



**TECHNICAL REPORT ON THE CYPRUS NATIONAL DATA
COLLECTION PROGRAMME
2005**

by

**DEPARTMENT OF FISHERIES AND
MARINE RESEARCH**

**MINISTRY OF AGRICULTURE,
NATURAL RESOURCES AND ENVIRONMENT**

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1. Introduction

The DCR establishes a Community framework for the collection and management of data needed to evaluate the situation as regards to fishery resources and the fishing industry. Based on this obligation Cyprus has carried out the collection of fisheries data for 2005 and the following document represents the results of the data collection in a technical report.

The technical report is formulated and presented based on the "*Guidelines for the submission of Technical Reports on the National Data Collection Programmes under Commission Regulation (EC) N° 1639/2001 as amended by Commission Regulation (EC) N°1581/2004*" from now on called GTR.

2. Participating Institutes

2.1. National correspondent

Dr. Nicos Hadjistephanou
Department of Fisheries & Marine Research
Ministry of Agriculture Natural Resources & Environment
Aeolou 13
Nicosia 1416
Cyprus
Phone: +357 22 807866, +357 99 492456
Fax: +357 22 775955
E-mail: nhsteph@spidernet.com.cy, nhadjistephanou@dfmr.moa.gov.cy

2.2. Participating bodies

I. Module G – Medits was assigned through a tender's procedure to the following institute:

National Agricultural Research Foundation,
Aigialias 19, 15125 Marousi, Athens
Fisheries Research Institute, Kavala
64007 N. Peramos, Kavala, Greece
Tel.: +30 25940 22691-2
Fax.: +30 25940 22222

Responsible scientist: Dr Argyris Kallianiotis
e-mail: akallian@otenet.gr

II. Modules H&I were assigned through a tender's procedure to the following joint venture:

- National Agricultural Research Foundation,
Aigialias 19, 15125 Marousi, Athens
Fisheries Research Institute, Kavala
64007 N. Peramos, Kavala, Greece
Tel.: +30 25940 22691-2
Fax.: +30 25940 22222

Responsible scientist: Dr Argyris Kallianiotis
e-mail: akallian@otenet.gr

- AP Marine Environmental Consultancy Ltd
2, Acropoleos St. Aglanjia
P.O.Box 26728 1647 Nicosia
Cyprus
Tel: +357 99 407300
Fax: + 357 22 339959
Director: Antonis Petrou
e-mail: apmarine@valicom.com.cy

III. The Statistical Service of Cyprus (Ministry of Finance) participated in the conduction of Module J.

3. Precision levels

3.1 Required and achieved precision levels

Standard table 3.1 GTR, gives the precision levels achieved for each module of the Cyprus National Programme 2005.

3.2 Methods used to calculate precision levels

No methods were used for calculating precision level estimations, since for most modules a precision level was not needed.

3.3 Other relevant issues

Problems were encountered concerning the precision levels calculations. It is suggested that precision level calculations be formulated for all MS. It is also suggested that a workshop addressing precision levels be incorporated in the DCR coordination meetings.

Table 3.1. - Summary table Precision levels					Country	Cyprus	MP+EP
					NP-year	2005	
Module	Type of data	MP/EP	Required level of precision	Achieved level of precision	Data sources and data collection methods used	Calculation method used	
C	Fleet capacity	MP	All or Level 3	All	Fleet Vessel Register		
D	Fuel consumption	MP	All or Level 2	All	Census survey - questionnaire		
	Fishing effort	MP	All or Level 2	All ¹ Not estimated ²	Logbooks and production reports		
	Species-specific fishing effort	MP	All or Level 1	All	Logbooks and production reports		
E	Landings	MP	Level 1, 2 or 3, depending on management type	All ³ Not estimated ⁴	Logbooks and production reports		
F	CPUE data series	MP	Not specified	NR	Logbooks and production reports		
G	Surveys	MP	Not specified	NR			
H	Age compositions of other mandatory stocks	MP	Not specified Level 1 from 2006 onwards	NR	Port sampling		
I	Length & weight at age for species that can be aged	MP	Level 3	NR	Port sampling		
	Sexual maturity	MP	Level 3	NR	Port sampling		
	Sex ratios	MP	Level 3	NR	Port sampling		

¹ For vessels over 12 m LOA,

² For vessels less than 12 m LOA

³ For vessels over 12 m LOA,

⁴ For vessels less than 12 m LOA

J	Economic data fishing vessels	MP	Level 1	All ⁵	Census survey - questionnaire	
K	Data processing industry		Not specified			

⁵ Except for the parameter “investment (asset)”

4 Data transmission

4.1 Data transmitted

Data collected under the 2005 NP such as landings of catches for large pelagic species (*T. thynnus*, *X. gladius*, *T. alalunga*) have been transmitted to ICCAT. Data on nominal catches in the Mediterranean, for species listed in FAO questionnaires on fishery Statistics (STATLANT 37A-GFCM summary) for the year 2005, will be transmitted by August 2006.

Data collected regarding fleet capacity were also transmitted as required by EU Regulations 2090/98.

No other data regarding the 2005 NP have been transmitted.

4.2 Reasons for non-transmission of data

There were no other data requests.

4.3 Other relevant issues

Data requests concerning the new EU database (web services pilot software) and the pilot project should involve a training workshop, before the EU database becomes fully operational.

