

Report of the
Study Group on the Review of the Structure of the
Fisheries Technology Committee

by Correspondence
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1 EXECUTIVE SUMMARY

The Study Group on the Review of the Structure of the Fisheries Technology Committee (SGRSFTC) has carried out an extensive review through correspondence and discussion sessions with its Expert Groups and Committee members. The Fisheries Technology Committee's scientific area of responsibility is twofold; it covers the development of more optimal selective and ecosystem friendly fishing gears and focuses on the technical improvement and development of fisheries survey methodology. The Committee provides scientific information directly to the Advisory Committee and other Science Committees forming the basis of advice on the selection of appropriate technical measures in fishing operations and the improvement and selection of appropriate survey and sampling gears for resource survey and monitoring studies. The Committee provides a technical bridge that spans the issues of fishing practices, environmental impact, bio-diversity studies, and fisheries resource evaluation and management.

The present structure of the Fisheries Technology Committee consists of two Working Groups: 1) Fisheries Acoustics, Science and Technology (FAST) and 2) Fishing Technology and Fish Behaviour (FTFB) which hold annual meetings together. At these annual meetings time is allocated for a one day Joint Session of both Expert Groups to deal with common topics such as resource sampling and surveys, and fish behaviour studies. The Joint Session may be described as the glue that binds the two WGs together, the reason to meet at the same time and location. Study and Planning Groups are periodically created to look in-depth at special topics arising from the discussions of the Working Groups. The FAST and FTFB Working Groups use their meetings to disseminate and discuss new information and ongoing research in their respective technological fields. The Committee's Working Groups respond to requests for scientific information from the Advisory Committees and other Science Committees and also from industry, with whom both Expert Groups are closely allied. Industry representatives regularly participate in Working Group meetings.

In reviewing and rationalizing the existing structure of the Fisheries Technology Committee, the Study Group recognized that there was a need to clarify responsibilities, and to evaluate the need for change against the goals in the ICES Integration Action and Strategic Plans. The Fisheries Technology Committee Action Plan, served as a blueprint and provided the background for the Study Group. The Group considered the following topics in-depth: number of present working groups, study groups and planning groups; need for additional groups; the utility of the Joint Session; collaboration with other Committees; and communication of the Fisheries Technology Committee activities via Annual Science Conference (ASC) Theme Sessions, and Symposia.

The Study Group concluded that present structure of the Fisheries Technology Committee with two Working Groups holding annual meetings and a joint session together should be maintained. The concept of Study and Planning Groups being periodically created to look in-depth at special topics contributes to the development of the Working Groups and hence the Committee and is working well. The Study Group made 15 recommendations for improvements to activities under the Fisheries Technology Committee's Action Plan. Under the existing structure, the Committee should be able to meet the demands of the Integrated Action Plan and contribute effectively to the success of the Strategic Plan.

1.1 Participants

Stephen Walsh, Canada, Chair of FTC and SGRSFTC
David Somerton, USA, Chair of WGFTFB
Yvan Simard, Canada, Chair of WGFAST
Ronald Fonteyne, Belgium, former Chair of FTC
Paul Fernandez, UK, member of WGFAST
Thomas Moth-Poulsen, Denmark, member of WGFTFB

1.2 Terms of Reference

A Study Group on the Review of the Structure of the Fisheries Technology Committee [SGRSFTC] (Chair Stephen Walsh, Canada) will be established and will work by correspondence to:

- a) review and rationalise the existing Committee's Working Groups;
- b) identify and establish priority areas of activity with particular emphasis on cross-Committee collaboration;
- c) identify areas of work to support the Advisory Process;
- d) consider ways to increase the input from the Committee by:
 - (i) increased contributions to the Annual Science Conference and Symposia;
 - (ii) publications.

SGRSFTC will make its report available by 31 May 2003 for the attention of the Fisheries Technology Committee

2 INTRODUCTION

ICES is evolving and all Committees are expected to evolve with it. The activities in our Action Plan (see Appendix I) have been collated with other Committee activities into the 2002 Consultative Committee's Integrated Action Plan (see www.ices.dk website) (summarized as medium term work items for each of the WGs in Appendix II) and rolled up into the ICES Strategic Plan (see ICES website). The Strategic Plan specifies the activities that will be undertaken by the Science Committees and the Advisory Committees over the coming years. Prior to each Statutory Meeting, the Consultative Committee will review progress of each Science Committee towards specified goals during the past year. These documents have been described as 'living' documents – and changes will occur over time. There is a strong recognition that cross-Committee collaborations are highly desirable. The question is: *With the present structure of our Committee are we able to deliver on our commitments to the goals of the ICES Strategic Plan?* Both attachments provide the necessary background information for our deliberations.

Although this Study Group was formally created following a recommendation at the 2002 Annual Science Conference, it continues the work of an ad hoc group set up by the Chair of the Fisheries Technology Committee in April 2002. This report summarizes the numerous email discussions of that ad hoc group and also independent discussions at the annual meetings of the Working Groups in June and the Fisheries Technology Committee September, 2002.

3 THE REMIT OF THE FISHERIES TECHNOLOGY COMMITTEE

The Committee's scientific area of responsibility is twofold; it covers the development of more optimal selective and ecosystem friendly fishing gears and focuses on the technical improvement and development of fisheries survey methodology. The Committee provides scientific information directly to the Advisory Committee and other Scientific Committees forming the basis of advice on the selection of appropriate technical measures in fishing operations and the improvement and selection of appropriate survey and sampling gears for resource survey and monitoring studies. The Committee provides a technical bridge that spans the issues of fishing practices, environmental impact, bio-diversity studies, and fisheries resource evaluation and management (*from FTC Action Plan, Appendix I*).

3.1 The Structure of the Fisheries Technology Committee

The Committee is made up of two Working Groups formed in 1983 under the then Fish Capture Committee with the following Terms of References (ToR) (Anon, 1983):

- 1) *The Fishing Technology and Fish Behaviour Working Group (WGFTFB) shall review investigations of technologists and biologists on fishing gear/methods, fishing operations, vessels and behaviour of fish in relation to fishing operations.*

WGFTFB resulted from the merger of two Working Groups: 1) Working Group on Research on Engineering Aspects of Fishing Gear, Vessels and Equipment, and 2) the Working Group on the Reactions of Fish to Fishing Operations.

- 2) *The Fisheries Acoustics, Science and Technology Working Group (WGFAST) shall review investigations by scientists and technologists concerned with the design, planning and execution of all forms of measurements and observations pertaining to acoustic stock abundance estimation techniques and fishing operations including behavioural, acoustic, statistical and capture topics.*

The task of the WGFAST is to encourage discussion and development in fish behaviour factors, acoustic theory, equipment and gear, calibration, data collection and management, survey design and execution. This should include proposals for standard methodology.

Both Working Groups meet together annually at the same location which permits close contact between the chairs of the Working Groups and the Committee and the general membership. The Chair of FTC typically attends both Working Group meetings. Common topics of interest to both Working Groups are discussed in a one day Joint Session during this annual meeting.

On advice from the Working Groups, the Committee recommends to the Consultative Committee (CONC) the creation of specific Study Groups and Planning Groups to investigate specific topics of research.

4 AGENDA FOR THE STUDY GROUP

In reviewing and rationalizing the existing structure of the Fisheries Technology Committee, there is a need to clarify responsibilities, and to evaluate the need for change against the goals in the ICES Strategic Plan. The Fisheries Technology Committee Action Plan, which serves as a blueprint for our activities under the Strategic Plan, (see Appendix I) provides the reference for approaching the ToR for the Study Group and are listed below in Sections 4.1 to 4.3.

4.1 Review existing Committee, Working, and Study Groups. A review process to evaluate the progress towards the Committees objectives will be established

4.2 Committee composition

- a) At present, two working groups and a joint session between these two working groups comprise the main scientific body of the FTC and have done so for the last two decades. Occasional Study Groups have been formed to focus on special topics identified within the working groups. With the implementation of the Scientific Plan the working group structure of FTC should be evaluated, and the Committee will evaluate the need for change against the objectives in the Strategic plan.
- b) The responsibilities of the working group structure of FTC as they emerge from the evaluation to take place under a) should be clarified according to the objectives listed in the Strategic Plan
- c) All other groups presently supported by the Committee will be reviewed.
- d) The cross-Committee activity of FTC should be reviewed and suggestions for closer ties considered.

4.3 Review of annual reports for Working, Planning, and Study Groups

A formal discussion to consider a mechanism for a monitoring review of the reports of various groups parented by the FTC to ensure scientific quality and assist FTC in realizing the goals of its Action Plan will take place in 2002. Reviews will be carried out prior to September in each year and presented at the Statutory Meeting along with the group reports. Formal peer-review will be initiated if the monitoring review indicates a report is suitable for publication or is to be used as a basis for advice.

Expected outcome of the review

A functional working and study group structure with clear reporting responsibilities and linkages to Advisory and Scientific Committees and delivering the highest scientific quality in its reports (FTC Action Plan).

5 SUMMARY OF THE STUDY GROUP'S FINDINGS

The Study Group worked by correspondence producing 45 pages (font size 10) of deliberations on the structure of the Fisheries Technology Committee and also obtained feedback on its review at the 2002 annual meetings of WGFAST, WGFTFB and the Fisheries Technology Committee. The Group considered the following topics in-depth: number of present working groups, study groups and planning groups; need for additional groups; the utility of the Working Groups' Joint Session; collaboration with other Committees; and communication of FTC activities via Annual Science Conference (ASC) Theme Sessions, and Symposia.

5.1 Review and rationalise existing Committee, Working, Study, and Planning Groups, and the Joint Session

The Study Group began their deliberations by agreeing that a change for change's sake is not appropriate. It started with the hypothesis that the present structure is serving all the needs of all the members, i.e., Status Quo. It also began by unanimously agreeing that we need to further profile ourselves through publications, announcements, theme sessions, symposia and workshop. The following observations and conclusions were made:

- The FAST and FTFB Working Groups use their meetings to disseminate and discuss new information and ongoing research in their respective technological fields. The flow of information and the establishment of contacts are a big attraction since both of these Working Groups are at the forefront of research and development in their respective fields and their members are world leaders in this research. Many people are attracted to the meetings not only to be informed but to test out ideas, seek advice and guidance from a larger audience of experts on what

they are doing in the absence of that expertise at home. They also attend the meetings to maintain contacts with many international colleagues and the research community.

