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**GENERAL FISHERIES COMMISSION
FOR THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE**



GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

SCIENTIFIC ADVISORY COMMITTEE (SAC)

Thirteenth Session

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**DRAFT REPORT OF THE 11TH SESSION OF THE SUB-COMMITTEE
ON STATISTICS AND INFORMATION (SCSI)*
St Julians, Malta, 29 November - 2 December 2010**

(Draft)

*** Available only in English**

OPENING AND ARRANGEMENT OF THE SUB-COMMITTEE MEETING

1. The Sub-Committee meetings of the Scientific Advisory Committee (SAC/GFCM), including the Transversal Session, were held at the San Gorg Hotel, St George's Bay, Malta from 29th November to 2nd December 2010.
2. During the general opening, Dr Anthony Gruppeta, Director General of Maltese Agriculture and Fisheries Regulations Department of the Ministry for Resources and Rural Affairs, welcomed the participants and thanked them for attending this series of meetings. He highlighted Malta's commitment and contribution to the functioning of the GFCM which has clearly been demonstrated throughout the years, not only through the hosting of various meetings, but also through its active participation in activities of its subsidiary bodies. He added that Malta is following closely the developments in fisheries management in the Mediterranean through the GFCM and referred to important Recommendations related to management measures (eg. trawl minimum mesh size, closed seasons, Fisheries Restricted Areas, reduction in fishing effort), MCS (eg. VMS, Authorised Vessels List, logbook, Port State Measures) and data collection schemes (eg. Task 1, Fleet Register) which have been adopted in recent years. He underlined the importance for GFCM countries to strive together to implement a clear strategy for the management of shared resources and stressed that the deliberations and outcomes of the meetings of the SAC Sub-Committees being held during that week were the vital seeds for the processes leading to the formulation of regional policy and management decisions.

3. Mr Abdellah Srour, the Acting Executive Secretary of the General Fisheries Commission for the Mediterranean (GFCM), welcomed the participants and thanked the Maltese Authorities for their kindness in hosting and organising the meeting. He further drew the attention of the participants on key issues to be addressed by the Sub-Committees.

4. Mr Henri Farrugio, Chairperson of the SAC also thanked the hosting country and the participants for attending the meeting and recalled the mandate of the SAC and its Sub-Committees.

TRANSVERSAL SESSION: REVIEW OF TRANSVERSAL ISSUES

5. The Transversal Session was chaired by Mr Henri Farrugio, the Chairperson of the Scientific Advisory Committee. This session reviewed the outcome from the following transversal meetings:

- Transversal Workshop on Red Coral (Italy, September 2010)
- First expert meeting on the status of Elasmobranches in the Mediterranean and the Black Sea (Tunisia, September 2010)
- Transversal workshop on European Eel (Tunisia, September 2010)
- Transversal workshop on Fishing Capacity (FAO HQs, September 2010)
- Workshop on data collection methods (applied to all segments of the Fleet and their coherence with the requirements of the GFCM Task 1) (FAO HQs, September 2010)
- Workshop on algal and jelly fish blooms (Turkey, October 2010)
- Workshop on monitoring recreational fisheries in the GFCM (Spain, October 2010)

6. The meeting agreed that discussions and comments of the transversal session be included in the reports of each Sub-Committee under the agenda item corresponding to the review of the above mentioned activities.

INTRODUCTION TO THE MEETING AND ADOPTION OF THE AGENDA

7. The eleventh session of the Sub-Committee on Statistics and Information (SCSI) was attended by 18 experts from 8 Members of GFCM namely France, Italy, Lebanon, Libya, Malta, Montenegro, Morocco and Tunisia, together with staff from FAO Regional Projects and the GFCM Secretariat. The list of participants is given in Appendix II.

8. Mr Joël Vigneau, SCSI Coordinator, further presented the workplan and agenda of the meeting which was adopted without any changes (See Appendix I).

9. Ms Alicia Mosteiro Cabanelas was appointed as rapporteur for the entire session.

FOLLOW UP OF LAST YEAR'S CONCLUSIONS AND RECOMMENDATIONS

10. A review of last year's conclusions and recommendations was made as an opening of the SCSI session. The result was very positive showing that the conclusions and recommendations of the Sub-Committee are either well followed through, or bouncing back to the SCSI for reconsideration. The group was thus invited to pay a special attention to propose conclusions and recommendations that were sufficiently clear for delivering a workable solution during the interim period, as far as possible.

CONCLUSIONS OF THE WORKSHOP ON DATA COLLECTION METHODS (APPLIED TO ALL SEGMENTS OF THE FLEET AND THEIR COHERENCE WITH THE REQUIREMENT OF THE GFCM TASK 1)

11. The SCSI highlighted the call of the workshop for national experts to inform the Secretariat on the difficulties encountered in data collection and data reporting on a real time basis.

12. The SCSI noted that the Coordinating Working Party (CWP) on Fisheries Statistics is currently revising the classification of fishing gear (International Standard Statistical Classification of Fishing Gear - ISSCFG). As a consequence, the Task 1 gear type dimension will have to be revised accordingly. The evaluation of the need to revise the EU Data Collection Framework (DCF) Regulation to reflect exactly the gear types defined in Task 1 is thus postponed until the CWP has finalised the gear classification.

13. The group endorsed the proposal to use “Miscellaneous gear” when it was impossible to distinguish which catch has been taken by which gear within trips having operated with several gears. It is also reminded that the ideal solution was to desegregate the catches by gear types on a trip by trip basis in order to fill correctly the catch information by Operational Units.

14. Following a proposal made by the workshop, the Secretariat informed the SCSI that it had produced a draft CSV schema, as an additional Task 1 data exchange protocol. The Secretariat hoped to receive feedback from the IT experts of Members wishing to contribute to the review and testing of the CSV schema produced, preferably before the next data submission.

15. As regards the proposal for “Task 1” training workshop by FAO Regional Projects, the CopeMed coordinator indicated that this would need to be decided by the respective Coordination Committees of Regional Projects. The coordinator suggested that the experts from the countries contact their focal points to pass this request onto the projects. The group endorsed this way to proceed and invited its experts to act accordingly.

16. The Sub-Committee was informed that the MedFisis Regional Project has developed a new generation software of a national Fleet Register (MedStat System) which includes data export features in compliance with various GFCM requirements and standards. This software can be provided to countries which seek assistance and could be customised to national contexts on a case-by-case basis.

17. The workshop suggestions related to Task 1 technical issues are discussed in the section related to the Task 1 options to be improved.

CONCLUSIONS OF THE WORKSHOP ON FISHING CAPACITY

18. The group endorsed the conclusions of the workshop, and considered that there was little scope for technical discussion within the Sub-Committee at this stage of development.

UPDATES ON NATIONAL DATA COLLECTION AND STATISTICAL SYSTEMS (NATIONAL REPORTS)

19. Updates on the development of national data collection and statistical systems and fulfilment of data submission requirements were presented to the SCSI by experts from France, Italy, Lebanon, Libya, Malta, Montenegro, Morocco and Tunisia. The texts provided by some of these experts are reproduced below.

20. Malta: Maltese Fisheries Data Collection and Statistical System; the Agriculture and Fisheries Regulation Department (AFRD) within the Ministry for Resources and Rural Affairs is the administrative authority responsible for fisheries related issues in Malta. The Capture Fisheries section is the institute within this Department responsible for scientific monitoring, research, development and training in the fields of fisheries.

21. Catch assessment survey – New sampling approach for the small scale fleet (<10 metres). In 2010, the Capture fisheries section embarked on a new sampling approach for the small scale fishing fleet. A multivariate sampling survey for vessels less than 10 metres length overall is carried out to obtain monthly data on landings per species and on fishing effort. The target population is made up of the vessels registered in the Maltese fishing fleet register that includes full-time commercial vessels (MFA) and part-time commercial vessels (MFB), and comprises both active and inactive vessels.

22. The sample is 10% of the respective population and is stratified randomly per quarter selected from the fleet segments from the fleet vessel register.

23. Interviews are conducted with the vessel owners every week. In the beginning of each month the vessel owners are given a data sheet that they have to fill in every week. Information on catches, effort in fishing days, by type of gear, fishing areas and activity is obtained. This methodology of obtaining data overcomes the difficulty of acquiring data from the fish market and other official sources for the small scale fishery which can have many errors due to various reasons such as the underestimation in information on landings declared in the invoices and erroneous names attributed to fish species which are difficult to identify. Furthermore data on effort is not usually reported in sales vouchers.

24. The data of each individual vessel is computerised through a software programme elaborated for this specific aim. The questionnaire is composed of two separate sheets; the first sheet is to be filled in by the vessel owner which is a very simple form for fishermen to fill in, while the other is to be filled in by the interviewer with assistance from the fisherman.

The sheets contain general information such as:

- Vessel name and registration number
- Month and year

The first sheet contains weekly information on:

- Gears used
- Number of fishing days by gear
- Species caught (according to the gear used)
- Identification of species caught by gear
- Weight of species caught in kg
- The target species by gear

The second sheet contains monthly catch data such as:

- Gear used
- Average number of gear units per trip for each gear
- Characteristics of the gear such as length of net, number of hooks, etc
- Type and size of mesh or hook
- Total number of trips per month

- Total number of fishing days
- Average number of days at sea
- Average number of fishing operations per day
- Average fishing time (soaking time)
- Fishing area
- Average number of crew per trip

25. Training courses are periodically organised for the data collectors to update them on possible new developments and to further their knowledge on aspects related to the identification of fish species. In the latter case, field recorders are trained by experienced fisheries biologists.