5. Module C – Fishing capacities

5.1 MP – Required and achieved sampling

All the obligations concerning collection of fishing capacities data were met. The data were collected based on the DCR fleet segmentation Appendix III and covered all licensed fishing vessels regardless of length category (<12 m, $12 \leq 24$ m, $24 \leq 40$ m, ≥ 40 m).

Data collected were:

- Vessel type (e.g. trawler, boat)
- Vessel age (calculated on the basis of the age of the 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 (GT)

The data are stored in the existing National Database of the DFMR per fleet segmentation and length category. The data were collected from the National FVR database which is updated annually.

5.2 MP – Deviation from aim

There were no deviations from the proposed sampling as set in the DCR Proposal 2005

5.3 EP – Required and achieved sampling

Cyprus did not apply for a Fisheries Capacity-EP in the NP 2005.

5.5 Action taken to avoid shortfalls

There were no shortfalls in the collection of data concerning fishing capacities.

6. Module D – Fishing effort

6.1 MP – Required and achieved sampling

In order to meet the data requirements and precisions concerning fishing effort the following data were collected extensively according to the Cyprus NP-2005.

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

i. Fuel consumption

Data on fuel consumption, which is also considered as part of the economic evaluation, were collected by census of the fishing fleet. The census covered all the vessels (100%) of the Cyprus fishing fleet. Fuel consumption is recorded by volume (litres) and cost (euro/litre). The level of coverage was achieved.

ii. Fishing effort by type of technique

All the information required concerning fishing effort by technique were collected by logbook sheets of the demersal trawlers, the purse-seiner and the polyvalent vessels covering 100% of these vessels segments of the Cyprus fishing fleet.

For vessels less than 12 m (passive gears) the current practice of sampling 10% of the inshore vessels (production reports) was used to evaluate fishing effort.

Furthermore, a census through questionnaires was carried out covering all segments of the fishing fleet, under the Module J, in which fishermen were required to provide information on fishing effort for 2005. The response rate from the inshore fishery, of which 10% is covered by production reports, was higher than 90%.

iii. Specific fishing efforts

Data on specific fishing effort for stocks of special interest (Appendix VI EC Regulation 1639/2001) were collected by logbook reports for the following species:

- Swordfish (*Xiphias gladius*)
- Bluefin tuna (*Thunnus thynnus*)
- Albacore (*Thunnus alalunga*)

6.2 MP – Deviation from aim

There were no deviations from the proposed sampling as set in the Cyprus NP Proposal 2005. Data regarding fishing effort were collected from logbook reports covering all the fleet segments.

6.3 EP – Required and achieved sampling

Cyprus did not apply for an EP in the NP 2005.

7. Module E – Catches and landings

7.1 MP – Landings – Required and achieved sampling

The following data were collected regarding landings.

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

The above data (i. &ii.), were obtained from logbook reports of the following fishing fleet vessels of the Cyprus fishing fleet (>12 m)

- Demersal trawlers
- Purse-seiner
- Polyvalent vessels

This translates into 100% coverage all fleet segments larger than 12 m.

- i. Commercial landings for all stocks

Landings for commercial stocks were recorded for Cyprus fishing vessels operating in Cyprus waters and International waters with the use of logbook reports. Catches and landings from vessels <12 m operating in Cyprus waters were frequently inspected both onboard as well as at landing sites for the verification of the reported landings.

- ii. Stocks mentioned in Appendix XII

The overall commercial landings for all stocks mentioned in Appendix XII were based on logbook reports and random observations of production at each landing site and for each fleet segment. The required precision levels were achieved.

7.2 MP – Landings – Deviation from aim

There were deviations from the aim compared to what is required by the DCR.

7.3 EP – Landings – Required and achieved sampling

Cyprus did not apply for a Fisheries Capacity-EP in the NP 2005.

7.5 MP & EP – Discards – Required and achieved sampling

Monitoring of discards for the stocks mentioned in Appendix XII was planned to be covered through pilot surveys concerning each segment of the fishing fleet.

However discard sampling was not performed during 2005 as was planned. Since the obligation for data collection regarding discards is once yearly over a three year period (DCR 1581/2004, Appendix XII) the discard sampling is to be completed in 2006.

7.6 MP & EP – Discards – Deviation from aim

No discard samplings were carried out due to unforeseen technical problems concerning tenders. It was decided by Cyprus that the discard sampling that was scheduled to take place in 2005 be resubmitted in the 2006 NP.

7.7 MP – Recreational – Required and achieved sampling

There were no requirements on Cyprus to perform sampling of recreational fisheries since catches from recreation and game fisheries were not included in the Cyprus NP 2005.

The reason for not performing recreational fisheries sampling in Cyprus is that Bluefin tuna (*Thunnus thynnus*) are not targeted by this fishery.

Derogations were granted since there is no recreational Bluefin tuna fishery in Cyprus.

7.8 MP – Recreational – Deviation from aim

No recreational samplings were carried out.

7.9 EP – Recreational – Required and achieved sampling

No EP recreational fisheries samplings were planned in the Cyprus NP 2005.

8. Module F – Catches per unit effort

8.1 MP – Required and achieved sampling

Catch per unit effort have been estimated for the polyvalent vessels fisheries targeting large pelagic species, and specifically Bluefin tuna, Albacore and Swordfish. Catch per unit effort for the demersal trawl fleet have been estimated from random catch effort observations, logbooks and landing records.

