



**Council Regulation (EC) No 1543/2000 establishing a
Community framework for the collection and management
of the data needed to conduct the common fisheries policy**

**CYPRUS NATIONAL PROGRAMME
2005**

by

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THE CYPRUS NATIONAL PROGRAMME FOR THE COLLECTION OF FISHERIES DATA

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THE CYPRUS NATIONAL PROGRAMME FOR THE COLLECTION OF FISHERIES DATA

1. INTRODUCTION

Regulation (EC) No. 1543/2000 requires the establishment of a permanent statistical framework for the collection of fishery data relevant to the common fisheries policy, and distinguishes between a minimum compulsory programme (MP) and an optional extended programme (EP).

Commission Regulation (EC) No 1639/2001 establishes a MP and an EP for the collection of data in the fisheries sector and lays down detailed rules for the application of Council Regulation (EC) No 1543/2000.

This document presents the National Programme of the Republic of Cyprus for the collection of fishery data for the year 2005, as required by article 3 of the implementing Regulation. The Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture and Natural Resources and Environment will direct the collection of the data.

The document has been produced in accordance with Commission Regulation 1543/2000 “*establishing a Community framework for the collection and management of the data needed to conduct the common fisheries policy*” based on detailed rules, set by Regulation 1639/2001 which establishes the minimum and extended Community programmes for the collection of data in the fisheries sector and covers the entire Minimum Programme.

The National Programme will conform to the MP according to Article 3 and collect data according to Article 4 of *Council Regulation 1543/2000*.

All data collected under the programme will be dealt with confidence. Only members of staff of the DFMR will have authorisation concerning access to the data. Data collected under the Cyprus National programme will be stored into databases. It should be noted, that the National Programme will cover only areas under Cyprus Government control.

THE FISHERY OF CYPRUS

The Cyprus capture fishery consists of the Inshore fishery, the Trawl fishery, the Multipurpose fishery and the Sport fishery. There is also one purse seiner operating in the waters of Cyprus.

The Inshore Fishery

The Inshore fishery is practiced with small wooden boats of 6 to 12m (OAL), which mainly fish with bottom set nets and long lines (passive gears). In 2003 677 persons were occupied as full time fishermen in 500 licensed boats.

Total production of the Inshore fishery, numbers of working days and boats, total fleet size and H.P. as well as production per working day for the years 1994 to 2003 are given in Table 1.

TABLE 1: INSHORE FISHERY PRODUCTION AND FISHING EFFORT (1994-2003)

| YEAR | PRODUCTION | WORKING | No. OF | FLEET | FLEET | PRODUCTION/ |
|------|------------|---------|--------|----------|----------|-------------|
| | M. TONS | DAYS | BOATS | TOTAL m. | TOTAL | WORKING DAY |
| | | | | O.A.L. | H.P. | Kg |
| 1994 | 1.789,5 | 104.192 | 438 | 3.574,0 | 18.225,0 | 17,18 |
| 1995 | 1.587,2 | 109.379 | 491 | 3.978,0 | 20.237,0 | 14,51 |
| 1996 | 1.648,5 | 110.124 | 500 | 4.216,0 | 23.266,0 | 14,97 |
| 1997 | 1.498,0 | 96.657 | 466 | 3.724,0 | 20.035,0 | 15,50 |
| 1998 | 1.520,9 | 101.289 | 490 | 3.945,0 | 21.539,0 | 15,02 |
| 1999 | 1.299,6 | 113.589 | 498 | 4.017,3 | 22.771,5 | 11,44 |
| 2000 | 1.341,4 | 111.391 | 500 | 4.274,1 | 26.017,5 | 12,04 |
| 2001 | 1.168,7 | 101.098 | 500 | 4.420,3 | 27.841,0 | 11,56 |
| 2002 | 1.062,8 | 84.257 | 500 | 4.514,7 | 31.942,5 | 12,61 |
| 2003 | 972,5 | 72.588 | 500 | 4.033,5 | 24.090,5 | 13,40 |

The Trawl Fishery

The trawl fishery (mobile gears) consists of 22 trawlers of 21,4 to 26,8m (OAL) with 220-750 HP diesel engines. All of them are stern trawlers of steel or wooden hull. Eight trawlers are licensed to operate in the waters of Cyprus, whereas the others exclusively operate in international waters in the Mediterranean. In 2003 144 fishermen were fully occupied on these 22 trawlers.

Total production, number of working days, fleet total size and HP as well as production per working days of the 8 trawlers fishing in the waters of Cyprus are given on Table 2 for the years 1994 to 2003. The same information on the trawl fishery in international waters is given on Table 3.

**TABLE 2: TRAWL FISHERY PRODUCTION AND FISHING EFFORT (1994-2003)
CYPRUS WATERS**

| YEAR | PRODUCTION M. TONS | WORKING DAYS | No. OF VESSELS | FLEET TOTAL m. O.A.L. | FLEET TOTAL H.P. | PRODUCTION/ WORKING DAY Kg |
|------|-----------------------|-----------------|-------------------|-----------------------------|------------------------|----------------------------------|
| 1994 | 452,5 | 1.261 | 8 | 187,6 | 2.290 | 358,8 |
| 1995 | 427,7 | 1.314 | 8 | 187,6 | 2.290 | 325,5 |
| 1996 | 526,7 | 1.321 | 8 | 187,6 | 2.290 | 398,7 |
| 1997 | 462,5 | 1.308 | 8 | 187,6 | 2.290 | 353,6 |
| 1998 | 451,0 | 1.305 | 8 | 187,6 | 2.290 | 345,6 |
| 1999 | 405,8 | 1.308 | 8 | 193,0 | 3.365 | 310,2 |
| 2000 | 313,6 | 1.000 | 8 | 193,0 | 3.365 | 313,6 |
| 2001 | 415,6 | 1.305 | 8 | 193,2 | 3.365 | 318,5 |
| 2002 | 375,3 | 1.412 | 8 | 191,9 | 3.400 | 265,8 |
| 2003 | 394,0 | 1.388 | 8 | 191,9 | 3.400 | 283,8 |

**TABLE 3: TRAWL FISHERY PRODUCTION AND FISHING EFFORT (1994-2003)
INTERNATIONAL WATERS**

| YEAR | PRODUCTION M. TONS | WORKING DAYS | No. OF VESSELS | FLEET TOTAL m. O.A.L. | FLEET TOTAL H.P. | PRODUCTION/ WORKING DAY Kg |
|------|-----------------------|-----------------|-------------------|-----------------------------|------------------------|----------------------------------|
| 1994 | 348,4 | 852 | 6 | 96,2 | 1.785 | 408,9 |
| 1995 | 400,4 | 1.001 | 10 | 234,2 | 3.915 | 400,0 |
| 1996 | 333,9 | 852 | 10 | 235,3 | 3.815 | 391,9 |
| 1997 | 275,9 | 769 | 11 | 265,1 | 4.395 | 358,8 |
| 1998 | 350,7 | 1.051 | 13 | 258,7 | 4.135 | 333,7 |
| 1999 | 420,3 | 1.155 | 13 | 288,6 | 5.055 | 363,9 |
| 2000 | 406,8 | 1.309 | 12 | 292,5 | 5.470 | 310,8 |
| 2001 | 425,2 | 2.316 | 16 | 387,7 | 7.573 | 183,6 |
| 2002 | 236,7 | 916 | 22 | 531,1 | 9.663 | 258,4 |
| 2003 | 222,6 | 1.102 | 16 | 381,0 | 6.598 | 202,0 |

The Multipurpose Fishery

The Multipurpose fishery (polyvalent gears) is practiced with boats of about 16m OAL using long lines in the waters of Cyprus and in international waters in the east Mediterranean. In 2003 105 fishermen were fully occupied in 22 boats licensed for multipurpose fishing.

Table 4 gives the production, number of working days, fleet total size and HP as well as the production per working day for the years 1994 to 2003 in the multipurpose fishery.