- The Working Groups respond to requests for scientific information from the Advisory Committees and Science Committees within ICES and also from industry, with whom both groups are closely allied. Industry representatives regularly participate in WG/SG/PG meetings. Several requests from ACFM have been directed to WGFTFB and a substantial part of many of its meetings have been allocated to deal with these requests.
- The ToRs for annual meetings of the Working Groups are largely proposed by the members often as a means to present or discuss whatever they are currently working on. It is now recognized that most of the research previously done within ICES (the only international platform at one time) is now done within the EU projects. Several of the research topics on the agenda at the WG meetings are the subjects of EU projects. Since the work is done externally by a segment of the same community, our meetings become a clearing house for presenting the results to the other segment. So, many meetings are typified by a mini-symposium format, and not by the idea of a working group since the work is done elsewhere. Exception is when we are dealing with specific requests from the Advisory Committees when ad hoc sub-groups of experts are formed to investigate these requests and their results are discussed in plenary.
- The membership of both Working Groups are ever increasing and both are the largest Working Groups in ICES, averaging 50–60 people at each WG meeting which generally means more papers to present and more time needed for the meeting. A problem with the mini-symposium format that is common to both Working Groups is that there are too many presentations and not enough time for good scientific discussion of each talk. A more focused agenda, discussion and output is stressed for both Working Groups. A simple report of the abstracts in the WG reports may not be the best use of the gathered expertise. It was noted that more tolerance be given for the “work in progress” type of presentation characteristic of working groups, as opposed to more formal preparations of the symposium type. What distinguishes the WG is the gathering of common expertise and this facility can only be tapped into by encouraging more debate. This is needed to guide the Working Group’s towards more in-depth evaluation of results, improvements in research and the development of new research directions. There should be less time for presentation and more time to debate each paper/research. Such debate should lead to the development of firm conclusions about the subject area, new topic areas for the coming years, new Study or Planning Groups, theme sessions or even symposia.
- The size of the Working Groups may be problematic for hosting both meetings together, along with Study Groups and PGs, in the same location. Organizers of recent annual meetings have taken the meeting site away from the hosting institute and moved it to hotel/convention centres to deal with the numbers. This generally has led to an increase in the cost of hosting the meetings. Another approach to the size problem would have the Working Groups not meeting together every year but, perhaps, every other year. Disadvantage would be loss of synergy between the 2 groups and more travel for those who attend both Working Groups.
- Several ideas to reduce the number of presentations by increasing the use of posters, i.e., those papers that do not require much discussion should be presented as posters and time allotted for their viewing; increasing the use of expert panels to investigate (prior to the annual meeting) and present reviews of specific topics, and host forums on those topics during the annual meetings. It was noted that the successful use of the invited panel format discussing unaccounted mortality at the 2000 meeting of WGFTFB in IJmuiden and the panel on acoustic bottom classification at the 2001 meeting of WGFAST in Seattle whereby the panels carried out a review of a special topic, presented by a convener who then facilitated a free discussion were excellent examples of a focused agenda. This successful approach led to both topics being selected as ASC Theme Sessions in 2002. Such reviews could also provide the justification for forming new Study/Planning Group, convening a workshop or publishing a review article in primary scientific journal. Another advantage of this approach is that it will give young scientists an opportunity to be more active in the meetings and discussions which tend to be dominated by the “old timers”.
- The identification of special topics/themes for each WG meeting gives the membership a chance of hearing about the latest innovations in a specific field. But too many special topics on one agenda could dilute the success of the meeting. As one reviewer stated “I miss the yearly discussions on innovations inside the most common themes (where most people work) in the ever-lasting search for new themes”. It is recognized that in both Working Groups there are common topics that will keep re-occurring on the annual agenda. This is to be expected and not seen as an impediment to the progress of the Working Groups, since often this is how Study Groups are formed or Theme Sessions are suggested.
- The Review Group suggested a brief list of topics to be considered for Special Topics in future meetings for each WG. Some of these topics could become ASC Theme Sessions, Study Groups or workshops and are as follows:

WGFAST: acoustic species identification; sampling tools for an ecosystem approach; use of multibeam sonar in fisheries research; new technologies in aquatic remote sensing; deep sea fish survey techniques; shallow water survey techniques; advances in fish TS modelling and measurement; survey design in aquatic surveys; determining uncertainty in survey estimates; geostatistics in fisheries research; etc.

WGFTFB: estimating abundance of semi-demersal species – including combining trawl and acoustic estimates; technical measures used in bycatch reductions; technical measures used to reduce adverse impacts of fishing gears: - on the bottom (e.g., reduction of bottom contact; alternative stimulation; how to assess bottom contact) and effect on benthos by-catches; fishing effort studies; reduction of “unaccounted mortalities”; netting materials and characteristics¹; use and comparison of knotted and knotless netting for square mesh panels, new research directions for selectivity studies, etc.

- The Joint Session may be described as the glue that binds the two Working Groups together, the reason to meet at the same time and location. However, because it is not a formal group with official membership and often hastily thrown together with little planning this session often is not effective. Each year we try to find common topics to put in - some with relevance to both groups some not. If the Joint Session is to continue, it needs careful planning with lots of lead time for suggestion of topics. If we are convinced that there should be a common forum for both Working Groups then a formal group with a Terms of Reference and membership should be considered. If we consider that it is not very productive it could be replaced by workshops or mini-symposia with peer-reviewed proceedings. If the Joint Session is retained then the Working Groups’ meetings should be organized successively rather than at the same time and the Joint Session should be in between and the planning of the session should take place at the FTC meetings during the ASC.
- The Study Groups and Planning Groups are set up to aid the Working Groups in the work they are doing and the concept is working well. The Study Groups handle topics which have gathered sufficient importance and interest and generally result in a COOP report reviewing the topic and recommending good practices. The concept is working well and it is emphasized that a COOP report should be a necessary outcome of every Study Group. These publications bring high profile to our Committee. With the increasing emphasis within ICES on cross-collaboration of Committee activities the focus of these Study Groups will become wider. Planning Groups are used by WGFASST to handle persistent issues such as the common standard format. WGFTFB has not used this group format in its activities. There is also a need to consider the use of Workshops to address certain topics, i.e., training, and expose our members to other disciplines, e.g., geostatistics.
- All groups need to allocate more time for the business side of their groups, i.e., for planning of: topics for the coming years, ASC theme sessions, workshops and symposia All too often we see a great enthusiasm for new topic items proposed at the annual WG meetings but must note rather poor response at the meeting the year after. The agenda for next annual meeting will only be successful if sufficient time is made available for discussion and planning.

6 THE FUTURE STRUCTURE OF THE FISHERIES TECHNOLOGY COMMITTEE

The two Goals of the ICES Strategic Plan directly related to activities of our Working Groups are 1): Modernise technologies and sampling design for collecting, measuring and enumerating marine organisms and improve the precision and accuracy of resource surveys (WGFTFB & WGFASST) and 2) Design and test harvesting technology that is more selective and more environmentally benign (WGFTFB).

6.1 Creation of additional Groups

Can we best address the two goals of the Strategic Plan under the present two WG structures or should we look at other options? The Study Group spent a lot of time on this question. It recognized that resource surveys were gaining a higher profile in the assessment because of the poor performance of other resource indices. Both Working Groups deal with this issue probably more so in WGFASST. With increasing demands on WGFTFB to examine technical measure issues and gear related environmental studies and WGFASST’s recent activities examining new and existing technologies this topic may not be adequately dealt with by any WG. The Study Group discussed the need for two additional Working Groups: one on survey design and analysis and one on fish behaviour (which had been discussed in several Joint Sessions in recent years). If these Working Groups were created then the structure of the Committee would look like this:

WGFT (Fishing Technology) would deal with technical measures, environmentally benign fishing gears and modernizing harvesting technology

WGFASST would deal with modernizing technologies

WGFB (Fish Behaviour) would deal with behaviour and effects on precision and accuracy of surveys

WGSAD (Survey Design and Analysis) would deal with modernizing sampling design and analysis

¹ there have been significant technical developments in netting materials since 1973 when Klust¹ published “Netting materials for fishing gear”. This FAO publication needs an update - Fits well in the new FTFB/ FAO collaboration);

The creation of a Survey Analysis and Design Working Group to deal with the commonality of members in FTFB and FAST who work extensively in this area of resource surveys drew much discussion. There is probably no forum in ICES dedicated to those working on survey design and analysis. Less interest was shown in the creation of a Working Group on Fish Behaviour, although there could be a case for merging these two new groups into one since many of the members of the two Working Groups work in the field of behaviour dealing with survey issues. The following scenario was discussed:

The Study Group concluded that as an alternate to the creation of a new Working Group at this point in time, special topics such as accuracy and precision of surveys, design and merging of data, fish behaviour, and catchability could also be more efficiently and profitably handled through workshops with a proceedings format. This is a well proven efficient way to address special topics in science. The success of these Workshops would be an indication for the need of a real WG. Similarly the Theme Sessions at the ASC could be used to gauge the need of additional Working Groups. These topics could also be agenda topics for the joint sessions of the two Working Groups or with other Committees/Working Groups. The Working Groups should be able to assess when a topic becomes more prominent so that it can be made a special topic for a future meeting, a Study Group, a workshop theme or an ASC Theme Session.

6.2 FAO co-sponsorship of WGFTB with ICES

As a result of a recommendation by the Consultative Committee FAO has been invited to co-sponsor the WGFTB beginning in 2002. This made it difficult at times for the Study Group to discuss the effect this would have on the activities of WGFTB. This co-sponsorship should bring new questions and ideas to the traditional thinking of WGFTB. In addition there has been a lot of parallel, independent research on common subject areas between ICES and FAO and this could be avoided in the future. Clearly, FAO involvement could further entrench the activities of the WG towards a focus on technical measures and gear related environmental studies with the possible negative effect of losing interest in other topics such as performance and catchability of survey gears and fish behaviour. Should this occur then thought should be given to removing this subject area from the WGFTB ToR and consider consolidating it with the work of WGFST. On a positive side, the co-sponsorship will probably revise older topics on vessels, fishing operations, net design fishing effort, and materials technology. Each of these topic areas have been the subject of attention within WGFTB at one time or another and this will continue to happen when a topic becomes important and several people are working in the area.