8.2 MP – Deviation from aim

Data collection was achieved without deviation from the proposed sampling programme.

8.3 EP – Required and achieved sampling

There was no required data collection based on the EP.

Table 8.1. - Summary table Catches per Unit Effort				Country	CYPRUS	MP+EP
				NP-year	2005	
Species	Area	Reference fleet	MP/EP	Data sources		
Thunnus thynnus	37.3	Cyprus – Polyvalent (Longliners)	MP	Landings and effort data from reports and log books		
Thunnus alalunga	37.3	Cyprus – Polyvalent (Longliners)	MP	Landings and effort data from reports and log books		
Xiphias gladius	37.3	Cyprus – Polyvalent (Longliners)	MP	Landings and effort data from reports and log books		

9. Module G – Scientific evaluation surveys

9.1. MP – Required and achieved Priority 1 surveys

Mediterranean International Trawl Survey (Medits)

In 2005 the Medits survey was conducted for the first time around the Cyprus seas (under the effective Government control). The aim of the survey was to collect biological data from the Cyprus demersal species, for creating time series of abundance and biomass indices, and length frequency distributions. The trends of these data series will provide information on the status of the Cyprus fishery resources, which may contribute to their management.

The survey was assigned through a tender's procedure to the Fisheries Research Institute (FRI)⁶, in charge of Dr. Argyris Kallianiotis. It was conducted from 1/8/05 to 11/8/05, using the commercial trawler "Evagelistria" (see Annex 1). 25 hauls were performed as proposed, after investigating the Cyprus waters for suitable trawlable areas in the required depth strata (i.e. 10-50m, 50-100m, 100-200m and 500-800m). The distribution of the number of programmed and achieved hauls related to depth is illustrated in Table 9a.

Table 9a. Depth zones, surface area and distribution of programmed and achieved hauls.

Depth (m)	Surface (Km ²)		No of programmed hauls	No of achieved hauls
	Total of Cyprus	Under Government Control		
10 – 50	796	450	4	5
50 – 100	717	470	4	8
100 – 200	918	857	5	5
200 – 500	2245	1055	5	3
500 – 800	6430	2156	7	4
Total	11106	4988	25	25

The distribution of the conducted sampling hauls is given in Figure 9.1. An overview of the planned and achieved numbers of fishing hauls and days at sea is provided in Table 9.1.

During the survey, sampling procedure was carried out based on the common methodology defined in the instruction manual of Medits⁷. The fishing gear used was the bottom trawl (IFREMER reference GOC 73). Sampling included the collection of biological parameters (i.e. total weight, total number, sex, stage of sexual maturity, and length of individuals for the 36 reference species, and the total weight, total number and length of individuals of the remaining species). Basic environmental parameters, such as water temperature, salinity and dissolved oxygen, were measured for each sampling haul, using a CTD device. In addition, a Minilog was used for recording temperature and pressure conditions of the net during towing.

The list of participants is given in Annex 2.

⁶ National Agricultural Research Foundation, Fisheries Research Institute, Kavala, Greece

⁷ International bottom trawl surveys in the Mediterranean MEDITS, Volume 2, Instruction manual, May 2002.

At the end of the survey, the data were checked, in order to be stored in the Medits Data Management System (MDMS). The abundance and biomass indices were calculated, as well as the length distribution of the species sampled.



Figure 9.1. Distribution of sampling hauls of the 2005 Medits survey

Mediterranean Bluefin tuna tagging (*Thunnus thynnus*)

The objectives of the survey as agreed in the Planning Group on Tuna Tagging (PGTT) – Joint European Tuna Tagging Programme for 2005 (Report of the First Meeting of the PGTT in the East Atlantic and Mediterranean Sea; Bari, 4-6 April 2005) were achieved.

Cyprus accomplished the tagging target of 10 BFT specimens. The specimens were collected from a tuna farm in Cyprus territorial waters. The tagging operations were carried out in October 2005. Ten tuna specimens were collected from tuna farm cages measured on the deck of a vessel and tagged using a satellite pop up tags.

9.2 MP – Deviation from aim

Mediterranean International Trawl Survey (Medit)

The conduction of the Medits survey was delayed until the beginning of August, instead of taking place in June (May-July). This is because the survey was assigned through a tender's procedure and the successful candidate was not in a position of conducting it earlier. Effort will be made in the following years to implement the survey during the defined season.

Though the total numbers of the planned and performed sampling hauls were in agreement, a redistribution of the planned numbers of hauls in each depth stratum had to be made (see Table 9a). This is because not enough suitable areas were found for conducting the proposed numbers in the deeper depth zones (200-500m, 500-800m). However, considering that

- i) the Medits survey was conducted for the first time around the Cyprus waters and
 - ii) trawlable areas in deep waters have rarely been investigated in previous years,
- it is not surprising that a number of hauls to be conducted in deep waters (based on the surface of the area) was not achieved. In the future years, the areas will be re-investigated, in order to achieve the necessary number of sampling hauls in the required depths.

Mediterranean Bluefin tuna tagging

There were two target specimens lost (satellite tag either detached/malfunctioned or the specimen died) in the first week of release. The data have not been collected to this date (25 May, 2006) since the tags pop-up programmed date is late May 2006.

