



Ministero delle Politiche Agricole e Forestali

DIPARTIMENTO DELLE POLICHE DI MERCATO
DIREZIONE GENERALE PER LA PESCA E L'ACQUACOLTURA

Italian National Program
under Council Regulation (EC) N° 1543/2000 and
Commission Regulation (EC) N° 1639/2001
as amended by
Commission Regulation (EC) N° 1581/2004

National Program 2007

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1. Introduction

1.1. General framework

The present document represents the Italian national programme for the collection of fishery data for the year 2006, according to the legal Community framework put in place in 2000 with the adoption of a Council Regulation¹ and a Council Decision², followed in 2001 by a Commission Regulation amended in 2004³ laying down the detailed rules of application.

In accordance with Article 3 of the implementing regulation, this national program includes the following components:

- (a) planned actions by article and with reference to the Community programme
- (b) expenditure analysis by article and by programme
- (c) for sampling, a detailed description of the strategies followed and the statistical estimates used, allowing assessment of precision levels and the cost-precision relationship.

As provided by Chapter I(A) of the Annex to Regulation (EC) No 1639/2001, the national programme is divided into the following three modules:

- (A) module of evaluation of inputs: fishing capacities and fishing effort;
- (B) module of evaluation and of sampling of catches and landings;
- (C) module of evaluation of the economic situation of the sector.

The present national programme covers the entire minimum programme.

Concerning the extended programme, it also includes:

- the GRUND scientific evaluation survey, which is deemed necessary for completeness of the fishery data collection programme in Italy and to guarantee the continuity with previous surveys carried out
- the CPUEs data series for catches and effort for demersal trawl fishery, as recommended by the STECF.
- Complementary parameters and more detailed disaggregation levels for the module of fishing effort
- Complementary parameters and more detailed disaggregation levels for the module of economic data

1.2. General description of the fisheries

The national fleet consists of about 14,3 thousands vessels, of which more than 9,300 are classified in the segment of passive gears less than 12 meters. The fleet is characterised by a strong multispecificity and multigear activity. The fishing sector appears highly fragmented in

¹ Council Regulation (EC) N° 1543/2000 of 29 June 2000 establishing a Community Framework for the collection and management of the data needed to conduct the common fisheries policy – OJ L 176,15.7.2000, p.1.

² Council Decision N° 439/2000 EC of 29 June 2000 on a financial contribution from the Community towards the expenditure incurred in Member States in collecting data, and for financing studies and pilot projects for carrying out the common fisheries policy – OJ L 176, 15.7.2000, p.42.

³ Commission Regulation (EC) N° 1581/2004 of 27 August 2004 Amending Regulation (EC) N°1639/2001 establishing the minimum and extended Community programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) N° 1543/2000 – OJ L 289/6 27.8.2004, (subsequently called the “implementing regulation”).

many regions along the coast and there are many large structural and technical differences in vessels from different geographical areas. The Italian fishing fleet is generally classified into the following segments: bottom trawlers, purse seiners, midwater pair trawlers, dredges, polyvalent vessels (using a combination of passive and mobile gears), vessels using passive gears, long liners. The bottom trawlers represent the most important segment of the Italian fleet in terms of production (32% of total landings). The main target species are shrimps, hakes, mullets, nephrops, cuttlefishes. Small-scale fishery is the most relevant Italian fleet segment in terms of number of vessels, representing 65% of national total. Small scale fishery accounts for more than a quarter of the national value of landings. Even if average incomes are low, these vessels represent an important economic resource in some geographical areas with a high level of dependence on fishery.

Table 1.1 gives an overview of the Italian fisheries covered by this Program

2. Participating institutes

2.1. National correspondent

The Italian national correspondent pursuant to Article 6(3) of the implementing regulation is:

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2.2. Participating institutes

In 2006 a call for tender will be launched for the implementation of the 2007 National Program.

3. Module C - Fishing capacities

3.1. MP - Planned sampling

To determine the fishing capacity of the Italian fleet, the following parameters will be evaluated:

- 1 Total number of vessels
- Average value of the following parameters for each segment:
 - 2 Gross tonnage
 - 3 Maximum continuous engine power of main engine in kW
 - 4 Age of vessel, calculated on the basis of hull age

The data for all parameters will be referred to the fishing segments as described in Appendix III of the implementing regulation.

Data will be broken down by GFCM/FAO statistics divisions and will be updated annually.

Data will be gathered exhaustively for all parameters. The data source is the Fishing Licenses Archive (ALP) kept by the Directorate-General of Fisheries and Aquaculture of the Ministry of Agricultural and Forestry Policies (MIPAF).

3.2. MP - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

3.3. EP - Planned sampling

No data collection will be carried out within the framework of the extended program.

4. Module D - Fishing effort

4.1. MP - Planned sampling

Fuel consumption

Fuel consumption will be expressed by volume (litres) and cost (euro/litre). The values recorded will allow an estimate of average fuel consumption per vessel for each fishing segment.

The data will be collected by type of fishing techniques defined in Appendix III of the Regulation n. 1581/2004 and will be reported according to level 3 of geographical disaggregation defined in appendix I (GCFM/FAO statistics divisions).

Data on fuel consumption will be reported on an annual basis.

Data on fuel consumption will be collected according to sampling procedures making it possible to reach statistically significant sampling estimates with 10% maximum permissible error (95% confidence level).

The fuel-consumption parameter is one of the variables covered by the economic-data sample survey (Module C – Evaluation of the economic situation of the sector). The methodology is described in Annex III. Cost for the evaluation of fuel consumption is part of the overall cost of the economic survey.

Fishing effort by type of technique

The fishing effort by type of technique is measured by the weighted sum of the fishing days associated with an area and a specific period. Each day is weighted with a measuring unit (GT and kW) representing the nominal fishing power of each vessel.

The data will be collected by type of fishing techniques defined in Appendix VIII of the implementing regulation. In addition effort by technique and by segment will be reported following appendix III of the implementing regulation.

Data on fishing effort by type of technique will be reported according to level 3 of geographical disaggregation defined in appendix I (GCFM/FAO statistics divisions) and on a quarterly basis.

Data related to fishing effort will be collected according to sampling procedures making it possible to reach statistically significant sampling estimates with 10% maximum permissible error (95% confidence level).

This parameter is one of the variables covered by the sample survey for estimation of landings (weight and value) by species (Module B – Evaluation and sampling of catches and landings).

The methodology is described in Annex II. Cost for the evaluation of fishing effort by type of technique is part of the overall cost of the landing survey.

Specific fishing effort

The specific fishing effort is defined as the effort associated with species of special interest. The species to be considered are listed in appendix VI of the Regulation 1581/2004.

The effort must be recorded by fishing technique, but account is to be taken only of days when catches of predefined stocks exceed specified thresholds (see annex I, Methodology, for the list of stocks and the relevant catch limits). Two types of catch limits will be used. They are defined as the proportion of total catches accounted for by catches of the relevant species. The first limit, or threshold value, is used to identify the target species, whereas the second indicates the catch limit of a species which, if exceeded, gives rise to a “by catch” consideration of that species. Essentially, there will be two specific fishing-effort parameters for each species, by virtue of the distinction between fishing days on which the species is deemed a target species and fishing days on which it is accounted for on a “by catch” basis.

The data will be collected by separating types of fishing techniques specified in appendix VIII of the implementing regulation and will be reported according to level 3 of geographical disaggregation defined in appendix I (GCFM/FAO statistics divisions) on a quarterly basis.

Data related to specific fishing effort will be collected according to sampling procedures making it possible to reach statistically significant sampling estimates with 25% maximum permissible error (95% confidence level). Description of sample survey is reported in Annex I.

Information collected by logbooks will be used only to cross check the estimates. In fact, the logbook is compulsory in the Mediterranean only for a minority of fleet (vessels of overall length exceeding 10 metres) and will contain production information only where vessels retain on board quantities exceeding 50 kg live-weight equivalent of the species included in a specific list (Annex VII of Regulation (EC) No 2737/1999).

In the case of the specific fishing effort moreover, the species required by Regulation EC n. 1639/01 are different from that provided by logbook framework.

Moreover, even for the common species, the logbook information is not sufficient for evaluation of the specific fishing effort. The threshold value on which the assignment of a fishing day to a specific species is based is determined by the catch proportion and not by a maximum catch quantity, so that if logbook recording is not compulsory it does not necessarily follow that analysis of the specific fishing effort is not required. The relevant survey must take account of all the fleet's fishing days and be based on an examination of the make-up of total catches per day of activity.

Financial form related to fishing effort reports only cost for this survey.

A pilot survey to estimate fishing effort by fishing activity

Background

In order to integrate the fishery-based approach in the future collection of bio-economic data, a matrix approach has been suggested during a specific workshop (Nantes, May 2005).

Following this workshop, Italy evaluated its national fishing activity components and carried out some analysis (test the economic parameters) in order to propose adequate and stable fleet segmentation (length vessel classes).

These analysis have been presented during the RCM for Mediterranean countries (*Italian proposal on the fishery-based approach (DCR revision): proposal for a Mediterranean classification of fishing activities*, Draft for the Mediterranean meeting, Kavala, 2005).

This document identified several problems to fill the matrix. Basically these problems refer to the estimates of effort for each cell of the matrix, in other words, the estimates of effort, for each of the vessels present in the fleet register detailed by the different fishing activities they have practised during the year. These problems have been stressed also during the last workshop on fleet segmentation (Nantes, March 2006).

During this last meeting it was also stated that: "... The risk being that most of the MS would not be able to fill the matrix using the fleet-based approach, the group strongly recommends MS to obtain the pertinent data, for example by testing the fishing calendar (sampling) programme proposed above as soon as possible". It was also suggested that: "...MS includes necessary actions and cost in their National Programme 2007 to collect relevant data. The group recommends that the Commission consider this initiative as having the up most importance in view of the next DCR Regulation".

Following these recommendations, Italy proposes the following project to be included in the 2007 National Program. The implementation of such program is considered relevant in order to follow the matrix approach as it will be probably required by the next DCR.

Project proposal

The Italian fishing fleet consists of about 15 thousand vessels, of which about 5 thousand are more than 12 meters long.

The present licence scheme does not allow for the identification of the prevalent fishing technique, as it only considers the list of all the authorized gears (more than 70% of the Italian licences allow the use of more than one fishing techniques).

The logbook is available only for a minority of the fleet and not all the fishing operations must be recorded (>50 kg).

Moreover, in order to fill the matrix, the composition of fishing effort per fishing activity should be known, therefore even the information on the prevalent fishing technique (as it is required now by the present DCR) will not be sufficient.

In order to get the information on effort per fishing activity, Italy proposes to carry out a survey on the vessels more than 12 meters⁴, using the present data collectors' network⁵.

In particular this field survey will be aimed to collect information on:

- the fishing activities practised during one calendar year (2006)
- the time spent in each fishing activities (in terms of months)
- the stability of fishing practises from one year to another

⁴The matrix approach is considered feasible in the Italian context, provided that a yearly census of the fleet is established. The applicability is limited to vessels > 12 meters, as (a) coverage of all the fleet will be too expensive and (b) vessels <12 meters are characterised by a multi-purpose activities (E. Sabatella & all., 2005).

⁵ A well established network of about 60 data collectors is currently used to collect elementary data on landings and economic parameters. This network is composed by people established in the fishery world, who have working relationship with relevant associations and fishermen service centres. Due to their closeness to the industry, people in these positions can easily contact ship-owners.

Another relevant aspect that the suggested study will cover is the association of effort per fishing activity to the fishing areas. Until now, fishing effort per fleet segment is associated to major areas (administrative regions and GFCM Geographical Sub Areas). A deeper knowledge of the spatial distribution of fishing effort is considered useful for fishery management purposes, especially considering that instruments currently used for regulation of the Mediterranean fishing activity are the effort and selectivity control. This is especially relevant for demersal species in order to get the information on different composition of the species assemblages with depth.

Project phases

The survey will be carried out in 2007 and will collect information on the 2006 activity.

A meeting will be organised at the beginning of the year with data collectors to explain the aim of the survey and to discuss technical aspects. Contacts will be established with fishermen and vessels owners' associations to ask for their availability in answering the questionnaire.

A specific software will be developed to fill the questionnaire, linked with a database to store elementary data and to make necessary aggregations.

The main phases of the project and the time schedule are presented in the following table:

	I quarter 07	II quarter 07	III quarter 07	IV quarter 07
Definition of the questionnaire				
Identification of the list of vessels to be interviewed				
Meetings with data collectors and fishermen associations				
Interview on the 2006 activity				
Development of the software and the database				
Data processing				
Data analysis				
Final matrix with effort data for each fishing activity				

The final outputs of the project will be:

- the compilation of the matrix with effort data (months at sea) for each of the fishing activity agreed at the Mediterranean regional level
- an analysis on the cost-effectiveness of the study in order to verify what kind of actions will be necessary to update the information achieved for the following years (from 2008 onwards).

References

Commission Staff Working Paper, Report of the Ad Hoc Meeting of independent experts on Fleet-Fishery based sampling, Nantes, 23-27 May 2005

Final report of the Training Group on Fleet-based Approach , Nantes, 13 – 17 March 2006

E. Sabatella, A. Abella, C. Manzi, P. Carpentieri, Nicola Sassu, *Italian proposal on the fishery-based approach (DCR revision): proposal for a Mediterranean classification of fishing activities*, Draft for the Mediterranean meeting, Kavala, 2005

4.2. MP - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

4.3. EP - Planned sampling

Regarding the fishing effort by type of technique:

(a) Complementary parameters:

- fishing effort for longliners will be measured as number of hooks × time at sea;
- data on fishing effort of traps, pots and pond nets will be collected as number of gears at sea, multiplied by time (number of days of each gear at sea on an annual basis).

(b) Disaggregation levels:

- fuel consumption data will be gathered in a way which makes it possible to estimate the average fuel consumption per vessel within each segment defined in Appendix IV (but length classes < 10 m and 10<12 m will not be considered separately), on a quarterly basis;
- effort data by segment will be gathered with reference to the segments defined in Appendix IV (but length classes < 10 m and 10<12 m will not be considered separately);
- effort data collected within the minimum program will be gathered on a monthly basis, and referring to the level of geographical disaggregation 4 of Appendix I (GFCM/Geographical Sub Areas).

Regarding the specific fishing effort:

- red mullet (not considered in Appendix VI) will be considered for the evaluation of specific fishing effort
- effort will be evaluated in terms of hours at sea and gears characteristics (length of the nets, number of hooks), on the basis of single fishing operation as sampling reference unit.

4.4. EP - Non-conformities

Activities will be performed as required by the DCR.

5. Module E - Catches and landings

5.1. MP - Landings - Planned sampling

Landings (quantity and value) of all stocks (including those listed in appendix XII of the implementing regulation) will be evaluated.

Conversion factors will not be applied to landing-weight-based quantities as all species are landed ungutted. Conversion factors could be necessary only for marginal share of landings. For these species, quantities will be converted to live weight by the FAO and Eurostat conversion factors⁶.

⁶ FAO Fisheries Circular No 847 rev. 1.

Landings by species (weight and value) will be disaggregated in accordance with the basic segmentation of vessels for capacities (appendix III of the Implementing Regulation).

Within the minimum programme estimate of overall annual commercial landings will be provided distinguishing the geographical origin of the catches according to level 2 of geographical disaggregation of Appendix I of the implementing regulation.

Commercial landings for all stocks will be reported on a quarterly basis.

Commercial landings will be assessed on the basis of a sampling procedure, as logbook is compulsory in the Mediterranean only for a minority of fleet (vessels of overall length exceeding 10 metres) and will contain production information only where vessels retain on board quantities exceeding 50 kg live-weight equivalent of the species included in a specific list (Annex VII of Regulation (EC) No 2737/1999).

