A much better situation exists for the landing data on little tunny. In this case, the two databases show good comparability for most of the years, with very minor discrepancies until 2003. Following this something happened and data start to show discrepancies, which are particularly relevant in the last year.

Other inconsistencies exist for minor small tuna species in terms of reported landings, particularly for skipjack (Katsuwonus pelamis) in some countries and for some years.

Another important point, which has emerged from many parts of this report, is the correct classification of some species, either in terms of declaration of statistics or scientific identification according to the most updated zoological nomenclature.

As a matter of fact, it is clear that some discrepancies might be caused by catches declared, for instance, as one species to ICCAT or FAO and as another species to EUROSTAT. This is sometimes caused by two different offices manipulating the original data sets at national level, attributing different international codes to a particular vernacular name. This is likely to occur for small tuna species, because sometimes local vernacular names identify different species in the same way according to different geographical places. This issue needs to be put right, requesting the support of specialized scientific institutions.

A further problem is much more closely related to a scientific issue, already discussed in chapter 3.0. It concerns the classification of Auxis spp. in the Mediterranean (and possibly in the Black Sea if present) which, according to the latest scientific findings, should be correctly classified as Auxis rochei (bullet tuna – BLT). This is not to be underestimated, because currently most statistics concern Auxis thazard (frigate tuna – FRI) in all databases, while some catches of bullet tuna were also reported from time to time. This can create unwanted confusion in the statistics and needs to be solved by a correction to the data bank.

6. **CONCLUSIONS**

The history of small tuna fisheries in the Mediterranean and Black Seas after World War II appears rather unclear and complicated to define.

The common existing perception that these fishing activities are not particularly relevant either in terms of catches or revenues, is well established almost everywhere, with very few exceptions. This is also still affecting the importance given to the reporting of the catches. It is commonly believed that these fisheries are mostly subsistence activities, while, on the contrary, they are able to provide important production levels. The fleet catching small tunas is practically undefined or not identified in most of the countries, but it is generally known that thousands of small and medium size vessels, engaged in the small-scale, artisanal or
recreational fisheries, are carrying out activities targeting small tuna species, among others. Additional catches are obtained intermittently or as a bycatch in other fisheries.

Despite the fact that some Mediterranean and Black Sea countries are not reporting any catches (or some are only occasionally reporting a few catches), the fishery production related to all the small tuna species shows a total official reported landing of **83,386 tonnes in 2005**. The under-reporting is believed to be relevant, because of the landings which are scattered all along the coastline and the islands and among many thousands of small and medium size vessels; furthermore, the catches are sometimes passing directly from the fishers to consumers, without passing through the general markets. The majority of small vessels engaging in recreational fishery in many countries is not reporting the catches at all. As stated in chapter 4.0, the declared catches must be considered as the bare minimum of the real production, also taking into account that about 37 percent of the countries are not reporting catches (or sometimes reported a few catches of one species), while most of the small tuna species are distributed throughout the area, with different presence or concentrations. This implies that the total production might possibly reach about **150,000 tonnes** or more as a prudential estimate in the most productive years.

Considering that the total official production of only the four most relevant species was able to give an annual revenue of **168 million euros in 2005**, it is likely that the estimation of the real production might reach a level of about **300 million euros** in the best years. However, even considering only the official production and annual revenues, the value of these fisheries is quite relevant in the regional context.

A specific problem relates to the fishery targeting small tuna species in the Marmara Sea and in the Black Sea. Apart from Turkey, no recent data are present in any of the databases used for this study. The Black Sea had a very important and dramatic ecological crisis in the seventies and this certainly affected the small tuna species fishery, but now the environmental situation is improving and the level of catches reported by Turkey in that area is extremely relevant. Special effort should be devoted to obtaining data from the countries having fleets in the Marmara Sea and in the Black Sea, even if some of them are not members or ICCAT of GFCM.

An additional problem resulting from the non-identification of the fleets targeting these species is the fact that it is not possible to get any data on the fleet segmentation, the CPUE, the socio-economic parameters, etc. This prevents a reliable analysis of the fleet characteristics and the socio-economic aspects of this particular sector.

Therefore, the following points need to be dealt with by the competent RFMO (ICCAT and GFCM) or further investigated:

1. Revision of the exiting fishery statistics, with the purpose of eliminating or clarifying the existing discrepancies among the FAO, ICCAT and EUROSTAT databases;
2. Critical revision of the existing statistics in order to clarify the declaration by species when a discrepancy exists between one database and another or when a reported species, believed to be uncommon, is reported with high quantities;
3. Improvement of the statistical reporting for small tuna species, including them in all countries’ reporting systems and checking if the national statistical services are collecting data on these species;
4. A specific effort is required to improve the existing statistics with the catches from all the countries fishing in the Marmara Sea and in the Black Sea, possibly also including historical data;
5. Particular attention should be devoted to the data collection on the most abundant species, *Sarda sarda*, with in order to follow this fishery more closely and possibly define management approaches, including stock assessments;
6. Identification of the fleet segment concerned with the fishery of small tunas in all countries, following the “métier” approach for the data collection;
7. Pilot studies for the monitoring of catches of small tuna species obtained during recreational fishery or/and to estimate the bycatch of these species in other fishing activity concerned or/and to identify the various component in the mixed fisheries;
8. Pilot studies to define the economic and socio-economic aspects of fisheries targeting small tuna species, following a “métier” approach;
9. Detailed scientific investigations are needed to improve definition of several aspects of the biology of small tuna species in the various parts of the Mediterranean and the Black Seas; these studies should help in setting minimum size regulations when necessary;

10. A scientific study is needed at regional level to define the systematic situation of *Auxis*, getting proper samples from the various areas of the Mediterranean and the Black Sea and carrying out all the necessary studies to set a commonly accepted framework and a clear identification procedure if necessary;

11. General monitoring of the various species, including lessepsian migrants, would be quite useful to define the proportion in catches in all the various Mediterranean and Black Sea countries;

12. Periodic and regular joint meetings between ICCAT and GFCM are necessary to follow and monitor the small tuna fisheries appropriately over the years.
This study was undertaken upon request by the General Fisheries Commission for the Mediterranean (GFCM) and according to the suggestion made by the seventh meeting of the Joint GFCM/ICCAT Working Group on Large Pelagic Species. It summarizes the available information about different aspects of the small tuna species in the Mediterranean Sea and the Black Sea and provides data on their biology and ecology, their exploitation, including the fishery statistics by species, and the socio-economic aspects of these fisheries. It is generally known that thousands of small- and medium-sized vessels, engaged in small-scale, artisanal or recreational fisheries, are carrying out activities that also target small tuna species. In addition, catches are also obtained as a bycatch in other fisheries. The fishery production is estimated at a minimum of about 150,000 tonnes. Considering only the total official production for the four most relevant species, it is likely that the estimation of the real production might reach about 300 millions euros in the best years. A specific problem can be noted in relation to the small tuna species fishery in the Marmara Sea and in the Black Sea. Apart from Turkey, no recent data are present in any of the databases used for this study. The level of catches reported by Turkey in that area is, however, important. A secondary difficulty is the lack of data on fleet segmentation targeting these species, on catch per unit of fishing effort and on socio-economic parameters.