TABLE 4: MULTIPURPOSE FISHERY PRODUCTION AND FISHING EFFORT (1994-2003)

| YEAR | PRODUCTION M. TONS | WORKING DAYS | No. OF VESSELS | FLEET TOTAL m. O.A.L. | FLEET TOTAL H.P. | PRODUCTION/ WORKING DAY Kg |
|------|-----------------------|-----------------|-------------------|-----------------------------|------------------------|----------------------------------|
| 1994 | 218,8 | 1.148 | - | - | - | 190,6 |
| 1995 | 122,0 | 899 | - | - | - | 135,7 |
| 1996 | 74,9 | 803 | - | - | - | 93,3 |
| 1997 | 71,3 | 778 | - | - | - | 91,6 |
| 1998 | 94,5 | 679 | - | - | - | 139,2 |
| 1999 | 139,5 | 1.146 | - | - | - | 121,7 |
| 2000 | 157,1 | 1.286 | - | - | - | 122,2 |
| 2001 | 237,1 | 1.615 | 24 | 405,3 | 5.965,0 | 146,8 |
| 2002 | 211,2 | 2.006 | 24 | 378,9 | 5.451,0 | 105,3 |
| 2003 | 132,8 | 1.446 | 33 | 499,9 | 9.185,0 | 91,8 |

The Sport Fishery

In Cyprus about 2000 persons are licensed sport fishermen, while many other persons fish with rod and line and spear gun for pleasure, without the need of license.

Categories of sport fishing:

- boats with nets and long lines
- scuba divers
- divers with lights and spear-guns
- fishing with nets-without boats

The Sport fishery captures about 15% of the total catch of Cyprus. Its catch is not yet reflected on the Fishery Statistics, as our attention has only recently focused on this fishery.

THE FISHERIES STATISTICAL SYSTEM

Data Collection Practices

Fishery statistical data are collected by:

- a) Direct Reports given by the various segments of the Fishery
- b) Legislative procedures
- c) Interviews

a) Direct Reports

- i) **Trawl Log-books:** All trawlers are required by law to keep log-books. Collection of data is carried out by daily return of log-book sheets, which all skippers are required to hand in prior to landing their catch. The log-book sheets are handed to the Fisheries Inspectors, while landed catches are inspected upon landing, to ensure that they are weighed and recorded accurately.

Trawl log-books include the following information: Identification of the trawler, place and depth of fishing, number of active fishing days, dates of the trip, port of landing, the total catch of 22 demersal fish species and breakdown of the catch by species and by quality.

The log sheets are collected every day by the Fisheries Inspectors and sent at intervals of one to two months to the Head Office of the Department for data processing.

- ii) **Inshore Fishery Production Reports:** Production data from the Inshore fishery are collected from a sample of this category of fleet. In this system a 10% random sample of the boat owners are provided with files of weekly production reports and are required to record their daily production.

Inshore fishery reports include the following information: Identification of the fisherman and the boat, the fishing station, month and the week of the month. The fishermen report their daily catch and the breakdown of the catch by species summed by week. A total of 40 demersal fish species are reported.

The sheets are collected at irregular intervals of one – two months by the Fisheries Inspectors and sent to the Head Office of the Department to process the data.

It is noted that the fishing equipment of every fisherman (i.e nets, type of nets and length, longlines etc) are known from the application for fishing licence.

- iii) **Multipurpose Fishery log-books:** All the multipurpose vessels are provided by log books, which they return to the Fisheries Inspectors every month.

The Multipurpose fishery log books include the following information: Dates of departure and return to the port, area of fishing and distance from Cyprus, number of hooks, species of the fish, number of fish and weight of each fish captured. Seven pelagic fish species are reported on these forms.

Similarly to the other reports, these log-books are collected and sent to the Head Office of the DFMR for data processing.

- iv) **Purse-seiner Production Reports:** The purse seiner is also provided with production reports, which are similar to the Inshore fishery reports. The catch is reported daily and the breakdown of the catch by species summed by week. These reports include 12 pelagic species. The area of fishing month and week of the month is noted on the reports, which are collected at irregular intervals and sent to the Head Office of the DFMR for data processing.

b. Legislative Procedures

- i) **Boat Registration Forms:** All fishing boats with tonnage of less than 15 tons are registered in the Fleet Vessel Register, kept by the Fisheries Department. Registration forms include the following information: Boat characteristics (length, width, depth, type and construction material), engine data (type, construction, power), the fishing equipment (nets, traps, long-lines), the mechanical and electronic equipment, as well as identification of the owners and the crew.
Similar as well as additional data are given upon registration of the trawlers, which are larger than 15 tons, and they are registered in the Cyprus Register, administered by the Merchant Shipping Department.
- ii) **Fishing Licences:** The fishermen apply for fishing licence every year. Fishing licence applications include the following information: Identification of the fisherman and crew (ages, addresses, I.D., insurances, etc.) boat and engine characteristics, fishing equipment, mechanical and electronic equipment (as above).

Thus, the information on the fishing fleet is obtained by processing the data given in the application forms for boat/trawler registration and for fishing licences, which are verified by the Fisheries Inspectorate Service.

c. Interviews

Interviews are employed for calculation of the average prices.

According to the system of the trading of fish, the prices of the various species and grades of fish are mostly fixed in Cyprus. Interviews with the first hand buyers and the skippers/fishermen give the prices of the landings of trawlers and of the inshore fishery. Estimation on the quantities, grades and species breakdown are not necessary, because they are reported on the log-book sheets for the trawl fishery; for the inshore fishery the above data are estimated from the relevant reports.

d. Sampling Surveys

The Statistical Service of Cyprus in Cooperation with the DFMR carries out sampling surveys of the fishing fleet at predetermined intervals.

At this point it is worthwhile to make a reference to Aquaculture statistics.

The collection of data on aquaculture is based on the information given by the farm owners/managers on reports on Production, Fish food consumption, Prices and Personnel. These forms are provided to the farmers at the beginning of the year and are to be returned to the Department within three months. The production reports include detailed information on the production of table size fish, fry and eggs for local use and for export, as well as the fry stocked in the farm. These data are verified by Fisheries Officers, from the veterinary certificates issued by the Veterinary Services Department for the export of aquaculture products, and the statistics kept on the

supply of dry food to the fish farms. The provision of the above data to the Department of Fisheries is a contractual obligation of the farmers who operate their farms under the conditions contained in the respective licence. The Fisheries Officers regularly visit the farms and observe, consult and supervise their activities.

The prices of the aquaculture products are submitted on the Prices Reports to the Department of Fisheries every year by the fish farmers. Price Reports include the following information: maximum and minimum wholesale and retail price of table size and fry fish for every species sold in the local market and maximum and minimum price and total values for table size fish, fry and eggs for each species exported. The prices are verified by data collected during the year by the personnel of the Fisheries Department, from fish mongers and retail outlets, as well as from the data stated on the export of the Veterinary Certificates.

Fishing area monitored

The inshore fishery fleet of Cyprus operates exclusively in the territorial waters of Cyprus under the Government control. It is unfortunate that no data are available from the area, which is not accessible to the Government of Cyprus. The same applies for the trawlers, licensed to operate in the waters of Cyprus. However, during the closed season some trawlers travel for fishing in international waters. These trawlers land their catch in Cyprus after being given landing permits and report their catch on log-book sheets. (In the statistics of Cyprus this catch is referred as catch from "International Waters"). The log-book is by far the source of information on the fishing area and it is verified by the Fisheries Inspectors.

The Processing of the Statistical Data

The data reports are collected by the Fisheries Inspectorate Service, located at the main fishing ports of Cyprus, or by Fisheries Inspectors, based in the Head Office in Nicosia. The collection is usually completed in January/February of the following year. These data are sent to the Statistics Section of the Department for computer processing and analysis.

The computer programs were designed to meet the Department's statistical requirements and are adequate for this purpose. Every year a Statistics Report is published by the Department around May or June. A total of 36 tables are included in this report. These Tables are presented on Table 5.