9.3 EP – Required and achieved sampling priority 2 surveys

No EP surveys were carried out.

9.5 Action taken to avoid shortfalls

Actions to simplify the tagging operations and minimise stress related losses of specimens.

Table 9.1. - Summary table Priority 1 surveys					Country		2005			MP
					NP-year		CYPRUS			
Name of survey	Aim of survey	Area covered	Period	Days at sea		Sampling activities				Reference to map mandatory
				Planned	Achieved	Type	Planned	Achieved	% achieved	
Medit	Abundance indices and length frequency distributions for 36 species	37.3.2	August	12	11	Fish Hauls	25	25	100	Fig 9.1
Mediterranean Tuna (<i>Thunnus thynnus</i> -BFT) tagging	Stock mixing, Calibration of CPUE	37.3.2	October	2	1	Pop-up Satellite tagging of BFT	10	10	100	

10. Module H – Length and age sampling

10.1. MP – Landings – Required and achieved sampling

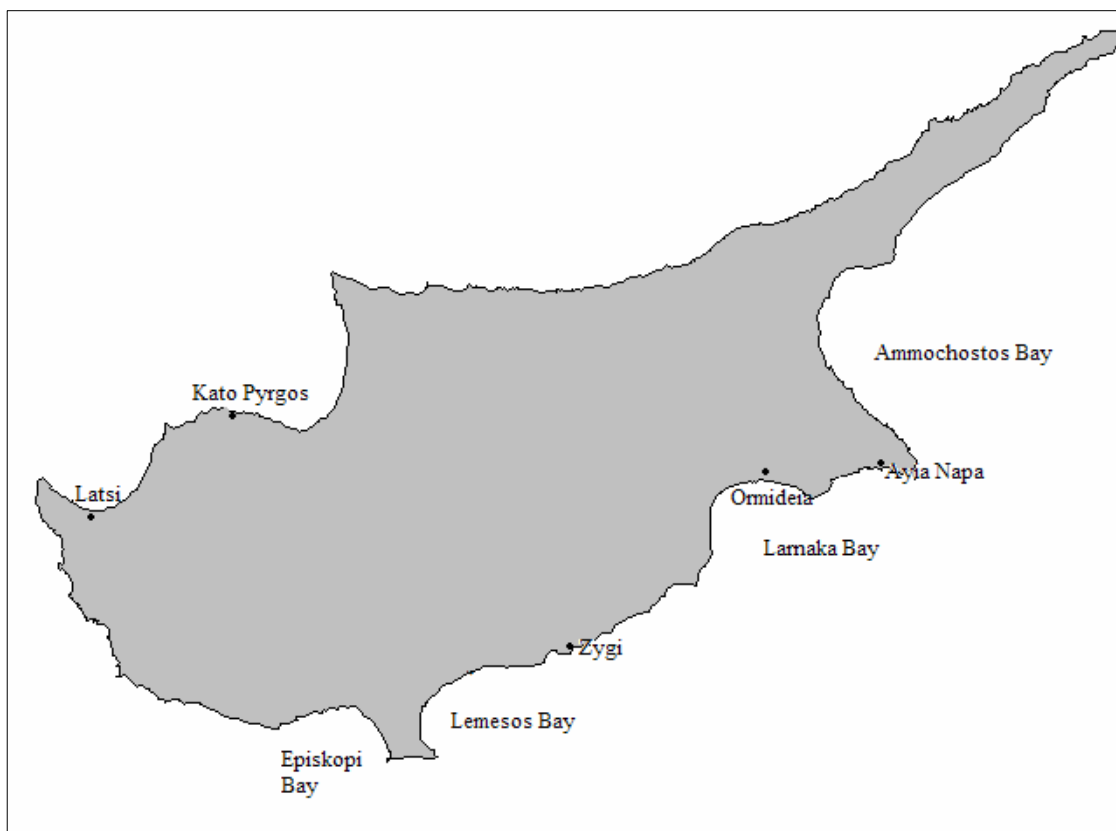
According to the provisions of the DCR, sampling from landings is required for estimating the composition in length and where appropriate in age, of all species included in Appendix XV. In the 2005 Cyprus NP, the following 6 species were proposed to be evaluated:

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

For the species *B. boops*, *M. barbatus*, *M. surmuletus* and *P. erythrinus*, the levels of Cyprus landings did not exceed the thresholds above which sampling is required. However, they were included in the sampling programme, due to their commercial importance for Cyprus.

Sampling was carried out at the main landing places of the country, which comprise about 90% of the Cyprus production. These landing places serve vessels that fish around the coastal areas under the effective Government control (Ammochostos bay, Agia Napa, Ormidia, Larnaca Bay, Zygi, Limassol Bay, Episkopi bay, Latsi and Pyrgos, see map 10.1). Samples of each species were collected from all fishing techniques used for their exploitation.

The number of length and age measurements required, programmed and achieved for the 6 species are given in table 10.1.



Map 10.1: Coastal areas from which age and length samples were collected.

10.2. MP – Landings – Deviations from aim

The collection of data from *M. surmuletus*, *M. barbatus*, *B. boops*, *S. smaris* and *P. erythrinus*, as well as the collection of “other biological data” under module I, were assigned through a tender’s procedure to a research body. However, due to problems with the tender’s procedure, biological sampling started in the 3rd quarter of the year. Therefore the samples are not considered to be representative of annual landings. The problems were foreseen and, therefore, in order to limit the problem, from the beginning of 2005 length data were collected from the 5 species by the personnel of the DFMR, for covering the length distribution in time.