6.3 Further discussions on the operations of WGFTB

The WGFTB members at their annual 2002 meeting in Sète set aside time to discuss how the structure of FTC should change to meet the needs of the ICES Strategic Plan. The discussion centered on evaluating the responsibilities of WGFTB against the objectives of the FTC Action Plan (Appendix I). Some criticism was raised concerning the format of the Working Group's meetings suggesting they lacked direction, and that the WG should draw more clear conclusions from discussions on topics in their annual Terms of Reference. Additional comments and proposals were solicited by the Study Group via email after the June meeting. Appendix III contains the summary comments of the Fisheries Technology Group at FRS Marine Lab in Aberdeen and the Fish Capture Division of the Institute of Marine Research in Bergen. These discussion papers were presented at the 2002 FTC meeting at the ASC in Copenhagen. FTC members concluded that WGFTB should examine these proposals at their annual meeting in 2003. The Study Group recognizes that this is a topic for continuing discussion and supports the 2002 FTC recommendation that this should be discussed at the 2003 working group annual meeting.

6.4 Producing group reports with the highest scientific integrity

Under the 2002 FTC Action Plan (see Appendix I), the following item was identified:

Review of reports for Working, Planning, and Study Groups (item 1.1)

"A formal discussion of a mechanism for a monitoring review of the reports of various groups parented by the FTC to ensure scientific quality and assist FTC in realizing the goals of its Action Plan will take place in 2002. Reviews will be carried out prior to September in each year and presented at the Statutory Meeting along with the group reports. Formal peer-review will be initiated if the monitoring review indicates a report is suitable for publication or is to be used as a basis for advice."

The Study Group recommends that only when there is a request for scientific information from one of the Advisory Committees to FTC's WG/SG/PG should a full peer-review of that information be carried out. This is in accordance with the directive of the Consultative Committee from the 2002 ASC. A panel of three independent members including

the Chair of group and Chair of FTC, if they have not been directly involved, should carry out this review prior to submitting the report to FTC/CONC. This presently is the format followed in 2003 by WGFTFB request for scientific information on Baltic Sea cod mesh selection and should serve as a model for all FTC groups.

The Study Group recommends that Executive Summaries of each of the Committee's WG/SG/PG be circulated to a wider audience of ICES (see below) in order to announce the current focus of our research.

6.5 Fisheries Technology Committee Meetings – Boosting interest and attendance

After the restructure in the format of the Annual Statutory Meetings in 1996, ICES has regulated the annual meeting of all Committees to deal with only business items at the Statutory Meeting leaving science topics to the Theme Sessions. The FTC session at the Statutory Meeting/ASC is generally allotted 2x4 hr sessions of which the first session typically covers reports and the second sessions covers planning for the coming years, i.e., resolutions, theme sessions, etc.

The Study Group expressed concern about the small attendance by FTC members at the Statutory Meetings, in particular the first session which occurs before the official start of the ASC. It is possible that some members feel that the FTC meeting only reviews the expert groups' reports, with which they are familiar. How can we change that perception? Certainly, more people attending the meetings would lead to more healthier discussions, i.e., inter-group discussion is needed to maintain continuity between the two Working Groups. We should be talking more about commonality in topics that the Working Groups share, i.e., seabed classification/reduction in fishing gear impacts on benthos, design and analysis of resource surveys, geostatistics, sampling gears used in acoustic and bottom trawl surveys. Such discussions could be topics for workshop, theme sessions or joint session topics. One idea was to have 1 or 2 selected outstanding papers from the Working Groups presented at the FTC meeting. Although very interesting it may be logistically impossible given the schedule, however position papers on topics such as: re-organization, workshops, or new research directions, etc. would be of general interest and encouraged. In addition drafts of COOP reports which have to be approved by the FTC should be presented at the annual meeting.

Another area of interest that is addressed in cross-Committee collaboration below is to include a session whereby the Committee considers the work of certain target Committee/WG/SG/PG's and discusses how information generated at FTC could be usefully conveyed to these groups (see below).

7 IDENTIFY AND ESTABLISH PRIORITY AREAS OF ACTIVITY WITH PARTICULAR EMPHASIS ON CROSS-COMMITTEE COLLABORATION.

The Fisheries Technology Committee is actively pursuing the cross-collaboration of activities through Theme Sessions and Study Groups.

In our 2002 ICES Integrated Action Plan we are noted as having cross links with most other Science Committees, in particular Marine Habitat Committee on acoustic seabed classification and bottom mapping; the Resource Management Committee on the use of commercial fisheries data; the Resource Management Committee, Living Resources Committee and ACFM on technical measures issues; and, the Resource Management Committee and Oceanography Committee on joint activities with FAO.

We are actively establishing relationships with colleagues in the Marine Habitat Committee, and this is evident by the 2002 and 2004 Theme Sessions with members from WGFAS and the WG on Marine Habitat Mapping (WGMHM), to deal with the issues of acoustic seabed classification and bottom mapping. A FTC proposal for the formation of a Study Group on this topic was approved at the CONC meetings in the 2002 ASC and invitations have been sent to a select number of Marine Habitat Committee groups to attend. Similarly there is a 2003 Theme Session being proposed on technical measures which has conveners from FTC and the Resource Management Committee. The Theme Sessions and Symposia are valuable vehicles to draw attention to the work of the Committee but they do not always take place at the right moment, i.e., they occur at some distant time from the present and efforts should be made to find better ways to draw attention to our current work.

Cross-Committee collaboration and the general promotion of FTC activities require communications with other groups if this idea is to be successful. Since there are 8 Science Committees with at least 51 Working Groups, 23 Study Groups and 7 Planning Groups, some of these groups need to be made aware of our work by providing (email) them with a very short tailored Executive Summary of each our groups' activity as relates to the Committee. There are some obvious targets: in ACFM just about all groups qualify; in ACE: WGEKO; in OCC: WGZE; in RMC: WGMG, IBTSWG, PGSPFN, PGRS; in MHC: WGMHM, BEWG, in MCC: WGEIM (?); in LRC: WGBIFS, WGCEPH, WGBEAM, SGSBSA, PGHERS, PGAAM; and in BCC: SGHAUB. At the annual meeting FTC could include a session where it explicitly considers the work (ToRs for the upcoming year) of certain target Committee/WG/SG/PGs and discusses how

information generated at FTC could be usefully conveyed to these groups. We could identify a number of people in FTC who would be responsible for liaison with each of these Committees. They could then prepare a concise but relevant presentation on FTC's work and present it to that Committee at the ASC. We would obviously have to establish our priority target groups by consensus.

8 IDENTIFY AREAS OF WORK TO SUPPORT THE ADVISORY PROCESS

The Study Group did not have too much time to dwell on this issue but did note that both Working Groups respond to requests for scientific information from the Advisory Committees and other Science Committees within ICES and from industry, with whom both groups are closely allied. Industry representatives regularly participate in WG/SG/PG meetings.

The FTC Chair became an *ex officio* member of ACE in 2001 and represents the Committee at the annual meetings of ACE on issues relating to the effects of fishing. The *ex officio* membership of ACE also includes the Chairs of the Marine Habitat, Oceanography, Baltic, and Living Resources Committees.

The ACFM, the *ex officio* membership comprises the Chairs of the Resource Management, Living Resources, and Baltic Committees, but not the Fisheries Technology Committee. Nevertheless, over the past 12 years, FTC has been asked by ACFM via CONC to provide scientific information for the formulation of advice on the GOV trawl, North Sea *Nephrops* codend mesh selectivity, and Baltic cod codend mesh selectivity, and a survey trawl for the Baltic sea demersal surveys. We are not aware of any direct requests coming to WGFAST. With the increasing attention being paid to technical measures CONC should consider whether it would be productive to extend *ex officio* membership in ACFM to the FTC.

The CONC's Integrated Action Plan does address the linkage with other Science Committees and FTC is cross-linked with other Committees on work items related to acoustic seabed classification and bottom mapping, and ecosystem effects of fishing, among other things.

9 CONTRIBUTE TO THE ANNUAL SCIENCE CONFERENCE AND SYMPOSIA

The Theme Sessions at the ASC allow FTC and its group members a chance to highlight our research to a wider audience of other Committees and the scientific community in general through publications of Commission Documents. The FTC via its Working Groups has been active in the theme sessions at the ASC. In 2002 there were two sessions: one on unaccounted mortality and one on acoustic seabed classification. In 2003 there is a theme session on technical measures and in 2004 there are two recommended sessions: one on acoustic seabed classification and bottom mapping and the other on new developments in fisheries acoustics. The selection of topics for Theme Sessions requires advance planning and the general procedure is that the topics are formulated at the WG level, presented at the FTC level for review and then onto CONC for final scrutiny. There are a limited number of theme sessions each year and there should be at least two theme sessions related to FTC at every ASC. In order to achieve this objective the Chairs of the WG and the FTC should encourage members to bring forth titles two years in advance with the target being one session per WG per year. Time has to be allocated during the business section of each WG meeting. Theme sessions can also be recommended by SG and PG directly to FTC for consideration.

Our FTC Action Plan (Appendix I) states that "The Committee will play an active role in promoting contributions to the Annual Science Conference by identifying for each year two major and four minor theme sessions for consideration by the Consultative Committee. The proposals will be developed in such a way that at any one time the draft proposals will contain titles for three years ahead. They will be updated annually so that a proper balance can be achieved and topicality maintained".

We can bask in the glory of back to back Symposia for 2002 and 2003. WGFAST has been keen on using the symposia every 5 years which attract a large number of papers and scientists. So we are probably the most active Committee in hosting symposia in recent years. WGFTFB should be more active in hosting symposia, the last one was 1992. Another Symposium/Congress on Fishing Operations is long over due and perhaps the linkage with FAO will see an increase in this type of activity.

10 PROMOTE PUBLICATIONS

The Study Group unanimously agreed that any publication from our Committee/WG/SG/PG profiles our status in ICES and the rest of the scientific community.