Table 5: The Tables included in the Statistics Report of the DFMR

1. Production by each segment of the fishery
2. Production by source and year comparisons
3. Aquaculture Production by species
4. Monthly fish landings and values
5. Landings by species of each segment of the fisheries
6. Landings by species and year comparisons
7. Fishing craft and fishermen
8. Wholesale fish prices by segment of the fishery
9. Trawl monthly landings and effort
10. Trawl monthly landings and effort - Cyprus waters
11. Trawl monthly landings and effort - International waters
12. Trawl monthly landings by fish quality with values
13. Trawl monthly landings by species – Cyprus waters
14. Trawl monthly landings by species – International waters
15. Trawl monthly landing by species - Cyprus and International waters
16. Trawl landings by species and area of Cyprus
17. Trawl landings by area – year comparisons.
18. Trawl landings by month with fishing effort by area.
19. Trawl fishery production – Cyprus waters - year comparisons
20. Trawl fishery production – International waters - year comparisons
21. Trawl fishery production – Cyprus and International waters - year comparisons
22. Inshore fishery landings by species – year comparisons
23. Inshore fishery monthly landings with details of fishing effort
24. Inshore fishery landings by area – year comparisons
25. Inshore fishery landings by area by species.
26. Inshore fishery landings by month with fishing effort-by area
27. Inshore fishery monthly landings by species and values
28. Swordfish fishery production and effort
29. The fleet: Inshore and Sword fishery Distribution of fishermen
30. The fleet: Inshore fishery – The ages of fishermen
31. The fleet: Inshore fishery – Boats
32. The fleet: Inshore fishery – Engines
33. The fleet: Trawl fishery
34. Imports of fish and fish products for home consumptions
35. Consumption of fish, Fresh, Frozen and Processed by source
36. Fish names

GOAL/OBJECTIVES OF THE FISHERY STATISTICAL SYSTEM

The data collected by the fishery statistical system are used to fulfill the following objectives:

- a) As a guide for management purposes, i.e. to direct the DFMR to decide on the introduction of measures and regulations for the fishery.
- b) For transmission to other bodies: The data are transmitted to the International Organizations and Agencies, where Cyprus has the legal obligation to send, i.e. FAO, GFCM, ICCAT and the European Union.
- c) For scientific purposes: Along with length distributions collected by sampling, the data are used to evaluate the stocks of the five most important commercial demersal fish species.

CHAPTER I

CONTENTS AND METHODOLOGY

PART A. Contents of the Community programmes

The following modules that are referred to in regulation (EC) No 1639/2001, comprise the Cyprus National Programme:

- a) Module of evaluation of inputs: fishing capacities and fishing effort;
- b) Module of evaluation and of sampling of the catches and landings;
- c) Module of evaluation of the economic situation of the sector.

PART B. Precision levels and sampling intensities

Precision levels will vary according to the sampling strategies which will be described in detail in the present programme. According to the Regulation 1639/2001, when reference is made to precision/ confidence level, the following distinction is established.

- a Level 1: parameters with precision of plus or minus 25% for a 95% confidence level;
- b Level 2: parameters with precision of plus or minus 10% for a 95% confidence level;
- c Level 3: parameters with precision of plus or minus 5% for a 95% confidence level;

Where the sampling programme is unable to define quantitative targets and precision levels, a pilot survey will be established so as to evaluate the problem. The cost effectiveness of such pilot surveys will be taken into consideration.

CHAPTER II

MODULE OF EVALUATION OF INPUTS: FISHING CAPACITIES AND FISHING EFFORT

PART C. Collection of data concerning fishing capacities

Introduction

The basic principle of the CFP is to regulate the fishing fleet of each Member State to conform to the available stocks. Fishing capacity is defined by the number of fishing vessels in relation to certain characteristics of the fleet such as:

- Tonnage
- Engine power

The collection of data on a regular basis will facilitate the management of the fleet on an annual basis.

Minimum Programme

The collection of data is required in order to assess the number of Cyprus fishing vessels licensed to carry out commercial fishing. Cyprus law (Fisheries law Chapter 135 and laws of 1961-2000 amended and replace of article 7A) requires all commercial fishing vessels to be registered in the Fleet Vessel Register (FVR) of the DFMR. Fishing vessel owners apply for fishing licenses every year.

The Cyprus FVR, as well as the fishing license applications include the following parameters in its database, as required by EU Regulations *2371/2002, 2930/86 and 2090/98*:

- Identification of the owners and crew.
- Vessel type (e.g. trawler, purse seiner, boat) and age (age of hull).
- Vessel characteristics (length, width, depth, type of construction material).
- Engine data (type, construction, power expressed in Kw as defined in Regulation 2930/86).
- Tonnage
- Fishing equipment (nets, traps, long-lines)
- Mechanical and electronic equipment.

The FVR is updated continuously.

Since all fishing vessels are registered in the FVR and applications for licenses are made every year, there is 100% coverage of the fishing vessels segments data, which can be at any time delivered.

Desegregation levels of the various segments of the fleet are made according to Appendix III of the implementing regulation.

Extended Programme

No data collection on fishing activities will be carried out based on the extended programme.

Methodology

Data concerning fishing power will be collected for all the categories of fishing vessels segmented according to Annex III EC Regulation 1639/2001. The Cyprus fishing fleet segmentation per length category and type of fishing technique is shown on Table 6.

Table 6: Cyprus fishing fleet segmentation

| Vessel length | | <12 m | 12 - <24 m | 24 - <40 m |
|---------------------------|------------------------------------|-------|------------|------------|
| Type of fishing technique | | | | |
| Mobile gears | Demersal trawl | - | 16 | 6 |
| | Purse seiners | - | 1 | - |
| Passive gears | Fixed nets and Hooks | 499 | - | - |
| Polyvalent gears | Combining mobile and passive gears | 4 | 30 | 1 |

Fishing capacity parameters, which will be recorded for each vessel of the above length and technique category, are as follow:

- The maximum continuous engine power actually developed by the main engine, after derating if appropriate, expressed in Kw as defined in Council Regulation 2930/86
- The tonnage
- The age of vessel calculated on the basis of the age of the hull

The above data are being collected by the DFMR through legislative procedures as it was described. These data will be derived and recorded in a database.

Description and analysis of the phases

Phase 1.

Collection of data concerning fishing capacity when applications for fishing licenses are completed. Recorded in a database. This will be performed by the DFMR.

Phase 2.

Management and grouping of the data according to Annex III (EC) Regulation 1639/2001, per category/technique.

Phase 3.

Data dispatch to the relevant agencies (Article 7, EC Regulation No 1543/200).

Table 7: Timetable of the phases

| 2005 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phase 1 | | | | | | | | | * | * | * | * |
| Phase 2 | | * | | | | | * | | | | | |
| Phase 3 | | | | | * | | | | | | | |

Expected outcome

A database which will include the data on the fishing fleet capacity will be produced:

Budget

| Category of costs | (Euros) 2005 |
|----------------------------------|---------------------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 1.500 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 10.200 |
| Total | 11.700 |

PART D. Collection of data related to fishing effort

Introduction

This part of the Regulation concerns the collection of data on the following:

- i. Fuel consumption
- ii. Fishing effort by type of technique
- iii. Specific fishing efforts

Minimum Programme

Data collected under the MP:

(i.) Fuel consumption

Fuel consumption data will be collected through a pilot project of the fleet with the use of questionnaires, which will be filled out by the vessel owners.

Information on fuel consumption will be collected according to the requirements set in Chapter IV of the implementing directive.

(ii.) Fishing effort by type of technique

All the information required concerning fishing effort by technique is given on the logbook sheets of the demersal trawlers, the purse-seiner and the polyvalent vessels. This translates into 100% coverage all fleet segments.