26. From the vessels sampled, data on effort is raised to estimate effort to the total fleet of the <10 m LOA vessels. Raising data is based on a weighting factor attributed to the total fleet segment. Data quality is primarily assessed by estimating the variance.

27. The group suggested that the sampling protocol would improve if the sampling allocation was adjusted to account for the within strata variability. It was also suggested to further seek for an appropriate stratification that would ensure the reduction of sources of bias (*e.g.* in the evaluation of the inactivity) and the decrease of the variability. The expert from Malta ensured that these suggestions will be taken into consideration after the completion of the first year of data collection.

28. **Lebanon:** The expert from Lebanon made a presentation about "EastMed Sub-Regional Workshop on Collection and Organization of Data" that took place from 14-17 September 2010 in Batroun, Lebanon. It was attended by experts from 7 countries who presented fisheries data collection situation in their respective countries. Discussion on GFCM Task 1 framework indicated that data entry and transfer is very laborious and that an automatic routine is needed. One participant presented the Methodological standards in sample-based fisheries surveys. Furthermore, the utility "FLOUCA, Fish Landing Operational Utility for Catch Assessment" for landing monitoring developed by a Lebanese university in North Lebanon, University of Balamand, was presented with data for the past 5 years. The workshop concluded that EastMed project should take immediate actions to assist countries to set up regular statistical monitoring programmes for their artisanal fisheries. EastMed would also assist by sponsoring training courses for national experts in basic sampling theory and in applications that make use of case studies.

29. **Italy:** The Italian fishing fleet is composed by 13.335 vessels. The total production account 216.567 tonnes, corresponding to an amount of 1.082 mln Euros. More than 800 landing points are scattered along the 7.400 Km of coastline.

30. Considering the characteristics of the Italian fishery (high number of species caught, spreading of the fleet along the coastline, vast number of landing points available), and considering the ineffectiveness of logbook system, the most efficient method to collect data was considered the sample survey.

31. The survey, a multivariate sample one, permits to have an evaluation of the following data:

- Total landings and prices per species
- Fishing effort and activity
- Landings per unit of effort

- Socio-economic data

32. The universe of the survey is the Official National Archive of fishing vessels (ALP), the sampling units are the vessels belonging to the ALP and the sampling design is a stratified sampling. The stratification is due to geographical, technical and dimensional criteria. The geographical variables are the FAO-GSA; the technical variables are the fishing system and the dimensional variable is the Length over all (LOA). From the combination of these variables is obtained 201 different strata.

33. The sample allocation across strata is obtained by Bethel method. The sample size is almost 1.500 units, the 12% of the universe, and the simple error per species is almost 3.5%.

34. The data collection is conducted by data collectors, people with strong relationship with fisheries sector (category associations and service centre of fisheries). Being part of the sector, they can easily contact the owners and can be easily present during the landing phase. The network is selected and trained by IREPA and is annually reviewed.

35. **Montenegro:** Montenegro will start collecting data in 2011 since there were problems to start collecting the data before. Montenegro is working to build a complete information system: license, sales notes, VMS, etc. A project entitled "Support to the Marine Fishery Sector in Montenegro" started in September 2010 with this target. The new law will provide the basis for licenses. Nowadays, there is data collected but it is not official. The reporting to Task 1 is not expected before 2012 to the data collected in 2011.

36. **Morocco:** Morocco has sent Task-1 data. Some problems are encountered with the socio-economic data and also biological parameters for some species. The socio-economic data needs to be updated. Morocco needs support from a sub-regional project. Morocco has started the reshaping of a full fisheries Information System 2 years ago and hope they could submit data in 2012.

37. **France:** France is completing a data collection system to cover Corsica (GSA08) and this data should be available in 2012. The remaining Mediterranean fisheries are covered by a routine data collection system, compliant to the EU DCF Regulation. France welcomed the CSV submission utility made available by the GFCM. France has already subcontracted a company to be able to submit it in XML, but this will take time before it is operating. The submission of the completed Task 1 data for 2008 in January will be a test for this new CSV submission format.

INITIATIVES IN THE FIELD OF FISHERIES STATISTICS COMPLIANT WITH GFCM REQUIREMENTS.

38. The MedFisis project delivered a presentation on the latest updates carried out. A summary of the project outputs in the form of 4 packages was provided. These packages target the Fleet Register, the Catch and Effort Assessment Surveys, both Logbook and Sampling Approach, and some other tools. It was also recalled that the Fleet Register software developed by the project is complete and available for the countries which request it. The software has the regional system built in (FAO, EU and GFCM) and is customisable. It was also recalled that the Fleet Register application constitutes the basis for several other systems (CAS, Task-1, EU snapshot, FishStat forms, VMS, AVL, Licensing System, etc) and therefore it has a crucial role in the national statistics. It was also recalled that the software calculates fleet segments automatically and identifies operational units (except for economical data) and includes several built-in tools to check for consistency and integrity of the data but also data validation (GT-Length-Power) and checks for relationships. All these checks

guarantee that the information produced is reliable and consistent with national and international standards.

39. The project also gave an insight on the Technical assistance that provided to Lebanon to review the Lebanese Fleet register, validate the census data, transfer historical data into the new software, customise the application according to Lebanese needs, and analyse the future development of a Licensing System linked to the Fleet Register (for automatic updating of the fleet register data). The project also explained that Albania and Egypt will also receive assistance during December 2010 in order to obtain the new Fleet Register software version, customised to their needs and carry out the transfer of historical data among other things. The project informed that the project webpage is available online with information (www.faomedfisis.org).

40. The SCSI raised concerns about the termination of the Regional Projects CopeMed and MedFisis in 2011, since they played an important role in national capacity building and training.

41. The SCSI stressed that it was important to collect and pre-process the data in the appropriate format prior to inputting the data into the Task-1 data entry application. The Secretariat stated that it was readily available for any *ad-hoc* assistance required including through the support of FAO Regional Projects. This assistance should be done on a case-by-case basis because the different countries have different exigencies and difficulties.

42. The SCSI stressed that reinforced coordination among the various FAO Regional Projects was crucial for providing adequate assistance to the countries.

THE CURRENT STATUS OF DATA SUBMISSION AND THE DEVELOPMENT OF DATABASES AND INFORMATION SYSTEMS MANAGED BY THE GFCM SECRETARIAT.

43. Dr Matthew Camilleri (GFCM Secretariat) reported on the current status of data submission and the development and management of GFCM databases and information systems.

44. Fisheries Restricted Area (Gulf of Lyons): The Secretariat prepared an electronic data submission tool for the transmission data on the fleet fishing in the FRA. Provisional data for Spain and France have been received in April 2010.

45. Minimum Mesh Size: Countries are obliged to submit a list of vessels operating with 40 and 50mm mesh size. The Secretariat developed an electronic data submission tool for the transmission of data on vessels fishing with a minimum mesh size of 40mm (square mesh) or 50mm (diamond mesh) in their cod-ends. The EU informed the Secretariat that all demersal trawlers of EU Member States are fitted with this cod-end minimum mesh size. Turkey has also submitted a list of its trawlers following this Recommendation.

46. Authorised Vessels List: As indicated by the on-line AVL browser, the last update to the AVL was transmitted in March 2010. The AVL includes vessels from 18 GFCM Members summing up to a total of more than 10.000 vessels, however complete and updated information is only available for less than half of these vessels. The Secretariat recalled that the AVL is an indicator of the active capacity of the fleet over 15m in the Mediterranean.

47. Capacity: The 34th Session of the GFCM adopted the Recommendation GFCM/34/2010/2 which includes the obligation of Members to submit data on vessels over 15 m that were authorized in 2007-2009 to fish in the Mediterranean, including the identification of the

Operational Units to which each vessel belongs. The GFCM Secretariat is in the process of finalising an electronic data submission tool in line with this requirement.

48. Fleet Register: The Secretariat recalled that the Recommendation GFCM/33/2009/5 will come into force in January 2011, whereby GFCM Members are expected to submit data on all vessels included in their national fleet register. The Secretariat is in the process of defining a data exchange protocol (XML schema) for the transmission of this data.

49. The SCSI noted that the submission of 5 fleet-based datasets (FRA, AVL, Minimum Mesh Size, Fleet Register and Capacity) places a big burden on Members and makes fleet data management too cumbersome. The SCSI stressed the need to optimise the submission of this information, by reducing the number of datasets to be submitted, ideally through a single fleet submission (the fleet register) whilst ensuring that all data fields requested by all Recommendations are included.

50. In this respect, the SCSI agreed that the crucial point was to have the Fleet Register up and running so that these considerations could be taken into account.

51. Some participants pointed out the need of an “assistance mechanism” to continuously help the countries in their endeavours to collect and compile fisheries data. For this, it was noted that the MedFisis role has been instrumental and therefore the group stressed that such crucial assistance should be maintained. In this respect, the group proposed that a Permanent Statistical Assistance Entity should be established to ensure continuity of assistance to the countries and to strengthen the capacity of GFCM in handling the numerous data exchange processes. The GFCM Secretariat is invited to coordinate efforts and explore the possibility to set up this entity (PSAE).

52. VMS: The SCSI noted that a data submission framework for VMS data may need to be defined by 2013.

53. The SCSI suggested the need for a Workshop to deal with the VMS data submission and data utility issues.

54. IUU: The Secretariat informed the SCSI that no information on vessels presumed to be involved in IUU fishing has been submitted to date.