The methodology of the survey was approved by Eurostat during the meeting of the working group “fishery statistics” held in Luxembourg, 18-19 February 2002. The full methodology is reported in annex II⁷.

The estimates will be statistically significant with 10% maximum permissible error (confidence level 95%) for the stocks listed within appendix XII of the implementing regulation and level 1 (25%) for other species.

The sample survey will not cover the entire Italian fleet. Vessels fishing beyond the straits (or “ocean-fishing fleet”) will be excluded from the sample base. The same applies to vessels licensed for tuna fishing and associated in the “Associazione Produttori Tonnieri Salernitani. The landing data for such vessels will be recorded on a census basis and taken from the compulsory documentation.

Data related to tuna farming will be provided by a specific data collection implemented by the national administration in accordance with ICCAT procedures and, as such, will be excluded from the sample survey.

The NP does not take into account landings of foreign vessels because they are not present in Italy.

5.2. MP - Landings - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

5.3. EP - Landings - Planned sampling

Data concerning the stocks mentioned in Appendix XII of the implementing regulation will be collected on a monthly basis, by separating the landings according to the types of techniques defined in Appendix IV (but length classes < 10 m and 10<12 m will not be considered separately), and by the geographical level 4 according to Appendix I.

⁷ The present survey integrates the ongoing sample survey Italy is carrying on in order to fulfil Regulation (EC) No 1382/91 as amended by Regulation (EC) No 2104/1993. However, the disaggregation level of results required by Regulation (EC) No 1543/2000 differs from that stipulated in Regulation (EC) No 1382/91. Therefore, results required by regulation EC no. 1543/00, as recommended by the Consultant and SGRN, imply an increase of the sample size.

5.4. EP - Landings - Non-conformities

Activities will be performed as required by the DCR.

5.5. MP & EP - Discards - Planned sampling

Discard data will be updated once every three years.

Average volume and length composition of discards for fleets other than trawlers have been estimated in 2005, while discards of the trawler fleet have been estimated in 2006. Therefore no discard sampling is planned for 2007.

5.6. MP & EP - Discards - Derogations and non-conformities

No discard sampling is planned for 2007. See table 5.2 for long-term planning triennial estimates.

5.7. MP - Recreational - Planned sampling

A specific pilot study was carried out in 2003 for overall evaluation of recreational bluefin tuna fishing. Routine data collection started in 2004 and will continue in 2007 following the same methodology.

According to the pilot study, it appears quite clear that monitoring the tuna sport fishing activity is a difficult exercise, showing several problems.

The first issue is related to the high importance of the seasonal presence of the bluefin tuna and its dependence upon the meteorological and climatic condition. These facts are strongly conditioning the fishing activity and the distribution of the fishing fleet along the Italian coast.

As far as the monitoring of this sector is concerned, the current official system based on the mandatory TR forms appears quite inefficient and absolutely unreliable (catches were declared only in one single harbor). Of course, more efficient monitoring or landing control systems necessarily imply higher costs.

The pilot study also developed a cost/efficiency comparative analysis of the various approaches to study the sector. According to the results of this cost/efficiency assessment, the best approach methods seems to be the log-books supported by controls or the continuous monitoring. Both methods are able to provide high quality data but with high costs.

Therefore, in 2007, the routine data collection system will be based on a strong collaboration with sport fishermen and their organisation and Clubs (they will be asked to fill appropriate log books) integrated with controls from an ad hoc scientific staff.

Bluefin tuna catches from recreational fishery will be collected in weight and number by:

- annual
- geographical area as defined Appendix 1, level 2.
- distinguishing catch of fish below and above 10 kg.

5.8. MP - Recreational - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

5.9. EP - Recreational - Planned sampling

No data collection will be carried out within the framework of the extended program.

5.10. MP - Planned activities on the monitoring of eel (*Anguilla anguilla*) catches

The European eel (*Anguilla anguilla*) is included in the Italian national programme for the collection of fishery data for the year 2007, on the basis of the fact that the species has been introduced by the Regulation (EC) No 1581/2004, amending Regulation N. 1639/2001, that requires the monitoring of eel catches for the three life stages (glass eel, yellow and silver eel) for all areas in the Mediterranean.

Eel (*Anguilla anguilla* L.) exploitation in Italy concerns all continental stages, i.e. glass eel, yellow and migratory silver eel. Glass eel fishing takes place in river estuaries, channel mouths and low river stretches, while adult eel (both yellow and silver) fisheries are found in main rivers and lakes. A distinctive exploitation pattern for eel in Italy is coastal lagoon fishery.

Governmental management framework for eel in Italy results fragmented, because the Ministry of Agriculture and Forestry Politics manages salt and brackish waters, while inland waters are in charge of local Administrations, i.e. Regions or Provinces. With regards to glass eel fishery regulation, in both departments a licence is necessary, which has to be renewed annually, in which quantities to be fished have to be declared. Fishermen must notify their catches and sales; destination of glass eels is restricted to aquaculture and restocking. With regards to inland waters eel fisheries, gears vary from region to region, also in relation to local traditions, and are specified by each Administration.

Eel total landings (adult eel only, yellow and silver cumulated) for 2003 amounted to 307,3 t in coastal lagoons and 138,3 t in lakes and artificial basins (Istituto Nazionale di Statistica), while glass eel recruitment has shown a steady decrease in the course of the last fifteen years, as shown by monitoring carried out within research programmes supported by Ministry of Agriculture and Forestry Politics (2nd -6th Three-years research plans, law 41/82). There is a general agreement in Italy to the fact that this species is considered to be declining by Reference bodies such as ICES and EIFAC. For this reason, in the course of 2005 and 2006, Italy has given growing notice to the discussion occurring at different levels, i.e. international workshops (Workshop on Data Collection for the European eel, Sweden, September 2005; ICES/EIFAC Working Group on Eel meeting, FAO Rome, January 2006), Regional meetings organised by the Commission, STECF meetings. Furthermore, great attention has been given to the “Proposal for a Council Regulation establishing measures for the recovery of the stock of European Eel” presented by the Commission (COM(2005) 472 final), to which discussion at the national level has followed and is still underway.

With specific reference to the Eel Data Collection, the Workshop held in Sweden in September 2005 has outlined the minimum requirements on sampling levels for fishery-dependent and fishery-independent data, for the three exploited life stages (glass eel, yellow eel and silver eel), in both inland and coastal waters. Some key topics, relevant to the actuation of the Data Collection, have been brought up, and primarily:

- the individuation of the basic spatial disaggregation units, that have been identified in the River Basin Districts and adjacent coastal waters (RBD), as currently developed under the Water Framework Directive (2000/60)
- incomplete coverage of the registration of fishing capacity, effort and landings, that often miss inland waters
- requirements of the catch composition sampling

The current DCR does not provide exhaustively for the collection of these data for eel. Notwithstanding this, Italy feels the need to give urgent attention to the collection of data relevant to eel management, also in the light of the key elements included in the Proposal for a Council “Regulation establishing measures for the recovery of the stock of European Eel”. The establishment of a national eel management plan whose main objective should be the achievement of a quantified escapement of adult silver eel from each river basin, shall require a sound data base, in order to put in place short and long term measures to ensure the achievement of this objective.

Therefore, Italy considers that a specific part of the national programme should be set up, to establish a monitoring framework for registration of fishing capacity, fishing effort and landings in Italy.

No proposal is put forward in the NP for the sampling of eel, because it is felt that sampling targets in terms of spatial units, sampling frequency, number of samples to be measured and aged, should have to be agreed later, on the basis of the results of a first phase of characterization.

A “census” program is therefore proposed to set – up the sampling survey. The program should consider, on the base of the topics before mentioned, eel fishery distribution, for each of the three life stages (glass-eel, yellow and silver eel), environments (salt, brackishwater and freshwater), and fishing gears (including “lavorieri”).

6. Module F - Catches per unit effort

6.1. MP - Planned sampling

Italian national programme for 2002 included a review of the utility of the CPUE time series and effort data which have been used during the years 1995 to 2000 by scientific assessments working groups. This review has been forwarded to the Commission, together with the Italian proposals on CPUE data series on the basis of the results gained from the study.

STECF analysed the results of the study and suggested that the Italian national programme should contain data series for catches and effort for the following fleet:

1. bluefin tuna traps (MP)
2. bluefin tuna purse-seiners (MP)
3. swordfish long line (MP)
4. demersal trawl fishery (EP)

CPUE data series for swordfish long line (MP)

Data series on CPUE for swordfish fished with surface long lines will be calculated.

Catch and effort for longliners targeting large pelagics will be provided in kg per hooks deployed .

Ad hoc questionnaires will be used to collect the following information on the number of hooks per day.

Total cost for this programme consists in two parts:

- questionnaires on activity, landings and effort specification (gears, number of hooks, ecc.)
- elaboration of elementary data and calculation of CPUE figures.

CPUE data series for bluefin tuna purse-seiners (MP) and bluefin tuna traps (MP)

Landings of bluefin tuna and effort data will be derived from compulsory logbooks and TR modules kept by the Ministry of Agriculture and Forestry Policies, General Directorate of Fisheries and aquaculture.

6.2. MP - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

6.3. EP - Planned sampling

CPUE data series for demersal trawl fishery (EP)

Landings for demersal trawl fishery will derive from the landing's survey and they will be integrated with information from the triennial evaluation of discards to obtain catches per species. Fishing effort (average days at sea per gross tonnage) will derive from the effort module.

CPUE indexes will be calculated for the following species:

Norway lobster	<i>Nephrops norvegicus</i>
Hake	<i>Merluccius merluccius</i>
White shrimp	<i>Parapenaeus longirostris</i>
Red mullet	<i>Mullus barbatus</i>

Regarding specific fishing effort, it is available only for sole and Norway Lobster (see appendix VI of the implementing regulation). Therefore, further work is necessary to estimate specific fishing effort of the remaining species listed above. This work justifies the personnel cost inputted in the financial form.

6.4. EP - Non-conformities

Activities will be performed as required by the DCR.

7. Module G - Scientific evaluation surveys

7.1. MP - Planned Priority 1 surveys

MEDITS trawl-survey

The challenge of scientific trawl-surveys is to provide data useful for describing and quantifying changes in the fish populations, through indices of demography, mortality, spatial occupation, biological traits (e.g. Fisboat project; Petitgas, 2004), thus contributing to the development of assessment and management advice tools.

These indices, when estimated for the different fraction of the populations can allow to tracking changes in recruitment strength and spawning stock biomass throughout the time. This task, together with the annual estimation of total mortality, growth parameters (e.g. from length-frequency distribution analysis), sex-ratios and average length at maturity, can allow the formulation of a framework that incorporates stock assessment (e.g. population model by simulation technique) and fish community indicators.

Within this general frame, the aim of MEDITS survey is to produce, for a pool of target species (38), abundance indices by species (in number of individuals and biomass per square km; i.e. N/km² and kg/km²) and length frequency distribution (splitted by sex and maturity stages) by depth macrostratum (shelf and slope) and geographical sub-area (FAO/GFCM Geographical sub-areas, GSA).

In the table A are reported the target species for the Medits Projects 2007.

In accordance with the requirements of Chapter III (G) and the Annex XIV to the implementing regulation, the Italian data collection program foresees the continuation of the MEDITS survey, principally in the perspective of obtaining information comparable among the various Italian areas and with other Mediterranean countries, because this survey derives from a EU project started in 1994 at European Mediterranean level (Bertrand et al., 2002).

There is also the willingness to work together with researchers from other countries of the East side of the Adriatic.

Table A: Medits species lists

Scientific name	Code	English name
<i>Aspitrigla cuculus</i>	ASPI CUC	Red gurnard
<i>Boops boops</i>	BOOP BOO	Bogue
<i>Citharus linguatula</i>	CITH MAC	Spotted flounder
<i>Eutrigla gurnardus</i>	EUTR GUR	Grey gurnard
<i>Galeus melastomus</i>	GALU MEL	Blackmouth catshark
<i>Helicolenus dactylopterus</i>	HELI DAC	Rockfish
<i>Lepidorhombus boscii</i>	LEPM BOS	Four-spotted megrim
<i>Lophius budegassa</i>	LOPH BUD	Black-bellied angler
<i>Lophius piscatorius</i>	LOPH PIS	Angler
<i>Merluccius merluccius</i>	MERL MER	European hake
<i>Micromesistius poutassou</i>	MICM POU	Blue whiting
<i>Mullus barbatus</i>	MULL BAR	Red mullet
<i>Mullus surmuletus</i>	MULL SUR	Striped red mullet
<i>Pagellus acarne</i>	PAGE ACA	Axillary seabream
<i>Pagellus bogaraveo</i>	PAGE BOG	Blackspot seabream
<i>Pagellus erythrinus</i>	PAGE ERY	Common pandora
<i>Phycis blennoides</i>	PHYI BLE	Greater forkbeard
<i>Raja clavata</i>	RAJA CLA	Thornback ray
<i>Scyliorhinus canicula</i>	SCYO CAN	Smallspotted catshark
<i>Solea vulgaris</i>	SOLE VUL	Common sole
<i>Spicara flexuosa</i>	SPIC FLE	Picarel
<i>Spicara smaris</i>	SPIC SMA	Picarel
<i>Trachurus mediterraneus</i>	TRAC MED	Mediterranean horse mackerel
<i>Trachurus trachurus</i>	TRAC TRA	Atlantic horse mackerel
<i>Trigla lucerna</i>	TRIG LUC	Tub gurnard

<i>Trigloporus lastoviza</i>	TRIP LAS	Streaked gurnard
<i>Trisopterus minutus capellanus</i>	TRIS CAP	Poor-cod
<i>Zeus faber</i>	ZEUS FAB	John dory
<i>Aristeus antennatus</i>	ARIT ANT	Blue and red shrimp
<i>Aristaeomorpha foliacea</i>	ARIS FOL	Giant red shrimp
<i>Nephrops norvegicus</i>	NEPR NOR	Norway lobster
<i>Parapenaeus longirostris</i>	PAPE LON	Deep-water pink shrimp
<i>Eledone cirrhosa</i>	ELED CIR	Horned octopus
<i>Eledone moschata</i>	ELED MOS	Musky octopus
<i>Illex coindetti</i>	ILLE COI	Broadtail squid
<i>Loligo vulgaris</i>	LOLI VUL	European squid
<i>Octopus vulgaris</i>	OCTO VUL	Common octopus
<i>Sepia officinalis</i>	SEPI OFF	Common cuttlefish

References

Bertrand J., Gil de Sola L., Papaconstantinou C., Relini G., Souplet A. (2001) - The general specifications of MEDITS surveys . Sci. Mar., 66 (Suppl.2): 9-17.

Petitgas P. (coordinator). 2004. FISBOAT . Fishery Independent Survey-Based Operational Assessment Tools. European Union, 6th Research Framework Programme, Priority 8.1 Modernisation and sustainability of fisheries, Specific Target Research Project, Contract no. 502572, website: <http://www.ifremer.fr/drvecohal/fisboat/index.htm>.

The Tuna tagging project

The main objectives of the present research programme is to investigate the bluefin tuna pre and post-spawning migratory movements in the Mediterranean, with particular reference to the events occurring in the eastern Mediterranean and their interaction with the rest of that sea and the Atlantic Ocean, and to improve the knowledge on the existing relationships between environmental parameters and CPUE series, according to the decision taken at the meeting held in Bari on 4-6 April 2005 by the Planning Group on Tuna Tagging.

Essentially the same number of surveys of 2006 are foreseen in the 2007 program. However some changes have been proposed (report of the second meeting of the Planning Group of tuna tagging in the Atlantic and Mediterranean Sea, Malta March 2007). For pop-up satellite tag surveys, and given the fact that most of the tags were not implanted during 2005, the total number of PSAT tags being purchased have been reduced. In some cases the cost of refurbishment of old tags has been budgeted, as well as costs for purchasing fish increased due to lower number of fish being donated. In the case of the sonic tracking survey, more days at sea are envisaged to avoid not reaching the target sample size due to low catch rates with trolling gear. Electronic and conventional tagging surveys are detailed in tables B and C, respectively.