(iii.) Specific Fishing effort:

Data required concerning stocks of special interest will be collected through a pilot project regarding the following species:

- Swordfish
- Bluefin tuna,
- Albacore,
- Yellowfin tuna

Extended Programme

No data collection on fishing activities will be carried out based on the extended program.

Methodology

Regarding fuel consumption, data are not recorded and this needs to be addressed by a pilot project. The pilot project will be conducted by the DFMR in cooperation with the Statistical Service of Cyprus. All vessels over 12m (OAL) will be covered, whereas for the remaining vessels data will be collected from vessels stationed in the ports of Paralimni, Larnaka, Limasol, Pafos and Lachi.

Fuel consumption will be expressed by volume (litres) and cost (euro/litre). The values recorded will allow estimates of fuel consumption per vessel for each trawler and each polyvalent vessel, as well as of average fuel consumption per vessel of the remaining segment of the fleet. For each fleet segment the values recorded will

provide an estimate of the average fuel consumption per vessel category as defined in appendix III of the Implementing Regulation.

Data regarding fishing effort by type of technique of the fishing fleet, in regard to the segmentation of the fishing fleet are recorded since 1963 by the DFMR on an annual basis.

Specific fishing effort data concerning stocks of special interest (Appendix VI EC Regulation 1639/2001) will be collected. Fishing effort regarding small pelagic and demersal species will not be carried out because landings of these species are not significant in the Cyprus fishery. Fishing effort regarding large pelagic species will involve pilot project regarding specific fishing effort of Swordfish, Bluefin tuna, and Albacore.

- **Data collection Network.**

The data will be collected through a collection network. The network will operate through the District Offices (DO) of the DFMR (Famagusta, Limassol, Larnaka, Pafos) which are based on the main landing ports of Cyprus. The collection of data will cover all of the segments of the Cyprus fishing fleet. The DO of the DFMR will derive the data both from main ports (Famagusta, Limassol, Larnaka, Pafos) where most landings are made, as well as from fishing shelters. Administrative areas will be set separately for each DO, taking into account the geographic localities of the areas. DO will be equipped with computer software/hardware having direct access to the Internet. Data collected by a DO will be evaluated and recorded. The data will then be dispatched to the central database of the Head Office of the DFMR. The geographical distribution of the DO is illustrated in Map 1.

Map 1: Geographical distribution of sampling stations



- **System for the management and storage of data:**

The system for the management and storage of data will be composed by the central database and the DO. The central database as required by this part of the Regulation will be situated at the Head Office of the DFMR. DO's will act as the primary data reception and will be administered individually by each DO Manager. Each DO will be able to transmit data regarding their administrative district area, and will transmit the primary data to the Head Office at the end of each month on a regular basis. After the collection of the data by the Head Office, the data will be analysed and made available to the relevant bodies (Article 7, EC Regulation No 1543/200). Data information will be two ways so that the peripheral bases can incorporate the data to there own database.

- **Specific fishing effort**

The existing infrastructure concerning data collection will be used to bring to completion collection of data regarding effort for stocks of special interest. Any required modifications in the existing system of data collection will be carried out by the DFMR. The collection of data will be according to the procedures described regarding fishing effort and fuel consumption.

Collection of data concerning fishing effort for certain benthopelagic species will not be carried out because benthopelagic species catches are insignificant in the Cyprus Fishery. Species that are caught by the Cyprus fishery, relating to Annex VI of EC Regulation 1639/2001 are listed in Table 8.

Table 8: Average catch of species (Appendix VI, EC Regulation 1639/2001) for the period 2001-2003

| Species | Catch in Kg |
|-----------------------|--------------------|
| Hake | 7.051 |
| Sardine | 3.301 |
| Horse mackerel | 127 |
| Albacore | 85.306 |
| Swordfish | 95.593 |
| Bluefin tuna | 85.159 |

Description and analysis of the phases

Phase 1:

Adaptation of the existing database to the requirements of the action. The upgrading of the current database will be the responsibility of the DFMR.

Phase 2:

Data collection and processing. Processing and grouping of the data per fishing fleet segment, fishing technique and geographical area.

Phase 3:

Data dispatch to the relevant agencies (Article 7, EC Regulation No 1543/2000).

Table 9: Part D completion timetable

| Year | 2004 | 2005 | | | | | | | | | | | |
|---------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Month | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Phase 1 | * | | | | | | | | | | | | * |
| Phase 2 | | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase 3 | | | | | | | | | | | | | * |

Expected outcome

Data collected regarding stocks of special interest will take into account data relating to fishing effort and fuel consumption of vessels targeting benthic-pelagic species and large pelagic species.

The collection of data will ensure assessments at the level of significance required by the regulation.

- Evaluation of fishing effort and fuel consumption per vessel category and fishing technique as required by Regulation (EC) 1639/2001.
- Specific fishing efforts.

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------|
| Staff costs | 0 |
| Travelling expenses | 2400 |
| Durable equipment | 7500 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 13.600 |
| Total | 23.500 |

CHAPTER III
MODULE OF EVALUATION OF THE CATCHES AND LANDINGS

PART E. Collection of data related to catches and landings

Introduction

Data collected concerning the above part of (EC) Regulation 1639/2001:

- Commercial landings for all stocks, and
- Stocks mentioned in Appendix XII, total catches, landings and discards, and
- Catches from recreational and game fisheries in marine waters for stocks mentioned in Appendix XI.

Data on landings, as well on catches, give rise to the contribution of different fishing techniques to total catch. Data on landings regarding the mobile gear, the passive gear (vessels less than 12m) and polyvalent gear fishery are collected through logbooks.

Data relating to catches and landings have been collected by the DFMR within the framework of National and International data collection reports (see Table 10) since 1963.

Table 10: List of species for which weights and values of landings are collected by the DFMR.

| | | |
|------------------------------|-------------------------------|--|
| <i>Mullus surmuletus</i> | <i>Sarpa salpa</i> | <i>Sparisoma cretense</i> |
| <i>Mullus barbatus</i> | <i>Sparus aurata</i> | <i>Spicara maena</i> |
| <i>Pagrus pagrus</i> | <i>Merluccius merluccius</i> | <i>Spicara smaris</i> |
| <i>Dentex dentex</i> | <i>Mugil spp.</i> | <i>Spicara flexuosa</i> |
| <i>Pagellus erythrinus</i> | <i>Sphyraena spp.</i> | <i>Synodus saurus</i> |
| <i>Pagellus acarne</i> | <i>Umbrina cirrosa</i> | <i>Dicentrarchus labrax</i> |
| <i>Lithognathus mormyrus</i> | <i>Sciaena umbra</i> | <i>Oncorhynchus mykiss</i> |
| <i>Oblada melanura</i> | <i>Belone belone</i> | <i>Xiphias gladius</i> |
| <i>Diplodus annularis</i> | <i>Seriola dumerili</i> | <i>Squaliformes</i> |
| <i>Diplodus vulgaris</i> | <i>Trachurus spp</i> | <i>Rajiformes</i> |
| <i>Boops boops</i> | <i>Euthynnus alletteratus</i> | <i>Palinurus vulgaris</i> |
| <i>Epinephelus spp.</i> | <i>Sardina pilchardus</i> | <i>Scyllarides latus</i> |
| <i>Serranus scriba</i> | <i>Sardinella aurita</i> | <i>Octopus vulgaris,</i> <i>Eledone spp</i> |
| <i>Serranus cabrilla</i> | <i>Sardinella spp.</i> | <i>Sepia officinalis</i> |
| <i>Epinephelus aeneus</i> | <i>Epinephelus guaza</i> | <i>Loligo vulgaris</i> |
| <i>Thunnu thynnus</i> | | |

Minimum Programme

The MP requires data to be collected according to the following parameters.

Information required to assess:

- commercial landings for all stocks
- for stocks mentioned in Appendix XII, total catches, landings and discards
- catches from recreational and game fisheries mentioned in Appendix XI.

According to Cyprus legislation, information on catches and landings are collected by the DFMR.