There was a shortfall on the achieved number of individuals sampled for length, for the species *T. thynnus*. The reason is that it was difficult to trace tuna specimens. It should be noted that in Cyprus there is no auction market, where the various fish species would have been easily found, and vessels targeting tuna land their catch in various landing places.

There was an excess in the number of individuals collected for length sampling (>50%), for the species *B. boops*, *M. barbatus*, *M. surmuletus*, *P. erythrinus* and *S. smaris*. Nevertheless, this excess sampling did not affect the expenses of the Cyprus NP.

Regarding age sampling, there was an excess in the numbers of individuals collected (>50%) for the species *S. smaris*. Considering that the sampling period was limited and that usually large sizes of this species are caught during spring, the excess sample was collected for covering as much as possible all size classes. The “over-sampling” did not affect the expenses of the NP.

10.3. EP – Landings – Required and achieved sampling

No data collection has been carried out within the framework of the extended programme.

10.5. MP & EP – Discards – Required and achieved sampling

No data collection has been carried out, since the proposed pilot study for assessing discards was removed from the 2005 NP and was included to the 2006 NP.

10.7. Action taken to avoid shortfalls

In order to avoid delays on the conduction of future biological samplings, in case they are assigned through a tender’s procedure, effort will be made to complete the procedures before the beginning of the relevant year.

An effort will be made to avoid any future shortfalls on the number of individuals of *T. thynnus* planned to be sampled. A better communication between the DFMR and the fishermen on the importance of sampling may provide more successful results.

Table 10.1. - Summary table Length & age sampling of Landings							Country		Cyprus		MP			
							NP-year		2005					
Species	Area / Stock	Length sampling					Age sampling						Recovery Plan	Tuning series
		Required ----- R	Planned ----- P	Achieved ----- A	% achieved ----- A/R*100	% achieved ----- A/P*100	Required ----- R	Planned ----- P	Achieved ----- A	% achieved ----- A/R*100	% achieved ----- A/P*100	Precision achieved		
<i>Boops boops</i>	37.3.2	20	100	600	3000	600	10	100	120	1200	120	NR		
<i>Mullus barbatus</i>	37.3.2	54	100	320	593	320	10	100	140	1400	140	NR		
<i>Mullus surmuletus</i>	37.3.2	65	100	550	846	550	15	100	140	933	140	NR		
<i>Pagellus erythrinus</i>	37.3.2	10	100	235	2350	235	1	100	115	11500	115	NR		
<i>Spicara smaris</i>	37.3.2	55	100	435	791	435	55	100	180	327	180	NR		
<i>Thunnus thynnus</i>	37.3.2	85	85	32	38	38	Not applicable							

11. Module I – Other biological sampling

11.1. MP – Required and achieved sampling

The requirements of this module include the estimation of the following parameters for the species indicated in Appendix XVI of the DCR:

- i) Growth curves by length and weight,
- ii) Relation between sexual maturity and length/age
- iii) Sex ratio

In the 2005 Cyprus NP, data were proposed to be collected for 1 species, *Spicara smaris*. The samples used for the estimation of the parameters concerned where the same used for the determination of length and age (see section 10.1.).

Table 11.1 provides an overview of the long-term sampling strategy regarding “Other biological sampling”, while Tables 11.2 and 11.3 provide information on the achieved sampling for length at age, sex ratios and sexual maturity in the 2005 Cyprus National Programme.

Considering that

- i) 2005 was the first year in which data were collected for the estimation of the required parameters for *S. smaris*, and
 - ii) with the current system of triennial updates (see Appendix XVI of the DCR), data may be collected through out the whole period of three years,
- the estimations of the requested parameters, along with the achieved precision levels, will be provided in the 2007 technical report.

11.2. MP – Deviations from aim

As it was stated in section 10.1., biological sampling started in the 3rd quarter of the year. Therefore the samples are not considered to be representative of annual landings, and do not provide any maturity data for estimating the relation between maturity and age/length.

11.3 EP – Required and achieved sampling

No data collection has been carried out within the framework of the extended programme.

11.5. Action taken to avoid shortfalls

In order to avoid delays on the conduction of future biological samplings, in case they are assigned through a tender’s procedure, effort will be made to complete the procedures before the beginning of the relevant year, in order to provide the necessary time to the successful tenderer to collect i) representative samples from all commercial length classes and ii) samples near the reproductive period of the species concerned.

Table 11.1. - Long-term planning Other biological parameters														Country		Cyprus		MP							
														NP-year		2005									
Species	Area / Stock	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
<i>Spicara smaris</i>	37.3.2				X	X	X				X	X	X				X	X	X	Not applicable					

Table 11.2. - Summary table Growth and Sex ratios										Country		Cyprus		MP	
										NP-year		2005			
Species	Area / Stock	Length at age						Sex ratios							
		Nos. achieved	Data sources				Precision achieved	Nos. achieved	Data sources		Precision achieved				
<i>Spicara smaris</i>	37.3.2	180	Length & age readings from landing samples				NR	220	Sampling from landings		NR				

Table 11.3. - Summary table Sexual maturity and Fecundity				Country	Cyprus	MP	
				NP-year	2005		
Species	Area / Stock	Sexual maturity			Fecundity		
		Nos. achieved	Data sources	Precision achieved	Nos. achieved	Data sources	Precision achieved
<i>Spicara smaris</i>	37.3.2	220/0*	Sampling from landings		Not applicable		

* Number of specimens with identified sexual maturity

12. Module J. Economic data on fishing vessels

12.1 . MP – Required and achieved sampling

The purpose of this module was to assess the economic situation of the fisheries sector in Cyprus. According to the Appendix I of the current Regulation, Cyprus belongs only to one geographical division.