The FTC/Working Groups via the Study Groups have been very successful at using the COOP Research Reports series to highlight our work. We can expect in 2003 a draft of COOP for SGMESH group and another one from the Sub-group on Static Gear Selectivity Manual. A COOP report should be a necessary minimum output of each Study Group thus ensuring a continuous flow of publications.

Theme Sessions allow us to publish our scientific work as Commission documents so we need to ensure that we have one or more sessions each year. Hosting international symposia allow us to publish in the primary literature. WGFAST have been highly successful at this with symposia every 5 years. WGFTFB has not been as active in this area.

Workshops and mini-symposia with proceedings format should also be encouraged as another source of publications. In addition, the adoption of panel experts format by the Working Groups, whereby a small group prepares a review of a particular topic prior to the annual meeting, could become a review publication.

The Study Group noted that “publish or perish rule” exists in many of our institutes as one of the main criteria for promotion. It would like to see the Chairs and the Rapporteurs of the WG/SG/PG’s reports listed as authors and not the commonly used “ICES”. The FTC Chair pursued this request at the 2002 CONC meeting and it is being investigated by the Publication Committee. In addition, shouldn’t all contributors to the COOP reports be listed as the authors of the report?

11 RECOMMENDATIONS

The Study Group has carried out its mandate to review the structure of the Fisheries Technology Committee in relation to the objectives of the Integrated Action Plan component of the Strategic Plan and makes the following recommendations to the Committee:

- 1) The present structure of the Fisheries Technology Committee with two Working Groups holding annual meetings together should be maintained. The concept of Study and Planning Groups being periodically created to look in-depth at special topics contributes to the development of the Working Groups and hence the Committee and is working well. Under the existing structure, the Committee should be able to meet the demands of the Integrated Action Plan component of the Strategic Plan.
- 2) A third Working Group on Survey Design and Analysis may be warranted in the future due to the increasing emphasis being put on surveys within the Committee and also in the expert groups of the Living Resources and Resource Management Committees. In order to gauge the interest and demand a workshop with a proceedings format should first be convened.
- 3) The annual Joint Session meeting of both WGFTFB and WGFAST should be continued as a common forum for both Working Groups with theme topics being identified at the working group level and ratified at the annual FTC meeting. The Chairs of both Working Groups should co-chair this session.
- 4) The Committee² should consider for review an update of the original Terms of Reference for the two Working Groups and suggest the following new ToRs:

WGFTFB: *The Fishing Technology and Fish Behaviour Working Group shall initiate and review investigations of scientists and technologists concerned with all aspects of the design, planning and testing of fishing gears used in abundance estimation, selective fishing gears used in bycatch and discard reduction; and benign environmentally fishing gears and methods used to reduce impact on bottom habitats and other non target ecosystem components, including behavioural, statistical and capture topics.* The Working Group’s activities shall focus on all measurements and observations pertaining to both scientific and commercial fishing gears, design and statistical methods and operations including benthic impacts, vessels and behaviour of fish in relation to fishing operations. The Working Group shall provide advice on application of these techniques to aquatic ecologists, assessment biologists, fishery managers and industry.

WGFAST: *The Fisheries Acoustics, Science and Technology Working Group shall initiate and review investigations by scientists and technologists concerned with the design, planning and execution of all forms of acoustic and other related measurements and observations pertaining to: abundance estimation and*

² This was approved at the 2002 annual meeting of the FTC in Copenhagen ASC

distribution of fish and plankton, fishing operations, and the classification and mapping of the seafloor; including behavioural, statistical and capture topics. The Working Group's activities should stimulate advances in theory, technology, standard methodology, survey design and fish behaviour and provide advice on application of these techniques to aquatic ecologists, assessment biologists, fishery managers and industry.

It is suggested that these remits would appear annually in each Working Group's report and on each of the Working Group's websites.

- 5) Each Working Group should review and discuss what format its annual meetings should take. Much of the work of the Working Group is done elsewhere and the meetings are a clearing house for that work. Rather than simply report on this work, there is a need to guide the groups towards in-depth evaluation of results, improvements in research and the development of new research directions.
- 6) At the annual meetings of the Working Groups, the number of oral presentations should be limited to a predetermined fraction of the schedule and more use should be made posters (50–100%) to free up time for discussions and planning. In addition time at the annual meetings could be set aside to conduct mini-workshops.
- 7) More time has to be allocated to the business side of the Working/Study/Planning Groups and the Fisheries Technology Committee, to discuss special topics, new research directions, cross-Committee/expert group collaborations, theme session planning, symposia, workshops, etc. for future next meeting.
- 8) Requests for scientific information from the Advisory Committees to the Fisheries Technology Committee may best be handled by the formation of ad hoc sub-groups of experts within the Working Groups who carry out preliminary work on the issue during the year, finishing it at the annual meeting and presenting their results in plenary for a wider input. Requests from other Science Committees can also be handled in a similar manner, if there is an urgency or a joint Study Group could be formed if the topic is substantial enough and there is no urgency.
- 9) When requests for scientific information is made by the Advisory Committees, the reports of this information should be peer-reviewed by an independent group prior to submitting to the requesting Committee. This review group should include the Chairs of the relevant Working Groups and the Chair of the Fisheries Technology Committee. Advance peer review of annual reports are unnecessary since the review is carried out at the annual Fisheries Technology Committee meetings in September.
- 10) The Committee needs to kept up-to-date on the activities of other Science and Advisory Committee in order to identify areas of collaboration. The Committee can further profile itself by sending Executive Summary reports of its expert groups out to the Chairs of other relevant Working Groups and Committees who share with The Fisheries Technology Committee common goals in the Strategic Plan.
- 11) The workshop format should be utilized by the Committee as an effective method of training of Committee members in various speciality areas. It also offers the opportunity to cross collaborate with other Science Committees/expert groups' members to address common goals.
- 12) In an effort to attract more attendance at the Committee's annual meeting, the time allocated for reports of the Expert Groups should be kept a minimum level and cover highlights of findings, conclusions and recommendations. More time should be allocated for discussions of specific items, new science ideas and implications of work done in the Expert Groups. The forum of discussion should continue with presentations of special research topics, and planning of the upcoming Committee meeting, theme sessions, symposia, and workshops, based on future needs and with a focus on forward looking science goals of the Action/Strategic Plan
- 13) The Committee should set as its goal a minimum of two Theme Sessions representing the research of both working groups at each Annual Science Conference. The Theme Sessions at the Annual Science conference allow our members to showcase their research to a broader community and themes which cross-collaborate with other Science Committee expert groups are encouraged.
- 14) The Committee should pursue a request to have the names of the Chair and rapporteur as authors of the various reports with the Consultative and Publication Committees. All contributors to the COOP reports should be listed as authors of the report.
- 15) The Committee should discuss whether it should seek ex officio membership in ACFM.

12 REFERENCES

Anon 1983. General report of the joint meeting of the Fish Capture Committee working groups, 2–6 may 1983. ICES CM 1983/B:5: 6pp

APPENDIX I: FISHERIES TECHNOLOGY COMMITTEE ACTION PLAN (B)

22 January 2003

Remit

The Committee's scientific area of responsibility is twofold; it covers the development of more optimal selective and ecosystem friendly fishing gears and focuses on the technical improvement and development of fisheries survey methodology. The Committee provides scientific information directly to the Advisory Committee and other Science Committees which forms the basis of advice on the selection of appropriate technical measures in fishing operations and the improvement and selection of appropriate survey and sampling gears for resource survey and monitoring studies. The Committee provides a technical bridge that spans the issues of fishing practices, environmental impact, biodiversity studies, and fisheries resource evaluation and management. It is responsible for:

- Development and deployment of new methodologies and new acoustic instrumentation and survey gears to enumerate and monitor distribution and abundance of fishing resources, trophic relationships, marine habitats and biodiversity.
- Design and testing of selective fishing gears with respect to target species and size groups, to reduce by-catch and minimize discards and improve escape survival.
- Design and testing of fishing gears and methods with reduced impact on bottom habitats and other non target ecosystem components.
- Continued development in the catching efficiency performance of survey gears for representative sampling and estimation of fish distribution and abundance indices..
- Continued development of hydroacoustics and lidar for finfish fisheries and plankton surveys, seabed classification and bottom mapping and providing the techniques and methodologies for simultaneous evaluation of different components of the ecosystem at the same time
- Continued developments of techniques and protocols for fish and plankton behaviour studies to aid in the development of survey and monitoring fishing gears and methods, and detection and evaluation of predator prey interaction.

The Fisheries Technology Committee has explicit links with ACFM, ACE, Baltic Committee and the Resource Management Committee through its evaluation and provision of scientific information which forms the advice for selection of appropriate technical measures and ecosystem friendly fishing gears for fishery and conservation management. It also has links with the Baltic and Living Resources Committee through its development of technical aspects of survey equipment and survey methods and in the selection and improvements of bottom survey trawls used in resource surveys. The Committee will strengthen its links with the Advisory and Scientific Committees through the flow of better information about the scientific achievements within the Committee, cross-coordination of related scientific activities and through active participation in the implementation of the strategic plan..

Links to the ICES Strategic Plan and other Committees

The Fisheries Technology Committee currently has a particular responsibility to two components of the third scientific objective of the ICES Strategic Plan: "develop the scientific basis for sustainable use and protection of the marine environment, including living marine resources". These responsibilities are:

Modernise technologies and sampling design for collecting, measuring and enumerating marine organisms, and improve the precision and accuracy of resource surveys.

To a large extent the development of the acoustic method to estimate the abundance of fish has taken place under the auspices of ICES, and the method is now widely used in fishery science. As technology advances, it is important that new methods and instruments are developed and deployed for marine scientific application. These will improve the accuracy and precision of surveys, and open new possibilities for marine investigations such as assessing and monitoring biodiversity and marine habitats.

Similarly, methods and instrumentation to measure the performance and catching efficiency of survey gears used in annual resource surveys have developed under the auspices of ICES. This has lead to a reduction in measurement error in abundance indices associated with the performance of the survey trawl. Emerging technologies will permit the development of new methods and instrumentation to model the performance and catchability of survey gears as input parameters to stock assessment models.