EU regulations stipulate that vessels used in commercial fisheries are obliged to keep logbooks on board (vessels under 10 m are not obliged, Article 8, Regulation 2847/93).

As mentioned in the introduction, trawl fishery logbooks are required by law and include the following data:

- Identification of the trawler
- Departure and arrival date
- Place and depth of fishing activity
- Port of landing
- Total catch of 22 demersal fish species
- Breakdown of the catch by species weight and quality

Trawler logbooks will be collected by Fisheries Inspectors.

The inshore fishery production reports include the following information:

- Identification of the boat and the fishermen
- Fishing station
- Method of fishing
- Number of hooks and length of nets
- Time, place and depth of fishing
- Breakdown of catch by species per week (forty demersal fish species are recorded)

The inshore production reports are collected at intervals of one to two months by fisheries inspectors and sent to the DFMR offices for data processing.

The polyvalent fishery logbooks include the following information:

- Identification of the vessel.
- Date of departure and return to port.
- Place of fishing and distance from Cyprus.
- Number of hooks.
- Species caught by number and weight for each fish capture
- Seven pelagic fish species are recorded.

The polyvalent fishery logbooks are collected in the same procedure as the other reports.

From the above-mentioned reports fishing effort data, the overall commercial landings by species and by geographical disaggregation will be extracted and recorded by type of fishing technique as defined in Appendix VIII of the Implementing Regulation.

Bluefin tuna (*Thunnus thynnus*) tagging

A pilot survey will need to be implemented relating to the catches of the fishery concerning Bluefin tuna.

Bluefin tuna (*Thunnus thynnus*) is one of the most commercially important pelagic species and as such is heavily exploited in the Atlantic Ocean and the Mediterranean Sea. The Mediterranean and eastern Atlantic populations are considered to form a common stock. Although very little is known about spawning in the Mediterranean,

high catch rates of large individuals in certain eastern Mediterranean areas during the reproductive period of the species may suggest the presence of spawning grounds in the Eastern Mediterranean. It is therefore desirable that a bluefin tuna tagging pilot project will be carried out by means of a significant number of animals to be tagged in several Mediterranean sites soon after the spawning period in order to improve the knowledge of the migration patterns in the Mediterranean and of the behaviour of this species related to the environment parameters.

Precision levels of the assessment of commercial landings will be made according to data gathered under Council Regulations 2847/93.

Monitoring of discards will require a pilot scheme, in order to collect the average annual catches by weight of the stocks listed (Appendix XII) of the implementing Regulation.

Based on experience and sampling in previous years it has been verified that discard rates obtained in the Cyprus passive gear fishery are insignificant. Therefore, no discard sampling of this fishery will be conducted. Discard sampling will be carried out for only two segments of the fleet i.e. Mobile and pelagic fishery.

Extended Programme

No data collection on fishing activities will be carried out based on the extended programme.

Methodology

As it was mentioned, landings of the mobile gear and polyvalent fleet segments are based on logbook reports that are compulsory by Cyprus legislation (Fisheries Law, Chapter 135 and Laws of 1961 to 2000). As a result, the landings of these two segments of the fleet are derived by logbook reports of all vessels of each segment. The landings of vessels using passive gears are collected at the moment by sampling of the fleet segment. However, for the fulfilment of the requirements concerning landings of this fleet segment, logbooks will be provided to the fishermen.

Description and analysis of the phases

Phase 1:

Adaptation of the database to the requirements of the part of the Regulation. The upgrading of the current database will be under the competence of the DFMR.

Phase 2:

Landing data collection and updating of the database. Processing and grouping of the data per fishing vessel segment/technique.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 11: Part E timetable of the phases

| Year | 2004 | 2005 | | | | | | | | | | | |
|---------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Month | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Phase 1 | * | | | | | | | | | | | | * |
| Phase 2 | | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase 3 | | | | | | | | | | | | | * |

Expected outcome

- Evaluation of commercial catches and landings of stocks,
- Evaluation of total catches, landings and discards for stocks mentioned in Appendix XII EC Regulation 1639/2001 by segment of the fleet.
- Indications on Bluefin tuna migration pattern

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------|
| Staff costs | 3.694 |
| Travelling expenses | 1.327 |
| Durable equipment | 0 |
| Consumable material and supplies | 2.500 |
| Computer costs | 0 |
| Subcontracting and other costs | 13.600 |
| Total | 21.121 |

Collection of data concerning discards

Discards are a major concern for fisheries and a part of discrepancy relating to fisheries management. The DFMR has no records concerning discards, partly because:

- Catches having no commercial value
- Size of discard catches are smaller than the marketable size

Methodology

Monitoring of discards for the stocks mentioned in Appendix XII will be covered through pilot surveys concerning each segment of the fishing fleet. The pilot project will be carried out in conjunction to part H out as follows:

- Discard data sheet (discard report) will be incorporated into the existing logbook report for the mobile and polyvalent gear fleet segments. Discard reports will be collected together with logbook sheets using the existing DFMR procedure.
- Random on board sampling will be carried out twice a month for mobile gear and polyvalent segments of the fleet, in order to verify discard reports.

The survey will aim the collection of data for every fishing vessel segment and will be supported by onboard inspectors, who will record sample catch and discard data as well as total landing data.

The following vessel segments will be surveyed:

- Mobile gears
- Polyvalent gears
- Purse seine's
- Passive gears vessels will not be included in the sampling surveys. Discards of these vessels are negligible (previous surveys carried out by DFMR).

The survey will record sample catch and discard data, as well as total landing data for all the species in the catches. This will permit cross-checking of data, and estimation of the precision. The data will also provide sampling keys relating to fishing vessel segment and technique landings and discards.

Time series:

Sampling will take place according to the current sampling regime taking into account the closed fishing periods in regard to fishing vessel segments. The following are the open fishing periods of the various fishing vessel segments.

- Mobile gear (Nov-May)
- Purse seine (year round)
- Polyvalent (year round)
- Passive gear (year round)

Space series:

Sampling will take into account the main fishing grounds of the various fishing vessel segments by onboard observers. Observers will embark on mobile gear vessels at the main ports where landing are made. Onboard sampling will be carried out twice a month. For every haul the following data are recorded:

- Area

- Depth of fishing activity
- Species composition
- Length distribution

Sampling of discards will be carried out using the following procedure. Representative random samples will be collected and kept for biological analysis. The following data will be recorded from the sample.

- Total weight of the sample
- the total length of each individual.
- the total weight of each individual.

Polyvalent vessels: Large pelagic species

Data collection on large pelagic species will be carried out on the basis of the current sampling procedures. Logbooks will be completed with the following details:

- Total weight of the catch landed
- Total weight of discards
- Number of hooks
- Area
- Weight/Species/Number composition of catch

Data collected by the onboard sampling regime will be incorporated into the existing database, based on catch, landings and discards per fishing day.

Description and analysis of the phases

Phase 1:

Phase one of the survey will include the activities regarding area-sampling surveys for the collection of the data. These activities will be carried out on a yearly basis.

Phase 2:

Adjustment of the database to the requirements of the part of the Regulation. The upgrading of the current database will be the competence of the DFMR. Processing and grouping of the data per fishing vessel segment and fishing technique. Data regarding discards will be incorporated in the existing fisheries database.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 12: Mobile gear timetable of the phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | * | * | * | * | * | | | | | | * | * |
| Phase II | | | | | * | | | | | | | * |
| Phase III | | | | | * | | | | | | | |

Table 13: Polyvalent gear timetable of the phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase II | | | | | * | | | | | | | * |
| Phase III | | | | | * | | | | | | | |

Expected outcome

- Estimation of the total quantity of catches, landings and discards of the fisheries sector per vessel segment for all the species mentioned in Appendix XI, XII of EC Regulation 1639/2001.
- Estimation of the percentage of landings and discards of the total catch of the fisheries sector by fishing vessel segment.
- Estimation of the length composition of commercial landings and the discards of all the species in the catch.