55. Coryphaena fishery: The SCSI noted that Members involved in this fishery generally submit the required data in a timely and appropriate manner.

56. Registered ports: The Sub-Committee noted that the submission of data related to national registered ports and inspections of foreign vessels is absent despite the entry into force of Recommendation GFCM/2008/1 and the requirement to submit data in accordance with Annex E of this Recommendation. In view of this situation, the SCSI suggested that the Commission should reassess the viability of this data exchange requirement.

Task 1 Regional Information System and data submission status

57. The Secretariat informed the participants that the first release of the Task 1 Regional Information System (T1-RIS) was completed and automatic data processing routines have already been inbuilt.

58. The draft Task-1 bulletin, distributed during the meeting and presented during the Transversal Session, was one example of the outputs from the T1-RIS.

59. The Sub-Committee noted that only 11 countries had submitted data for the reference year 2008 and reviewed the data submitted, for quality and completeness, through the data processing and display facilities of T1-RIS. It was noted that significant progress had been made by some countries and that, in general, data was available at Operational Unit level,

although catch and effort data by fishing period, gear and species was still scanty for several of the reporting countries.

60. Some participants raised the issue of data validation and quality. The Secretariat indicated that there are some data validation rules incorporated into the information system but the SCSI agreed that ultimately the responsibility of data quality lay with the submitting country.

61. The SCSI agreed that in compliance with Recommendation GFCM/33/2009/3, the reporting procedure for the forthcoming submission should be as follows:

- The full task 1 datafile for 2008 to be submitted by January 2011. In the case that Task 1 data (Task 1.1, 1.2 and 1.4) has already been submitted in 2010, this datafile must be completed with new information and sent as a whole to the Secretariat.
- 2009 data (Full Task 1) to be submitted by May 2011.
- Member countries are encouraged to send 2010 data if already available (see also section on STATLANT 37A).

REVIEW OF THE TASK 1 FRAMEWORK AND OPTIONS FOR IMPROVEMENT

Data accessibility and outputs

62. The issue on data accessibility and access policy is further discussed in the section 'Data confidentiality and Data policy'.

Reporting on by-catch

63. The transversal workshop on elasmobranchs recommended the inclusion of the by-catch data by species in Task 1. Currently, by-catch is not reported by species but as a total amount. To avoid any ambiguity on the definition of by-catch, the group decided to remove the indication of by-catch on the Task 1 data entry software and replace it by 'unwanted species of conservation concern'. As a result the Task 1 data compilation / submission scheme would require that catches are reported into the following 4 categories: Target species, Associated Species (by-catch of commercial species), Unwanted Species (by-catch of species of conservation concern) and Discards (all species).

64. The SCSI recommended to report the total figures for discards and report the unwanted species of conservation concern by species. To this end, a list of species to report in Task 1 has to be elaborated by the SCME.

Biological parameters (Task 1.5)

65. The Sub-Committee considered that the biological parameters needed to be expanded in order to develop an archive of data useful for the evaluation of the status of the stocks.

66. The SCSI highlighted the fact that the biological information needed for stock assessment purposes include a number of population dynamics variables of the species caught including length, weight, age, maturity, and sex ratio. Providing these by species for each fishing period of each Operational Unit and by gear would increase of data compilation / submission volume enormously and thus the SCSI proposed that Task 1.5 may be replaced by a Task 2, whilst maintaining a clear link to the fisheries data included in Task 1.

67. Moreover, the SCSI considered that given the complexity of collecting and processing this information, a choice must be made on the selection of species/stock for which data is required. It also suggested that setting rules for the submission of biological data could be the opportunity for GFCM to move forward by establishing a data collection framework, where

the collection of biological data would be restricted to a list of species based on a reference list or on specific criteria to select species.

68. In order to progress and given the transversal feature of the issue, the group suggested calling for a transversal workshop with the SCSA. The proposed terms of reference for a transversal Workshop on setting up a frame to report biological parameters and demographic structures to GFCM, are as follows:

- to review of the current situation on data collection of biological parameters and demographic structures by country;
- to evaluate which are the parameters of importance for stock assessment purpose, starting from the current Task 1.5 requirements;
- to evaluate the need to restrict the collection of biological parameters and demographic structures to a list of species/stocks and/or specifications of criteria to collect these data. Reflect on the need to specify requirements at the GFCM level;
- to propose a frame for the data collection and submission of biological parameters and demographic structures.

69. The workshop should be transversal to SCSA/SCSA. A chair can be nominated later, knowing that the SCSA coordinator accepted to act as a chair as a default choice. No venue was proposed by the group.

Nomination of Task 1 national focal points

70. The SCSA endorsed the proposal of the Workshop on data collection methods that a national focal point for Task 1 data submission should be formally nominated.

Effort fields in the Task 1 operating tool

71. Up to now, the request for Task-1 is to report total GT and total effort in days, gear units and fishing activity. However, the correct way of calculating the effort is to sum effort of each vessel (the product of these variables) and in accordance with Appendix II of Recommendation. The problem is that such a procedure would lead to empty fields each time one variable is missing. The preferred approach was to approximate the real total effort by multiplying the total of one variable by the average of the others.

72. There is currently no general rule to fix which field should be always the total and which field should be always the average, since the total effort, depending on the gear, will make use of different combinations of variables. The SCSA decided that the solution is to report the total capacity (GT / KW) and the average values per vessel for the other effort parameters. In the case of indicators not using the capacity parameter, it is the 'time' estimator that should be used as a total and would be derived automatically by the Task 1 data entry/submission software, given that the number of vessels involved in the O.U. has already been reported.

73. The SCSA recommended to modify the Task 1 data entry software and data exchange protocol to reflect the considerations above as follows:

- the total GT of the vessels should be recalled from information already entered at Operational Unit – period level;
- the total KW should be added as a capacity measure for trawlers;
- the 'time' parameter should be the average total number of fishing days per vessel for a given period

- the 'gear units' should be the average measure of the gear used by the vessels concerned;
- the 'activity' must be the average value per day per vessel.

74. Some experts expressed concern on their capacity to provide data to such a detailed level. The SCSI recommended to submit the data as available, report on their difficulties and revisit this issue at the next Sub-Committee meeting.

The notion of Group of Target Species

75. The classification of Group of Target Species for the identification of OU was based on 6 groups. However, it was noted that there is an ambiguity problem when it comes to assigning a group to certain species (especially demersal) and as a result countries may report in different ways. The proposed solution makes use of the ISSCAAP groups and divisions of species. The advantage is that each commercial marine species is listed in an international reference list (ASFIS¹) comprising two coding systems (Taxonomic and 3-alpha code) and a grouping system (ISSCAAP group). This list is maintained and updated annually. The SCSI appreciated that the ISCAAP list comprises 50 groups, which is far too extensive for GFCM purposes, but agreed that it could select the relevant groups and use divisions (higher level) for certain species. In this regard, the following table was proposed:

GFCM group of target species	ISSCAAP division	ISSCAAP Group code	Examples of species
Diadromous	Diadromous	22	Eel
Flat fishes	Marine fishes	31	Sole, turbot
Gadoids	Marine fishes	32	Hake, blue whiting
Miscellaneous coastal fishes	Marine fishes	33	Mullet, grouper, seabream
Miscellaneous demersal fishes	Marine fishes	34	Rockfish, gurnard, anglerfish
Small pelagics	Marine fishes	35	Anchovy, sardine
Tunas, bonitos, billfishes	Marine fishes	36	Bluefin tuna, albacore, swordfish
Miscellaneous pelagic fishes	Marine fishes	37	Mackerel, horse mackerel, dolphinfish
Sharks, rays, chimaeras	Marine fishes	38	Skate, dogfish, blue shark
Crustaceans	Crustaceans	41 - 47	Shrimps, lobsters, nephrops
Molluscs	Molluscs	51 - 58	Murex, mussels, tellins, octopus, squids

76. The group recommended the modification of the reference list of group of target species, taking into account the ISCAAP divisions and groups of species, in the data exchange protocol (Task 1 operating tool, CSV and XML schemas).

¹<http://www.fao.org/fishery/collection/asfis/en>

Definitions in the Task 1 data entry / submission software

77. The review of all definitions of the Task 1 data entry / submission software, to ensure clear instructions and full consistency with the GFCM glossary, has been suggested by the SCSI and requested that the Secretariat undertakes this task in 2011.

Quality indicators

78. The group endorsed the proposals by the workshop on Data Collection Methods to enrich the section 'Comments' of the Task 1 data entry / submission software, by including the possibility to enter more than one data source for each of the sub-tasks and to give the possibility to attach a pdf document describing the data collection protocols.

79. It was recalled during the meeting that all data submitted under GFCM Task 1 must be checked and validated before sending, and that it was under the responsibility of each Member country to make sure the data was quality-controlled.

80. The Sub-Committee discussed the possibility to set up a framework for assessing data quality, through, inter alia, the declaration of precision indicators for each parameter. The SCSI felt it was premature to take this matter forward but agreed that this idea should be kept in mind for future developments. As a first step, it was also agreed that a simple description of precision and bias for each sub-task could be included in the "Comments" section by selecting from a pre-set list.

81. The SCSI recommended to add a free text section in the 'Comments' section on quality evaluation, the possibility to enter several sources and the inclusion of two drop-down lists beside the 'source' of data for each sub-task, as follows :

- 'Precision estimates': not relevant, not assessed, poor precision, average precision, high precision.
- 'Bias estimates': not relevant, not assessed, no bias, risk of bias.

DATA CONFIDENTIALITY AND ACCESS POLICY IN CONNECTION WITH GFCM DATABASES AND INFORMATION SYSTEMS.