Due to the reduction of budget for conventional tagging of BFT juveniles, it has been decided that, in these conditions, it is not useful carrying out this activity. Alternatively, it is proposed to do an archival tagging survey in the Bay of Biscay with the budget of the three surveys devoted to BFT juveniles, aiming at calibrating the CPUE indices of ages 2 and 3 in the Bay of Biscay.

Table B – BFT tagging programme 2007 (pop-up satellite and sonic tags)

Objectives	Type of tags	Fishing area	Fishing period	Country	Tagging place	Gear	Tagging period	Programmed time	Expected pop-up date	Number/size of fish
Refine CPUE from Bait boat	Sonic (archival?)	Bay of Biscay	Jun-Sep	Spain	Bay of Biscay	Trolling	Jul-Aug 2006	-	-	n=10 ; 10 kg
	Archival?	Bay of Biscay	Jun-Sep	Spain	Bay of Biscay	Baitboat	Jul-Aug 2006			
- Refine CPUE from Tuna trap, Spanish, Italian and Japanese longline - Mixing rates	pop-up satellite	East Atlantic	Apr-Aug	Ireland	Irish waters	Sport fishing	Sep 2007	270 days	May 2008	n=5 ; 200 kg
		East Atlantic	Apr-Aug	Portugal	Algarve	Tuna trap	Jul 2007	300 days	April 2008	n=3 ; 100 kg
		West Med	Apr-Aug	Spain	Cartagena	Tuna pens	Jul 2007	300 days	April 2008	n=10 ; 100 kg
		Central Med	Apr-Aug	France	Corsica	Sport fishing	Sep 2007	270 days	May 2008	n=10 ; 80 kg
		Central Med	Apr-Aug	Malta	Malta waters	Tuna pens	Jul 2007	300 days	April 2008	n=5 ; 100 kg
		East Med	Apr-Aug	Italy	East Med	Purse seine	Jun 2007	310 days	April 2008	n=20 ; 100 kg
		East Med	Apr-Aug	Cyprus	East Med	Tuna pens	Nov 2007	200 days	May 2008	n=10 ; 100 kg

Table C – BFT tagging programme 2007 (conventional tags)

Fishing area	Tagging period	Country	Tagging place	Gear	Expected number/size of fish
East Atlantic	Jun-Sep	Portugal	Algarve	Tuna Trap	Opportunistic*/ <6.4 kg
	Jun-Sep	Spain	Bay of Biscay	Sport Fisheries	Opportunistic*

The Swordfish tagging project

The Italian National Program for 2007 will adopt the joint European tagging program proposed in the second meeting of the Planning Group of tuna tagging in the Atlantic and Mediterranean Sea (Malta, March 2007). In this meeting it was stated what follows.

In order to clarify the uncertainties regarding population parameters, stock boundaries, mixing rates and stock structure, the following tagging operations will be carried out in 2007:

- Conventional (spaghetti-type) tagging on juvenile animals (0-2 yrs old) in the Mediterranean (eastern, central and western) and on both, juvenile and adult fish in the central Atlantic, around the equator zone (5° S – 15°N).
- Pop-up tagging on adult fish in the: (a) eastern Mediterranean, (b) western Mediterranean and the E. Atlantic around the Canaria – Azores area.

It should be noted that due to technical difficulties, pop-up tags have been only recently employed for tagging swordfish and it is the first time that they will be used for this species in Europe. However, taking into account that they can provide important information on stock delimitation and mixing, it was decided to utilize them in the 2007 survey.

Taking into account the existing fisheries, the following tagging schemes are suggested:

Table D – SWO tagging programme 2007 (conventional tags)

Area	Country	Tagging period	Expected number of tags to be released
E. Mediterranean	Greece	Oct-Dec	~150
C. Mediterranean	Italy	Oct-Dec	~150
W. Mediterranean	Spain	Oct-Dec	~150
C. Atlantic	Spain	Jan-Dec	~200
N. Atlantic	Portugal	Jan-Dec	Opportunistic*

*No budget is requested for opportunistic tagging

7.2. MP - Derogations and non-conformities

Concerning the MEDIT survey 2007, no changes are foreseen in the operational protocols (gear, target demersal species, etc...) compared with 2006.

Concerning the tuna and swordfish tagging programs, all changes in the implementation of the surveys are in agreement with the Planning Group of tuna tagging in the Atlantic and Mediterranean Sea (see report of the second meeting , Malta March 2007).

7.3. EP - Planned Priority 2 surveys

GRUND

The 2007 Italian data collection programme retains the GRUND project with no modifications with respect to 2006 survey.

The total number of hauls is the same of those in the MEDITS project for Italian seas (750).

The number of operational units is seven (like the FAO/GFCM Geographical sub-areas), with a single motor vessel for each area using nets and mesh sizes similar to those employed for commercial fishing in the area; this means that full data comparability will be achieved within each large FAO/GFCM Geographical sub-areas and the data will also be comparable with that of commercial trawling in the same area.

The total number of hauls (750) will be distributed among the seven FAO/GFCM Geographical sub-areas in accordance with the basic principle of the data-collection regulation, in proportion to commercial trawl catches from the same geographical area and to the surface area of each geographical area.

GRUND PROJECT						
<i>FAO/GFCM Geographical sub-areas</i>	<i>Trawl-fishing production</i>		<i>Estimated area</i>		<i>Number of hauls</i>	
	<i>tonnes</i>	<i>%</i>	<i>km²</i>	<i>%</i>	<i>No</i>	<i>%</i>
9 – Ligurian/Upper Tyrrhenian	10 639	9	40 000	18	115	15
10 – Lower Tyrrhenian	7 217	6	17 000	8	70	9
11 – Sardinia	3 020	3	27 000	12	70	9

16 – Sicilian Channel	28 000	24	50 000	22	170	23
17 – Upper and Mid-Adriatic	40 618	34	59 000	26	170	23
18 – Lower Adriatic	18 000	15	16 000	7	85	11
19 – W. Ionian	10 996	9	14 000	7	70	9
TOTAL	118 490	100	223 000	100	750	100

The form in which the results are submitted to the relevant Italian Administration will be amended within a time scale and in a way to be agreed with the Administration, so that the requirements of Regulation (EC) No 1543/2000 can be observed.

7.4. EP - Non-conformities and priority upgrades

The survey will be carried out in compliance with the GRUND protocol.

8. Module H - Length and age sampling

8.1. MP - Landings - Planned sampling

The general framework of the length and age planned sampling is aimed to provide:

- information on the exploitation pattern of the target species (20), disaggregated by fishing segments;
- information on the demographic structure of the landings (size/age);
- information on the growth, sexual cycle and mortality.

To be consistent with the above objectives, the sampling scheme has been designed taking into account:

- the fishing capacity, techniques and effort of the Italian fleet;
- the spatial and temporal variability of the landings.

The following geographical disaggregation (GFCM/FAO, Alicante, 2001) per species will be applied in biological sampling:

<i>FAO sub-area</i>	<i>FAO statistics divisions</i>	<i>GFCM Geographical sub-areas</i>
Western	1.3 Sardinia	11. Sardinia
		10. South and Central Tirrenian Sea
		9. Ligurian and North Tirrenian sea
Central	2.1 Adriatic	17. Northern Adriatic
		18. Southern Adriatic Sea
	2.2 Ionian	19. Western Ionian Sea
		16. South of Sicily

The target variables are the length and age of those species that can be aged, in order to estimate the length frequency distributions (LFDs) and the age-length keys.

For the sake of getting a good level of accuracy, mainly as regards the seasonality of the landing by fishing techniques, the sampling design will be a *two-stage stratified random scheme*, with strata represented by a combination of geographical sub-areas (GSA) and fishing segments. Therefore, in each stratum, the sampling fishing days will be the primary sampling units and the commercial fishing vessels the secondary sampling units. The planned specimens, to be used for estimating the LFDs and the age-length keys, will be collected during a total number of 1390 sampling fishing days.

The survey will cover a one-year period, subdividing the whole time in quarters, in order to detect seasonal differences in the demographic structure and composition of the landings.

The number of days that will be sampled by quarter, fishing segment and area is reported in annex IV.

The total number of required and planned specimens to be collected, for each species, is reported in Tab 8.1.

Such number of planned specimens, which is proportional to the landing obtained in the previous years, is considerably greater than the minimum required, in order to improve the precision level as defined in the DCR. The planned specimens for the NP 2007 are the same of those achieved in the NP 2005 (see Italian Report 2005), when exercise for estimating precision levels were performed according to the following methods:

- Vigneau and Mahevas, 2004 (Working document for the WKSMFD, Nantes 26-31/01/2004)
- Pennington *et al.*, 2002 (Fishery Bulletin 100)
- Bootstrap technique (e.g. Manly, 1997; Haddon, 2001)
- Baird, 1983 (Can. Spec. Publ. Fish. Aquat. Sci., 66)

8.2. MP - Landings - Derogations and non-conformities

Table 8.2. reports in grey the species for which derogations are requested. The share in EU landings is not reported as it is unknown.

In general, the species that will not be sampled are considered less valuable for the economy of the fishery sector. The landings are not relevant and sometime scarce. Furthermore, the minimum required specimens that should be sampled, according to the DCR, would be really inadequate in order to achieve an acceptable precision level. On the other hands, the effort required for planning a suitable sampling intensity would results in an excessive cost. About the exercise for estimating precision levels see the previous paragraph.

8.3. EP - Landings - Planned sampling

No data collection will be carried out within the framework of the extended program.

8.4. MP & EP - Discards - Planned sampling

No discard sampling is planned for 2007.

Discard data will be updated once every three years. Average volume and length composition of discards for fleets other than trawlers have been estimated in 2005, while discards of the trawler fleet have been estimated in 2006.

8.6. MP & EP - Discards - Derogations and non-conformities

No discard sampling is planned for 2007.

9. Module I - Other biological sampling

9.1. MP - Planned sampling

Other biological samplings have to be carried out at three-year intervals for all species. Since these samples were collected in 2005 they are not present in the 2007 National Programme.

9.2. MP - Derogations and non-conformities

No data collection will be carried out within the framework of this module in 2007.

9.3. EP - Planned sampling

No data collection will be carried out within the framework of this module in 2007.

10. Module J - Economic data on fishing vessels

10.1. MP - Planned sampling

The parameters to be evaluated for analysis of the economic situation of the sector are those reported in appendix XVII of the implementing regulation.

Definitions and specifications of these parameters will follow the recommendations of the expert working group on economic data collection, Paris May 2004 and of the SGECA meetings (October 2004, May 2006).

Each parameter is estimated for each group of vessels as defined in appendix III of the Implementation Regulation.

Economic data will be provided by FAO statistics divisions (level 2 appendix I).

The reference period will be one year, except for production and average price by species, which will be estimated quarterly.

Economic parameters enumerated will be estimated by a specific sample survey. However, the value of fixed assets will be estimated processing data of the Vessel Register.

The sample survey results will be statistically significant with a maximum permissible error of 25% (confidence level 95%).

Methodology for the estimation of revenues, production costs, employment

Revenues, production costs and employment will be estimated through a specific sample survey. The object of the sample survey is to estimate the aggregate economic account of the fishery sector by year type of fishing technique and FAO statistics divisions.

The survey is continuous in character and has a reference period of one year.

The target population of the survey comprises the Italian fishing fleet and the list is based on the Fishing License Archive kept at the Directorate-General of Fisheries and Acquaculture of the Ministry of Agricultural and Forestry Policies. It includes vessels < 12 meters.

Table 10.1. gives information on (i) the population nos. by fleet segment, (ii) the planned sampling levels and sample rates, and (iii) the sampling method that will be used. The sampling levels are those of the 2006 sampling program; the 2007 sampling design will be defined in the next month of October 2006. The fleet segments in table 10.1. correspond to those listed in Appendix III (MP) of the DCR, and the 'Total population nos.' Refers to the official fleet register.

Data were collected by using a computerised questionnaire specifically designed for the survey (see annex III). The primary cost headings are specified in the following table. The single cost headings are subsequently aggregated in macro-headings:

Item	Aggregated	
Fuel costs	Fuel and Lubricants	
Lubricants costs		
Purchase of fishing gears	Variable Production Costs	
Purchase of nets		
Purchase of ropes and warps		
Shipping agent, customs clearance		
Maintenance of nets		
Crew working clothes		
Purchase of bait		
Ship's telephone expenses (Cell. E CB)		
Ship's TV expenses		
Purchase of other consumable materials		
Fishmarket or Wholesaler's commission		Selling Costs
Wholesaler's commission		
Bidder's commission		
Portage fish products		
Expenses for motor-vehicle fish transport		
Ices		
Boxes and packages		
Boat painting	Maintenance Costs	
Routine maintenance		
Expenses for blacksmith – carpenter		
Haulage expenses		
Maintenance electrical equipment		
Maintenance mechanical equipment		
Maintenance hydraulic equipment		
Maintenance radar and communication equipment		
Maintenance refrigerators		
Book-keeping	Other Fixed Costs	
Legal expenses		
Vessel insurance		
Bank expenses		
Passive banking interests		
Annual quota fishermen associations		
Dock expenses (water, electricity)		
Management of depository		
Travel expenses		
Insurance motor-vehicles		
Maintenance motor-vehicles		
Office supplies		
Expenses for RINA inspections		

VHF tests	
Sanitary certificates	
Extinguishers	
Veterinary services AUSL	
Drugs renewal	
Sanitary certificates ICCAT	
VAT annual quota and other administrative rights	
Fishing licence renewal	
Taxes for the local Port Authority	
Annual quota C.C.I.A.A.	
Firm taxes; IRPEF, IRPEG, IRAP	
Expenses Mud, CONAI, etc.	
INPS social costs and pension contributions	Labour Cost
IRPEF – crewmembers	
IPSEMA social security	

The survey methodology and the questionnaire are reported in annex III.

Methodology: Total value of fixed assets and capital costs

The total value of fixed assets (“investments” in appendix XVII of the DCR) is defined as the monetary value of the capital invested in the fishing sector.

The replacement-value method will be used to estimate this parameter⁸.

The insurance value cannot be used because vessel insurance is neither compulsory nor customary in Italy. In the absence of an insurance market for fishing vessels, insurance tables broken down by fishing-vessel type and size do not exist as a reference basis.

The methodology for calculating replacement value is based on a number of information sources:

- The unit value of a vessel per unit GRT as published by RINA (the Italian Shipping Register). These values date from 1992 and are updated annually for inflation. The updated values are multiplied by the total GRT of each vessel. The RINA estimate is based on technical and engineering information. It also takes account of the hull material – wood, glass fibre or steel.
- Market information obtained from field surveys to verify the estimated amounts.

Capital costs (“fixed costs” in appendix XVII of the DCR) will be calculated using the standard methods proposed by the Concerted Action on the “Economic performance of selected European fishing fleets” (FAIR PL97-3541).

Production and average price by species

Total production in tonnes and average price in euro/kg will be recorded for each species. The quarterly data will be disaggregated by type of fishing technique (appendix III of the Implementation Regulation) and referred to FAO statistics divisions.

The data will be obtained from the specific sample survey illustrated in Annex II - sample survey for the evaluation of landings per species and of fishing effort by type of technique.

Fleet data

⁸ The replacement-value method of estimating invested capital was chosen as standard for the concerted project “Economic performance of selected European fishing fleets” (FAIR PL97-3541).

The size parameters of the fleet will be updated annually, disaggregated by type of fishing technique (appendix III Implementing Regulation) and referred to FAO statistics divisions.