The relevance period is year 2005. The collection of the economic data was based on the fleet segmentation described in the Appendix III of the Regulation. It was aimed to estimate the parameters listed in the Appendix XVII of the current Regulation. Definitions of these parameters were based on the recommendations of the Expert Working Group on the Economic Data Collection that took place in Paris, May 2004.

The sources for collecting the socio-economic data are the Inshore Fishery Production Reports, Logbooks, the Purse Seiner Production, the Fishing Licenses and the Sales Notes from the fishmongers for verifying the quantities of production and the value of production of the Inshore Fishery. Moreover, an important tool that was used for the economic analysis is the face-to-face interviews. The aim was to carry out a census for the whole population. The interview-questionnaire method was conducted in cooperation with the national Statistical Service (Ministry of Finance).

The target variables are the following:

- Income – Turnover
- Gross value of landings
- Production costs
 - Labour costs
 - Fuel costs
 - Repair and maintenance
 - Other operating costs
- Fixed costs
- Financial position of fishermen
- Investment (value of assets)
- Live/weight prices per species
- Number of persons employed
- Fleet
- Effort

The fishing vessels population consists of all commercial licensed fishing vessels included in the Fleet Vessel Registry (FVR) for 2005.

The sampling strategy was based on the population segments described in the enclosed Table 12.1. "Fishing vessels: Population segments for collection of economic data".

It should be noted that the fleet segmentation was based on the recommendation of the Workshop on Small Scales Fisheries (Kavala 2005) of the session devoted on the "Fleet – Fishery Based Approach for the Mediterranean Fisheries" suggesting that if a length stratum is composed of less than 10 vessels it can be regrouped within the lower stratum. The recommendation was used both for trawlers (12 - 24m category only) and the vessels using polyvalent passive gears (also 12 – 24m category only).

Effort was made to carry out a full census for all the segments of the fleet. The response rate from the inshore fishery was approximately 91%, which makes it possible to calculate the parameters and all the data with a precision of plus and minus 25% for a 95% confidence level (precision level 1) as required by the Regulation. The same applies for the vessels using polyvalent passive gears the response rate of which was 87.5%.

Unfortunately, the response rate for trawlers (territorial and international waters) was not of the same level. The response rates for trawlers fishing in International Waters was 66.7% whereas, for trawlers fishing in territorial waters was 50%. The problems encountered were not due to the unwillingness of fishermen to interview them. The lower response rates were mainly, due to the fact that these vessels remain outside Cyprus for long periods before reaching Cyprus ports and thus it was not possible to interview them during the period the census took place.

Effort will be made to continue the survey for the trawlers in the following months in order to increase the response rates.

Description of parameters

The Cyprus NP took into consideration the following parameters, which are included in Tables 12.2.(a,b,c,d) for each segment of the fleet:

1. The income or otherwise the turnover is defined as the total Gross Revenue of the fishing sector. It should be noted that the personal fish consumption is excluded from the income variable.

The total income was estimated using the following sources:

- Inshore Fishery Production Reports – for vessels below 12m
- Logbooks – for vessels over 12m
- Purse seiner Production Report

The Sales Notes from fishmongers were used for verifying the quantities of production and the value of production mainly for the vessels below 12m.

Furthermore, another important tool that was used for the economic analysis was the face-to face interviews for the entire segment.

2. The production cost is the total expenditure of the fishing activity. The production cost was broken down as follows:

a) Labour cost

The wages are defined as the total expenditures paid by the employers including social securities, health Insurance and other related taxes.

The face to face interviews/ questionnaires method was used for estimating this variable. This method was chosen because the owners of the vessels are:

(I) for vessels less than 12 m are individuals who do not have financial accounts and

(II) for vessels above 12 m are mostly small firms that do not have audited financial accounts.

For the latter, in some cases the financial accounts were used for verifying the quality of the data.

b. Fuel cost

Means the actual petrol cost paid by the vessels owners. The fuel consumption is estimated using the formula described below:

Trawlers and Vessels using polyvalent passive gears (vessels over 12m):

$$0.180l/hr/HP$$

Where:

l: litres used by the vessel

hr: hours/working days

It is assumed that these vessels work 24 hours per working day.

HP: Horse power of each vessel

Inshore Fishery (vessels below 10m)

0.200l/hr/HP

Where:

l: litres used

Hr: hours/working day

It is assumed that these vessels work 6 hours per working day.

HP: Horse power of each vessel

The data sources used for estimating the variables needed for calculating the formula are:

Logbooks: for the number of working days

FVR: for the horse power of each vessel

Questionnaires: for litres of petrol used by each vessel and the number of working days for vessels less than 10 m
Questionnaires will also be used for verifying the estimations of the above formula.

c. Repair and maintenance

The information for estimating this variable was extracted from the questionnaire interview method. It is noted that the DFMR does not keep records of costs, because it is not subject to administrative control.

