

## DATA COLLECTION AND HANDLING

### Data Collection by CCAMLR in the Inter-sessional Period

6.1 The Secretariat presented a paper SC-CAMLR-III/4 which summarised the progress that had been made in collecting data in the inter-sessional period. There were three main areas: STATLANT data, commercial data inventory and the scientific data inventory.

#### STATLANT Data

6.2 During the inter-sessional period the Secretariat had compiled available STATLANT data and archived them in the Commission data base. The current position on data availability is given at Annex 4.

6.3 In summary, 8A data which contain information on total catch by species is almost complete although some USSR data are for calendar years and there is a need to report the data according to Antarctic fishing seasons. The 8B data are much less complete and in addition have a number of problems. In particular data have been presented in irregular groupings of area - sub area, effort types and species sought, making it difficult to consolidate the historical returns in a standard manner. The Scientific Committee agreed that the STATLANT data should be the basis for compiling an initial Statistical Bulletin.

#### Commercial Data Inventory

6.4 SC-CAMLR-III/4 indicated the progress that had been made in collating the inventories of commercial data. Inventories have been received from all members.

#### Scientific Data Inventory

6.5 The scientific data inventory requested by the Scientific Committee at its last meeting has been received from the following members to date: Argentina, Australia, GDR, FRG, Japan, USSR, UK and USA. It was also noted that Poland had submitted its scientific data inventory together with commercial data.

6.6 A major report on USSR activities in the period 1962–1984 covering more than 150 expeditions was submitted to the Secretariat.

6.7 These inventories and other documents submitted with them are held in the Secretariat, where they are available for examination by members.

6.8 The Committee believed that the inventories would provide useful basic information for the work of *ad hoc* groups, the Secretariat and the Scientific Committee.

6.9 It was urged that members which had not yet submitted their scientific data inventories to the Secretariat should do so before the end of 1984.

6.10 It was also agreed to ask SCAR if it would be possible to arrange for copies of the National Reports sent to SCAR to be sent to the CCAMLR Secretariat.

#### Proposal for a CCAMLR Statistical Bulletin

6.11 SC-CAMLR-III/8 contains a draft Statistical Bulletin which had been prepared by the Secretariat in response to a request made by the Scientific Committee last year.

6.12 The Committee agreed that the summary of catch and effort statistics presented in Annex 5 would be published as part of the Scientific Committee report. Publication of the Statistical Bulletin should be deferred until next year by which time a complete set of the historical data was expected to have been submitted to the Secretariat.

6.13 The Scientific Committee recognised that the extent of the dissemination of this Bulletin was a matter for discussion by the Commission as it involved budgetary considerations.

#### Report of the Ad Hoc Working Group on Data Collection and Handling

6.14 The report of the inter-sessional meeting of the *Ad Hoc* Working Group on Data Collection and Handling, held in June 1984 at Woods Hole, USA, is given in SC-CAMLR-III/9. The Committee welcomed this report and agreed that it would be appropriate for it to be annexed to the Scientific Committee report. It is contained at Annex 6.

6.15 The report raised a number of questions for further discussion by the Scientific Committee.

#### STATLANT 8A/B Data

6.16 The current Statistical Areas used by FAO in the STATLANT forms are inadequate in a number of ways and the Working Group had made some proposals to revise them. These proposals were discussed by the Committee and revised Statistical Areas were agreed involving the following changes:

<u>Area or Subarea</u>	<u>Changes</u>
48.1	Change lower boundary between 50°W and 60°W from 64°S to 65°S.
58.4	Add boundary along 62°S between 30°E and 80°E.  Extend current boundary at 60°E down to 62°S.  Add boundary line at 80°E down to land area.  The above would subdivide 58.4 into four new subareas, 58.4.1, 58.4.2, 58.4.3, 58.4.4.
88	Sub-divide into three new subareas along 1) 105°W 2) 170°W to be identified as 88.1, 88.2 and 88.3

These changes are illustrated in the map contained at Annex 7.