See Section 3 (fishing capacity) for methodology.

Effort data

The fishing effort will be evaluated on the basis of specific units of measurement that take account of technical and activity parameters.

Effort data will be updated quarterly, disaggregated by type of fishing technique (appendix III Implementing Regulation) and referred to FAO statistics divisions.

See Section 4 for other details.

10.2. MP - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

10.3. EP - Planned sampling

(a) Complementary parameters

Within the extended program, operational costs will be further subdivided in the following items (appendix XVIII implementing regulation):

- fuel and oil,
- selling costs,
- other variable costs,
- total variable costs,
- repair and maintenance,
- other fixed costs,
- total fixed costs,
- Crew costs
- Landings per species (quantity and value) will be presented monthly (appendix XVIII implementing regulation).

(b) Disaggregation levels:

Economic data will be disaggregated according to Appendix IV (but length classes < 10 m and 10<12 m will not be considered separately) and regarding the regional differentiation of level 3 of Appendix I of the implementing regulation.

Landings and effort data will be collected on a monthly basis.

10.4. EP - Non-conformities

Activities will be performed as required by the DCR

11. Module K - Data concerning the fish processing industry

11.1. MP - Planned sampling

A specific pilot study was carried out in 2003 for overall evaluation of Italian fish processing industry⁹.

On the basis of the results of this study a routine data recording system started in 2006 and will continue in 2007.

In particular, the pilot study suggested that the economic unit of observation more indicated to collect the information is the local unit, even if data related to the profit and loss account are available only at level of company. Therefore, the survey unit will be the company that will collect data on products from its local unit.

This implies that the archive of referring is ASIA¹⁰, that is based on the company.

The field of observation will be limited to the companies that belong to the sector of transformation of fishery products, that is those identified by the activities corresponding to the following ATECO codes:

15201 Preserving of fish, crustaceans and molluscs by freezing, salting, etc

15202 Production of fish products, crustaceans and molluscs

For the characteristics of the sector and the asked data to the enterprises, it's necessary to perform the survey yearly.

The survey will be carried out through postal technique and personal interviews. The enterprises will have the possibility to send the questionnaire by fax, by e-mail and also by electronic questionnaire (to be projected through ad hoc software). In the case of personal interviews, data collectors will be prepared through an informative meeting.

The parameters to be evaluated for analysis of the economic situation of the sector are those reported in appendix XIX of the implementing regulation.

Statistical methods to estimate target variables are those reported in the above mentioned pilot study.

11.2. MP - Derogations and non-conformities

No derogations are requested. Activities will be performed as required by the DCR.

11.3. EP - Planned sampling

No data collection will be carried out within the framework of the extended program.

⁹ The sector is composed by 493 companies and employees 7610 people (source: 2003 pilot study on Italian fish processing industry)

¹⁰ ASIA: statistical archives of active companies. ASIA has been realised by Istat on the basis of data provided by the company for administrative needs to some public or private organisations; these information are been integrated with other collected by Istat by means of some surveys

12. Databases

12.1. Database development and data management

The centralized databank has been developed in 2004 and 2005.

The product assembled in previous years will be amended and improved in 2007.

In particular the adaptation and feeding of the data bank will refer to the following aspects:

- updating of the data concerning module G (surveys) with data of MEDITS and GRUND surveys of the years before the data collection regulation (from 1994 to 2001)
- inclusion in the database of relevant biological indicators useful for the assessment of resources.
- inclusion in the database of precision level for each parameter and development of a tool for re-calculation of precision level depending on the aggregation level of data requests
- adaptation of the database to the requirements of the extended program

All the previous aspects are described in details in a specific document on the definition of user's requirements. The relative expected costs are set out in the financial statement concerned.

13. National and international co-ordination

13.1. National co-ordination

An *ad hoc* scientific Committee manages the National program for the gathering of fishery data. This Committee is composed of the national correspondent and of other members experts in the fields of biology, economy and statistics. The scientific Committee is entrusted with the task of co-ordinating the data collection program, of monitoring the entire process, of proposing adjustments aimed at improving the methodologies of data gathering and endorsing the pilot studies to be conducted within the present national program.

Composed of researchers in the fields of economic and fishery biology, a central co-ordination unit has been established with a view to managing and co-ordinating both the operational and technical aspects of the national data collection program.

An annual national meeting for co-ordination will be organised in 2007. Research institutes taking part to the implementation of the national program will participate to the meeting

13.2. International co-ordination

Closer cooperation between MS's is felt to be necessary to improve data collection and analysis. Therefore, several meetings are foreseen in 2007 to strengthen cooperation.

Table 13.1 gives an overview of the international co-ordination meetings (Planning Groups, Study Groups, Regional Co-ordination Meetings, etc.) and the workshops that will be attended, and of the inter-calibration exercises and ring-tests in which the MS will participate.

In 2007 Italy will host the Medit Planning Group and it will organize and host the following three workshops:

A) Workshop on Age Determination of common pandora (*Pagellus erythrinus*)

The ToRs of the Workshop on *Pagellus erythrinus* were presented and endorsed at the Regional Coordination Meeting of Malta (see Report of the third Regional Coordination Meeting for the

Mediterranean area, 26/28-04-2006). The workflow for exchange of otoliths was specified: first year exchange of otoliths and second year organization of a workshop.

B) ALADYM Age-Length Based Dynamic Model Workshop

Aladym model would be an useful tool for the assessment of demersal stocks. During the third Regional Coordination Meeting for the Mediterranean area (Malta, 26/28-04-2006), the group endorsed the ToRs of a workshop on Aladym model within the framework of the new PG for the Mediterranean.

C) Fish Maturity workshop

The Working group on maturity stages (WGMS) was initiated during the Medits meeting held in Rome (January 2004). The first task of the group was the preparation of new maturity scales for fishes, crustaceans and cephalopods. The aim was to identify maturity stages (macroscopic stages) more detailed with respect the previous ones (see at the Medits protocol, version 4, Medits 2002b) but easily convertible (after pooling) in the old ones. A project for the presentation of the new maturity scales and the preparation of a photo gallery was presented and discusses during two Medits meeting in Nantes (March, 2005) and Kavala (April, 2006). Following the recommendation of the Medits meeting the RCM for the Mediterranean area (Malta, 26/28-04-2006) presented and endorsed the ToRs for a workshop on fish maturity.

13.3. Follow-up of RCM recommendations and initiatives

Italy attended the 2006 Regional Coordination Meeting held in Malta at the end of April.

Considering that the meeting took place only few weeks before the preparation of this program, it is not possible to describe the responsive actions that will be taken.

Follow-up to previous RCMs have been described in the Technical Report on Activities performed in 2005.

14. List of acronyms and abbreviations

ALP	Archivio Licenza Pesca – Vessel Register
ASIA	statistical archives of active companies
ATECO code	Codification for sectors of economic activities
CPUE	Catch per Unit of Effort
DCR	Data Collection Regulation
GFCM	General Fishery Commission for the Mediterranean
GRT	Gross Registered Tonnage
GRUND	GRUppo Nazionale risorse Demersali
GSA	Geographical Sub Areas
ICCAT	International Commission for the Conservation of Atlantic Tunas
ISTAT	National statistical institute
MEDITS	Mediterranean International Trawl Survey programme

MIPAF	Ministry of Agricultural and Forestry Policies
RINA	Registro Italiano Navale
SAC	Scientific Advisory Committee of GFCM

15. Comments, suggestions and reflections

In order to evaluate Catches Per Unit of Effort of demersal species (paragraph 6.3), landings for trawl fishery should be integrated with information from the evaluation of discards to obtain catches per species.

Considering that discards have to be evaluated every three years, CPUE data will be biased because it is not reliable the assumption of constant discards volume over a three year period. In these cases, Landing Per Unit of Effort is considered to be a more reliable information.

Annexes

Annex I. Sample survey for the evaluation of specific fishing effort

Purpose of survey

The object of the sample survey described in this section is to obtain a statistically significant estimate of the specific fishing effort as defined in the foregoing sections.

Survey period and reference period

The results of the sample survey will be furnished quarterly. The sampling design for the following year will be prepared annually in accordance with the methodology described below.

Determination of sample population and list

The object of the survey is to estimate the number of days of activity on which catches by species exceed two predetermined limits (limit 1: target-based catches; limit 2: "by catch" catches). Nine species are covered (see Table I.a). The limits set for each species are as follows:

Table I.a. Threshold values by species

<i>Species</i>	<i>1st threshold value</i>	<i>2nd threshold value</i>
Sole	30%	5%
Nephrops	30%	5%
Hake	30%	5%
Anchovy	30%	5%
Sardine	50%	5%
Swordfish	30%	5%
Bluefin tuna	30%	5%
Albacore	30%	5%
European eel	30%	

The sample basis comprises the list of days of activity per vessel over the survey reference year.

The complete list of vessels licensed for commercial fishing and the list of days of activity for the reference period are required for compilation of the sampling list.

The first list (vessels licensed for commercial fishing) is obtained from the Vessel Register (ALP) kept at the Directorate-General of Fisheries and Aquaculture of the Ministry of Agricultural and Forestry Policies (MIPAF).

The second list (days of activity for the reference period) is of course not available in advance. However, on the basis of available data on fishing activity in the two years prior to the reference year, the total number of days of activity for the reference year can be predefined on the assumption of an expected variation of $\pm 5\%$ compared with the previous two-year period.

The list will be updated annually on the basis of the estimated number of days of activity for the two-year period preceding the reference year.

Selection of target variables

The purpose of the sample survey is to estimate the fishing effort directed towards species of special interest.

The fishing effort is obtained by multiplying the number of days of activity by size parameters (kW and GT for mobile gears, GT for passive gears and kW for polyvalent gears). The fleet's size parameters are census data obtained from evaluation of fishing capacity. Hence the target variable of the survey remains the number of days of activity at sea on which catches of a given species exceed specified threshold values.

Besides catches by species, the survey will be required to cover other, auxiliary variables for each fishing day. These variables, to be recorded for each individual day of activity, are as follows:

- total hours spent at sea
- fishing areas

The above variables will be recorded by an interviewer on landing.

Where vessels are at sea for more than one day at a time, the interviewer will be required to obtain as detailed information as possible with a view to distributing the total value over the actual number of days of the fishing trip.

Questionnaire and choice of interviewers

The questionnaire will be paper-based, at least in the initial phase of the survey. It will subsequently be computerised to assist accuracy and allow faster transmission of data by electronic means.

The order of questions will be “funnel-shaped” – that is, starting with general questions and then proceeding to the recording of the target information. The first part comprises general information such as vessel name, gears used and home marine district, while the second part includes the survey target information.

In view of the target phenomenon and the degree of knowledge available, the questions must be structured; in other words, there is no need to choose between open-answer questions and fixed or predefined-answer questions. In particular, a comprehensive list of the species for which the specific fishing effort must be recorded has been drawn up.

Interviewer selection and the conduct of interviews are two very important phases of the survey. Given the object of the survey, it is felt appropriate for the interviewers themselves to be engaged in fish production and fishery management.

The interviewers will undergo specific training courses. These will be conducted annually and will concern the information-gathering procedures to be used.

Sample design

Two-stage sampling with stratification at primary-unit level

The sampling design is complex, using a two-stage sample stratified at primary-unit level. The first-stage units are the fishing vessels and the second-stage units fishing days. Both the primary and the secondary units are selected without replacement and with equal probabilities. Two-stage sampling was chosen owing to the need for maximum possible precision coupled with containment of costs within a reasonable budget.

The primary units are stratified so as to take account of the level of disaggregation of the information required by the implementing regulation, and the stratification is therefore based on two variables. The first is the GFCM Geographical sub-areas. There are seven FAO

Geographical sub-areas (GSA), which account almost exclusively for the fishing operations of the Italian fleet:

- 9: Ligurian Sea and Upper Tyrrhenian
- 10: Lower Tyrrhenian
- 11: Sardinia
- 16: Sicilian Channel
- 17: Upper and Mid-Adriatic
- 18: Lower Adriatic
- 19: Western Ionian

Even if GFCM Geographical sub-areas are chosen to stratify the universe, it will be possible to move to GFCM/FAO divisions, in order to comply with EU regulation n. 1639/01.

The second stratification variable is type of fishing technique. The relevant fishing techniques are set out in appendix VIII of the Implementing Regulation.

The final number of non-empty strata or domains from which the overall sample is to be extracted was 36 (see Table I.b).

Sample size and allocation to strata

The sample size was determined after evaluation of the sampling error.

In particular, sample size was fixed on the basis of the requirement of a 25% maximum permissible error as laid down in the implementing regulation. Since corrected or approximately correct estimators will be used for the survey, the variances of the estimates had to be determined.

The required sample size to ensure an error not exceeding 25% with a probability $p = 95\%$ was calculated by the following formula:

$$n \geq \frac{N \sum_{h=1}^H N_h S_h^2}{\varepsilon^2 \hat{Y}^2 + \sum_{h=1}^H N_h S_h^2}$$

in which:

- n : sample size calculated on the basis of secondary units
- N : population size
- h : generic stratum $h = 1, \dots, H$
- S_h^2 : variance of target variable
- \hat{Y} : total target variable
- ε : maximum permissible error

The overall sample size will be distributed among the H strata by Neyman's criterion, according to which stratum allocation is based on minimisation of sample variance. This criterion is expressed by the formula:

$$n_h = n \frac{N_h S_h}{\sum_{h=1}^H N_h S_h}$$

The above formulae are applicable provided that the variance S_h^2 and the total Y of the target variable (the number of days of activity at sea on which catches of a given species exceed specified threshold values) in the population (the total number of fishing days of the Italian fleet) are known. A pilot survey was not necessary for estimating S_h^2 and Y , as estimates of previous surveys on the fishing-days variable were used.

The value of S_h^2 was calculated on the basis of average sample data from the surveys mentioned. The variance of the target variable is defined in each stratum by the following formula:

$$S_h^2 = \frac{1}{n_h - 1} \sum_{i=1}^{n_h} (y_{hi} - \bar{y}_h)^2$$

in which:

- h : stratum index ($h = 1, \dots, H$)
- i : primary-unit index
- n_h : number of secondary units observed in stratum h
- y_{hi} : value observed on the i th unit of the sample
- \bar{y}_h : simple arithmetic mean of the values observed on the n_h units of the sample

After determination of the number of secondary units for each stratum (n_h), the number of primary units (m_h) was taken proportionally to the variability within each stratum.

The sampling design was drawn up by applying the procedure described above and is set out in Table I.b.