Fundamental to the improvement in accuracy and precision of annual indices of abundance using acoustics and bottom trawls is the recognition that fish behaviour is one of the major sources of bias. Quantification of this bias is critical to the understanding of fluctuations in population size and other demographic parameters.

Design and test harvesting technology that is more selective and more environmentally benign.

Improving commercial fishing gear selectivity is crucial to deciding on the appropriate technical measures to realize the growth potential of fish before harvest, to prevent by-catch of small and non-target fish, and to rebuild stocks in severe decline. As technical measures become more complex to allow more specific targeting of species or sizes, there is an increasing need for technical advice to management on the most appropriate measures for particular fisheries. Quantitative studies of fish behaviour are critical to the further development of responsible fishing with regard to size and species selectivity, by-catch reduction, survival of non-target species which encounter the gear and protection of biodiversity and critical marine habitats in an ecosystem approach to fisheries management.

The design and testing of more selective fishing gears and methods with reduced impact on bottom habitats and other non target ecosystem components will aid the development of an ecosystem approach to fisheries management directly through initiatives to develop more target specific fishing methods.

In addition, a large number of the scientific objectives in the Strategic Plan related to other Science and Advisory Committees, are directly related to the work of FTC since fish capture and survey methods underpin much of ICES science. As a result it will be necessary to develop and maintain dialogue with these Committees to ensure that work is properly co-ordinated within ICES and that science activities are efficiently executed. Some obvious examples where cross Committee interests lie are:

Resource Management	Living Resources	Mariculture	Marine Habitat	Oceanography	Baltic
Fishing gear instruments that enhance technical measures to conserve the resources. Evaluate and provide advice on selection of appropriate technical measures, Improving the precision and accuracy of abundance indices from fishery independent acoustic and trawl surveys. Evaluating the relationship between fishing effort and fishing mortality.	Effect of selective fishing on biological parameters of fish population. The further development of acoustics and electronics to study behaviour and migrations and the calibration of acoustic and sampling trawls to study trophic relationships, distribution and abundance and population dynamics of both commercial and non commercial species.	Monitoring the behaviour of fish in relation to technical installations, and the harvest of sea ranched organisms. Further developments in acoustics and electronic instrumentation to measure biomass and size structure of fish in rearing pens and to monitor the movements and recaptures of escapees.	Effects of towed demersal gears on the seabed habitat and the bottom fauna. The further development of acoustic and sampling trawls to measure and monitor biodiversity. Development of acoustics to provide fine scale habitat classification and seabed and bottom mapping.	A further development of the acoustic method for measurement of currents and the increase use of trawl mounted instrumentation to measure oceanographic data on survey and commercial fishing gears	Evaluate and provide advice on appropriate technical measures and survey gear selection. Ensuring that parallel regional science is co-ordinated with FTC work

Scope

There is a need to ensure that the action plan of the Committee embraces the breadth of ICES expertise and addresses priority areas. It should also cover the main biological groups of marine finfish, anadromous and catadromous fish, plankton, shellfish and marine mammals. The new ICES Strategic Plan is wide-ranging and ambitious in its objectives so not all of the objectives can be addressed at once. Furthermore, there is a legacy of existing work, much of which must continue, as new technologies and work are developed. The initial plan for the Committee incorporates the need to review and rationalise existing work while at the same time embarking on a process of stimulating new initiatives. There is also a need for the Committee to approach its input to the ASC and Symposia in a systematic way.

Action plan

1.0 Review existing Committee Working and Study Groups. A review process to evaluate the progress towards the Committees objectives will be established

1.1 Committee composition

- (a) At present, two working groups and a joint session comprise the main scientific body of the FTC and have done so for the last two decades. Occasional Study Groups have been formed to focus on limited topics identified within the working groups. With the implementation of the Scientific Plan the working group structure of FTC should be evaluated, and the Committee will evaluate the need for change against the objectives in the Strategic plan.
- (b) The responsibilities of the working group structure of FTC as they emerge from the evaluation to take place under a) should be clarified according to the objectives listed in the Strategic Plan
- (c) All other groups presently supported by the Committee will be reviewed.
- (d) The cross-Committee activity of FTC should be reviewed and suggestions for closer ties considered.

1.2 Review of reports for WG, PG, and SG

A formal discussion of a mechanism for a monitoring review of the reports of various groups parented by the FTC to ensure scientific quality and assist FTC in realizing the goals of its Action Plan will take place in 2002. Reviews will be carried out prior to September in each year and presented at the Statutory Meeting along with the group reports. Formal peer-review will be initiated if the monitoring review indicates a report is suitable for publication or is to be used as a basis for advice.

Expected outcome: A functional working and study group structure with clear reporting responsibilities and linkages to Advisory and Scientific Committees and delivering the highest scientific quality in its reports.

For the coming year the following Working, Study and Planning Groups are recommended under FTC:

Fisheries Technology Committee (B)

2B01 **A Study Group on Survey Trawl Gear for the IBTS Western and Southern Areas** [SGSTG] (Chair: Francisco Velasco, Spain) will be established and will meet in Vigo, Spain from ?-? February 2003 to:

- a) conduct a review of the current uses and needs for IBTS data to determine potential uses and users of the data from the surveys in terms of stock assessment, species distribution and marine ecosystem applications e.g., biodiversity.
- b) conduct a review of the current survey trawl gears to recommend standardisation of current methodology,
- c) consider other candidate gears that would be suitable for use in all areas after suitable modification;
- d) propose a minimum number of candidate net and ground gear configurations;
- e) supervise modification and field trials of candidate trawl gears;
- f) determine standardized trawling procedures after appropriate trawl gear has been chosen, in relation to the procedures used in the North Sea;
- g) define the required scope of continuing intercalibration work required to maintain continuity in time series, including the North Sea time series;
- h) recommend appropriate survey design for multi-vessel/gear permutations such as stratification, overlap, and the combining of data to provide indices of abundance and biodiversity and any other appropriate indicators of stock and regional scales.

SGSTG will report by 28 February 2002 for the attention of the Fishing Technology, Living Resources and Resource Management Committees and ACFM and ACE. It will also make its report available to WGFTFB

Supporting Information

Priority:	One or more of the participants in the Western and Southern areas International Bottom Trawl Survey are planning replacements to their survey vessels, and at least one new survey is planned. Since vessel replacement must be accompanied by experiments calibrating the old to the new vessels, any gear changes related to IBTS standardization must precede vessel replacement to avoid duplicate calibration experiments. Consequently this activity should be considered as high priority.
Scientific justification:	The Western and Southern areas of the International Bottom Trawl Survey are presently comprise a composite of eight national surveys using at least five distinct types of trawl gear. Although the WGIBTS has addressed the need for standardization in trawl gear and fishing practices, little progress has been made because of a lack of expertise in trawl design and performance on the variety of bottom types comprising the area. This study group is intended to combine the expertise of the primary users of IBTS data from RMC and LMRC, the trawl gear designers and experimentalists from WGFTFB and the practitioners of trawl surveys from WGIBTS to develop a gear type and a set of standard fishing practices allowing the Western and Southern areas of the IBTS to be combined into one unified whole.
Relation to strategic plan:	This Study Group directly addresses the remit of the Fisheries Technology and the Resource Management Committees.
Resource requirements:	No ICES resources are needed, unless a meeting room is needed to hold the workshop at ICES headquarters
Participants:	Participation is expected from all 7 countries supporting the Survey effort in the Western and Southern areas of the IBTS. In addition, several members of the WGFTFB, and the working groups of RMC and LRC are also expected to participate.
Secretariat facilities:	None
Financial:	No financial implications. Possibility of EU funding as a workshop
Linkages to Advisory Committees:	ACFM (standardisation) and ACE (biodiversity)
Linkages to other Committees or Groups:	The proposed study group will be closely linked to WGIBTS, WGFTFB as well as several working groups within RMC and LMRC.
Linkages to other Organisations:	
Cost share:	ICES: 100%

2B02 The **Study Group on Mesh Measurements Methodology** [SGMESH] (Chair: R. Fonteyne, Belgium) will meet in Ostend, Belgium from 19–21 March 2003 to:

- consider the results of additional tests on proposed measure forces recommended for mesh size measurements;
- propose final specifications of a suitable mesh measurement methodology and the conditions under which mesh measurements for all fishing gears in ICES areas are made;
- review the preparation of a proposed draft Cooperative Research Report on “Mesh Measurements Methodology”; SGMESH will report by 30 June 2002 for the attention of the Fisheries Technology Committee. It will also make its report available to WGFTFB.

Supporting Information

Priority:	The activities of the SG will provide a scientifically correct methodology for the measurement of the mesh opening. The underlying objective of mesh measurements is to control fishing mortality through specifying the selectivity characteristics of fishing gears and as such to contribute to creating sustainable fisheries. Consequently these activities are considered as having a high priority.
Scientific Justification:	In 1998/1999 the WGFTFB established the need to refine mesh measurement methodologies to take account of the wider range of twines and netting types used in the fishing industry since 1962 when the current ICES and wedge gauge methods were adopted. Modern twines vary significantly in e.g., thickness and stiffness and it is known that these characteristics affect both mesh size measurement and selectivity. At the same time two other international bodies (CEN and EU) and the fishing industry (both fishermen and netmakers) have agreed that there is a need to consider the adoption of a standard mesh measurement method for use by the fishing industry, enforcement agencies, and scientists. At its annual meetings (2000–2002) the SG considered whether the current definition of mesh size is still appropriate for scientific and industrial purposes, taking account of the need in stock assessment for the selection factor (L50/MS) to have a consistent meaning. The SG compiled an inventory of commercially available netting associated with the selectivity process. The SG discussed the need to define groups of netting types for which the same measurement conditions can be applied. In order to define these groups, and the measuring forces to be used, the SG members performed a series of laboratory tests. Based on these tests the SG proposed new measuring forces suitable for modern netting materials. These measuring forces will be tested and the results compared to other methodologies prior to final recommendations for a suitable mesh measurement methodology and for the conditions under which mesh measurements for all fishing gears in ICES areas are made. The work of the SG and the resulting recommendations will be presented as an ICES Cooperative Research Report. The SG will work by correspondence in 2002–2003 and will finalise its task at the 2003 meeting.
Relation to Strategic Plan:	This Group directly addresses the remit of the Fisheries Technology Committee. Its terms of reference are embodied in the scientific objective 3h of the ICES Strategic Plan and goals 4 and 5 of the draft integrated action plan.
Resource Requirements:	The research activities which provide the main input to this group are nearly completed. The additional resource required to undertake additional activities in the framework of this group is limited.
Participants:	Some 12 members attend the Group. Most of them are also members of WGFTFB.
Secretariat Facilities:	None
Financial:	No financial implications.
Linkages to Advisory Committees:	The outcome of the activities can be of importance to ACFM in view of advice given on some technical measures.
Linkages to other Committees or Groups:	There is a very close working relationship with the Fisheries Technology Committee and with WGFTFB in particular. The results have implications for LRC and RMC.
Linkages to other Organisations	The work of this group is closely aligned with a EU-project proposal for the development of a new mesh gauge and the drafting of a new European Standard for a Method of Test for the Determination of Mesh Size by the European Committee for Standardisation. Industry members are participating in the SG.
Cost share	ICES 100%