Repair: Means the cost after accidental or unforeseen damages

Maintenance: Means the standard annual maintenance needed

d. Other operational Cost

This variable was further subdivided into the actual expenditure paid for the following items:

- Ice
- Fishing gears
- Baits
- Food

- Medicines
- Fish boxes
- Expenses for safety measures
- Expenses for security reasons
- Services by third parties
- Transportation

The data were extracted from the face-to face interviews.

3. Fixed Cost

These expenses are not directly related to the fishing activity. The main costs are the depreciation and the opportunity cost of capital. The depreciation was calculated according to the value of the fixed assets. The Straight Line Method (SLM) was used considering that the Useful Economic Life (UEL) of the vessels is as follows:

<u>Vessels</u>	<u>UEL</u>
• Up to 6.6 m	20 years
• Over 6.6m – 9m	25 years
• Over 9m – 12 m	30 years
• Over 12m	35 years

The SLM is calculated by the formula:

$$\frac{\text{Value of the vessel} - \text{Scrap value}}{\text{UEL}}$$

The opportunity cost of capital is not available at the moment. It needs to undertake an analysis in depth to assess the risk and return of such investment.

It is well-known that the return should be much higher than that of the secured government bonds, because it entails much higher risk.

4. Financial position of fishermen

This variable is calculated as the ratio of the own capital to the borrowed capital.

Capital investments are considered those investments that increase the value of the vessel, improving the fishing activities, such as the modernization of the vessel.

Borrowed capital is mainly the loans.

It should be noted that no subsidies were given in 2005 within the framework of the Structural Funds.

5. Investment capital

It is defined as the total value of the capital.

The Regulation considers that the insured value is preferred. This methodology could not be applied in Cyprus, because the Insurance Scheme for vessels is not compulsory and the fishermen are not willing to insure their vessels. Thus, for the non-insured vessels the current evaluation cost is used.

The estimation of the current evaluation cost is not an easy task and although all the data have been collected, the data are still being analyzed.

Methodology – summary

A survey was conducted for estimating the prices of new constructed vessels.

In order to estimate the current evaluation cost of vessels the following variables are needed:

- UEL of vessels – same methodology as the one specified in the Depreciation parameter.
- Value of new constructed vessels
- UEL of fishing gears
- UEL of the following fishing electronic equipment:
 - Engine up to 30 HP 20 years
 - Engine over 30 HP 25 years
 - Net Longline haulers 20 years
 - Radar 15 years
 - Ecosounder, radiotelephone, GPS 15 years

6. Live/weight prices per species

The prices are collected for each species and they are the live/weighted prices taken by the fishmongers.

7. Employment

It is defined as the total persons employed in the fishing sector, either full time or part time.

These data are derived from the fishing license applications. The validity of these data was verified through the interview – questionnaire method.

The calculation of Full Time Equivalents (FTE) is not available at the moment because the data are still being analyzed. However, it should be noted that the FTE is not clearly defined in the Regulation nor it was clarified in any of the technical meetings.

8. Fleet

The characteristics of the fleet segment are provided by

- GT
- KW
- Age of vessel
- Gear used

These data are collected by the DFMR for all the vessels and they are included in the FVR, which it is continually updated (see Section C).

9. Effort

It is measured by the number of days of fishing activity multiplied by a size of the fleet parameter (GT, KW). The Fleet data are included in the FVR.

All the information required concerning fishing effort by technique were collected by logbook sheets of the demersal trawlers, the purse-seiner and the polyvalent vessels covering 100% of these vessels segments of the Cyprus fishing fleet.

For vessels less than 12 m (passive gears) the current practice of sampling 10% of the inshore vessels (production reports) was used to evaluate fishing effort.

Furthermore, a census through questionnaires was carried out covering all segments of the fishing fleet, under the Module J, in which fishermen were required to provide information on fishing effort for 2005. The response rate from the inshore fishery, of which 10% is covered by production reports, was higher than 90%. (see also Section D).

12.2. MP – Deviations from aim

There were no deviations as set in the Cyprus NP Proposal 2005.

12.3. EP – Required and achieved sampling

The National Programme did not implement the Expended Programme for the collection of economic data by groups of vessels.

12.5. Action taken to avoid shortfalls

No actions are needed, since there were no shortfalls.

Table 12.1. - Fishing vessels : Population segments for collection of economic data		Country		Cyprus	
		NP-year		2005	
		MP			
Fleet segment	Total population no. ----- N	Planned sample no. (1) ----- P	Achieved sample no. (1) ----- A	Sample rate (2) ----- A/N*100 (%)	Response rate (2) ----- A/P*100 (%)
Demersal trawlers : ≤24m	16	16	10	62.5	62.5
Purse seiners	1	1	1	100	100
Passive gears :Polyvalent vessels ≤ 24m	32	32	28	87.5	87.5
Passive gears : Fixed nets	461	461	424-431	92-93.5	92-93.5
Passive gears : Gears using hooks	30	30	25-30	83-100	83-100
Passive gears : Pots and Traps	7	7	'5-7	71-100	71-100

