

MANAGEMENT UNDER UNCERTAINTY

7.1 The Scientific Committee noted the steps which had been taken from last year (SC-CAMLR-XX, paragraph 7.1) to further develop the unified framework for providing management advice on all fisheries in the Convention Area. As part of the regulatory framework, fishery plans have been compiled and submitted to the Scientific Committee in SC-CAMLR-XXI/BG/32.

7.2 The Scientific Committee thanked the Convener of WG-FSA, Dr Everson, for his considerable intersessional effort in producing the first draft of species profiles of the most important commercial species, *D. eleginoides*, *D. mawsoni* and *C. gunnari*. These drafts covered all important aspects of the biology and fisheries of the two species which are relevant to fish stock assessment purposes. Based on comments provided by various participants during the meeting, the species profiles will be updated in the intersessional period. Revised versions will be submitted to WG-FSA at its next meeting in 2003.

7.3 Ukraine stressed the need to conduct further surveys in those areas of which little is known on the state of the stocks which have either been fished previously, such as *Lepidonotothen squamifrons* on Ob and Lena Banks (Division 58.4.4), and/or where IUU activities on longlining of *D. eleginoides* are currently likely to take place. Furthermore, Ukraine emphasised the need to extend surveys to by-catch species, such as *Gobionotothen gibberifrons* and *Pseudochaenichthys georgianus*, which may suddenly become target species of the fishery, as has occurred in 1977/78 around South Georgia when the abundance of the target species of the fishery, *C. gunnari*, was much lower than expected.

7.4 Australia supported this notion and stressed the need for surveys in yet unsurveyed areas, such as Subareas 88.1 and 88.2, where longlining for *Dissostichus* spp. is currently being conducted and catches are likely to increase in the near future. By-catch species which have not been assessed in areas for a long time, such as South Georgia, need to be included in data collection plans and assessments in the future. This would enable WG-FSA to better advise on the likely consequences of allowing the use of bottom trawl gear in areas, such as South Georgia, in order to reduce the by-catch of seabirds.

7.5 Other Members of the Scientific Committee emphasised that any consideration of the use of bottom trawls needs careful evaluation by the Scientific Committee. Not only do by-catch species need to be taken into account but also the impact of bottom trawling on benthic communities requires further consideration and studies. In this context, it was noted that changes to the ground tackle and the decrease in the size of the otter boards reduced the amount of benthos being caught from 9.6 to 1.6 tonnes without affecting the amount and composition of the fish being taken (Annex 5, paragraph 5.191).

7.6 Australia underlined that other aspects which require further consideration are the future development of the fishery plans. These are so far single-species plans. However, CCAMLR is different from other regional fisheries bodies in that Article II of the Convention specifies an ecosystem approach to fish stock assessment and management. This refers in particular to krill as the important prey species in the krill-dominated ecosystems and to *C. gunnari*, which is both an important prey species to CEMP species, such as Antarctic fur seals at South Georgia, Kerguelen and Heard and McDonald Islands, as well as an important predator of krill in the Atlantic Ocean sector.

7.7 The Scientific Committee agreed that the fishery plans should include summary statements of decision rules and requirements for ecosystem assessment.

7.8 Australia underlined that long time series of surveys, as are available in some areas, such as South Georgia, the South Shetland Islands and Heard and McDonald Islands, do help to better understand the dynamics of the species over space and time. This information is a prerequisite for successful fish stock assessment.

7.9 WG-EMM drew the attention of the Scientific Committee to the difficulties it has in predicting reliable trends in the krill fishery in the absence of reliable information pertaining to their future plans. The fact that scientists from only a few krill fishing nations attend WG-EMM and the voluntary nature of the submission of relevant data, is hindering its ability to provide in-depth information on developments in the krill fishery. Often, information is only anecdotal. In this regard, formal annual notification of a Member's intentions to participate in the krill fishery, such as that adopted for new and exploratory fisheries in the Convention Area, might facilitate identification of future trends in the krill fishery. A good example of how the necessary information can be submitted to CCAMLR is provided by the US fishing company which started krill fishing in the 2000 season.