82. Mr Antonio Cervantes from the European Commission presented the main aspects of Data Collection Framework (DCF) and issues related to data collection and transmission to RFMOs, international scientific organisations and other end users.

83. It was recalled that in the EU DCF rules, the data could have three kinds of status:

- raw data which is never accessible by anybody except the owner of the data;
- detailed data which are individual validated information, where the confidentiality is ensured².
- aggregated data which is also validated information but grouped in such a way that anonymity and confidentiality is ensured³.

² In the GFCM, this is the case of all data related to the fleet (confidentiality is ensured for the personal details of the owner of the vessels)

³ This is the case of the Task 1 datasets with data grouped per O.U.

84. Following the presentation, the group discussed on how to establish a data access policy which could be acceptable. The main point was on how to restrict the access to “sensitive” information so that only authorised end users could access it. In the case of more general data it is easier to make them accessible, provided that individual countries information could not be identified.

85. Currently, the Task 1 datasets received by the GFCM Secretariat is only available to the public under the form of a statistical bulletin. A consensus was found on the fact that the Statistical Bulletin and some general statistics derived from Task 1 could be available to the public. The question was raised about the possibility to download the data by an end-user or not, which the group lets at the appreciation of the SAC.

86. In the case that a restriction of access would be chosen, the SCSi contemplated whether this access should be given to an individual or to a group. The period of access was also discussed, specifically on whether the access is given without time limitation or during a GFCM workshop.

87. The SCSi recommended three options, to be chosen singly or in combination, and a decision must be taken if data can be only displayed or also downloadable. The three options are:

- the statistical bulletin and other general statistical outputs will be available to the public;
- the access to Task 1 datasets will be available to users upon registration. The eligible users will be nominated by the national SAC focal point. In this case, the access has no time limitation.
- the access to Task 1 datasets will be available to participants registered in selected GFCM meetings, with access limited to the period of the meeting and some extensions before and after.

REVIEW OF THE IMPLEMENTATION OF THE GSA COMPATIBLE STATLANT 37A REPORTING SCHEME AND OPTIONS FOR THE FUTURE

88. The Sub-Committee recalled that 2010 is the last year of the trial period using STATLANT 37A GSA-compatible form. The Secretariat informed announced that 2007 and 2008 data had been processed and was to be published shortly. The submission of capture data by GSA was very limited and most countries reported using the FAO-GFCM divisions.

89. It was agreed that data submitted through Task 1 could serve to produce STATLANT data, provided that Task 1 data refer to year n-1 data. In this case the time frame would match given that STATLANT is to be provided during summer of each year. It was also noted that the data for Task 1 and for STATLANT, for some reasons, could come from different sources, preventing the use of Task 1 to produce STATLANT data.

90. In conclusion, the SCSi suggested that an automatic facility should be made available by the Secretariat to automatically produce from Task-1 data the output requested by STATLANT. For this purpose, it was reminded that data pertaining to year n-1 is required. For the time being, the SCSi suggested to keep the present system of reporting for both STATLANT and Task-1, further encouraging the reporting of STATLANT data by GSA. These parallel submissions would allow the cross-checking of the data.

91. An important point was also raised regarding certain countries, non-coastal and non-members of GFCM, that fish in the Mediterranean and are reporting catches through STATLANT 37A but not reporting data through Task-1. The question of their regulatory status should be raised at SAC/Commission level, since under the current regulatory situation they could be classified as IUU.

OUTCOME OF THE PILOT EXERCISES CARRIED OUT BY MEMBER COUNTRIES ON THE IMPACT OF USING DIFFERENT CATCH WEIGHT THRESHOLDS IN LOGBOOK REPORTING

92. Experts from Italy, France and Malta presented studies carried out on the effect of weight thresholds in logbook reporting, as summarised below.

93. Malta has carried out a pilot study for the analysis of the optimum weight threshold for the reporting of catches in the GFCM logbook using information from 2008, 2009 and 2010. Malta focused on two fisheries; Surface longline fishery and Bottom trawl fishery as they are two of the most important fisheries in the Maltese Islands in terms of catches, effort and value. Also, the surface longline fishery is species-specific whereas the bottom trawl fishery is multispecific. On-board observations were carried out as part of the sampling adopted for the biological sampling for the EU Data Collection Framework. For the surface longline fishery, 67 trips were sampled, while for the bottom otter trawl fishery 14 trips were sampled. All weights of species caught and landed were recorded by the observers to obtain data on all landed species per trip. Different threshold levels were chosen; 50kg, 25kg, 15kg, 10kg and 5kg (in case of the trawls only) to determine the percentage of the catch per species that would be recorded when applying different thresholds, to possibly come up with the most appropriate threshold. Examples for both types of fisheries are given below in tables 1 and 2:

Table 1: Percentage of recorded catch with different threshold values in longline fishery

Species	Total catch (kg) (sampled trips)	% recorded (by weight)			
		10kg threshold	15kg threshold	25kg threshold	50kg threshold
<i>Coryphaena hippurus</i>	200.0	92	46	15	0
<i>Lamna nasus</i>	180.0	100	100	100	100
<i>Mola mola</i>	75.0	100	100	73	73
<i>Prionace glauca</i>	35.0	100	100	100	0
<i>Ruvettus pretiosus</i>	14.5	0	0	0	0
<i>Tetrapturus belone</i>	84.5	89	89	71	0
<i>Thunnus alalunga</i>	40.0	100	63	63	0
<i>Thunnus thynnus</i>	9789.1	100	100	100	100
<i>Xiphias gladius</i>	3148.2	100	97	97	97

Table 2: Percentage of recorded catch with different threshold values in bottom trawl fishery

Species	Total catch (kg)	% recorded (by weight)				
		5kg threshold	10kg threshold	15kg threshold	94.25kg threshold	50kg threshold
<i>Aristaeomorpha foliacea</i>	657.2	100	100	100	97	86
<i>Aristeus antennatus</i>	40.0	71	27	0	0	0
<i>Aspitrigla cuculus</i>	0.3	0	0	0	0	0
<i>Helicolenus dactylopterus</i>	17.9	56	56	0	0	0
<i>Illex coindetii</i>	0.2	0	0	0	0	0
<i>Lepidorhombus boscii</i>	6.1	0	0	0	0	0

<i>Lophius budegassa</i>	3.0	0	0	0	0	0
<i>Merluccius merluccius</i>	114.6	97	85	85	37	0
<i>Mullus surmuletus</i>	1.7	0	0	0	0	0
<i>Nephrops norvegicus</i>	87.1	96	66	40	0	0
<i>Parapenaeus longirostris</i>	541.8	100	100	99	91	59
<i>Phycis blennoides</i>	23.7	100	63	63	0	0
<i>Todarodes sagittatus</i>	1.4	0	0	0	0	0

95. From the results obtained from both fisheries, the Maltese experts recommended that the optimum weight threshold for reporting in logbooks should be either a threshold of 10kg, or a threshold of 15kg with NO threshold for GFCM/DCF priority species. Since these lists are quite extensive it is suggested that a discussion should be held to decide the most important species, so as to reduce the number of species for which weights have to be reported in logbooks whenever any amount is caught.

96. France: The analysis was carried out on vessels > 15 m, based on at-sea observations for distinction of the gears and based on auction sales for more comprehensive information. The working document with all details is given in Appendix III. The principal conclusions are that the threshold level had little effect for the small pelagic fisheries, and that for the French fishery a threshold of 15 kilos would be a good compromise between the number of species to report on a day-to-day basis and the bias induced by the non reporting of small catches.

97. Italy: The experts from Italy presented their analyses on the subject and concluded that the improvement in the catch information with a lower threshold is not enough to justify the expense of implementing this change. In this respect, they suggested to maintain the current threshold of 50kg.

98. The use of the logbook system in the Italian fishery sector provides partial information: only 14% of vessels have a LOA greater than 15 m and usually a vessel lands approximately 100 Kg of 30 different species. Therefore data reported in the logbook represent a very negligible share of actual landings.

99. Moreover, from experience, the use of logbook for statistical production could potentially lead to unreliable data, considering the low quality of information reported in logbooks.

100. The analysis of Italian data, presented at the meeting, has demonstrated that moving the logbook threshold from 50 Kg to 15 Kg has no effects on more than 60% of the species targeted and that an improvement higher than 50% is registered for only 5% of total commercial species.

101. Considering the Italian fishery sector and the limited improvement in catches and landings statistics, the Italian expert considers that the improvement in information gained from a change in the logbook threshold is not relevant compared with the increase of the associated "costs".

102. The SCSI noted that

- The studies presented addressed only the component of the catches taken by the fleets impacted by the logbook regulation, *i.e.* vessels > 15m. and thus, the results only partially reflect the impact on the overall catches per species at the national level. In other words, if a given stock is marginally exploited by vessels > 15 m., the bias induced by any level of threshold will be relatively insignificant.

- The induced cost of different thresholds (the lower the threshold the more information is generated) was not evaluated and cost-benefit analysis not produced. It was also agreed that this kind of analysis could hardly be conducted *a priori*.

103. The SCSI concluded that

- in terms of scientific utility, the option of no threshold would be the ideal, but the number of species to report per trip, in the context of the Mediterranean and Black Sea would be prohibitive;
- any threshold would bear the risk of miss-reporting the catches of rare and endangered species;
- the studies presented all demonstrated that the threshold levels had little impact on reporting catches of small and large pelagic fisheries. They also all demonstrated that demersal fisheries were very sensitive to the thresholds, but at this stage, the Sub-Committee could not find an agreement on which threshold would be the best compromise.