Table I.b. Sampling design for the 2004 survey of specific fishing effort

<i>Geographical area</i>	<i>Type of fishing technique</i>	<i>Number of primary units</i>	<i>Number of secondary units</i>
10, Lower Tyrrhenian	Demersal trawl	5	82
10, Lower Tyrrhenian	Pelagic trawl and seiners	4	39
10, Lower Tyrrhenian	Gears using hooks	10	551
10, Lower Tyrrhenian	Polyvalent (passive gears)	8	26
10, Lower Tyrrhenian	Polyvalent (combining 5 mobile and passive gears)	5	302
11, Sardinia	Demersal trawl	7	33
11, Sardinia	Gears using hooks	3	22
11, Sardinia	Polyvalent (passive gears)	7	44
16, Sicilian Channel	Demersal trawl	7	113
16, Sicilian Channel	Pelagic trawl and seiners	7	71
16, Sicilian Channel	Gears using hooks	2	10
16, Sicilian Channel	Polyvalent (passive gears)	12	40
17, Upper and Mid-Adriatic	Demersal trawl	10	572

17, Upper and Mid-Adriatic	Beam Trawl	4	9
17, Upper and Mid-Adriatic	Pelagic trawl and seiners	9	115
17, Upper and Mid-Adriatic	Gears using hooks	3	124
17, Upper and Mid-Adriatic	Polyvalent (passive gears)	9	225
17, Upper and Mid-Adriatic	Polyvalent (combining mobile and passive gears)	5	293
18, Lower Adriatic	Demersal trawl	7	181
18, Lower Adriatic	Pelagic trawl and seiners	9	44
18, Lower Adriatic	Gears using hooks	3	73
18, Lower Adriatic	Polyvalent (passive gears)	8	48
19, Western Ionian	Demersal trawl	5	17
19, Western Ionian	Pelagic trawl and seiners	4	37
19, Western Ionian	Gears using hooks	6	308
19, Western Ionian	Pots and traps		
19, Western Ionian	Polyvalent (passive gears)	9	227
19, Western Ionian	Polyvalent (combining mobile and passive gears)	6	196
9, Ligurian Sea and Upper Tyrrhenian	Demersal trawl	6	33
9, Ligurian Sea and Upper Tyrrhenian	Pelagic trawl and seiners	5	33
9, Ligurian Sea and Upper Tyrrhenian	Gears using hooks	3	65
9, Ligurian Sea and Upper Tyrrhenian	Polyvalent (passive gears)	9	126
9, Ligurian Sea and Upper Tyrrhenian	Polyvalent (combining mobile and passive gears)	4	78
		201	4137

After determination of the sampling design, the sampling units were selected on a random basis without replacement, by the simple random sampling method. The primary units were extracted from the panel used for the survey on landings and economic parameter. For each sampled vessel will be possible to compare data from different surveys, in order to check elementary data.

Estimator

A two-stage sampling design is used, stratified in the first stage, both the primary and the secondary units being selected by a probabilistic mechanism without replacement and with equal probabilities.

The object of the survey is to estimate the total value of the number-of-fishing-days variable by segment and by area. To estimate the total, it was decided to use a direct estimator, expressed by:

$$\hat{Y} = \sum_{h=1}^H \sum_{i=1}^{m_h} \sum_{j=1}^{n_{hi}} K_{hi} Y_{hij}$$

in which :

$$K_{hi} = \frac{M_h}{m_h} \frac{N_{hi}}{n_{hi}}$$

where :

Y_{hij} : value of variable y of secondary unit j of primary unit i of stratum h

M_h : number of primary units in stratum h

m_h : number of sample primary units in stratum h

N_{hi} : number of secondary units of primary unit i in stratum h

n_{hi} : number of sample secondary units of primary unit i in stratum h

In the case of two-stage sampling with stratification at primary-unit level, and assuming extraction of the sampling units with equal probability and without replacement, the expression for the sampling variance of the estimate \hat{Y} of the total Y is as follows:

$$V(\hat{Y}) = \sum_{h=1}^H M_h^2 \frac{M_h - m_h}{M_h} \frac{S_h^2}{m_h} + \sum_{h=1}^H \frac{M_h}{m_h} \sum_{i=1}^{M_h} N_{hi}^2 \frac{N_{hi} - n_{hi}}{N_{hi}} \frac{S_{hi}^2}{n_{hi}}$$

in which:

- h : stratum index ($h = 1, \dots, H$)
- i : primary-unit index
- j : secondary-unit index
- M_h : number of primary units in stratum h
- m_h : number of sample primary units in stratum h
- S_h^2 : variance of target variable between totals of primary units in stratum h
- N_{hi} : number of secondary units of primary unit i in stratum h
- n_{hi} : number of sample secondary units of primary unit i in stratum h
- S_{hi}^2 : variance of target variable within primary unit i of stratum h

Phases of sample survey

Task B1: Reception of records from interviewers

Daily records will be received by email and computerised daily with effect from the end of the first week of the reference quarter. The closing date for despatch is set at the

thirtieth day after the reference day. Specific software for checking incoming records will be used.

Task B2: Checking of sampling data

Sampling data will be checked with software designed specifically to identify and deal with non-sampling errors and to check the individual items of data.

Task B3: Expansion of data to entire population

The weightings mentioned in the previous section will be applied for scaling up to the population as a whole.

Task B4: Checking of expanded data

Specific software will be used to check the results and to analyze inconsistencies.

Task B5: Transmission of data to Central Statistical Office

The institute conducting the survey will forward the results to the Central Statistical Office in the agreed format within five months of the end of the reference month.

Annex II. Sample survey for the evaluation of landings per species and of fishing effort by type of technique

A specific sample survey will be conducted to estimate the Italian fleet's landings (quantity and value) and fishing effort by type of technique. The sampling data will be expanded to the entire population to yield the final overall estimates, which will be statistically significant because corrected estimators will be used.

The methodology of the survey was approved by Eurostat during the meeting of the working group "fishery statistics" held in Luxembourg, 18-19 February 2002.

The present survey integrates the ongoing sample survey Italy is carrying on in order to fulfil Regulation (EC) No 1382/91 as amended by Regulation (EC) No 2104/1993. However, the disaggregation level of results required by Regulation (EC) No 1543/2000 differs from that stipulated in Regulation (EC) No 1382/91. Therefore, results required by regulation EC no. 1543/00, as recommended by the Consultant and SGRN, imply an increase of the sample size.

Purpose of survey

The object of the relevant statistical survey is to estimate landings (by weight and value) of each species by the commercial fishing fleet, by quarter, type of technique and FAO statistics divisions.

Survey period and reference period

The object of the sample survey is to estimate landings by weight and value. These estimates will be referred to quarterly periods. Hence the sample survey concerned will be repeated quarterly.

Determination of sample population and list

The purpose of the survey is to estimate total catches and average prices for each individual species. The sampling base thus comprises the more than 800 landing points along the 8 000-kilometre Italian coastline. However, the list of landing points cannot on any account be deemed to constitute the list of elementary units.

These difficulties have been overcome by adopting an observed population that differs from the total sample population but includes units exhibiting the phenomenon to be analysed. The elementary analysis units essentially constitute landings from vessels included in the sampled fleet, so that the list from which the sampling units will be extracted comprises all the vessels making up the Italian fishing fleet.

The most comprehensive and efficient sampling base currently in existence, which is also official, is the Fishing Licence Archive (ALP) kept by the Directorate-General of Fisheries and Aquaculture of the Ministry of Agricultural and Forestry Policies. This sampling base excludes ocean-fishery and tuna-fishing vessels.

Selection of target variables

The target (or descriptive) variables are the prices and quantities by species of the total production of the Italian fishing fleet.

Regulation (EC) No 1639/2001 enumerates some 45 species whose weight and value must be communicated¹¹. The sample survey discussed here will cover all these species.

¹¹ Appendix XII of the implementing regulation.

To sum up, the target variables to be recorded in this survey are:

- quantities of each species landed
- price per species

In addition to the descriptive variables, the survey will record other, associated variables that may be useful for providing additional information.

The connected variables covered by the survey break down into “annual structural data” and “other information on weekly activity and production”, as follows:

Table II.a Variables to be recorded in the sample survey

<u>Annual structural data</u>	<u>Other information on weekly activity and production</u>
Company type and year of foundation	Gear used
Communication equipment	Total fishing days
Navigation equipment	Sailing days
Fish location instrumentation	Rest or other days
Preservation equipment	Bad-weather days
Number of owners, vessel age and ownership shares	Number of trips
Contractual provisions for work remuneration	Total hours
	Sailing hours
	Actual hours
	Average crew numbers
	Distance of fishing area from coast
	Port of departure
	Port of sale
	Commercial channel (fish market, wholesaler, fish shops or travelling sellers, processing industry)

The “other information on weekly activity and production” is needed for estimation of fishing effort by type of technique, as required by Chapter II(D) of the Annex to the implementing regulation.

Questionnaire and choice of interviewers

The survey uses two questionnaires, namely an annual questionnaire for recording structural information and a weekly questionnaire for activity information.

The order of questions will be “funnel-shaped” – that is, starting with general questions and then proceeding to the recording of the target information. The first part of the weekly questionnaire includes general information such as vessel name, gears used, days of activity at sea, bad-weather days and rest days, total hours, number of trips and distance of fishing area from coast, while the second part covers information on species caught (quantities, average prices and marketing channel).

In view of the target phenomenon and the degree of knowledge available, the questions must be structured; in other words, there is no need to choose between open-answer questions and fixed or predefined-answer questions. In addition, an exhaustive list of the species for which quantities and prices must be recorded has been drawn up; it is the responsibility of the interviewer to specify the individual species caught.

Other important aspects of the questionnaire design, such as use of language, question formulation and correct recording of information, are dealt with directly by the interviewers, who thus constitute the filter between the interviewees and the data-processing centre. Note too that the information base by individual vessels is fully computerised; the software, written for the specific purposes of the survey, is structured consistently and includes check programs to avoid partial or inconsistent completion of questionnaires.

Interviewer selection and the conduct of interviews are also two very important phases of the survey. The interviewers themselves work in the fish production and management sector. It is considered essential to use interviewers who belong to the fish production sector in order to ensure that correct and prompt information is obtained. Again, their motivation will ensure that the information collected is objective and impartial.

Sampling design

Sampling in a single stratified stage

A complex-type sampling design using a single-stratified-stage sample with two variables is employed. The stratification is designed to maximise the homogeneity of the strata, using parameters of known form for each unit of population, linked to (correlated with) the target variables. The stratification uses two parameters, one geographical and one technical (fishing systems), in accordance with the disaggregation of the results.

Sample size and allocation to strata

The sample size was determined after evaluation of the sampling error.

In particular, the precision of the estimates had to be specified – that is, the value of the mean square error had to be fixed; furthermore, since corrected or approximately correct estimators are used, the variance values of the estimates needed to be determined.

On the basis of a single-stratified-stage sampling procedure and assuming extraction of the sampling units with equal probability and without replacement, the expression for the sampling variance of the estimate \hat{Y} of the total Y is as follows:

$$V(\hat{Y}) = \sum_{h=1}^H N_h^2 \frac{N_h - n_h}{N_h} \frac{S_h^2}{n_h}$$

in which:

- \hat{Y} represents a corrected estimate of Y, the total of the survey variable
- N_h : stratum size
- n_h : number of samples in stratum h
- S_h^2 : variance of generic stratum h

For a given population, the variance thus varies either in accordance with the total sample size n or, for an assigned value of n, in accordance with the numbers $n_1, \dots, n_h, \dots, n_H$, which are linked by the condition that their sum shall be equal to n.

Of the various ways of determining the sample sizes of the H strata, the proportional criterion was discarded in favour of Neyman's criterion, which involves taking a variable percentage of elements from each stratum in order to obtain the minimum value of $V(\hat{Y})$.

However, Neyman's method is applicable only in the case of a single target variable, as a different sample size would otherwise be obtained for each variable considered. Since our survey is multivariate – that is, there is more than one target variable in the survey – the sample size was calculated by Bethel's method, which is the application of Neyman's technique to the multivariate case. The approach here is to reduce the analysis to a linear-programming problem, whereby sample size and stratum allocation can be identified while at the same time minimising the variances of all the variables (cf. 1989, *Survey Methodology*, 15, 47-57).

The problem of optimum stratum allocation for multipurpose surveys was solved by Bethel using the Kuhn-Tucker theorem, the expressions for optimum allocation thus being derived in terms of LaGrange multipliers.

The application of this method calls for a preliminary estimate of the variances S_h^2 – that is, the variances of the estimates of total catches and of prices for each species – for each region and fishing system. The results of previous sample surveys were used for this purpose.

Bethel's method was therefore applied to the available data by a procedure implemented on STATISTICA vers. 6 StatSoft inc.

The sample size was defined in about 1400 vessel units.

Extraction without replacement of sampling units

After determination of the sample size and stratification proportions, the sampling plane – i.e., the association of the corresponding extraction probability with each population unit – was constructed.

The following quantity was used as a measure of the standardised size:

$$P_i = \frac{LOA_i}{LOA_h}$$

in which:

- i: generic vessel
- h: generic stratum defined by region and fishing system
- LOA: length overall

The LOA was chosen as the standardised measure of size on the basis of a large number of correlation studies between various vessel size variables and catches per species.

Hanurav's algorithm (1967, *Journal of the American Statistical Association*, 77, 88-96) was used as the extraction method.

For completeness, the problem of sample dropouts must be considered. It turns out that one of the main problems arising with the ALP (Fishing Licence Archive) list is delayed updating, as a result of which the list includes non-existent units.

The required dimension is restored after extraction of non-samplable units by replacement of non-includable units on the basis of a list of substitute vessels. On the basis of experience from previous surveys, the sample dropout proportion is put at approximately 10%.

Estimators – expansion factors

The direct estimate of the total Y, obtained by single-stratified-stage sampling, is given by:

$$\hat{Y} = \sum_{h=1}^H \hat{Y}_h = \sum_{h=1}^H \sum_{i=1}^{n_h} K_h Y_{hi}$$

in which:

- h: generic stratum
- H: total number of strata
- \hat{Y}_h : direct estimate of total Y_h
- n_h : size of sample h
- Y_{hi} : value of generic variable y to be recorded, relative to unit i of stratum h
- K_h : basic weight to be assigned to each of the n_h units

Assuming that the units are extracted with variable probabilities (PPS), the inclusion probability is not equal for each unit but varies in accordance with the standardised size P_i , which, as stated, is given by LOA_i/LOA_h – that is, the LOA of the generic vessel divided by the LOA of stratum h.

In this case the average weight of the generic sampling unit i of stratum h is given by:

$$K_{hi} = \frac{1}{\pi_{hi}} = \frac{1}{n_h \frac{LOA_i}{LOA_h}} = \frac{LOA_h}{n_h LOA_i}$$

If some of the replies in the total are lacking, the initial weights k_{hi} are adjusted on the basis of data on the respondents (r_h) and non-respondents (s_h) in the extracted sample (n_h). The method involves multiplying the initial weight (k_{hi}) by a factor (d_h) defined as follows:

$$d_h = \frac{r_h + s_h}{r_h}$$

The resulting weights (v_{hi}) are called “base weights” because they are used to calibrate the sum of the weights applied to the population levels and to eliminate distortion due to differences in non-response rates between strata. In the present case, the base weights are therefore given by:

$$v_{hi} = \frac{r_h + s_h}{r_h} \frac{LOA_h}{n_h LOA_i}$$

This method assumes that the missing total replies have no effect on homogeneous groups of statistical units.

The estimator for response homogeneity groups (RHGs)

$$\hat{Y}_{(r)h,RHG} = \sum_{i=1}^{n_h} v_{hi} y_{(r)hi} \quad \text{is correct.}$$

Finally, in the case of a single-stratified-stage sample in which the units are assumed to be extracted without replacement and with equal probabilities in each stratum, the variance of the sampling distribution of the estimate of the total is as follows (Sen-Yates-Grundy formula):

$$\widehat{Var}(Y_{HT}) = \sum_{i=1}^n \sum_{j>1} \left(\frac{y_i}{\pi_i} - \frac{y_j}{\pi_j} \right)^2 \frac{\pi_i \pi_j - \pi_{ij}}{\pi_{ij}}$$

in which π_{ij} is the inclusion probability of second order.

Checking for non-sampling errors – results validation system

In the last phase of the survey, the basic data are checked to eliminate a proportion of non-sampling errors. The non-sampling error is checked with specific software written to correct wrong values and for statistical analyses. The programs essentially involve graphic visualisation of the basic data.

Sample survey phases

Task B1: Reception of records from interviewers

The weekly records will be received daily over the Internet from the end of the first week of the reference quarter. The closing date for sending in will be the thirtieth day of the quarter following the reference quarter.

Task B2: Checking of sample data

This will be carried out by software specifically designed for identifying and processing non-sampling errors and checking individual data items.

Task B3: Expansion of data to population as a whole

The relevant weightings will be applied for expansion to the entire population.

Task B4: Checking of expanded data

Specific software will be used to check the results and to analyse them for inconsistencies.