2B03 The **Planning Group on the HAC Data Exchange Format** [PGHAC] (Chair: D. Reid, UK) will meet in Bergen, Norway on 17 June 2003 to:

- a) coordinate the development of the HAC standard data exchange format;
- b) provide information on the changes in the format and its evolution;
- c) share information between manufacturers and users on the way acoustic data are processed and stored;
- d) agree on the definition of two new tuples for the use of attitude sensors on towed bodies;
- e) define the layout and sequence for the use of the HAC structure to allow data exchange between different sounder systems and users.

PGHAC will report by 15 July 2003 for the attention of the Fisheries Technology Committee. It will also make its reports available to WGFAST.

Supporting Information

Priority	Essential component of WGFAST activities.
Scientific Justification	<p>The common data format (called HAC - Hydro Acoustic) is now already usable and shared by most of the users and manufacturers. It has been agreed that such a format must be allowed to evolve and that a group is needed to continue to work on the format in order to adapt it to the latest versions of equipment and to improve it. It seems important that the FAST be informed continuously on the changes in the format and its evolution; there is also a need to share information between manufacturers and users on the way acoustic data are processed and stored. This requires a permanent forum in order to deliver to the FAST members the up-dated versions of the HAC and to answer the questions of both users and manufacturers.</p> <p>Tor -d at the 2002 meeting, it was agreed to define two new tuples – a “sub-channel” tuple (42) and a “ping style” tuple (10142) for the data flow. These were allocated to IFREMER for development and will be presented at this meeting.</p> <p>NOTE: a Tuple is a term from set theory which refers to a collection of one or more attributes.</p>
Relation to Strategic plan	Range of activities under Goals 1 and 3 of the Strategic Plan and 5 of the integrated action plan.
Resource requirements	None
Participants	The HAC group will include a majority of WGFAST member institutions, and representatives of fisheries software suppliers and fisheries sounder manufacturers. The normal composition will consist of one representative from each organisation or institution and an additional nominated Chair from within the HAC group. The HAC group can ask for participation on a non-voting basis of any other experts, accepting this on a majority basis.
Secretariat facilities	None
Financial	No financial implications
Linkages to Advisory Committees	There are no direct linkages to the Advisory Committees
Linkages to other Committees or Groups	This Group is closely aligned to WGFAST

Linkages to Other organizations	This group works closely with industry in achieving its objectives.
Cost share	ICES:100%

2B04 The **Study Group of Target Strength Estimation in the Baltic Sea** [SGTSEB] (Chair: B. Lundgren, Denmark) will meet in Bergen, Norway from 17–18 June 2003 to:

- evaluate the single target TS measurements on herring and sprat during the surveys in 2001–2002 and from cage experiments in the Baltic;
- apply the modelling methods on the case of the herring and sprat and compare their results to the existing information and single target TS measurements and cage experiments in the Baltic Sea
- recommend TS length relationships for herring and sprat in the Baltic Sea.

SGTSEB will make its report available by 31 July 2003 for the attention of the Fisheries Technology Committee and the Baltic Committee. It will also make it available to WGFASST.

Supporting Information

Priority	The variability and trends on the TS of Baltic herring have been recognized as important
Scientific Justification	<p>The reasons and sources of variations are rather well documented and understood in the particular case of the Baltic Herring population. Although these sources of variation are particularly important in the case of the Baltic herring, it is clear that they are not specific to this population and that any result on this particular population would have potential application on other stocks.</p> <p>Due to the fact that (a) there is an urgent need of improving the definition of the TS of Baltic Herring (b) there is good knowledge of this population and (c) there are potentially good possibilities of measurements and experimentation on this fish, this population could be considered as a test population for the WGFASST members to understand and improve the meaning and value of target strength on pelagic fish.</p>
Relation to Strategic plan	Direct links to Goal # 1 and # 4
Resource requirements	None
Participants	Anticipate attendance of 8–10 persons. Appropriate members will attend the WGBIFS meeting in April 2003 to discuss these new ToR with Baltic acoustic colleagues and prepare the data for the Study Group meeting in 2003.
Secretariat facilities	None
Financial	No financial implications
Linkages to other Groups or Committees	This group is closely aligned to the FAST Working Group. WGBIFS
Linkages to Advisory Committees	There are no direct linkages to the Advisory Committees

Linkages to Other organizations	
Cost Share	ICES 100%

2B05 A **Study Group on Acoustic Seabed Classification** [SGASC] (Chair: J Anderson, Canada) will be established and will meet in Bergen, Norway from 17–18 June 2003 to:

- a) evaluate acoustic seabed classification technologies and applications, its underlying physics, theoretical basis, and empirical practices in relation to:
 - i) scales of observations, data quality and standards;
 - ii) classification methods and criteria;
 - iii) ground-truthing means;
 - iv) sampling design;
 - v) discuss methods and approaches to combining the above ancillary information in studies on fish distribution, abundance and ecology.

SGASC will report by 31 July 2003 for the attention of the Fisheries Technology and Marine Habitat Committees. It will also report to WGFAST.

Supporting Information

Priority	Acoustic remote sensing of seabed characteristics for fish and shellfish habitat classification and abundance estimation is a rapidly evolving multidisciplinary research area that is becoming more and more used for stock estimation, effects of fishing gears on benthic community, ecosystem research and habitat protection and management.
Scientific Justification	The use of acoustics for remotely measuring characteristics of fish (benthic) habitat such as the seabed substratum type and the flora and fauna growing in or on it is an area that is developing rapidly (cf. WGFAST 2001 annual rep. ICES-CM B:06). Several papers were presented at the 2002 ICES Symposium on Acoustic in Fisheries and Aquatic Ecology on this topic, which is also the object of a special session for the 2002 Annual Science Conference. Such applications of acoustics are getting more and more considerations from marine scientists interested to link the fish with some habitat characteristics for various objectives including ecological studies, habitat mapping, fish stock estimation and survey design, applications of ecosystem approach in fisheries management. Applications in this field are still largely empirical. A diversified expertise of acoustic scientists, benthic ecologists and habitat mapping scientists is required for proper use of this new remote sensing method. For example, the absence of standard methodologies hinders direct comparisons of results obtained from different instruments, different settings and processing algorithms or coming from different environments. A comprehensive understanding of the seafloor acoustic backscatter is required for proper interpretation and use of the signal. WGFAST members of the study group have considerable experience in acoustics and in implementing operational solutions responding to such needs for understanding and the establishment of standardisation guidelines. The SG can join its efforts with other groups to the scientific development of this rapidly evolving acoustic field. Other ICES groups and organisations, notably those making use of the results, are also interested in the development and standardisation in this area of research.
Relation to Strategic plan	This Group directly addresses the remit of the Fisheries Technology Committee. Its terms of reference are embodied in the scientific objective 3h of the ICES Strategic Plan. It also addresses goals 1 to 4 of the Action plan.
Resource requirements	No new resources will be required. Having overlaps with WGFAST and other meetings of the Working Groups of the Fisheries Technology Committee increases efficiency.

	Approximately 25 members are expected to participate in the Study Group.
Participants	It is expected that this Study Group would include members of other Committees or Working Groups interested in acoustic seabed classification, especially the Working Groups of Marine Habitat Committee. Support was obtained from the theme session on this topic at the 2002 ASC.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to Advisory Committees	ACE
Linkages to other organisations	-
Linkages to other Committees or Groups:	This group stems from the WGFAST and other Working Groups, notably from the WGFTFB and Various Groups of the Marine Habitat Committee who may be interested to join their efforts to develop this promising new area of research
Cost Share	ICES 100%

2B06 The **Working Group on Fisheries Acoustics Science and Technology** [WGFAST] (Chair: Y Simard, Canada) will meet in Bergen, Norway from 18–21 June 2003 to:

- a) evaluate the possibilities and limitations of using fishing vessels to collect acoustic data for fish stock assessments;
- b) develop technical guidelines and standards for the collection of acoustic data for fish stock assessments.
- c) examine works in the following research areas that WGFAST prioritised from the new research presented at the 2002 ICES Symposium on Acoustic in Fisheries and Aquatic Ecology:
 - i) developmental work and applications of echo trace spectral signatures;
 - ii) combination of methods in acoustic applications and multi-species estimation in the context of an ecosystem approach;
 - iii) advanced technologies and platforms;
- d) review the reports of the:
 - i) Planning Group on the HAC (PGHAC) common data exchange format
 - ii) Study Group on Baltic Herring TS (SGTSEB)
 - iii) Study Group on Acoustic Seabed Classification (SGASC)

WGFAST will report by 31 July 2003 for the attention of the Fisheries Technology Committee.