6.17 The change of the boundary to area 48.1 is based on GDR commercial catches of fish taken south of 64°south. The division of areas 58 and 88 is based on the current estimates of the spatial structure of the Antarctic circumpolar current and the horizontal water column of the Antarctic surface waters. The subarea 58.4 is quite large and encompasses fairly stable separate concentrations of krill. The new divisions will encompass consistent concentrations south of 62°S, as illustrated by Japanese data (SC-CAMLR-III/INF.9), and also those which are noted to be latitudinally separate. Area 88 is a very large area, probably containing semi-distinct concentrations; in particular USSR studies indicate that the 170°W line would

separate concentrations to the east of the Ross Sea area. The 105° line was taken to separate the krill production area which feeds into 48.1.

6.18 The Committee noted in completing the 8B Forms, effort data have been included which were associated with the combined catch of both krill and fin fish.

6.19 This is clearly unsatisfactory, as the operations are different. It was noted that the STATLANT form contains a heading for main species sought and the Committee emphasised the importance of reporting data in this way. As a minimum fishing for krill and for fin fish should be reported separately, but data should also be reported separately according to main species of fin fish sought. It is also desirable to report data according to major vessel categories as required in the STATLANT format.

6.20 The Committee recommended that the proposed changes to the Statistical Areas be taken up with FAO by the Secretariat in October 1984 so that revisions to the reporting forms can be introduced for the 1984-85 season. The Committee also recommended that FAO be requested when distributing STATLANT forms for completion, to draw the attention of the statistical offices of the members concerned to the importance of maintaining the separation between species sought when completing the forms.

#### Collection of Catch and Effort Data

6.21 The Working Group had noted that the data collection systems used by members fishing in the Convention area were similar to that recommended by the Scientific Committee in the logbook information list (Annex 8, Scientific Committee Report 1983).

6.22 For stock assessment purposes, the Working Group had agreed that the basic data collection proposal contained in Appendix 14 of their report (Annex 6) was satisfactory, although there were some doubts about the need for identifying particular gear and vessel characteristics. For the purposes of krill stock assessment some desirable information on effort, particularly associated with assessment of searching time, had not been collected in the past.

6.23 At present, fishing vessels routinely record information on catch per haul, but not on activity. For those operations where vessels both fish and search, the Working Group suggested that some extra information to that currently recorded during fishing operations in the logbooks would add significantly to the value of the catch/effort information. This would

involve recording whether trawl hauls are on the same or different krill aggregations, and/or the time spent searching between different krill aggregations. This latter information could be deduced from the data routinely collected if the periods when the vessel was searching were recorded. Delegations from fishing nations noted the difficulties of getting precise data on searching times from commercial operations. The Scientific Committee noted these difficulties, but believed it important that these data be collected. Some reservations, however, were expressed by the representative of Japan. For those operations where fishing vessels use information directly from fishery research vessels, there is less advantage in seeking information on searching time from fishing vessels.

6.24 Fishery research vessels operating in association with fishing vessels may be capable of providing information on the distribution and abundance of krill aggregations. Such information could be used in conjunction with CPUE data from fishing vessels operating in the same area to construct an index of abundance. The Working Group suggested that fishery research vessels collect, on a routine basis, information on the distribution and abundance of krill aggregations. The Scientific Committee agreed with this suggestion.

#### Submission of Catch and Effort Data

6.25 The Scientific Committee considered the problem of routine submission of catch and effort data referred to in Article XX of the Convention.

6.26 The Working Group had considered two basic options, the one involved submission to the Secretariat of the raw data from logbooks. The Secretariat could then process these data to any degree of detail required. The alternative involved submission by members of some form of summary of the data collected. This latter option involves a subsidiary question concerning the degree of detail required for such a summary.

6.27 The representative from Japan questioned the former option on the grounds that: submission of logbooks is rather abnormal among many other international commissions' regulations; there is a domestic law prohibiting the disclosure of precise information relating to the benefit of individual companies; and there is a priority and obligation of national scientists to analyse data and to report to CCAMLR.