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------|
| Staff costs | 11.251 |
| Travelling expenses | 2.354 |
| Durable equipment | 0 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 27.200 |
| Total | 40.805 |

PART F. Collection of data concerning the catches per unit of effort and/or effective effort of specific commercial fleets

Introduction

One of the most important indicators of the relative abundance of stocks is the catch per unit of effort (CPUE), calculated on the basis of catches landed and fishing effort. CPUE is a very useful index for the long term monitoring of a fishery. Determination of CPUE can be done using various methods depending on fishing technique (i.e number of hooks).

Data concerning catches per unit of effort will be collected for all the fishing vessel segments.

Table 14: Review of the detailed catch and effort data from vessels flying the Cyprus flag

| Year | Category of vessels | Production MT | Total H.P | Working days | CPUE* |
|-------------|----------------------------|----------------------|------------------|---------------------|--------------|
| 2000 | Inshore | 1.341,40 | 26.017,5 | 111.391 | 12,04 |
| | Trawl | 720,4 | 8835 | 2309 | 624,4 |
| | Polyvalent | 157,1 | - | - | 122,2 |
| 2001 | Inshore | 1.168,7 | 21.876,0 | 101.098 | 11,56 |
| | Trawl | 840,8 | 10.938 | 3.621 | 502,1 |
| | Polyvalent | 237,1 | 5.965 | 1.615 | 146,8 |
| 2002 | Inshore | 1.062,8 | 26.491,5 | 84.257 | 12,61 |
| | Trawl | 612 | 13.063 | 2.328 | 524,2 |
| | Polyvalent | 211,2 | 5.451 | 2.006 | 105,3 |
| 2003 | Inshore | 972,5 | 24.090,5 | 72.588 | 13,40 |
| | Trawl | 616,6 | 9.998 | 2.490 | 485,8 |
| | Polyvalent | 132,8 | 9.185 | 1.446 | 91,8 |

*CPUE expressed as production / working days

Minimum Programme

The collection of data concerning catch per unit of effort (CPUE), of vessels flying the Cyprus flag will be performed. Data on CPUE are collected by the DFMR.

Table 14 presents catch and effort data of the years 2001-2003. Catch per unit effort will continue to be collected for all vessels flying the Cyprus flag.

Regarding data series on CPUE, a pilot study will be carried out.

1. CPUE data series for the Passive gears (Inshore Fishery) and the Polyvalent gears (large pelagic bluefin tuna and swordfish) long line.

Data for the following parameters will be collected:

- Days spent at sea
- Fishing areas
- Length of nets
- Number of hooks per day, characteristics and types
- Catches

Vessel owner collaboration will be encouraged, with onboard observers also collecting biological samples. The biological sampling programme coordination will allow measurements on numbers of fish, weights and length distributions.

The programme will be carried by collecting the following:

- Activity and landing questionnaires
- On board observers for effort (fishing areas, gears, number of hooks, etc)
- Biological sampling and classification.

2. CPUE data series for Mobile gear fishery

The pilot project will cover Mobile gear fishery in Cyprus and International waters.

For each vessel, information on gears and equipment will be collected

Catches will be monitored during landings in regard to information on fishing areas, fishing time by observers on board twice a month. Observers will also be involved in collecting representative samples of total catches to be used for biological sampling, as well as the evaluation of discards.

The project data will collect the following:

- Information on equipment
- Information on landings (quantity)
- Biological samples through onboard observers

Extended Programme

No data collection on fishing activities will be carried out based on the extended programme.

Methodology

Data required to be collected for this Regulation part are as follow:

- Commercial landings data from the Mobile, Passive and polyvalent segments gear of the fishery.
- Fishing effort of the various fishing vessel segments.

The above data are included in the logbook provided to all fishing vessels of the fleet and will be collected on a monthly basis (see data collection Network, Part D).

Description and analysis of the phases

Phase 1:

Collection of data of the various fishing fleet segments.

Phase 2:

Data analysis and tabulation. Evaluation of results.

Phase 3:

Submission of final report on CPUE.

Table 15: Timetable of the phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase II | | | | | | | * | | | | | * |
| Phase III | | | | | * | | | | | | | |

Expected outcome

- Results on the CPUE of the fishery are expected to provide an estimation of the relative abundance of stocks.
- Estimations on catch by species, effort by boat and technique will provide valuable information for fisheries management.

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 2.000 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 20.620 |
| Total | 22.620 |

PART G. Eligibility of the scientific evaluation surveys of stocks

Introduction

The Medits programme will be carried out for the first time (2005) as an annual sample survey of demersal stocks. The study will give rise to existing trends in abundance indices and length frequency distributions of the species being examined. The use of the data collected, as well as the collected fishing activity data will provide results for assessing the stocks in Cyprus seas.

Minimum Programme

The surveys with priority 1 as mentioned by Appendix XIV of the implementing regulation for the Mediterranean will be carried out according to guidelines of the Minimum Programme.

- **Mediterranean International Trawl Survey (MEDITS)**

The Medits programme will be carried out as an annual sample survey of demersal stocks.

Medits was designed to meet the following objectives:

- i. description of the bottom fisheries resources in the Mediterranean in term of population distribution and demographic structures
- ii. data for modelling the dynamic of the species under study, i.e. estimation of total mortality

The aim of the survey is to collect the above data in Cyprus seas under Government control for 2005, using the Medits protocol and to study the resulting data series that will arise. Thus the study will give rise to existing trends in abundance indices and length frequency distributions of the species being examined (*data required by Part H of Regulation 1936/200, Biological sampling of catches: composition by age and by length*). The use of the data collected in conjunction with fishing activity data will provide results for assessing the stocks in Cyprus seas.

Extended Programme

No data collection on fishing activities with priority 2 as mentioned by Appendix XIV of the implementing regulation for the Mediterranean will be carried out.

Methodology

The bottom trawl fishing technique used in the Medits programme will be carried out during the closed trawler fishing season in Cyprus, between the end of spring and the beginning of summer. This programme will cover the continental shelf and slope of Cyprus at depths ranging from 10 to 800 m.

Table 16: Depth zones, surface area and number of hauls

| Depth (m) | Surface (Km ²) | | No of hauls |
|--------------|----------------------------|--------------------------|-------------|
| | Total of Cyprus | Under Government Control | |
| 10 – 50 | 796 | 450 | 5 |
| 50 – 100 | 717 | 470 | 5 |
| 100 – 200 | 918 | 857 | 5 |
| 200 – 500 | 2245 | 1055 | 5 |
| 500 – 800 | 6430 | 2156 | 5 |
| Total | 11106 | 4988 | 25 |

It is noted that from the surface areas shown on the Table only the areas under direct control of the Republic of Cyprus will be surveyed. For the purposes of the Medits programme the main harbours of Larnaka, Limassol, and Paphos, as well as the fishing shelter of Lachi will be used as base stations.

The biological parameters (i.e. total weight, sex, stage of sexual maturity, length of individual for the 36 reference species and the total weight of the remaining species) will be collected in accordance with the manual of protocols for Medits sampling. The basic environmental data will also be collected on a systematic basis that will assist in the interpretation of the biological data.

Data acquired by sampling will be checked and evaluated using the Medits Data Management System (MDMS) created in the context of the DG XIV/EU No 96/016 programme. Any data corrections required will then be stored in the MDMS database and calculations of the abundance indices will be made. The composition by length will be given in relation to depth zone and per area. The programme allows the presentation and analysis of the results in accordance with GFCM areas. Apart from these analyses, nursery areas will also be identified for the main reference species in accordance with the Medits 2000-2001 methodology programme.

Description and analysis of the phases

Phase 1:

Sampling surveys for the collection of the data.