Supporting Information

Priority	Fisheries acoustics is a vital area of fish stock management and ecosystem research
Scientific Justification	<p>TORS a and b will be addressed in a sub group of the WG which will meet on the 18 June. The whole WG will meet from 19–21 June.</p> <p>A,b) Scientists and managers in several ICES member nations are being asked to develop methods for collecting hydroacoustic data from commercial vessels. However, concerns regarding equipment performance and stability, calibration, radiated vessel noise, trawling and other methods of biological sampling, survey design, and data interpretation must be considered in relation to the objectives associated with the collection of this type of data. Since WGFAST has played a leading role in identifying and addressing the aforementioned issues relative to survey assessment by research vessels, it is appropriate for the working group to evaluate the possibilities and limitations, and provide guidance regarding collection of hydroacoustic data from commercial vessels.</p> <p>c) These three research areas have been identified by the WGFAST members at the 2002 meeting (details in WGFAST 2002 Report: ICES-CM B:XX, in press) as special areas where the WG should intensify his efforts for the development of knowledge in</p>

	<p>its research field. These priorities were established by the WG during the discussion of the results of the ICES Symposium on Fisheries and Plankton Acoustics, held on 11–14 June in Montpellier, France. At his 2003 meeting WGFASST will address methods for identifying the characteristics of the source of the echoes in a multi-species in situ context, the combination of the relevant information for the estimation of the abundance per taxa, and the new technologies and platforms pertinent for fisheries and plankton acoustics.</p> <p>d) PGHAC, SGTSEB, SGASC report to the WGFASST at its annual meeting according to their terms of reference.</p> <p>The 3-year term of the present WGFASST Chair will end in 2003 and a new Chair has to be chosen among WGFASST members before being appointed at the 2003 FTC meeting.</p>
Relation to Strategic plan	This Group directly addresses the remit of the Fisheries Technology Committee. Its terms of reference are embodied in the scientific Goals 1 and 3 of the Strategic Plan and Goals 1, 4 and 5 of the Integrated Action Plan.
Resource requirements	No new resources will be required for consideration of this topic at the annual meeting of the FAST Working Group. Having overlaps with the Symposium and other meetings of the working Groups of the Fisheries Technology Committee increases efficiency.
Participants	Approximately 50 members and guests are expected to attend the meeting.
Secretariat facilities	None
Financial	No financial implications
Linkages to Advisory Committees	There are no direct linkages to the Advisory Committees, but findings have relevance to ACFM, ACE
Linkages to other organisations	There is industry participation in many of its activities.
Linkages to other Committees or Groups:	The work in this group is closely aligned with similar work in the WGFTFB. The seabed classification work is related to other ICES groups (Marine Habitat Committee, ecosystem, benthic and hydrographic activity). Combined theme sessions are planned with the Marine Habitat Committee at the 2004 ASC
Cost Share	ICES 100%

2B07 The **ICES-FAO Working Group on Fishing Technology and Fish Behaviour** [WGFTFB] (Chair: D. A. Somerton, USA) will meet in Bergen, Norway, from 27–28 June 2003 to:

- a) assess gear related technical measures appropriate for improving species and size selectivity in *Nephrops* trawl fisheries with particular emphasis on:
 - i) describe and review current problems relating to size and species selectivity in specific *Nephrops* fisheries in the NE Atlantic and Mediterranean,
 - ii) review and report on existing legislative measures in force in *Nephrops* fisheries and
 - iii) review available technologies to improve size and species selection in the specific fisheries identified in item i), assessing advantages and disadvantages in terms of technical suitability, biological effectiveness and cost/benefits to the fishing industry,

- iv) evaluate, based on a(iii) of the options for the specific fisheries and, where necessary, propose further research or development required to produce effective solutions.
- b) review the final report of the Study Group on Mesh measurement Methodology (SGMESH)
- c) review the main topics of the Symposium on Fish Behaviour in Exploited Ecosystems to identify promising technological and methodological approaches to increase the accuracy and precision of surveys or to decrease the effects of fishing activities on the bottom
- d) review future working practices and meeting organisation following the co-sponsorship of the working group by FAO
- e) review the draft of the Static Gear Selectivity Manual;
- f) evaluate the selective properties of trawls using 90o turned diamond meshes and advice on appropriate mesh sizes corresponding to the agreed BACOMA gear. Evaluate selectivity of diamond mesh of 130 mm and 140 mm taking into account all new available information on the matter [ACFM request].

WGFTFB will report by 15 July 2003 for the attention of the Fisheries Technology Committee and ACFM

Supporting Information:

Priority:	The current activities of this Group will lead ICES into issues related to the effectiveness of technical measures to change size selectivity and fishing mortality rates. Consequently these activities are considered to have a very high priority.
Scientific Justification:	<ul style="list-style-type: none"> a) Due to the comparatively small mesh size used in the <i>Nephrops</i> trawl fisheries, and the relatively high level of fishing effort, considerable quantities of juvenile commercial fishes are caught and subsequently discarded. Since this issue is currently being addressed by many ICES countries, a collective look at the by-catch reduction devices either in development or now in use by the fishing industry is warranted at this time. b) SGMESH will complete its investigation of mesh measurement methodology and produce a final report just prior to the FTFB meeting. c) The Symposium on Fish Behaviour will meet just prior to the FTFB meeting. Discussion of the issues raised at the Symposium will allow FTFB members to better plan research in support of the ICES Integrated Action Plan. d) The Group is in the process of discussions with FAO personnel about their involvement in the WG. It is also carrying out a review of the structure of FTC according to the ICES Integrated Action Plan to see our present structure can meet the demands of the Action/Strategic Plan. A Norwegian proposal will be considered. This discusses their vision of how FTFB should be organized to meet these new demands for a global WG, which is what FTFB has become since the joint sponsorship agreement with FAO. They have presented this proposal to FTC and will present it to this meeting e) This is an ongoing item to consider a draft prepared by Poulsen f) This is a repeat of a request from IBSFC to take into new data from Poland and Germany.
Relation to Strategic Plan:	This Group directly addresses the remit of the Fisheries Technology Committee, and its terms of reference are embodied in the scientific objective 3h of the ICES Strategic Plan
Resource Requirements:	The research programmes, which provide the main input to this group, are already underway, and resources already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants:	The Group is normally attended by some 50 members and guests
Secretariat Facilities:	None
Financial:	No financial implications

Linkages to Advisory Committees:	The question of bycatch reduction is of direct interest to ACFM, the WG on <i>Nephrops</i> Stocks, and the SG on Discards and By-catch Information. Its work has implications for ACE.
Linkages to other Committees or Groups:	There is a very close working relationship with all the groups of the Fisheries Technology Committee. It also is of close relevance to the Working Group on Ecosystem Effects of Fisheries and the Marine Habitat Committee.
Linkages to other Organisations:	FAO co-sponsors this Group. Many of its activities involve industry.
Cost Share	ICES:100%

2B08 **A Study Group on the Review of the Structure of the Fisheries Technology Committee [SGRSFTC]**
(Chair: S.J. Walsh, Canada) will be established and will work by correspondence in 2003 to:

- a) review and rationalise the existing Committee's Expert Groups;
- b) identify and establish priority areas of activity with particular emphasis on cross-Committee collaboration;
- c) identify areas of work to support the Advisory Process;
- d) consider ways to increase the input from the Committee by:
 - i) increased contributions to the Annual Science Conference and Symposia;
 - ii) publications.

SGRSFTC will make its report available by 31 May 2003 for the attention of the Fisheries Technology Committee

Supporting Information

Priority	The ICES Strategic Plan and Integrated Action Plan has established that this review is a priority for all Committees.
Scientific Justification	See ICES Strategic Plan
Relation to Strategic plan	Evaluation of the present structure of FTC in providing the scientific information for advice, today and in the future under Step 1 of implementing the strategy of the Strategic Action Plan
Resource requirements	No new resources will be required for consideration of this topic. Approximately 6 members will participate to the Study Group.
Participants	The group will include the Chairs of FTC, WGFAST and WGFTFB. In addition one member from each Working Group and the Committee (R Fonteyne, Belgium, Paul Fernandes, UK and Thomas M Poulsen, Denmark)
Secretariat facilities	None.
Financial	No financial implications.
Linkages to Advisory Committees	To be determined in the goals
Linkages to other organisations	To be determined in the goals

Linkages To other Committees or Groups:	To be determined in the goals
Cost Share	100% ICES

2. Identify and establish priority areas of activity with particular emphasis on cross-Committee collaboration

There are a number of important current research areas of particular relevance to FTC. Some of these are already subject of work within the ICES community but are distributed among a number of Committees. These include, *inter alia*:

- The impact of towed bottom gears on the bottom habitat and the bottom fauna
- Means to improve selectivity of gears and that reduce by-catch and minimize discard
- Improvement of the accuracy and precision of acoustic and trawl surveys
- Development and deployment of new methods and new acoustic instrumentation to enumerate and monitor distribution and abundance of fishing resources, trophic relationship, marine habitats(e.g., seabed classification) and biodiversity
- Further development of survey gears to enumerate and monitor distribution and abundance of fishery resources, trophic relationships and biodiversity.

The FTC will develop a specific priority list and will design work activities in these areas in cooperation with other appropriate Committees to strengthen collaboration and avoid the duplication and proliferation of working groups.

Expected outcome: A clear finite list of scientific priorities, related to the strategic plan, building on national programmes, and a plan of activities related to these, co-ordinated with other relevant Committees.

3 Identify areas of work to support the advisory process

There are many examples where the scientific activity within FTC has produced results of major importance to the advice originating from ICES. For example within the past decade, FTC has provided advice to ACFM and the Baltic Committee on mesh sizes to be used in the Baltic cod fishery, selectivity and bycatch reduction measures in the *Nephrops* fishery, improvements to the GOV trawl used in IBTS, and the selection of a bottom trawl survey gear for the Baltic Sea resource surveys. In addition, recent work on target strength measurements and the standardisation of fishing protocols using acoustic instruments to measure trawl geometry and performance have implications for deriving precise, accurate and reliable survey estimates, and thereby improving the assessment of fish stocks. Technical solutions that enhance size selectivity and reduce by-catch have been developed. Observations, experiments and evaluation of the impact of towed bottom gears on the bottom fauna has revealed clear ecosystem implications. It is important that the work of the Committee continues to flow into the assessment work of ACFM and ACE. The Committee has a continuing role to play in support of the advisory process. To strengthen the role of the FTC to the advisory process it was decided at the Consultative Committee meeting in June 2001 that the Chair of FTC will be an *ex officio* member of ACE. The Committee will discuss with relevant ACFM and ACE working groups their particular needs and implement appropriate work to enhance the scientific input from FTC to the advisory process of ICES

Expected outcome: A clear finite list of priorities and a plan of activities related to areas of work to support the advisory process and coordinated with other relevant Committees.