FOLLOW-UP ON UPDATING THE SAC GLOSSARY

104. The SCSI recommended that the SCMEE should reconsider the definition of by-catch, as previously noted in the SCSI 2009 report.

CONCLUSIONS AND RECOMMENDATIONS

105. The SCSI drew up and agreed on the following conclusions and recommendations regarding Task 1 and other data submission requirements:

- Reiteration of the recommendation already made in 2009 and recalled by the workshop that national experts should inform the Secretariat on the difficulties encountered in data collection and data reporting on a real time basis.
- Proposal to use “Miscellaneous gear” when it was impossible to distinguish which catch has been taken by which gear within trips having operated with several gears. It is also reminded that the ideal solution was to desegregate the catches by gear types on a trip by trip basis in order to fill correctly the catch information by Operational Units.
- Proposal that feedback from the IT experts of Members wishing to contribute to the review and testing of the CSV schema produced, preferably before the next data submission.
- Reminder that demands for training workshop or specific assistance by FAO sub-regional projects should be brought by countries to the project coordination committees;
- Regarding the fleet-based datasets requirements, the SCSI stressed the need to optimise the submission of this information, by reducing the number of datasets to be submitted, ideally through a single fleet submission (the fleet register) whilst ensuring that all data fields requested by all Recommendations are included;
- Proposal that a Permanent Statistical Assistance Entity should be established to ensure continuity of assistance to the countries and to strengthen the capacity of GFCM in handling the numerous data exchange processes. The GFCM Secretariat is invited to coordinate efforts and explore the possibility to set up this entity (PSAE);
- Highlight of the issue of lack of submission of data pursuant to Recommendation GFCM/2008/1 on registered ports and inspections in accordance with Annex E from the above Recommendation. It is suggested that the Commission should reassess the viability of this data exchange requirement.
- Agreement that, in compliance with Recommendation GFCM/33/2009/3, the reporting procedure for the forthcoming submission should be as follows:
 - The full task 1 datafile for 2008 to be submitted by January 2011. In the case that Task 1 data (Task 1.1, 1.2 and 1.4) has already been submitted in 2010, this datafile must be completed with new information and sent as a whole to the Secretariat.
 - 2009 data (Full Task 1) to be submitted by May 2011.
 - Member countries are encouraged to send 2010 data if already available (see also section on STATLANT 37A).
- Recommendation to report the total figures for discards and report the unwanted species of conservation concern by species. To this end, a list of species to report in Task 1 has to be elaborated by the SCME;
- Proposal of a transversal workshop on setting up a frame to report biological parameters and demographic structures to GFCM, with the following Terms of Reference:

- to review of the current situation on data collection of biological parameters and demographic structures by country;
 - to evaluate which are the parameters of importance for stock assessment purpose, starting from the current Task 1.5 requirements;
 - to evaluate the need to restrict the collection of biological parameters and demographic structures to a list of species/stocks and/or specifications of criteria to collect these data. Reflect on the need to specify requirements at the GFCM level;
 - to propose a frame for the data collection and submission of biological parameters and demographic structures.
- Recommendation to modify the Task 1 data entry software and data exchange protocol to reflect the considerations above as follows:
 - the total GT of the vessels should be recalled from information already entered at Operational Unit – period level;
 - the total KW should be added as a capacity measure for trawlers;
 - the 'time' parameter should be the average total number of fishing days per vessel for a given period
 - the 'gear units' should be the average measure of the gear used by the vessels concerned.
 - the 'activity' must be the average value per day per vessel.
- Since some experts expressed concerns on their capacity to provide data to such a detailed level, the SCSI recommended to submit the data as available, report on the difficulties and revisit this issue at the next sub-committee meeting.
- The SCSI endorsed the proposal of the Workshop on data collection methods that a national focal point for Task 1 data submission should be formally nominated.
- Recommendation to modify the reference list of group of target species, taking into account the ISCAAP divisions and groups of species, in the data exchange protocol (Task 1 operating tool , CSV and XML schemas).
- Recommendation to add a free text section in the 'Comments' section on quality evaluation, the possibility to enter several sources and the inclusion of two drop-down lists beside the 'source' of data for each sub-task, as follows:
 - 'Precision estimates': not relevant, not assessed, poor precision, average precision and high precision.
 - 'Bias estimates': not relevant, not assessed, no bias, risk of bias.

106. The SCSI drew up and agreed on the following conclusions and recommendations regarding data confidentiality and access policy:

- Proposal of three options for data access, to be chosen singly or in combination, and a decision should be taken if data can be only displayed or also downloadable. The three options are:
 - the statistical bulletin and other general statistical outputs will be available to the public;

- the access to Task 1 datasets will be available to users upon registration. The eligible users will be nominated by the national SAC focal point. In this case, the access has no time limitation.
- the access to Task 1 datasets will be available to participants registered in selected GFCM meetings, with access limited to the period of the meeting and some extensions before and after.

107. The SCSI drew up and agreed on the following conclusions and recommendations regarding the implementation of the GSA compatible STATLANT 37A reporting scheme:

- an automatic facility should be made available by the Secretariat to automatically produce from Task-1 data the output requested by STATLANT. For this purpose, it was reminded that data pertaining to year n-1 is required. For the time being, the SCSI suggested to keep the present system of reporting for both STATLANT and Task-1, further encouraging the reporting of STATLANT data by GSA. These parallel submissions would allow the cross-checking of the data.
- Highlight regarding certain countries, non-coastal and non-members of GFCM, that fish in the Mediterranean and are reporting catches through STATLANT 37A but not reporting data through Task-1. The question of their regulatory status should be raised at SAC/Commission level, as under the current regulatory situation they could be classified as IUU.

108. The SCSI drew up and agreed on the following conclusions and recommendations regarding the outcome of the pilot exercises carried out by Member countries on the impact of using different thresholds in logbook reporting:

- Studies presented addressed only the component of the catches taken by the fleets impacted by the logbook regulation, *i.e.* vessels > 15m. and thus, the results only partially reflects the impact on the overall catches per species at the national level. In other words, if a given stock is marginally exploited by vessels > 15 m., the bias induced by any level of threshold will be relatively insignificant.
- The induced cost of different thresholds (the lower is the threshold, the more information is generated) was not evaluated and cost-benefit analysis not produced. It was also agreed that this kind of analysis could hardly be conducted *a priori*.
- The SCSI concluded that:
 - in terms of scientific utility, the option of no threshold would be the ideal, but the number of species to report per trip, in the context of the Mediterranean and Black Sea would be prohibitive;
 - Any threshold would bear the risk of misreporting the catches of rare and endangered species;
 - The studies presented all demonstrated that the threshold levels had little impact on reporting catches of small and large pelagic fisheries. They also all demonstrated that demersal fisheries were very sensitive to the thresholds, but at this stage, the Sub-Committee could not find an agreement on which threshold would be the best compromise.

109. The SCSI drew up and agreed on the following conclusions and recommendations regarding the update of the SAC glossary:

- The SCSI recommended SCMEE to reconsider the definition of by-catch, as previously noted in the SCSI 2009 report.

PRELIMINARY WORKPLAN FOR 2011

110. The SCSI agreed on the following workplan:

- Organise a transversal (SCSI/SCSA) workshop on setting up a frame to report biological parameters and demographic structures to GFCM
- GFCM Secretariat should review the definitions used in the Task 1 data entry / submission software.
- GFCM Secretariat should include the possibility to export catch data to the STATLANT 37A format from the Task 1 data entry / submission software.
- GFCM Secretariat should update the Task 1 data entry / software and data submission exchange protocols (XML and CSV) in accordance with the proposed changes of the SCSI.
- Submission of the full Task 1 datasets for 2008 by January, and the full Task 1 datasets for 2009 by May 2011 and the GFCM Secretariat to:
 - Update the statistical bulletin accordingly;
 - Continue the development of the Task 1 Regional Information System
 - Work on proposing data summary outputs and data access functions to be proposed at the next SCSI meeting.
- GFCM Secretariat to finalise the development of the Regional Fleet Register information system and manage the data submitted accordingly.

ANY OTHER MATTERS

111. Before the closure of the meeting, the participants warmly thanked the Maltese Ministry for Resources and Rural Affairs for its hospitality and kindness in hosting the meeting and expressed their appreciation for ensuring excellent conditions of work.

DATE AND VENUE OF THE NEXT MEETING

112. The Sub-Committee suggested to hold its next meeting in Rome at the end of 2011.

ADOPTION OF THE REPORT

113. The report of the meeting was adopted by the SCSI on 2nd December 2010.

Appendix I

Scientific Advisory Committee

11th Session of the Sub-Committee on Statistics
and Information (SCSI)

St-Julians, Malta, 29 November- 2 December 2010

(Chair: Joël Vigneau)

Agenda

1. Opening and arrangement of the Sub-Committee meetings
2. Transversal session: review of transversal issues (chaired by the SAC chairperson)
3. Introduction to the meeting and adoption of the agenda
4. Conclusions of the workshop on Data Collection Methods (applied to all segments of the fleet and their coherence with the requirement of the GFCM Task 1.
5. Conclusions of the workshop on Fishing Capacity
6. Updates on National Data Collection and statistical systems (national reports).
7. Initiatives in the field of fisheries statistics compliant with GFCM requirements.
8. Overview of the current situation of data submission by Members.
9. The current status and the future development of databases and information systems managed by the Secretariat
10. Review of the Task 1 framework and options for its improvement
11. Data confidentiality and access policy in connection with GFCM databases and information systems
12. Review of the implementation of the “GSA-compatible STATLANT37 A” reporting scheme and options for the future.
13. Outcomes of the pilot exercises carried out by Member countries on the impact of using different catch weight thresholds in logbook reporting.
14. Follow up on updating the SAC glossary
15. General conclusions and recommendations
16. 2011 SCSI workplan
17. Any other matters
18. Date and venue of the next meeting
19. Adoption of the report and closure of the meeting

Appendix II

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Appendix III**Threshold value for reporting catches on the GFCM logbook – Effects of different values on the estimation of catches per species.**

Working document to GFCM/SCSI meeting, November 2010

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Introduction

The GFCM, in its 2010 session, adopted (Recommendation GFCM/34/2010/1) a GFCM logbook to be filled by masters of fishing vessels over 15 meters, from 1st of January 2013. In the recommendation, it is also stipulated that the minimum quantity [to be reported on the logbook] shall be without prejudice to stricter rules implemented by Members and may be adjusted in the light of further work to be undertaken under the GFCM framework.