Phase 2:

Adjustment of the database to the requirements of the programme. Processing and grouping of the data.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 17: Timetable of the phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | | | | | | * | * | | | | | |
| Phase II | | | | | | | | * | * | * | * | * |
| Phase III | | | | | * | | | | | | | |

Expected outcome

- Data on sex ratio, sexual maturity, mortality, and degree of exploitation of demersal stocks.
- Description of the population distribution and demographic structures.
- Data on species dynamics
- Nursery areas identified

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|-------------|
| Staff costs | 0 |
| Travelling expenses | 9.072 |
| Consumable material and supplies | 52.000 |
| Sea Allowances | 16.745 |
| Subcontracting | 98.130 |
| Total | 175.947 |

PART H. Biological sampling of catches: composition by age and by length

Introduction

Collection of data relating to biological composition of the catches is a basic requirement both for species fisheries biology and for the management of the fisheries. Parameters such as length and age give statistical data, which define the dynamic of the populations targeted and lead to the determination of the stock composition.

Minimum Programme

Biological sampling will be performed, in order to evaluate the composition in length and, where appropriate, in age, of landings for the stocks (listed in Appendix XV). The purpose of the biological sampling of catches is to estimate the number of fish and their mean weight at age of landings made in Cyprus harbours. Sampling will be performed based on the segmentation of the fleet.

Exemptions

According to the Regulation the following stocks will be exempted from the sampling:

- Age/Lengths:
 - For the stocks in the Mediterranean area, the landings by weight of a Mediterranean Member State for a species corresponding to less than 5% of the total landings from the Mediterranean area, or to less than 200 tonnes, except for Bluefin tuna.

In this respect the stocks which will be evaluated are:

- (i.) *Mullus surmuletus*
- (ii.) *Mullus barbatus*
- (iii.) *Boops boops*
- (iv.) *Spicara smaris*
- (v.) *Pagellus erythrinus*

Discards

Length distribution will be estimated for the species listed in Appendix XII, which represent on an annual basis either more than 10% of the total catches by weight or more than 20% of the catches in numbers. Length distribution will be collected according to the Implementing Regulation 1936/2001 (*Part E: Collection of data related to catches and landings*).

Recreational and game fisheries

Recreation and game fisheries will not be included in the National Programme of Cyprus because there are no catches of Bluefin tuna (*Thunnus thynnus*).

Extended Programme

No data collection on fishing activities will be carried out based on the extended programme.

Methodology

In order to evaluate the composition in length and where appropriate in age, biological sampling of landings will be taken from a representative part of each segment of the Cyprus fishing fleet.

The stocks to be sampled are specified in Appendix XV of Regulation 1639/2001. Table 18 shows the production of years 2001-2003, the average catch production of the species, which will be included in the biological sampling.

Table 18: Species included in the biological sampling of landings according to Appendix XV of Regulation 1639/2001.

| Year | 2001 (MT) | 2002 (MT) | 2003 (MT) | Average (MT) |
|----------------------------|--------------|--------------|--------------|-----------------|
| Species | | | | |
| <i>M. surmuletus</i> | 132,2 | 125,3 | 130,0 | 129 |
| <i>M. barbatus</i> | 91,2 | 84,3 | 83,8 | 86 |
| <i>Boops boops</i> | 216,0 | 161,6 | 151,4 | 176 |
| <i>Spicara smaris</i> | 603,7 | 438,2 | 543,7 | 529 |
| <i>Pagellus erythrinus</i> | 34,0 | 30,9 | 20,7 | 29 |

Sampling system: A sample of fish (100 individuals) covering all size classes is collected from the landing of a vessel. These fish are measured and aged providing an age length key (ALK) by size grade. Other biological data such as weight and maturity are also collected. The sampled ALK applies to the raised length composition and provides an age composition of the landings of the vessels. The age- and length compositions of the catches of the vessels are raised to the total landings of the fleet by stratum. Data on the species in Table 18 will be collected during the Medits programme in order to establish biological keys of length/age correlation.

The pelagic species such as *Thunnus thynnus*, *Thunnus allalunga* and *Xiphias gladius* will also be included in the biological sampling. Data on these species will be collected during the pilot project proposed in *part E: Collection of data related to catches and landings* of the Regulation, regarding discards.

Discard Pilot project

Pilot project on discards, in conjunction to part E, will be carried out as follows:

- Discard data sheet (discard report) will be incorporated into the existing logbook report for the mobile and polyvalent gear fleet segments. Discard reports will be collected together with logbook sheets using the existing DFMR procedure.
- Random on board sampling will be carried out twice a month for mobile gear and polyvalent segments of the fleet in order to verify discard reports.

Recreational and game fisheries

Recreation and game fisheries in Cyprus do not catch or target Bluefin tuna (*Thunnus thynnus*).

Description and analysis of the phases

Phase 1:

Biological sampling of catches including the sampling surveys for the collection of the data. These activities will be carried out on a yearly basis.

Phase 2:

Adjustment of the database to the requirements of the programme. Data regarding composition by age and length will be incorporated in the existing fisheries database. Processing and grouping of the data.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 19: Timetable of phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase II | | | | | | | * | | | | | * |
| Phase III | | | | | * | | | | | | | |

Expected outcome

- Data on species composition by age and length
- Mean weight of species at age of landings.
- Estimation of the percentage of discards of the fisheries sector by fisheries vessel segment.

Budget: Age and length of landings

| Category of costs (Euros) | 2005 |
|----------------------------------|--------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 0 |
| Consumable material and supplies | 25.940 |
| Computer costs | 0 |
| Subcontracting and other costs | 0 |
| Total | 25.940 |

Budget: Discards

| Category of costs (Euros) | 2005 |
|----------------------------------|-------------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 4.000 |
| Consumable material and supplies | 1.525 |
| Computer costs | 0 |
| Subcontracting and other costs | 20.620 |
| Total | 26.145 |

PART I. Other biological samplings

Introduction

Other biological data will be collected, in order to assess the following:

- Growth curve
- Relations between age/length and maturity

Sex ratio sampling schemes will be performed wherever possible on commercial catches.

Minimum Programme

At the Minimum Programme data will be collected for the species listed in Appendix XVI of the Implementing Regulation. Biological sampling data based on the exemptions concerning sampling rules, will only be collected for the *Spicara smaris*.

All other stocks listed in Appendix XVI will not be included in the sampling because:

- Their landings were less than 200 tonnes on average during the previous 3 years
- Relevant quota corresponds to less than 10% of the Community share of TAC

As defined in Appendix XVI the data used for biological parameters will be checked on a three to six year basis for validity purposes.

Extended Programme

No data collection on fishing activities will be carried out based on the extended programme.

Methodology

Data information on biological sampling of *Spicara smaris* will be collected through the Medits Programme as well as through the collection of data related to catches and landings (see Part E and G).

Description and analysis of phases

Phase 1:

Phase one of the survey will include the biological sampling surveys of the Medits programme for the collection of the data and from the collection of data regarding catch and effort.

Phase 2:

Processing and grouping of the data.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 20: Timetable of phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | May 2006 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|----------|
| Phase I | * | * | * | * | * | * | * | * | * | * | * | * | |
| Phase II | | | | | | | | | | | | * | |
| Phase III | | | | | | | | | | | | | * |

Expected outcome

- growth curves by length and by weight of *Spicara smarís*
- relation between age, length and maturity of *Spicara smarís*

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 0 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 0 |
| Total | 0 |

CHAPTER IV MODULE OF EVALUATION OF THE ECONOMIC SITUATION OF THE SECTOR

PART J. Collection of economic data by groups of vessels

Introduction

The profitability and performance of the fleet is a vital micro-economic indicator of fishery performance, because it provides a measure of economic sustainability of the fleet. Landing prices in connection with data on investment and operational costs can provide fleet performance indices. The use of CPUE and prices in the sector are often used in the evaluation of socio-economic studies showing the trend of fisheries in an area. These indicators can subsequently lead to appropriate fishery management controls and infrastructure investment.