4 Contribute to the Annual Science Conference and Symposia

The Committee will play an active role in promoting contributions to the Annual Science Conference by identifying for each year two major and four minor theme sessions for consideration by the Consultative Committee. The proposals will be developed in such a way that at any one time the draft proposals will contain titles for three years ahead. They will be updated annually so that a proper balance can be achieved and topicality maintained.

For the coming years, the initiative for the ICES Symposium on Fisheries and Plankton Acoustics to be held in Montpellier in June 2002 has been taken through FTC. Similarly, the ICES Symposium on Fish Behaviour in Exploited Ecosystems to be held in Bergen in 2003 has been recommended through FTC.

APPENDIX II: MEDIUM TERM-TERMS OF REFERENCE FOR BOTH FTC WORKING GROUPS, 2003–2008 ADOPTED FROM ICES INTEGRATED ACTION PLAN

TERMS OF REFERENCE FOR WGFTFB 2003–2008

1. Enhance the efficiency of sampling tools and resource surveys [FTC/BLC/LRC/RMC] by:
 - o Improving the standardization and performance of survey gears.
 - o Promoting the development of techniques and protocols for studies of fish and plankton behaviour relative to survey gears.
2. Promoting the development and use of new survey designs, data analysis methods, acoustic instrumentation and survey gears.
3. Address the substantial need for improved data and information on components of the marine ecosystem in the Baltic Sea including: [BLC/OCC/LRC/RMC/MHC/FTC]
- ❖ Improve application of technology to surveys and monitoring.
4. Evaluate and increase knowledge of the effects of fishing activities, particularly mobile gears, on seabed structures and benthic communities and habitats, and on the ecosystem consequences of such effects. [MHC/FTC/LRC/MARC/ACME/ACE]
5. Expand investigations on species and size selectivity of fishing gears in order to reduce by-catch, minimize discards and improve survival of fish escaping from fishing gears. [FTC]
6. Expand investigations of target-specific fishing methods which reduce impact on bottom habitats and other non-target ecosystem components. [FTC]
7. Conduct further research on fish behaviour that is critical to the further development of mobile and static fishing gears for responsible fishing. [FTC/LRC]
8. Promote, through workshops, study groups, and training courses, the development and better application of methods for resource enumeration, status evaluations and forecasts
9. Evaluate, through analyses and modelling, the historical effectiveness of technical measures and establish a framework for evaluation of new technical measures suitable for the management of particular fisheries before they are legislated into use. [FTC/RMC/LRC/ACFM]
10. Further develop and maintain joint activities with FAO in support of the ICES/FAO Memorandum of Understanding including co-sponsorship of symposia, joint working groups, and collaboration on projects in fishing technology development, responsible fishing, environmental processes and global assessments of the status and trends of fish stocks and fisheries. [FTC/RMC/OCC]
11. Consult with and provide technical advice to the fishing industry and fisheries management agencies in the development of technical devices to be used in harvesting technology and the modernization of the methods and technologies presently used in the enforcement of technical measures. [FTC]
12. Provide advice on research design and in some cases participate in projects with research and development agencies in the acoustic and the fishing technology industries. [FTC]

TERMS OF REFERENCE FOR WGFAST 2003–2008

Enhance the efficiency of sampling tools and resource surveys [FTC/BLC/LRC/MHC] by:

- o Promoting the development of techniques and protocols for studies of fish and plankton behaviour relative to survey gears.
- o Implementing a common data format in acoustics for scientists and industry.
- o Promoting the development and use of new survey designs, data analysis methods, acoustic instrumentation and survey gears.
- o Establishing and evaluating a framework for the collection of hydroacoustic and ancillary data from commercial fishing vessels.

Promote the development and use of hydroacoustics and other technologies, such as lidar, in quantifying the biological and physical components of the ecosystem. [FTC]

Explore analytically the potential for incorporating data from commercial fisheries in the analysis of survey data for consequences such as potential use in assessment and management and better understanding of changes in distribution and migration. [LRC/RMC/FTC]

- 4) Establish a framework to evaluate acoustic seabed classification technology and applications in bottom mapping. [FTC/MHC]
 - 5) Develop better tools and training opportunities for monitoring and observation of physical, chemical and biological properties of marine ecosystems. [FTC] [Other Science Committees]
 - 6) Address the substantial need for improved data and information on components of the marine ecosystem in the Baltic Sea including: [BLC/OCC/LRC/RMC/MHC/FTC]
- ❖ Improve application of technology to surveys and monitoring.
- 7) Provide advice on research design and in some cases participate in projects with research and development agencies in the acoustic and the fishing technology industries. [FTC]

APPENDIX III: POSITION PAPERS FROM NORWAY AND SCOTLAND ON WGFTFB.

FRS MARINE LABORATORY, ABERDEEN

We suggest that we institute two new types of post within the FTFB WG. This may seem a bit ODD but we think it would be worthwhile ensuring that a routine was established for dealing with special topics, etc. You need a formal arrangement in order to impress upon the people that they have a job to do.

1. **A 'New Business' Convenor** should be appointed every year at the FTFB WG. His job would be to work with the Chair to drum up ideas for special topics, work items, etc. over the next 12 months and to lead the session at the next FTFB WG at which 'new business' is discussed. His responsibilities would include:
 - a) to assess the most appropriate areas for Special Topics to be chosen at the next meeting and to generate proposals from members,
 - b) to ensure that suitable candidates are available to act as Convenor for each Special Topic for the following year (see below),
 - c) to initiate discussion on suitable theme sessions (if any) for proposal to ICES for 2 years ahead and
 - d) to nominate a willing successor as new business convenor.
2. Each year Special Topics are chosen for the following year. The New Business Convenor initiates this process. As soon as a Special Topic is accepted, a **Special Topic Convenor** should be chosen to take responsibility for preparing the ground for the following year. His responsibilities would be
 - a) to formulate (with the proposers and FTFB Chair) the Terms of Reference and justification for the topic. This must include a clear statement of the outcomes expected at the end of the next meeting – write review report, summarise data, formulate advice, etc.
 - b) to organise preparatory work, during the year if necessary, to ensure that the terms of reference are fulfilled.

We do not see the NBC as taking over the running of the FTFB meeting at all. The only session he would chair would be the one where ideas for new work topics are discussed at the end of the meeting. One reason for doing this is that the NBC would probably ensure that there was enough time to discuss new business! I had assumed that the FTFB Chair would chair all the main sessions in the meeting including the special topic sessions and would also have a major role in preparing the final output from the special topics with the relevant convenors. This output could be a report, review, data summary or whatever but clearly as it is a key output of the WG and probably included in the WG Report, then the Chair must be closely involved, partly as part of a peer review process if the output was particularly significant. However, we think a co-Chair is an alternative option - the only trouble is that the roles will be less well defined and so there is potential for lack of clarity on who does what. Generally it is better to have a clear leader. The NBC would definitely be subordinate to the WG Chair.

15 August 2002

Future organization and role of a joint ICES-FAO FTFB WG

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Introduction

When FTFB WG is becoming a joint ICES-FAO (standing) working group, some adjustments of its organizational structure and working procedures might be required to accommodate for its future functions. This note briefly outlines some thoughts that might be useful to consider when deciding on how the group could be organized and function in the future.

Organisation

A steering Committee (SC) is established, including a Chairperson and three members, representing Europe, America and FAO, respectively. The FTC Chair can have observer status in the SC.

Mandate of the steering Committee is to be active in intersession periods by preparing for the annual WG meetings, develop recommendation for future meetings, maintain contact with WG members within their region, co-Chair plenary meetings of the FTFB and when appropriate Chair sub-group established by the WG. Other members of the WG should certainly be appointed as conveners of tasks and sub-groups when their interest and qualifications make such a choice more appropriate.

The SC shall mainly maintain contact by correspondence, but an intersession meeting shall preferably be held in conjunction with the ICES statutory meeting, or otherwise when meeting of the group is required.

FAO should preferably take some responsibility for a secretarial function in the future. A visiting scientist to FAO from its member countries could probably assist the FAO staff in such an endeavour (3–4 months per year).

Working procedures of the WG

The WG should primarily address two or three major topics at each meeting. The topic addressed should have a clear objective and the outputs from the WG should be a set of recommendations that are given for consideration and/or approval by its mother organizations ICES and FAO (COFI). It is important that participants are well prepared to discuss the issues under debate and that preferably only participants with competence in the particular topic attend the meeting.

When more than one topic is for consideration by the WG, it is recommended that subgroups are dealing with each topic for presentation, discussion and adoption of any recommendation in a plenary sessions.

To accommodate the need for gear technologist to meet regularly, it is recommended that every third or fourth year, a symposium-like meeting is held to review progress in fishing technologies and capture relevant behaviour.

When a relevant topic falls beyond the competence of traditional FTBF members, expertise from other relevant fields should be encouraged to attend the WG meetings, including representatives from the fishing industry and global environmental organization.

Examples of relevant topics to be addressed by the WG

The major strength of a FTFB WG is the competence of its members in most aspects of fishing gear technology, including selectivity of fishing gears, impact of fishing gears on the environment, efficiency of various fishing gears for sampling purposes, measurement and management of fishing capacity etc.

In a global context where fishing is associated with severe environmental damage advocated by many environmental groups, a global FTFB could have an important role to address factual, scientific based information about impact of fishing on the environment. When required such a group can jointly develop solution on how to mitigate problems that fishing might cause to particular parts of the environment.

Technical measures used to manage fisheries include the use of selective gears. There might be a need to evaluate consequences of the use of different kinds of selective fishing methods on fish populations. This will require joint effort by fishing gear experts, fisheries economists and management specialists.

Common terminology in the fishery field is important to avoid misunderstandings in the global debate about fishing impact whether it is considered positive or negative. Glossaries and fishing gear classification is probably an issue that could be discussed and agreed upon by such a global WG.

These are only a few issues of global relevance that can be addressed by the joint WG.

23 September 2002