In order to progress on the issue, the GFCM Sub-Committee on Statistics and Information (SCSI) suggested, during its last session, its members to undertake an analysis on the effects of various thresholds on the quality of reporting the catches by species, from the information available in the different countries (sales notes, on-board observers, ...). This way of doing is expected to allow the SCSI to advise on a threshold value which would maximise the quality of the logbook reporting, for vessels over 15 meters and in the exact context of the Mediterranean and Black Sea.

This paper is based on information from 457 on-board observations, and 5 years of auction data in the french Mediterranean harbours. The idea is to test threshold variations from 1 to 50 kilos on comprehensive landings estimated from on-board observations or registered in auction sales notes. The differences in total volume, volume per species and number of species to report per trip is further discussed with the objective of finding a threshold value having the minimal impact on these three parameters.

The methodology used was to create a variable (y) taking the value = 0 if the total landed part of the species for that trip was inferior to the threshold and the value = landed volume in kilos, otherwise. All inferences were made based on the y variable.

Information from on-board observations

The on-board information used were observed between 2003 and 2009, with 78% of these observed in 2008 and 2009. The sampling protocol on-board is to sample part of the fishing operations and count and measure all species retained and discarded from the sampled fishing operations. The data processing consisted in (i) raising all the information to the trip level, which is the level upon which the catches must be reported, and (ii) filtering only the retained part for the analysis.

The on-board observations are uniquely considering trawlers, and a distinction were made between trawlers targeting demersal fish and trawlers targeting small pelagics, given the specificities of these two metiers.

Total volume

The analysis on total volume of catches is presented figure 1. For trawlers targeting demersal, and based on the percentile 75 (lower side of the rectangles, i.e. corresponding to 75% of the trips considered), thresholds of 33 and 17 kilos are requested in order to report 80% and 90% of the catches, respectively. Trawlers targeting small pelagics are almost not sensitive to the threshold. The reason is the low number of targeted species, mainly 2, sardine and anchovies, which are almost always landed in quantities over 50 kilos. The variation is mainly due to the by-catch, more sensitive to the threshold.

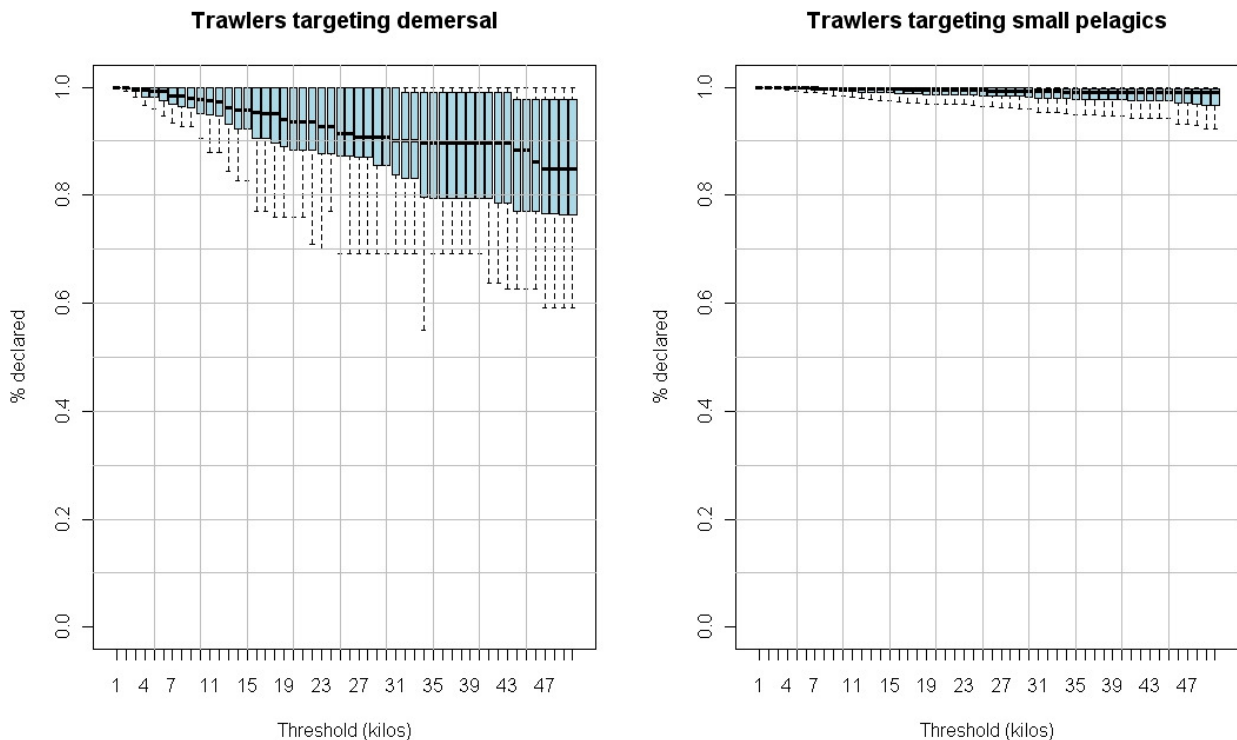


Figure 1 : Boxplot of the total catches per trip for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

Volume per species

Looking at the impact of the threshold values on a species level complicates the view. The main problem comes from evaluating at the same level main species and by-catch species. The figure 2 showing the impact of different thresholds on all species caught demonstrates a large impact on the number of species reported. Based on the median, a threshold over 23 kilos will obscure more than 50% of the species. The context of the Mediterranean and Black Sea, where a variety of species are landed in small quantities is demonstrated here. Figure 3a restricts the number of species to the GFCM priority list. The picture improves since the same threshold value of 23 kilos will obscure “only” 15% of the priority list species. Figure 3b details what happens species by species. On the top lines are the species insensitive to the threshold. They are marked with an (*) and corresponding species are listed in the bottom left part of the panels. Species listed on the right of the panels are those species relatively sensitive to the threshold value. For example, a threshold of 26 kilos will provide 80% of the total catches of *Boops boops* for the trawlers targeting demersal, 85% of *Octopus* and *Lophius*, between 90 and 95% of *Trachurus trachurus*, *Scomber scombrus* and *Sardina*

pilchardus. The bottom lines are those species very sensitive to the threshold values. They are marked with (**) and listed in the bottom center of the panels.

To finish on a more positive view on the impact of the threshold value on the catch statistics, figure 4 restricts the view to those species cumulating 95% of the total catches. A threshold of 17 kilos ensures that, at least 90% of the catches of the main species are reported.



Figure 2 : Boxplot of the catches per species (all species caught) for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

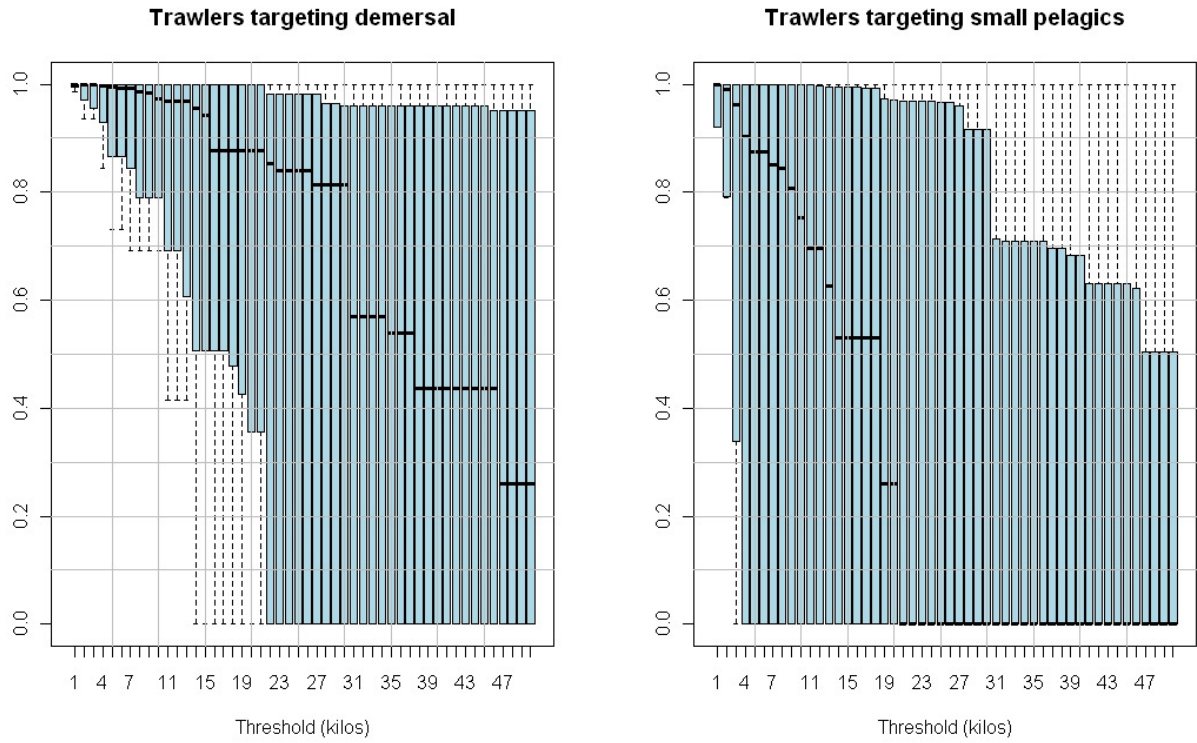


Figure 3a : Boxplot of the catches per species (GFCM priority list) for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