6.28 A similar concern was expressed regarding the legal problems by several other delegations. However, the USA delegation noted that the obligation accepted under

international agreements normally supersedes national law and questioned whether such legal problems were real.

6.29 Representatives from members fishing in the Convention Area indicated their strong preference for the latter option (Paragraph 6.26). The discussion therefore concentrated on the degree of detail in which summary statistics should be presented. The majority of the Working Group had agreed that for both fish and krill a spatial scale of 1° longitude by 0.5° latitude was the maximum desirable and had further suggested a temporal scale of ten days.

6.30 In discussion the Scientific Committee could not reach agreement on this point. Dr Lubimova (USSR) indicated her view that the spatial scale of the STATLANT data was preferable, because the processing of the great volume of raw data would be an extra burden for the Secretariat of the Commission. Apart from this, submission of such data could create technical difficulties for the USSR as it would involve re-arranging an existing national system of reporting. The representative of Japan believed that the submission of such fine data is not necessary for the moment, especially for krill, since there were negative views on the usefulness of CPUE for abundance estimates and no model has been developed to utilise such fine data.

6.31 The remainder of the Scientific Committee agreed with the majority of the Working Group that the maximum (i.e. coarsest) desirable level of reporting would be on a spatial scale of 1° longitude by 0.5° latitude in ten day periods.

6.32 The justification for this view for krill data was that the current low state of relevant knowledge of krill biology and the need to develop or refine methods for estimating abundance dictated the need for fine scale data.

6.33 For fin fish, the experience of the French scientists in assessing the fin fish stocks around Kerguelen indicated the need for this level of detail.

#### Level of Sampling of Commercial Catches

6.34 The Working Group in paragraphs 56 to 60 of its report stated:

‘General fishery experience has shown that a point is quickly reached beyond which measuring a larger sample from a given catch, or measuring more samples from a local concentration of fishing activity, adds little information on the length

composition of the catches or population as a whole. The precise point depends on the spread of lengths within the aggregate of fish being sampled, the degree of the haul-to-haul or area-to-area variability, and the work involved in increasing the size of the samples, as compared with taking more samples. Typically, the optimum size of sample is 50 fish or less; although, because it can be difficult to take a truly random sample of a small number from a large catch, a reasonable operational guide may be a sample size of 75–100 fish per haul.

At the meeting of the *Ad Hoc* Working Group on Data Collection and Handling during the Hobart session of CCAMLR in 1983, it was suggested that a provisional target for the intensity of sampling should be, for each species, at an intensity of not less than one sample from each major area each month, or 200 fish per 500 tons caught (SC-CAMLR-II/INF.10). It was noted also, that on each fishing ground one sample per day was collected from the fishery around Kerguelen Island.

The present meeting did not have sufficient information to suggest modifications or to support these targets. It would probably be impossible to define exact sample size, but further information with a haul-to-haul or area-to-area variation, and the spread of sizes within a sample, should enable better sample sizes to be suggested. Sampling intensity should probably also depend on the magnitude of the fishery, increasing in terms of absolute numbers of samples, but decreasing as a proportion of the catch or as the size of the fishery increases.

The same considerations stated above also apply to krill sampling. The Japanese have a standard of one sample per day of 50 individuals from one haul, which the Group agreed was suitable for an initial specification and it was suggested that observation of the proportion of gravid krill in the sample would prove useful.

It was also suggested that the observation on size categories that are taken on all fishing vessels be recorded in the logbooks.’

6.35 The Scientific Committee agreed with these views.

6.36 The Scientific Committee agreed that it would now be appropriate to disband the *Ad Hoc* Working Group on Data Collection and Handling. The Committee noted that during discussion of other items of the agenda the setting up of a number of other working groups

had been recommended. Such groups should be able to take over such outstanding matters as remained under the terms of reference of the *Ad Hoc* group.

6.37 The Scientific Committee, noting that there were a number of practical difficulties associated with the submission of catch and effort data to the Commission, recommended that the Data Manager should visit the appropriate institutions in the countries concerned in the hope of facilitating progress on these matters.