Minimum Programme

The data and the information for the economic analysis are listed in the FVR and in the National Statistics database. The FVR is the main Register used in the collection of economic data. Also the DFMR collects data from the Inshore Fishery Production Reports, Logbooks, the Purse Seiner Production, the Fishing Licenses and the Sales Notes from the fishmongers. Not listed data will be collected with a questionnaire method. The questionnaires will be contacted in cooperation with the Statistical Service. The National Program will take into consideration some parameters that are considered to be essential for the implementation of the program.

- The income or otherwise the turnover is essential, since it is defined as the total Gross Revenue of the fishing sector. The total income can be found from the logbooks, which the DFMR collects from fishermen as described above and from the Sales Notes. Personal consumption is excluded from income.
- The production cost is one factor that is also very important, since it includes the total expenditure of the fishing activity. The DFMR does not keep records of costs because it is not subject to administrative control. These data and all the information will be collected using a questionnaire-interview method. The production cost should be calculated taking into account the following parameters:
 1. Labour costs including the wages, all the expenditures paid by the employers, including social security, health insurance, retirements and other related taxes.
 2. Fuel costs
 3. Repair and maintenance
 4. Other operational cost

Apart from the labour costs, for which data can easily be collected, a pilot survey is needed, in order to calculate the other categories of costs together or to validate the data already collected for these costs.

- The fixed costs are considered to be major data, despite the fact that they are not directly connected with the fishing activity. Depreciation is one of the main costs and needs to be calculated according to the value of the fixed asset. Also the opportunity cost of capital should be taken into account. This information is not available at this moment and a pilot survey should be carried out.
- The financial position will be calculated with the ratio of the own capital to the borrowed capital. These data will be collected with the questionnaire method, the reason being that they concern fishermen and small enterprises, which do not have audited financial statements. The validity of the data cannot be cross-checked and a pilot survey is needed.
- The investment capital is actually the total value of the capital. These data will be collected using the questionnaire method and the insurance scheme for vessels. Quality data can be verified from the questionnaires and decisions can be made of whether to use insured values or replacement costs. The choice between the two values will be based on which one is the most reliable.
- The prices are collected for each species and they are the live/weighted prices taken by the fishmongers.
- Employment is defined as the total persons employed in the fishing sector, either full time or part time. These data are collected from the fishing licence applications. However, they can also be included in the questionnaires.
- Information on the fleet segment characteristics are provided by GT, KW, age and gear used. These data are collected by the DFMR and are included in the FVR, which it is continually updated (see Part C).
- Effort is measured by the number of days of fishing activity multiplied by the size of the fleet parameter (the number, GT, KW, age and gear used). These data are collected by the DFMR and are included in the FVR (see Part D).

The whole survey will be based on the same panel as the survey for evaluation of catches, landings and the fishing effort.

Precision levels:

In the pilot surveys for the collection of economic data by groups of vessels the precision level 1 is required by the Regulation. This level makes it possible to evaluate the parameters and all the data with a precision of plus and minus 25% for a 95% confidence level. This precision level will be used only in the data, which will be collected with the questionnaire-interview method. To improve the precision level of the survey, it should be noted that for all the segments of the fleet the questionnaires will cover a full census.

Extended Programme

The national programme will not implement the extended programme level.

Methodology

Selection of target variables:

The variables needed to be collected are:

Income-Turnover

Gross value of landings

Production costs:

- Labour costs

Remuneration of hired and own labour on board including social costs (wages, social security, health insurance, retirements and other related taxes).

- Fuel costs
- Repair and maintenance
- Other operating costs

Fixed costs

- Mainly Depreciation and opportunity cost of the capital at the current value

Financial position

- Own capital
- Borrowed capital

Investment

- Value of assets

Live/weight prices per species

Number of persons employed either Full time or part-time

Fleet

Effort

Sample questionnaire interviews census will be carried out on the parameters set in Appendix XVII according to the segmentation of the fleet Appendix III.

Pilot studies will be carried out, either because the data are not available, or because the collected data need to be verified.

The pilot surveys needed are:

- 1) To verify the data collected for three categories of cost:
 - Fuel costs
 - Repair and maintenance
 - Other operational cost
- 2) To calculate the fixed costs and in particular depreciation rate and opportunity cost of capital.
- 3) To calculate the financial position of fishermen

Description and analysis of the phases

Phase 1:

Adjustment of the database to the requirements of the programme.

Phase 2:

Collection of the data through the 3 pilot surveys. Processing and grouping of the data per fishing vessel segment, fishing technique and geographical area.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 21: Timetable of phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | | | | | | | | | | | * | |
| Phase II | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase III | | | | | | | | | | | | * |

Expected outcome

- Fuel costs
- Repair and maintenance
- Other operational cost
- Fixed costs and in particular depreciation rate and opportunity cost of capital.
- Financial position of fishermen

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 2000 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 20620 |
| Total | 22620 |

PART K. Collection of data concerning the processing industry

Introduction

Fisheries product exploitation includes the activities related to fisheries production such as preservation, processing and trade. In Cyprus the level of knowledge related to pressing activities, are limited because the sector is relatively new. The objective of this part is to record the current situation of the fisheries processing industry from a social and economic point.

Minimum Programme

The processing of fish products is a relatively new sector in Cyprus and the majority of the economic information is not available. A pilot survey needs to be carried out for collecting the data on the processing industry aiming at the evaluation of the economic situation in the processing industry as a whole. The national program will collect first the data needed with the use of a questionnaire and interviews. This survey will be conducted taking into account that the sector is in an early-growing stage and only few firms are involved. The national program will conduct surveys in order to assess the annual value of the sector of the following parameters:

- Raw materials (the number of fish products that are used in the processing industry).
- Income or the turnover (the total revenue of the processing sector).
- Production costs. An important factor because it includes the total expenditure of the processing activity. The DFMR does not keep records of production costs, so the data and all the information need to be collected using a questionnaire-interview method. The production costs will be calculated taking into account the following parameters:
 - a. Labour costs consist of the gross wages. This means, taking into consideration all the expenditures paid by the employers, including social security, health insurance, retirements and other related taxes.
 - b. Energy costs
 - c. Raw materials costs
 - d. Packaging costs
 - e. Other Running costs
- Fixed Costs are considered to be major data despite the fact that they are not directly connected with the processing activity. The depreciation is one of it is main cost.
- Financial position will be calculated with the ratio of the own capital to the borrowed capital
- Investment is the total value of the historical, replacement and insurance value of the fixed assets. In this category the rental fixed assets will be included.
- The production of each species and the prices.
- Employment (defined as the total persons employed in the processing sector either full time or part time).
- The capacity utilisation (defined as the annual capacity average of the processing sector).

Extended Programme

The National programme will not implement the extended programme level.

Methodology

Pilot surveys will be conducted to assess the annual value of the sector and its parameters, set in Appendix XIX of the regulation.

The pilot surveys will be conducted with the use of questionnaires surveys.

Description and analysis of the phases

Phase 1:

Adjustment of the database to the requirements of the programme.

Phase 2:

Collection of the data through the 3 pilot surveys. Processing and grouping of the data per fishing vessel segment, fishing technique and geographical area.

Phase 3:

Transmission of data to the relevant authorities/agencies involved in the programme.

Table 22: Timetable of phases

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| Phase I | | | | | | | | | | | * | |
| Phase II | * | * | * | * | * | * | * | * | * | * | * | * |
| Phase III | | | | | | | | | | | | * |

Expected outcome

- Total revenue of the processing sector.
- Total Production costs.
- Labour costs
- Energy costs
- Raw materials costs
- Packaging costs
- Fixed Costs
- Financial position
- Investments
- The production of each species and the prices.
- Employment
- Capacity utilisation

Budget

| Category of costs (Euros) | 2005 |
|----------------------------------|--------------|
| Staff costs | 0 |
| Travelling expenses | 0 |
| Durable equipment | 1500 |
| Consumable material and supplies | 0 |
| Computer costs | 0 |
| Subcontracting and other costs | 20620 |
| TOTAL | 22120 |