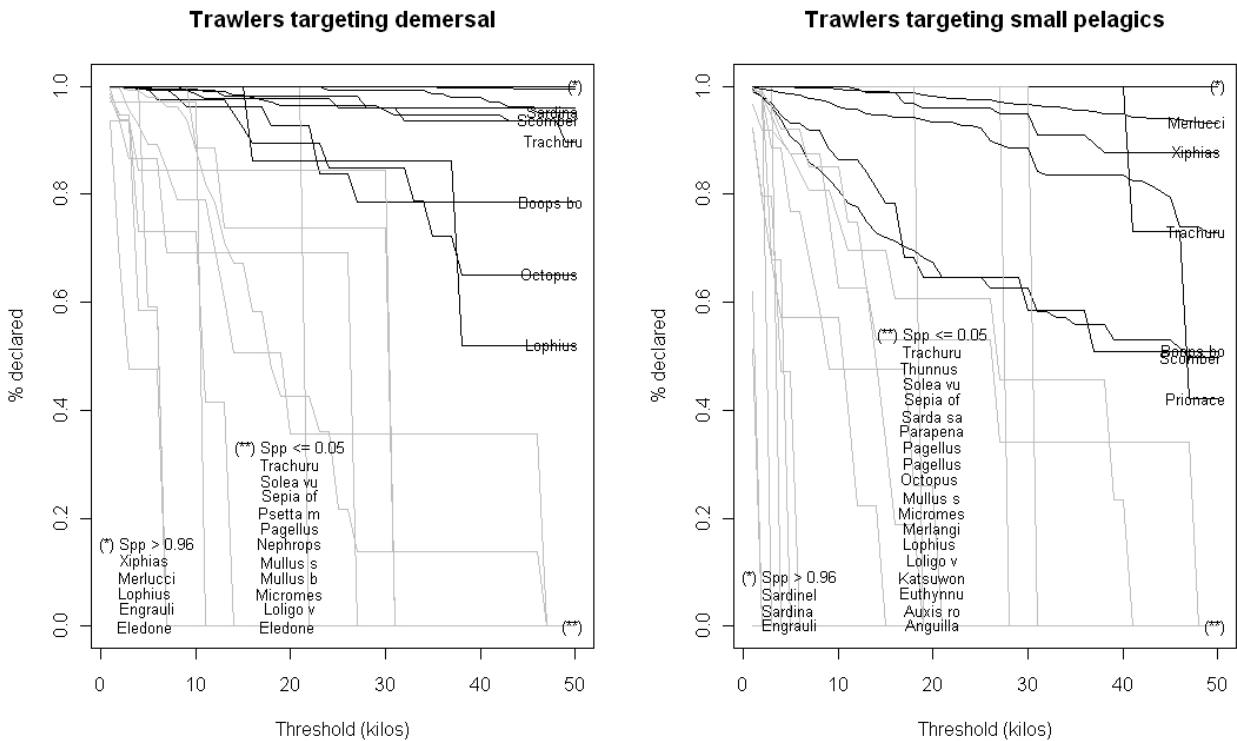


Figure 3b : plot of the percentage of the total catches declared per species (GFCM priority list) for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

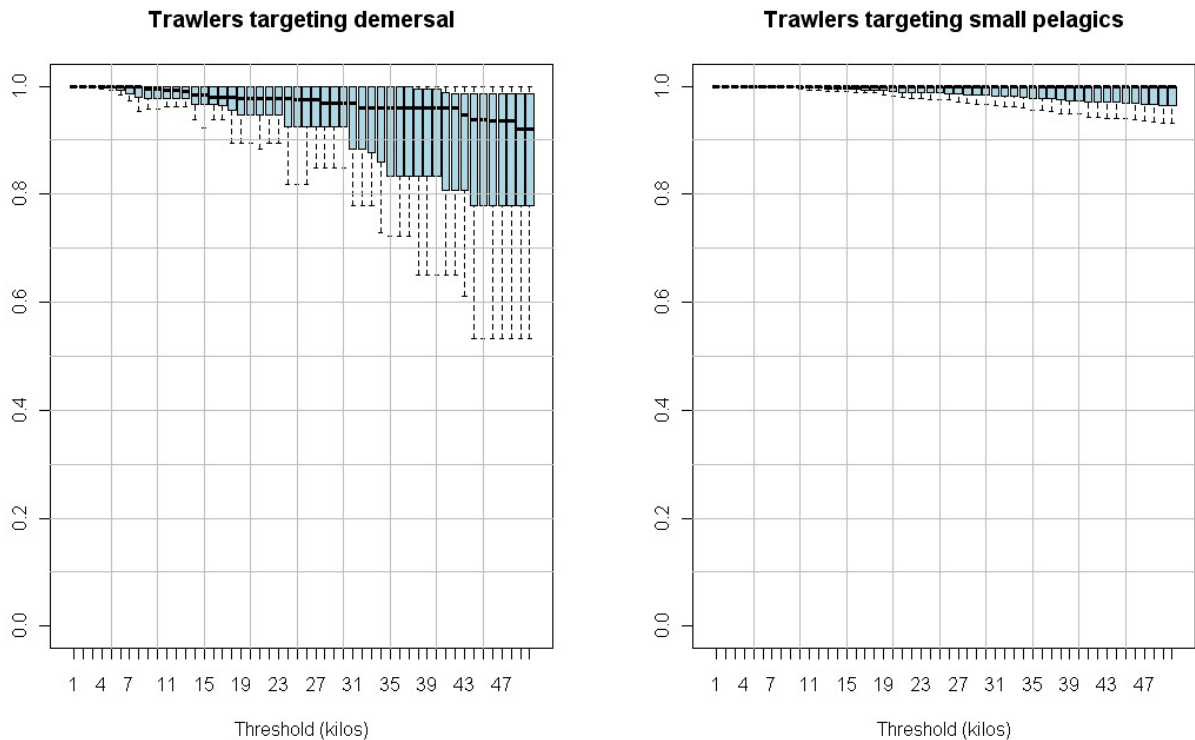


Figure 4 : Boxplot of the catches per species corresponding to the top 95% of the species caught for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

Number of species reported

Logbook reporting on the field also requires that the number of species to report on is not too wide, otherwise the appropriation of the concept by the fishermen and the quality of the information will suffer. Figure 5 shows the number of species to be reported depending on the threshold used. First, the trawlers targeting small pelagics are not impacted by the threshold, since they never fish more than 10 species during one trip. For trawlers targeting demersal, only a threshold over 20 kilos reduces the number of species to report to less than 14.

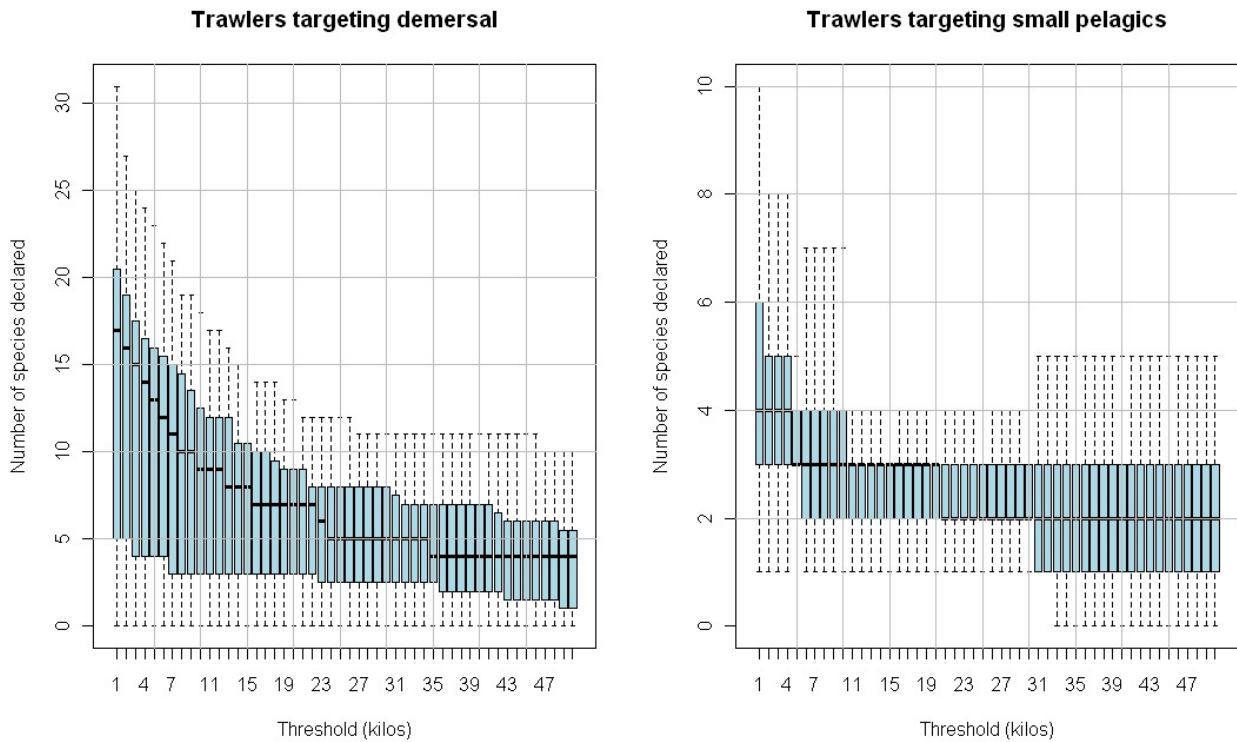


Figure 5 : Boxplot of the number of species to declare for trawlers targeting demersal fish (left panel) and for trawlers targeting small pelagics (right panel).