Task B8: Forwarding of data by the survey institute to the Central Statistical Office.

The survey institute will forward the survey results to the Central Statistical Office within six months.

Annex III Sample survey for the evaluation of economic data

The object of the sample survey is to estimate the aggregate economic account of the fishery sector by year type of fishing technique and FAO statistics divisions.

The survey is continuous in character and has a reference period of one year.

The target population of the survey comprises the Italian fishing fleet and the list is based on the Fishing Licence Archive kept at the Directorate-General of Fisheries and Aquaculture of the Ministry of Agricultural and Forestry Policies.

The survey is based on the same panel as the survey for evaluation of landings and fishing effort. The justification for the use of the same panel for both surveys is that the following items coincide in each:

- population and hence list
- level of disaggregation by type of technique
- geographical disaggregation level
- periodicity (annual or quarterly according to parameter)

Survey efficiency is increased by the use of the same sampling design because:

- the common panel mitigates problems of missing answers/lack of response (due to vessel non-traceability or failure to cooperate)
- the same recording network can be used
- the same basic software can be used by the interviewers for computerising the questionnaires
- a standardised procedure for managing the entire survey can be used (checking of incoming records, evaluation and checking of interviewers, recording of basic data, data processing, generation of end-results and calculation of sampling errors).

The sample size in the landings and effort survey was calculated so as to ensure observance of the precision levels required for the specific target variables of that survey (see annex II).

A posteriori analysis on the coefficient of variation for economic variables justified the use of the same panel as values obtained are satisfactory. The sample size obtained to estimate landings is sufficient to obtain economic data with a good level of reliability.

Finally, using the same vessels to collect data, it is possible to directly compare all information collected for each vessel, improving the possibility of checking data (for example, comparing fuel costs with landings, with fishing days and so on).

Statistical procedures used to elaborate economic data are the same defined in annex II:

- a) PPS without replacement method, based on LOA;
- b) the estimator for response homogeneity groups, to calculate gross saleable production, production costs, fixed costs and the number of persons employed in the sector;
- c) Sen-Yates-Grundy formula , to estimate the variance and the coefficient of variation of our estimates;
- d) graphic checking with specific software, to control non-sampling errors.

Questionnaire and interviewers

The economic-data survey will be conducted quarterly. This interval was chosen because of the nature of the variables to be monitored. Enterprises usually base their accounts on quarterly periods, partly for tax reasons. Again, the interviewers' task would be too onerous if a shorter period were chosen, while a longer period would entail higher costs.

The questionnaire is divided into the following main sections: fuel and oil, production costs, selling costs, maintenance costs, other fixed costs and labour costs.

The questionnaire is computerised and will be transmitted to the processing centre electronically.

The interviewers are provided with PCs to fill in the questionnaires and forward them via the Internet.

Some examples of computer displays relating to the software used by interviewers to collect and transfer information to head office are given below:

Foglio costi [trimestre 1] dal 01/01/2004 al 31/03/2004

TUTTI GLI IMPORTI VANNO DIGITATI IN EURO

Fissi | Produzione | Vendita | Lavoro

Descrizione	Unitario (Euro)	Valore (Euro)	% Armat.	% Oper.	Note
▶ Retribuzioni lorde		0,00	100	0	
Oneri sociali e contributivi		0,00	100	0	
IRPEF - equipaggio		0,00	100	0	
Ipsema malattie		0,00	100	0	
Ipsema infortuni		0,00	100	0	
Contabilità e tenuta libri paga		0,00	100	0	
Spese legali e notarili		0,00	100	0	
Assicurazione sul natante		0,00	100	0	
Costi di gestione c/c bancari		0,00	100	0	
Interessi passivi su c/c bancari e mutui		0,00	100	0	
Spese servizi e quota associativa sinda		0,00	100	0	

TOTALI OPERATIVI 0,00 ARMATORIALI 0,00

TOT. GEN. OPERATIVI 0,00 + ARMATORIALI 0,00 = 0,00

Browse 000015411 SCHEDA NON TRASMESSA

Figure 1: for each vessel, quarterly information on fixed costs

Foglio costi [trimestre 1] dal 01/01/2004 al 31/03/2004

TUTTI GLI IMPORTI VANNO DIGITATI IN EURO

Fissi | **Produzione** | Vendita | Lavoro

Descrizione	Unitario (Euro)	Valore (Euro)	% Armat.	% Oper.
▶ Acquisto attrezzi di pesca		0,00	100	0
Acquisto reti		0,00	100	0
Acquisto cavi		0,00	100	0
Spedizioniere pratiche doganali		0,00	100	0
Retail - riparazione reti		0,00	100	0
Spese gasolio		0,00	100	0
Spese lubrificanti		0,00	100	0
Spese panatica di bordo		0,00	100	0
Indumenti lavoro equipaggio		0,00	100	0
Acquisto esca		0,00	100	0
Spese telefonia di bordo (cellulare e CB)		0,00	100	0
Spese TV di bordo		0,00	100	0

TOTALI **OPERATIVI 0,00** **ARMATORIALI 0,00** Chiudi

TOT. GEN. **OPERATIVI 0,00** + **ARMATORIALI 0,00** = **0,00**

Browse **000015411** **SCHEDA NON TRASMESSA**

Figure 2: for each vessel, quarterly information on production costs

Foglio costi [trimestre 1] dal 01/01/2004 al 31/03/2004

TUTTI GLI IMPORTI VANNO DIGITATI IN EURO

Fissi | **Produzione** | Vendita | Lavoro

Descrizione	%	Unitario (Euro)	Valore (Euro)	% Armat.	% Oper.
▶ Diritti mercato ittico			0,00	100	0
Provvigioni grossista			0,00	100	0
Provvigioni astatore			0,00	100	0
Facchinaggio prodotti ittici			0,00	100	0
Spese per automezzi trasporto pesce			0,00	100	0
Spese per ghiaccio			0,00	100	0
Cassette, goffe e imballaggi			0,00	100	0
			0,00	100	0
			0,00	100	0
		0,00	0,00	100	0

TOTALI **OPERATIVI 0,00** **ARMATORIALI 0,00** Chiudi

TOT. GEN. **OPERATIVI 0,00** + **ARMATORIALI 0,00** = **0,00**

Browse **000015411** **SCHEDA NON TRASMESSA**

Figure 3: for each vessel, quarterly information on commercialisation costs

Annex IV: Biological sampling of catches

The sampling design will be a *two-stage stratified random scheme*, with strata represented by a combination of geographical sub-areas (GSA) and fishing segments. Therefore, in each stratum, the sampling fishing days will be the primary sampling units and the commercial fishing vessels the secondary sampling units. The planned specimens, to be used for estimating the LFDs and the age-length keys, will be collected during a total number of 1388 sampling fishing days.

The survey will cover a one-year period, subdividing the whole time in quarters, in order to detect seasonal differences in the demographic structure and composition of the landings.

The following table reports the number of days that will be sampled by quarter, fishing segment and area is reported.

Table IV a – number of Sampling Fishing Days

GSA	District	FISHING SEGMENT	LOA	I quarter	II quarter	III quarter	IV quarter	Tot
9	LAZIO	Demersal trawl	12 < 18	2	2	2	1	7
9	LAZIO	Demersal trawl	18 < 24	5	6	6	5	22
9	LIGURIA	Demersal trawl	12 < 18	2	4	3	2	11
9	LIGURIA	Demersal trawl	18 < 24	1	1	1	1	4
9	TOSCANA	Demersal trawl	12 < 18	3	3	4	3	13
9	TOSCANA	Demersal trawl	18 < 24	2	2	3	2	9
Total				15	18	19	14	66
10	CALABRIA TIRR.	Demersal trawl	12 < 24	2	3	2	1	8
10	CAMPANIA	Demersal trawl	12 < 18	2	3	3	3	11
10	CAMPANIA	Demersal trawl	18 < 24	2	2	2	2	8
10	SICILIA NORD	Demersal trawl	12 < 18	2	3	3	2	10
10	SICILIA NORD	Demersal trawl	18 < 24	2	2	2	1	7
Total				10	13	12	9	44
11	SARDEGNA	Demersal trawl	24 < 40	2	3	3	2	10
11	SARDEGNA	Demersal trawl	12 < 18	3	4	4	3	14
11	SARDEGNA	Demersal trawl	18 < 24	2	3	3	2	10
Total				7	10	10	7	34
16	SICILIA SUD	Demersal trawl	24 < 40	9	11	8	8	36
16	SICILIA SUD	Demersal trawl	12 < 18	6	8	7	5	26
16	SICILIA SUD	Demersal trawl	18 < 24	6	8	7	6	27
Total				21	27	22	19	89
17	ABRUZZO	Demersal trawl	24 < 40	1	1	1	1	4
17	ABRUZZO	Demersal trawl	12 < 18	2	2	2	2	8
17	ABRUZZO	Demersal trawl	18 < 24	2	3	2	2	9
17	E. ROMAGNA	Demersal trawl	< 12	0	1	1	1	3
17	E. ROMAGNA	Demersal trawl	12 < 18	4	5	3	5	17
17	E. ROMAGNA	Demersal trawl	18 < 24	2	2	1	2	7
17	F.V.GIULIA	Demersal trawl	12 < 18	1	1	1	1	4
17	MARCHE	Demersal trawl	24 < 40	2	2	1	2	7
17	MARCHE	Demersal trawl	12 < 18	3	3	2	3	11
17	MARCHE	Demersal trawl	18 < 24	5	5	3	4	17
17	MOLISE	Demersal trawl	24 < 40	1	1	1	1	4
17	MOLISE	Demersal trawl	12 < 24	1	1	0	1	3
17	VENETO	Demersal trawl	< 12	1	2	1	2	6
17	VENETO	Demersal trawl	12 < 18	5	7	3	5	20
17	VENETO	Demersal trawl	18 < 24	3	3	1	2	9
Total				33	39	23	34	129
18	PUGLIA NORD	Demersal trawl	< 12	1	1	1	1	4
18	PUGLIA NORD	Demersal trawl	24 < 40	2	2	2	2	8
18	PUGLIA NORD	Demersal trawl	12 < 18	13	15	11	13	52
18	PUGLIA NORD	Demersal trawl	18 < 24	5	6	4	5	20
Total				21	24	18	21	84
19	CALABRIA IONICA	Demersal trawl	12 < 24	3	5	5	4	17
19	PUGLIA IONICA	Demersal trawl	12 < 18	4	6	6	5	21
19	SICILIA EST	Demersal trawl	SD	2	2	1	1	6
Total				9	13	12	10	44

Demersal Trawl Total				116	144	116	114	490
9	LAZIO	Small scale fishery	< 12	5	7	9	6	27
9	LIGURIA	Small scale fishery	< 12	5	6	7	5	23
9	TOSCANA	Small scale fishery	< 12	5	6	6	4	21
Total				15	19	22	15	71
10	CALABRIA	Small scale fishery	< 12	1	4	3	1	9
10	CAMPANIA	Small scale fishery	< 12	11	22	23	17	73
10	SICILIA NORD	Small scale fishery	< 12	11	14	11	4	40
Total				23	40	37	22	122
11	SARDEGNA	Small scale fishery	< 12	10	20	17	7	54
Total				10	14	11	4	54
16	SICILIA SUD	Small scale fishery	< 12	10	15	13	7	45
Total				10	15	13	7	45
17	ABRUZZO	Small scale fishery	< 12	3	5	6	5	19
17	E. ROMAGNA	Small scale fishery	< 12	3	5	5	5	18
17	F.V.GIULIA	Small scale fishery	< 12	3	6	5	4	18
17	MARCHE	Small scale fishery	< 12	6	9	10	7	32
17	VENETO	Small scale fishery	< 12	2	5	4	3	14
Total				17	30	30	24	101
18	PUGLIA NORD	Small scale fishery	< 12	5	10	10	8	33
Total				5	10	10	8	33
19	CALABRIA	Small scale fishery	< 12	5	7	7	3	22
19	PUGLIA IONICA	Small scale fishery	< 12	7	12	11	7	37
19	SICILIA EST	Small scale fishery	< 12	7	17	15	8	47
Total				19	36	33	18	106
Small scale fishery Total				89	150	145	94	532
9	LIGURIA	Gear using hooks	SD	1	1	1	1	4
Total				1	1	1	1	4
10	CALABRIA TIRR.	Gear using hooks	SD	2	3	3	2	10
10	SICILIA NORD	Gear using hooks	SD	2	3	2	1	8
Total				4	6	5	3	18
16	SICILIA SUD	Gear using hooks	12 < 18	1	2	3	1	7
16	SICILIA SUD	Gear using hooks	18 < 24	1	3	2	1	7
Total				2	5	5	2	14
18	PUGLIA NORD	Gear using hooks	12 < 18	1	2	2	1	6
Total				1	2	2	1	6
19	CALABRIA IONICA	Gear using hooks	12 < 18	1	2	2	1	6
19	PUGLIA IONICA	Gear using hooks	12 < 18	1	1	1	1	4
19	SICILIA EST	Gear using hooks	12 < 18	3	7	8	4	22
19	SICILIA EST	Gear using hooks	18 < 24	3	8	8	5	24
Total				8	18	19	11	56
Gear using hooks Total				16	32	32	18	98
9	LAZIO	Passive polyvalent	12 < 18	1	1	2	1	5
9	TOSCANA	Passive polyvalent	12 < 18	1	1	1	1	4
Total				2	2	3	2	9
10	SICILIA NORD	Passive polyvalent	12 < 18	1	2	1	1	5
Total				1	2	1	1	5
11	SARDEGNA	Passive polyvalent	12 < 18	3	6	5	3	17
Total				3	6	5	3	17
16	SICILIA SUD	Passive polyvalent	12 < 18	0	1	1	0	2
Total				0	1	1	0	2
17	VENETO	Passive polyvalent	12 < 18	1	1	0	0	2
Total				1	1	0	0	2
19	PUGLIA IONICA	Passive polyvalent	12 < 18	1	1	1	1	4
19	SICILIA EST	Passive polyvalent	12 < 18	1	2	2	2	7
Total				2	3	3	3	11
Passive Polyvalent Total				9	15	13	9	46
9	LIGURIA	Polyvalent	< 12	1	1	1	1	4
Total				1	1	1	1	4
10	CALABRIA TIRR.	Polyvalent	< 12	1	2	2	1	6
10	CAMPANIA	Polyvalent	< 12	4	5	5	3	17
10	SICILIA NORD	Polyvalent	< 12	3	5	4	1	13
10	SICILIA NORD	Polyvalent	12 < 18	1	2	1	1	5
Total				9	14	12	6	41
17	E. ROMAGNA	Polyvalent	< 12	1	1	1	1	4
17	MARCHE	Polyvalent	< 12	1	1	1	1	4
Total				2	2	2	2	8

19	CALABRIA	Polyvalent	< 12	1	2	2	1	6
Total				1	2	2	1	6
Polyvalent Total				13	19	17	10	59
9	LIGURIA	Pelagic trawl and seiners	SD	-	2	3	0	5
9	TOSCANA	Pelagic trawl and seiners	SD	1	2	2	1	6
Total				1	4	5	1	11
10	CALABRIA	Pelagic trawl and seiners	SD	0	1	1	0	2
10	CAMPANIA	Pelagic trawl and seiners	SD	1	4	5	1	11
10	SICILIA NORD	Pelagic trawl and seiners	SD	2	3	2	1	8
Total				3	8	8	2	21
16	SICILIA SUD	Pelagic trawl and seiners	SD	1	4	4	2	11
Total				1	4	4	2	11
17	ABRUZZO	Pelagic trawl and seiners	24 < 40	2	1	1	1	5
17	E. ROMAGNA	Pelagic trawl and seiners	SD	3	4	2	3	12
17	F.V.GIULIA	Pelagic trawl and seiners	SD	1	3	3	1	8
17	F.V.GIULIA	Pelagic trawl and seiners	12 < 18	0	1	0	1	2
17	MARCHE	Pelagic trawl and seiners	24 < 40	2	2	1	2	7
17	VENETO	Pelagic trawl and seiners	SD	4	5	3	3	15
Total				12	16	10	11	49
18	PUGLIA NORD	Pelagic trawl and seiners	SD	0	1	1	1	3
18	PUGLIA NORD	Pelagic trawl and seiners	24 < 40	1	2	1	2	6
Total				1	3	2	3	9
19	SICILIA EST	Pelagic trawl and seiners	SD	2	4	4	2	12
Total				2	4	4	2	12
Pelagic Trawl and Seiner Total				20	39	33	21	113
17	E. ROMAGNA	Beam trawl	SD	1	1	0	1	3
17	F.V.GIULIA	Beam trawl	12 < 18	0	1	0	1	2
17	MARCHE	Beam trawl	SD	1	1	1	1	4
17	VENETO	Beam trawl	SD	1	1	1	1	4
Beam Trawl Total				3	4	2	4	13
17	ABRUZZO	Dredge	12 < 18	0	1	2	1	4
17	E. ROMAGNA	Dredge	12 < 18	1	1	1	2	5
17	F.V.GIULIA	Dredge	SD	1	1	1	1	4
17	MARCHE	Dredge	12 < 18	3	2	1	2	8
17	MOLISE	Dredge	SD	0	0	0	1	1
17	VENETO	Dredge	12 < 18	4	4	2	5	15
Dredge Total				9	9	7	12	37
Total fleet segments				275	412	365	282	1388

Estimate of length frequency distribution by species

Average and variance of length frequency distributions will be estimated according to the method reported in Pennington et al., 2002.

The mean fish length and its variance estimate are based on the clusters of fish caught at n sampling fishing days. This is because the sample of fish measured during a survey is not a random sample of individual fish from the entire population, but a sample of n clusters, one cluster from each fishing day. Because fish caught together are usually more similar than those in the general population, a total of M fish collected in n clusters will contain less information, about the population length distribution, than M fish sampled randomly.

Since both the lengths and the number of fish in a sampling fishing day are random variables, a ratio estimator is appropriate (Cochran, 1977). The ratio estimator, R , of the mean length is given by:

$$\hat{R} = \frac{\sum_{i=1}^n M_i \hat{\mu}_i}{\sum_{i=1}^n M_i}$$

where M_i = the number of fish caught in the sampling fishing day i ;

and $\hat{\mu}_i$ = an estimate of the average length of fish in the sampling fishing day i .

The estimated variance of \hat{R} is approximately given by:

$$\text{var}(\hat{R}) = \sum_{i=1}^n \frac{(M_i / \bar{M})^2 (\hat{\mu}_i - \hat{R})^2}{n(n-1)} \quad \text{where: } \bar{M} = \sum_{i=1}^n M_i / n$$

Then the variance σ_x^2 of the population length distribution is estimated. If mi are measured in each sampling fishing day, then the calculated variance:

$$\hat{\sigma}_x^2 = \frac{\sum_{i=1}^n \sum_{j=1}^{m_i} (M_i / m_i)^2 (x_{i,j} - \hat{R})^2}{M - 1}$$

is an estimator of variance σ_x^2 ; where

$M = \sum_{i=1}^n M_i$ is the total number of the fish caught during the survey and

$x_{i,j}$ = the length of the j^{th} fish in the sampling fishing day i .

Catch at length variance will be estimated also according to an approach based on Vignaeu and Mahevas (2004).

The number of fish per length class j (N_j) is given:

$$\hat{N}_j = \sum_{k=1}^K \frac{W_k}{\sum_{\eta=1}^{n_k} W_{k\eta}} \left(\sum_{\eta=1}^{n_k} N_{jk\eta} \right) = \sum_{k=1}^K W_k \frac{\sum_{\eta=1}^{n_k} N_{jk\eta}}{\sum_{\eta=1}^{n_k} W_{k\eta}}$$

where:

W_k is the total catch of a target species in weight for vessel and commercial category k ;

$W_{k\eta}$ is samples (η) in weight for commercial category k ;

Variance for each length class j ($\text{Var } N_j$) can be calculated as:

$$Var(\hat{N}_j) = \sum_{k=1}^K W_k^2 Var\left(\frac{\sum_{\eta=1}^{n_k} N_{jk\eta}}{\sum_{\eta=1}^{n_k} W_{k\eta}}\right)$$

where

$$Var\left(\frac{\sum_{\eta=1}^{n_k} N_{jk\eta}}{\sum_{\eta=1}^{n_k} W_{k\eta}}\right) = \frac{1 - \frac{\sum_{\eta=1}^{n_k} W_{k\eta}}{W_K} \sum_{\eta=1}^{n_k} \left(N_{jk\eta} - \frac{\sum_{\eta=1}^{n_k} N_{jk\eta}}{\sum_{\eta=1}^{n_k} W_{k\eta}}\right)^2}{\frac{1}{n_k} \left(\sum_{\eta=1}^{n_k} W_{k\eta}\right)^2 (n_k - 1)}$$

Coefficient of variation by length class CV_j is then calculated as:

$$CV = \frac{\sqrt{Var(N_j)}}{N_j}$$

A scalar value of CV is given as weighted mean by number of the length class which contributed to the 90% in number of the landed fish.

Age length-key by species

The total number of fish for each age group will be obtained by the sum of the individuals in each length class (Baird, 1983).

$$N = \sum_i N_i p_i$$

where $N_i = n^\circ$ of individuals for each length class;

p_i = proportion of the individuals in an age group for length class;

$N_i p_i$ = number of individuals for length class and belonging to an age group.

$n_i p_i$ = number of aged individuals for length class and belonging to an age group.

Variance of landing for each length class (Var $N_i p_i$) is calculated using the Gulland's formula (1955) as follows:

$$Var(N_i p_i) = N_i^2 Var(p_i) + P_i^2 Var(N_i)$$

The first term of the equation represents the variability due to the ageing and the second one the variability due to the length measures. The latter is negligible compared to the former (Brander, 1974, Pope e Knighths, 1975; Levi e Mortera, 1982) and thus the formula is reduced as follows:

$$Var(N_i p_i) = N_i^2 Var(p_i)$$

Assuming that the age groups are distributed in the length classes according to a binomial distribution the variance will be estimated as follows:

$$Var(p_i) = \frac{p_i * (1 - p_i)}{n_i}$$

where n_i = number of individuals aged for the length class (all the age groups of that length class).

If all the individuals of a length class belong to a single age group then the variance is zero.

The variance of the total number of individuals for an age group is computed by the sum of the variance of each length class containing the age group of interest according to the following formula:

$$Var(N) = \sum_{i=1}^L N_i^2 Var(p_i)$$

where L are the length classes.

The coefficient of variation CV for each age group is calculated as follows:

$$CV = \frac{Var(N)}{\sum_{i=1}^L N_i p_i}$$

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1.1. - General overview Fishing activities						Country	Italy
						NP-year	2007
Area	Sub-area	Target species or species assemblages					
		Demersal (a)	Pelagic (a)	Industrial (b)	Deep-water (a)	Highly migratory	Tuna and tuna-like
North East Atlantic	ICES Sub-area III (excl. IIIa N)	No	No	No	No		
North East Atlantic	ICES Sub-areas I, II, IIIa N, IV and VIId	No	No	No	No		
North East Atlantic	ICES Sub-areas V, VI, VII (excl. VIId), VIII, IX, X, XII and XIV	No	No	No	No		
North West Atlantic	NAFO area	No	No	No	No		
Mediterranean	All sub-areas	Yes	Yes	No	Yes		
East Central Atlantic	CECAF FAO 34	No	No	No	No		
West Central Atlantic	WECAF area	No	No	No	No		
Atlantic Ocean	All sub-areas					No	No
Pacific Ocean	All sub-areas					No	No
Indian Ocean	All sub-areas					No	Yes*
(a) Including fish, crustaceans and molluscs							
(b) Fisheries targeting species for the production of fish meal, fish oil, etc.							
(*) only one Italian vessel							

5.1. Conversion factors	Country	Italy
	NP-year	2007
Species	Presentation	Conversion factor

Conversion factors will not be applied to landing-weight-based quantities as all species are landed gutted. Conversion factors could be necessary only for marginal share of landings. For these species, quantities will be converted to live weight using the FAO and Eurostat conversion factors (FAO Fisheries Circular No 847 rev. 1)

5.2. - General overview Discard sampling

							Country	Italy		MP+EP			
							NP-year	2007					
Fleet segment or métier	Area	No. Vessels in segment	Fishing effort	Effort units	Is discarding important ?	Will discards be sampled ?	Long-term planning						
							2002	2003	2004	2005	2006	2007	
Beam trawl	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	89	14467	Days fishing	presumably yes (a)	triennially		X				X	
Bottom trawl	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	3007	2450927	Days fishing	presumably yes (a)	triennially		X				X	
Pelagic trawl	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	127	50969	Days fishing	presumably no (b)	presumably no					X		
Purse seine	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	302	437265	Days fishing	presumably no (b)	presumably no					X		
Long-lines	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	589	80966	Days fishing	presumably no (b)	presumably no					X		
Polyvalent gears (active and passive)	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	10233	934538	Days fishing	presumably no (b)	presumably no					X		

(a) 2003 pilot study

(b) results of the 2005 sampling programs have not yet completed processed

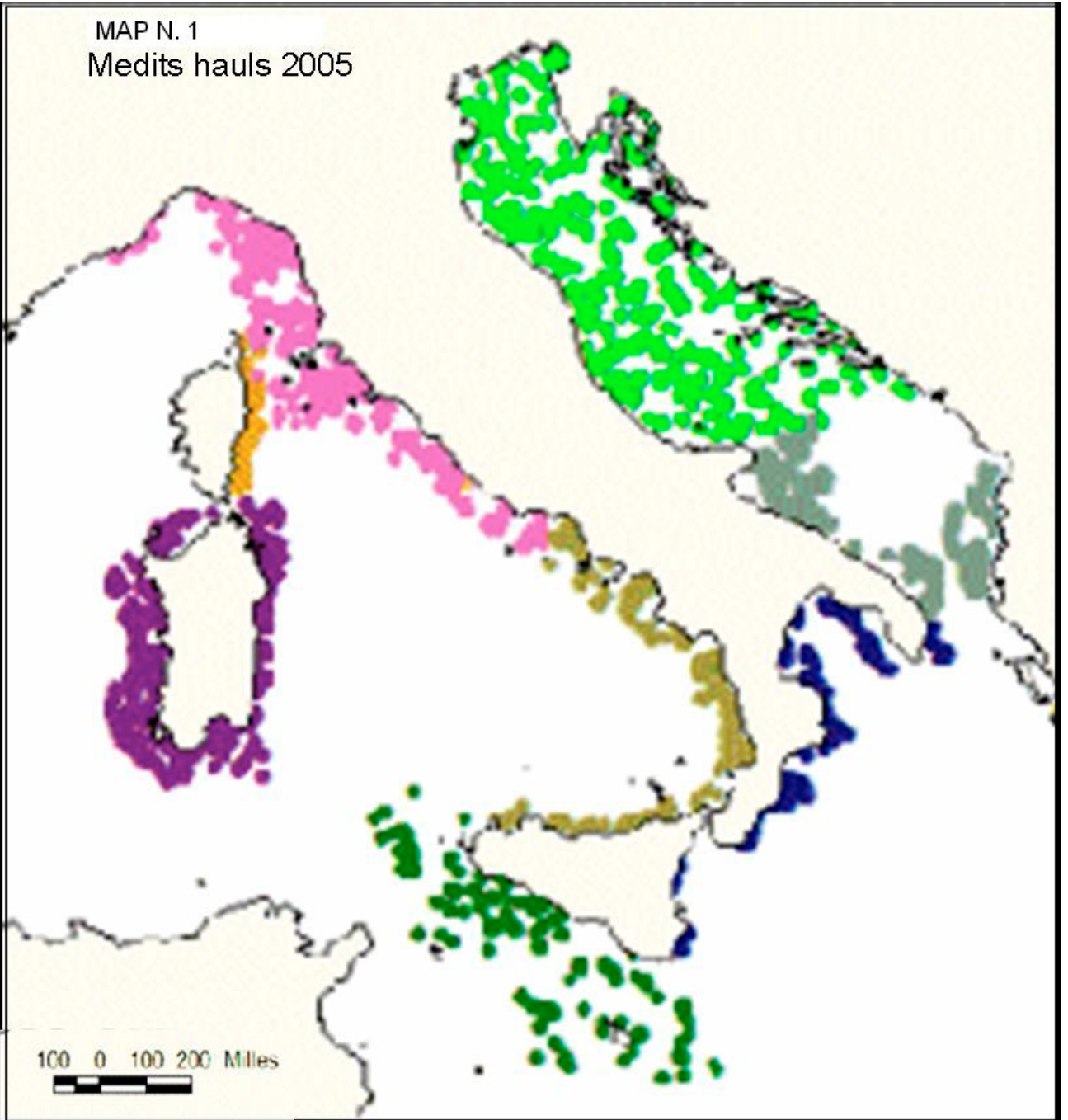
5.3. - Planned Discard sampling										Country		Italy		MP+EP
										NP-year		2007		
Fleet segment or métier	Area	Planned sampling effort in terms of ...			Temporal distribution sampling effort					Specied analysed			Sampling method	
		Observer and self-sampling trips	Days at sea	Hauls	Trips OR days OR hauls	Quarter 1	Quarter 2	Quarter 3	Quarter 4	App XII	App XIII	Restricted list		

no discard survey planned in 2007

6.1. - Planned CPUE data series			Country	Italy	MP+EP
			NP-year	2007	
Species	Area	Reference fleet	MP/EP	Data sources	
<i>Thunnus thynnus</i>	GSA 9: Ligurian Sea and Upper Tyrrhenian GSA 10: Lower Tyrrhenian GSA 11: Sardinia GSA 16: Sicilian Channel GSA 17: Upper and Mid-Adriatic GSA 18: Lower Adriatic GSA 19: Western Ionian	Purse seiners	MP	Official data (logbook, TR forms)	
<i>Xiphias gladius</i>	GSA 10: Lower Tyrrhenian GSA 11: Sardinia GSA 16: Sicilian Channel GSA 19: Western Ionian	Long liners	MP	Landings and effort data (modules D and E) + specific questionnaire for number of hooks	
<i>Nephrops norvegicus</i> , <i>Merluccius merluccius</i> , <i>Parapenaeus longirostris</i> , <i>Mullus barbatus</i>	GSA 9: Ligurian Sea and Upper Tyrrhenian GSA 10: Lower Tyrrhenian GSA 11: Sardinia GSA 16: Sicilian Channel GSA 17: Upper and Mid-Adriatic GSA 18: Lower Adriatic GSA 19: Western Ionian	Demersal trawlers	EP	Landings and effort data (modules D and E)	

7.1. - Planned Priority 1 surveys				Country	Italy	MP	
				NP-year	2007		
Name of survey	Aim of survey	Area covered	Period	Days at sea Planned	Sampling activities		Reference to map mandatory
					Type	Planned	
Meditis survey	Abundance and assessment of some Demersal species	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	April-July	320-391	Fish Hauls	750	Map n. 1
Tuna tagging	to improve the knowledge on the existing relationships between environmental parameters and CPUE series, according to the decision taken at the meeting held in Bari on 4-6 April 2005 by the Planning Group on Tuna Tagging	Eastern Mediterranean	July - August	270-300	pop up tags	20	
Swordfish tagging		Ligurian Sea, Sardinian seas, Sicily seas , Ionian Sea and South Adriatic	October-December		tags (spaghetti)	150	