Information on auction sales

The information used was the data from the major auction in the French Mediterranean (Sète) for the year 2008. The information available are the name of the vessels, the dates and the tonnage of the landings (sold) per species. The vessels were filtered to keep only those over 15 meters LOA, and the same statistics as the on-board observers were derived, except that no information on gears were available.

Total volume

Figure 6 presents the total volume per trips, in relation to the different threshold value from 0 to 60 kilos. The total number of trips available in the database (> 50 000) smooth much better the results than for the on-board observations. Considering the median, it is possible to conclude that a threshold of 15 kilos will hide about 10% of the total landings, whereas the threshold of 50 kilos hides more than 30% of the total landings.

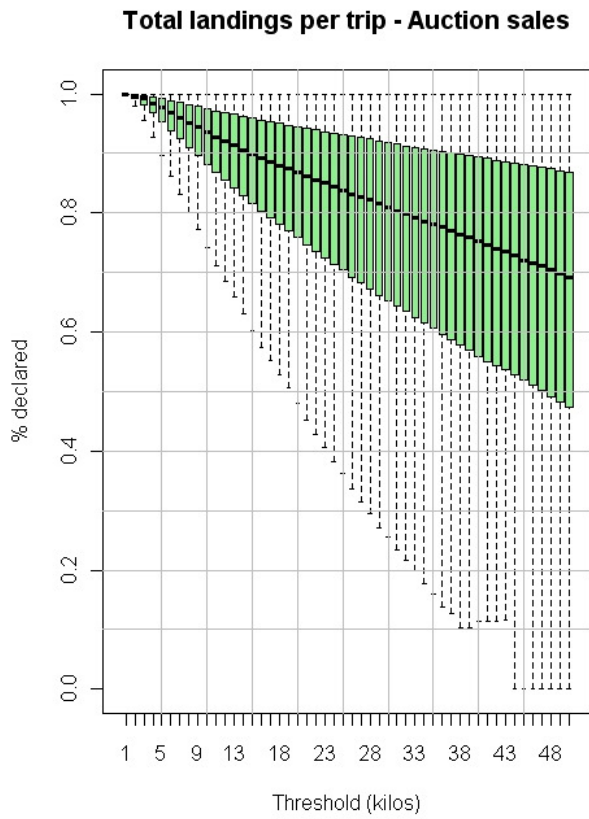


Figure 6 : Boxplot of the total landings per trip
Volume per species

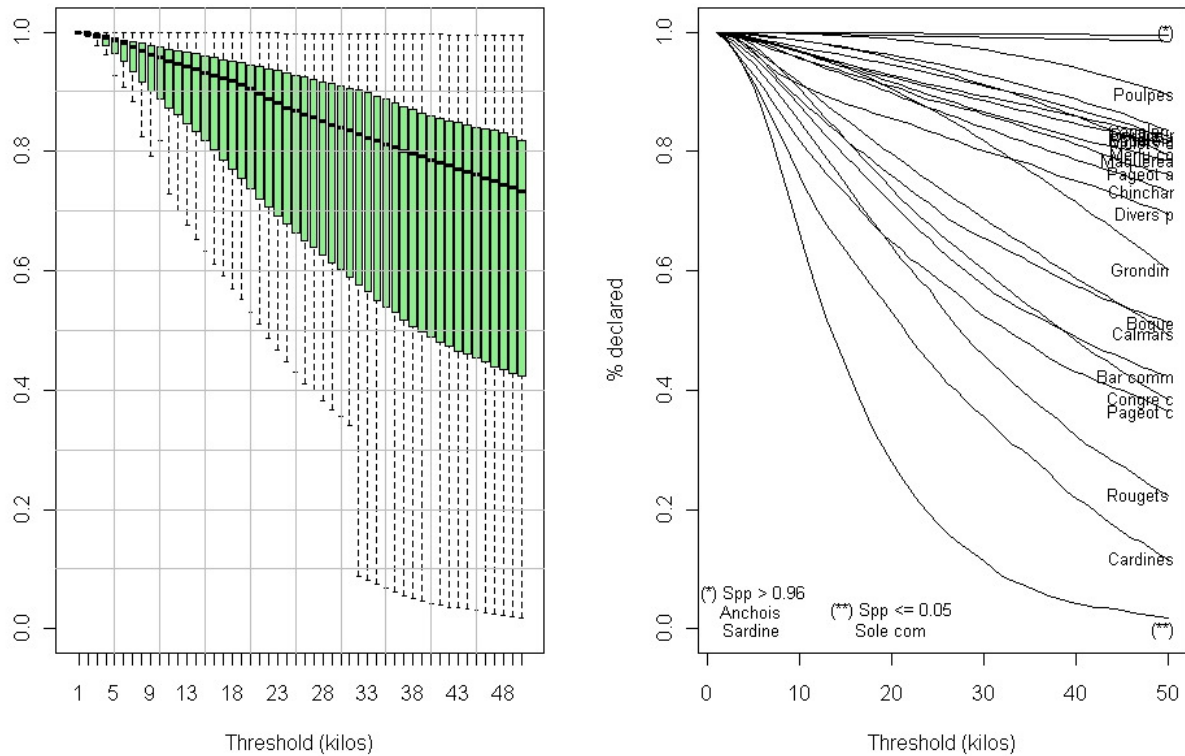


Figure 7 : Boxplot of the total landings per trip and per species (left panel). Plot of the percentage of the total catch per species declared in relation to the threshold values (right panel).

Figure 7 (left panel) shows that a threshold of 10 kilos will hide approximately 5% as an average for each of the species. The right panel displays the relevant figures for each of the species, and they vary a lot. On top of the lines, are the small pelagics, totally insensitive to any threshold, *i.e.* whatever the threshold value, always more than 99% would be declared on the logbook. On the bottom line is the common sole, the most sensitive to the threshold, to such a point that only 20% of the catches would be declared with a threshold of 20 kilos. The graph shows a bulk of species where a threshold of 50 kilos would hide about 20%, but where a threshold less than 20 kilos would provide 90- 95% of the actual catches. These species are hake, mackerel, horse mackerel, octopus, seabream, seabass, ...

Number of species reported

Figure 8 shows that a maximum of 15 species can be reported when threshold > 15 kilos, reducing to 12 species with a threshold > 25 kilos. This figure is in line with the figures provided by on-board observations. The no threshold option would require sometimes fishermen to report more than 30 different species on the logbook.

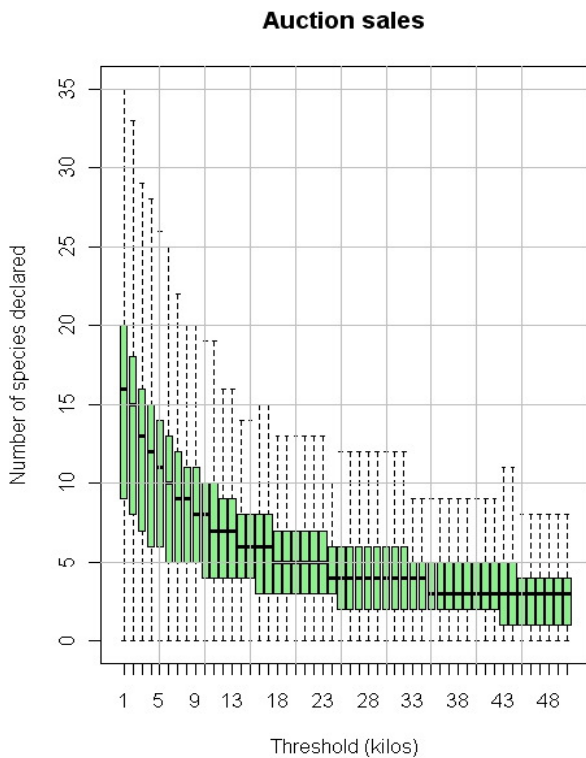


Figure 8 : Boxplot of the number of species to declare

Conclusion

The on-board observations reveals that the trawlers targeting small pelagics are not impacted by the threshold value, neither in term of resulting catch statistics, nor in term of number of species to report.

The information from on-board observations and from auction sales is very similar, in showing that

- a no threshold option would require the registration of too many species in the logbook;
- a threshold of 50 kilos induces too much bias in the catches per species;
- a threshold somewhere between 10 and 20 kilos would be the best compromise for the French fisheries.