MAP N. 1
Medits hauls 2005



7.2. - Planned Priority 2 surveys			Country	Italy	EP		
			NP-year	2007			
Name of survey	Aim of survey	Area covered	Period	Days at sea Planned	Sampling activities		Reference to map mandatory
					Type	Planned	
Grund survey	Abundance and assessment of some Demersal species	GSA 9, 10, 11, 16, 17, 18, 19 (FAO-GFCM, Alicante 2001)	october-december	320-391	Fish Hauls	750	

8.1. - Planned Length & age sampling of Landings						Country	Italy		MP			
						NP-year	2007					
Species	Area / Stock	Length sampling				Age sampling				Precision target	Recovery Plan	Tuning series
		Minimum required	Planned	Temporal strata	Adjusted for seasonality	Minimum required	Planned	Temporal strata	Adjusted for seasonality			
<i>Engraulis encrasicolus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	14.358	90.000	Quarterly	Yes	2.872	6.000	Quarterly	Yes	X		
<i>Sardina pilchardus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	4.991	70.000	Quarterly	Yes	998	4.900	Quarterly	Yes	X		
<i>Thunnus thynnus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	3.802	3.800	Quarterly	Yes	3.802	1.000	Quarterly	Yes	X		
<i>Xiphias gladius</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	7.631	7.600	Quarterly	Yes	7.631	1.500	Quarterly	Yes	X		
<i>Thunnus alalunga</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	4.348	4.000	Quarterly	Yes	4.348	1.000	Quarterly	Yes	X		
<i>Coriphaena hippurus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	2.012	2.000	Quarterly	Yes	2.012	2.000	Quarterly	Yes	X		
<i>Trachurus trachurus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	425	8.700	Quarterly	Yes	212	2.600	Quarterly	Yes	X		
<i>Loligo vulgaris</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	588	2.200	Quarterly	Yes	not applicable				X		
<i>Sepia officinalis</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	874	5.300	Quarterly	Yes	not applicable				X		
<i>Illex spp., Todarodes spp.</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	1.169	1.200	Quarterly	Yes	not applicable				X		
<i>Parapenaeus longirostris</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	6.041	90.000	Quarterly	Yes	not applicable				X		
<i>Aristaeomorpha foliacea</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	1.905	5.600	Quarterly	Yes	not applicable				X		
<i>Aristeus antennatus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	586	12.000	Quarterly	Yes	not applicable				X		
<i>Nephrops norvegicus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	4.201	10.700	Quarterly	Yes	not applicable				X		
<i>Lophius spp.</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	2.042	2.900	Quarterly	Yes	255	1090	Quarterly	Yes	X		
<i>Merluccius merluccius</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	7.036	37.000	Quarterly	Yes	1.759	6390	Quarterly	Yes	X		
<i>Mullus barbatus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	5.376	50.000	Quarterly	Yes	1.344	9000	Quarterly	Yes	X		
<i>Mullus surmuletus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	1.901	5.000	Quarterly	Yes	475	1800	Quarterly	Yes	X		
<i>Pagellus erythrinus</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	481	6.000	Quarterly	Yes	96	1500	Quarterly	Yes	X		
<i>Venus gallina</i>	Geographical sub-areas (FAO-GFCM, Alicante 2001)	1.085	1.085	Quarterly	Yes	8.679	1000	Quarterly	Yes	X		

8.2. - Overview of Average landings, Shares in EU TACs and EU landings, and Exemption rules applied - Mandatory species and stocks only						Country		Italy		
						NP-year		2007		
Stocks that will NOT be sampled for any of the parameters are highlighted in grey						Reference period landings		2003-5		
Species	Area / Stock		TAC Stock	Recovery Plan	Average landings --- ton	Share in EU TAC --- %	Share in EU landings --- %	Sampling for		
								Length	Age	Other
<i>Squilla mantis</i>	Medit.	Geographical sub-areas (FAO-GFCM)			7.220		?			
<i>Octopus vulgaris</i>	Medit.	Geographical sub-areas (FAO-GFCM)			4.995		?			
<i>Boops boops</i>	Medit.	Geographical sub-areas (FAO-GFCM)			4.685		?			
<i>Eledone moschata</i>	Medit.	Geographical sub-areas (FAO-GFCM)			3.800		?			
<i>Scomber spp.</i>	Medit.	Geographical sub-areas (FAO-GFCM)			3.485		?			
<i>Spicara spp</i>	Medit.	Geographical sub-areas (FAO-GFCM)			2.825		?			
<i>Eledone cirrosa</i>	Medit.	Geographical sub-areas (FAO-GFCM)			2485		?			
<i>Solea vulgaris</i>	Medit.	Geographical sub-areas (FAO-GFCM)			1.635		?			
<i>Sarda sarda</i>	Medit.	Geographical sub-areas (FAO-GFCM)			1.625		?			
<i>Trachurus mediterraneus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			1.045		?			
<i>Penaeus kerathurus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			815		?			
<i>Raja clavata</i>	Medit.	Geographical sub-areas (FAO-GFCM)			750		?			
<i>Eutrigla gurnardus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			645		?			
<i>Trigla lucerna</i>	Medit.	Geographical sub-areas (FAO-GFCM)			<200		?			
<i>Raja miraletus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			<200		?			
<i>Istiophoridae</i>	Medit.	Geographical sub-areas (FAO-GFCM)			<200		?			
<i>Engraulis encrasicolus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			57.432		?	x	x	
<i>Sardina pilchardus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			19.963		?	x	x	
<i>Thunnus thynnus</i>	Medit.	Geographical sub-areas (FAO-GFCM)			3.802		?	x	x	
<i>Xiphias gladius</i>	Medit.	Geographical sub-areas (FAO-GFCM)			7.631		?	x	x	
<i>Thunnus alalunga</i>	Medit.	Geographical sub-areas (FAO-GFCM)			4.348		?	x	x	

8.2. - Overview of Average landings, Shares in EU TACs and EU landings, and Exemption rules applied - Mandatory species and stocks only						Country		Italy		
						NP-year		2007		
Stocks that will NOT be sampled for any of the parameters are highlighted in grey						Reference period landings		2003-5		
Species	Area / Stock		TAC Stock	Recovery Plan	Average landings --- ton	Share in EU TAC --- %	Share in EU landings --- %	Sampling for		
								Length	Age	Other
Coriphaena hippurus	Medit.	Geographical sub-areas (FAO-GFCM)			2.012		?	x	x	
Trachurus trachurus	Medit.	Geographical sub-areas (FAO-GFCM)			4.248		?	x	x	
Loligo vulgaris	Medit.	Geographical sub-areas (FAO-GFCM)			2.351		?	x		
Sepia officinalis	Medit.	Geographical sub-areas (FAO-GFCM)			8.736		?	x		
Illex spp., Todarodes spp.	Medit.	Geographical sub-areas (FAO-GFCM)			4.674		?	x		
Parapenaeus longirostris	Medit.	Geographical sub-areas (FAO-GFCM)			12.083		?	x		
Aristaeomorpha foliacea	Medit.	Geographical sub-areas (FAO-GFCM)			1.905		?	x		
Aristeus antennatus	Medit.	Geographical sub-areas (FAO-GFCM)			586		?	x		
Nephrops norvegicus	Medit.	Geographical sub-areas (FAO-GFCM)			4.201		?	x		
Lophius spp.	Medit.	Geographical sub-areas (FAO-GFCM)			2.042		?	x	x	
Merluccius merluccius	Medit.	Geographical sub-areas (FAO-GFCM)			14.071		?	x	x	
Mullus barbatus	Medit.	Geographical sub-areas (FAO-GFCM)			10.752		?	x	x	
Mullus surmuletus	Medit.	Geographical sub-areas (FAO-GFCM)			3.801		?	x	x	
Pagellus erythrinus	Medit.	Geographical sub-areas (FAO-GFCM)			1.925		?	x	x	
Venus gallina	Medit.	Geographical sub-areas (FAO-GFCM)			21.698		?	x	x	

8.3. - Planned Length & age sampling of Landings						Country	Italy		EP			
						NP-year	2007					
Species	Area / Stock	Length sampling				Age sampling				Precision target	Recovery Plan	Tuning series
		Minimum required	Planned	Temporal strata	Adjusted for seasonality	Minimum required	Planned	Temporal strata	Adjusted for seasonality			

no sampling planned in 2007

8.4. - Planned Length & age sampling of Catches & discards				Country		Italy		MP+EP	
				NP-year		2007			
Fleet segment or métier	Area	Species	MP/EP	Planned length sampling			Planned age sampling		
				Unsorted catches	Landings	Discards	Unsorted catches	Landings	Discards

no discard sampling program planned in 2007

9.2. - Planned sampling Growth and Sex ratios				Country		Italy		MP
				NP-year		2007		
Species	Area / Stock	Length at age			Sex ratios			
		Nos. planned	Data sources		Nos. planned	Data sources		

Other biological samplings have to be carried out at three-year intervals for all species. Since these samples were collected in 2005 they are not present in the 2007 National Programme

9.3. - Planned sampling Sexual maturity and Fecundity			Country		Italy		MP
			NP-year		2007		
Species	Area / Stock	Sexual maturity			Fecundity		
		Nos. planned	Data sources		Nos. planned	Data sources	

Other biological samplings have to be carried out at three-year intervals for all species. Since these samples were collected in 2005 they are not present in the 2007 National Programme

9.4. - Long-term planning Other biological parameters														Country		ITALY		EP							
														NP-year		2007									
Species	Area	Length at age						Sex ratio						Sexual maturity						Fecundity					
		2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
no sampling program planned in 2007																									

9.5. - Planned sampling Growth and Sex ratios				Country		Italy		EP
				NP-year		2007		
Species	Area / Stock	Length at age			Sex ratios			
		Nos. planned	Data sources		Nos. planned	Data sources		
no sampling program planned in 2007								

9.6. - Planned sampling Sexual maturity and Fecundity				Country		Italy		EP
				NP-year		2007		
Species	Area / Stock	Sexual maturity			Fecundity			
		Nos. planned	Data sources		Nos. planned	Data sources		
no sampling program planned in 2007								

10.1. - Fishing vessels : Population segments for collection of economic data			Country		Italy	MP
			NP-year			
Fleet segment		Total population no. ----- N	Planned sample no. (1) (2) ----- P	Planned sample rate (1) ----- P/N*100 (%)	Sampling strategy	
Dredgers	=>12 <18	687	64	9,3	Stratified random	
Dredgers	=>6 <12	21	4	19,0	Stratified random	
Long liners	=> 18 <24	79	14	17,7	Stratified random	
Long liners	=>12 <18	317	40	12,6	Stratified random	
Beam Trawlers	=> 18 <24	5	4	80,0	Stratified random	
Beam Trawlers	=>12 <18	84	20	23,8	Stratified random	
Demersal trawlers	< 12 m	140	24	17,1	Stratified random	
Demersal trawlers	=> 18 <24	881	221	25,1	Stratified random	
Demersal trawlers	=> 24 < 40	303	132	43,6	Stratified random	
Demersal trawlers	=>12 <18	1554	189	12,2	Stratified random	
Midwater pair trawlers	=> 24 < 40	50	11	22,0	Stratified random	
Midwater pair trawlers	=>12 <18	62	14	22,6	Stratified random	
Midwater pair trawlers	=>18 <24	43	28	65,1	Stratified random	
Passive gears	< 6 m	3168	154	4,9	Stratified random	
Passive gears	=>12 <18	428	46	10,7	Stratified random	
Passive gears	=>6 <12	6215	340	5,5	Stratified random	
Purse seiners	=> 24 < 40	23	9	39,1	Stratified random	
Purse seiners	=>12 <24	254	83	32,7	Stratified random	
Total fleet		14314	1397	9,8	Stratified random	
(1) Where planned sample nos. and rates differ for the estimation of different parameters within a segment, please give the appropriate range.						
(2) The planned sample is referred to the 2006 sampling design. The sample for the 2007 survey will be defined in October 2006						

10.2. - Fishing vessels : Population segments for collection of economic data			Country	Italy	EP
			NP-year	2007	
Fleet segment		Total population no. ----- N	Planned sample no. (1) (2) ----- P	Planned sample rate (1) ----- P/N*100 (%)	Sampling strategy
Dredgers	=>12 <18	687	64	9,3	Stratified random
Dredgers	=>6 <12	21	4	19,0	Stratified random
Long liners	=> 18 <24	79	14	17,7	Stratified random
Long liners	=>12 <18	317	40	12,6	Stratified random
Beam Trawlers	=> 18 <24	5	4	80,0	Stratified random
Beam Trawlers	=>12 <18	84	20	23,8	Stratified random
Demersal trawlers	< 12 m	140	24	17,1	Stratified random
Demersal trawlers	=> 18 <24	881	221	25,1	Stratified random
Demersal trawlers	=> 24 < 40	303	132	43,6	Stratified random
Demersal trawlers	=>12 <18	1554	189	12,2	Stratified random
Midwater pair trawlers	=> 24 < 40	50	11	22,0	Stratified random
Midwater pair trawlers	=>12 <18	62	14	22,6	Stratified random
Midwater pair trawlers	=>18 <24	43	28	65,1	Stratified random
Passive gears	< 6 m	3168	154	4,9	Stratified random
Passive gears	=>12 <18	428	46	10,7	Stratified random
Passive gears	=>6 <12	6215	340	5,5	Stratified random
Purse seiners	=> 24 < 40	23	9	39,1	Stratified random
Purse seiners	=>12 <24	254	83	32,7	Stratified random
Total fleet		14314	1397	9,8	Stratified random
(1) Where planned sample nos. and rates differ for the estimation of different parameters within a segment, please give the appropriate range.					
(2) The planned sample is referred to the 2006 sampling design. The sample for the 2007 survey will be defined in October 2006					

11.1. - Processing industry : Population segments for collection of economic data			Country	ITALY	MP
			NP-year		
Fleet segment	Total population no. ----- N	Planned sample no. (1) ----- P	Planned sample rate (1) ----- P/N*100 (%)	Sampling strategy	
Companies with <2 employees	150	30	20	Stratified + PPS	
Companies with >=2 and <5 employees	114	46	40	Stratified + PPS	
Companies with >=5 and <10 employees	100	60	60	Stratified + PPS	
Companies with >=10 and <20 employees	78	63	80	Stratified + PPS	
Companies with >=20 employees	63	63	100	Stratified + PPS	
(1) Where planned sample nos. and rates differ for the estimation of different parameters within a segment, please give the appropriate range.					

11.2. - Processing industry : Population segments for collection of economic data			Country	Itlay	EP
			NP-year	2007	
Fleet segment	Total population no. ----- N	Planned sample no. (1) ----- P	Planned sample rate (1) ----- P/N*100 (%)	Sampling strategy	
no activity planned for 2007					

13.1. - Planned International co-ordination		Country		Italy	
		NP-year		2007	
Meeting / Workshop / Inter-calibration exercise	Venue	Month	No. MS's participants	Eligible under DCR	
Workshop on Age-reading on Common pandora (<i>Pagellus erythrinus</i>)	Italy	To be decided	2	Yes	
ALADYM Age-Length Based Dynamic Model Workshop	Italy	To be decided	2	Yes	
Workshop on fish maturity	Italy	To be decided	2	Yes	
RCM for the Mediterranean waters	Cyprus	To be decided	2	Yes	
Workshop on Discard raising procedures	venue to be decided	To be decided	2	Yes	
Workshop on Age-reading on Red mullet (<i>Mullus sp.</i>)	Greece	To be decided	2	Yes	
Medit (Mediterranean trawl surveys) working group	Italy	To be decided	2	Yes	
Working group on tuna tagging	Crete	January	2	Yes	
PGCCDBS Plenary Meeting	venue to be decided	To be decided	2	Yes	