Table 12.2.a - Summary table Economic data by Group of vessels						Country	CYPRUS	MP	
						NP-year	2005		
Fleet segment	Parameter	Year to which data refer	Measure(s) used	Data source(s)	Methodology	Targeted population	Sampling strategy	Sample rate (%)	Precision achieved
Demersal trawlers 12-24 m	Investment (asset)	2005	Vessel insured value	Vessels Insurance Scheme	National Database	Entire segment	Exhaustive (of the insured vessels)	All	
			Current Evaluation Cost	DFMR's survey	DFMR's calculation	Entire segment	Stratified random	10	
	Production cost								
	-- crew (incl. social cost)	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- fuel	2005	Actual cost paid	Logbooks, FVR, Questionnaires	Formula & face-to-face interview	Entire segment	Exhaustive	All	
	-- Repair and Maintenance	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- Other operational cost	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Prices/species	2005	Price per species	DFMR's survey (from fishmongers)	National Database	All recorded landings	Exhaustive	All	
	Effort	2005	Days at sea, GT, KW	EU Logbooks, Landings Reports, FVR	National Database, FVR	Entire segment	Exhaustive	All	

	Fleet	2005	GT, KW, Age, Gear	FVR	FVR	Entire segment	Exhaustive	All	
	Income	2005	Total Gross Revenue	Logbooks, Questionnaires	National Database, Face-to-face interview	Entire segment	Exhaustive	All	
	Fixed Cost	2005	Depreciation Opport. Cost of capital	Company accounts, Owner's estimate, DFMR's estimate	Formula	Entire segment	Exhaustive	All	
	Financial Position	2005	Ratio of own capital to the borrowed capital	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Employment	2005	Persons employed full-time or part time	Fishing license applications	National Database	Entire segment	Exhaustive	All	

Table 12.2.b - Summary table Economic data by Group of vessels						Country	CYPRUS	MP	
						NP-year	2005		
Fleet segment	Parameter	Year to which data refer	Measure(s) used	Data source(s)	Methodology	Targeted population	Sampling strategy	Sample rate (%)	Precision achieved
Passive gears: Polyvalent vessels 12-24 m	Investment (asset)	2005	Vessel insured value	Vessels Insurance Scheme	National Database	Entire segment	Exhaustive (of the insured vessels)	All	
			Current Evaluation Cost	DFMR's survey	DFMR's calculation	Entire segment	Stratified random	10	
	Production cost								
	-- crew (incl. social cost)	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interviews	Entire segment	Exhaustive	All	
	-- fuel	2005	Actual cost paid	Logbooks, FVR, Questionnaires	Formula & face-to-face interview	Entire segment	Exhaustive	All	
	-- Repair and Maintenance	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- Other operational cost	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Prices/species	2005	Price per species	DFMR's survey (from fishmongers)	National Database	All recorded landings	Exhaustive	All	
	Effort	2005	Days at sea, GT, KW	EU Logbooks, Landings Reports, FVR	National Database, FVR	Entire segment	Exhaustive	All	

	Fleet	2005	GT, KW, Age, Gear	FVR	FVR	Entire segment	Exhaustive	All	
	Income	2005	Total Gross Revenue	Logbooks, Questionnaires	National Database, Face-to-face interview	Entire segment	Exhaustive	All	
	Fixed Cost	2005	Depreciation Opport. Cost of capital	Company accounts, Owner's estimate, DFMR's estimate	Formula	Entire segment	Exhaustive	All	
	Financial Position	2005	Ratio of own capital to the borrowed capital	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Employment	2005	Persons employed full-time or part time	Fishing license applications	National Database	Entire segment	Exhaustive	All	

Table 12.2.c - Summary table Economic data by Group of vessels						Country	CYPRUS	MP	
						NP-year	2005		
Fleet segment	Parameter	Year to which data refer	Measure(s) used	Data source(s)	Methodology	Targeted population	Sampling strategy	Sample rate (%)	Precision achieved
Passive gears: Inshore Fishery ≤12 m	Investment (asset)	2005	Vessel insured value	Vessels Insurance Scheme	National Database	Entire segment	Exhaustive (of the insured vessels)	All	
			Current Evaluation Cost	DFMR's survey	DFMR's calculation	Entire segment	Stratified random	10	
	Production cost								
	-- crew (incl. social cost)	2005	Actual cost paid	Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- fuel	2005	Actual cost paid	FVR, Questionnaires	Formula, Face-to-face interview	Entire segment	Exhaustive	All	
	-- Repair and Maintenance	2005	Actual cost paid	Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- Other operational cost	2005	Actual cost paid	Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Prices/species	2005	Price per species	DFMR's survey (from fishmongers)	National Database	All recorded landings	Exhaustive	All	
	Effort	2005	Days at sea, GT, KW	Inshore Fishery Production Reports	National Database	Entire segment	Stratified random	10	
				Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
Fleet	2005	GT, KW, Age, Gear	FVR	FVR	Entire segment	Exhaustive	All		

	Income	2005	Total Gross Revenue	Inshore Fishery Production Reports, Questionnaires	National Database, Face-to-face interview	Entire segment	Exhaustive	All	
	Fixed Cost	2005	Depreciation Opport. Cost of capital	Owner's estimate, DFMR's estimate	Formula	Entire segment	Exhaustive	All	
	Financial Position	2005	Ratio of own capital to the borrowed capital	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Employment	2005	Persons employed full-time or part time	Fishing license applications	National Database	Entire segment	Exhaustive	All	

Table 12.2.d - Summary table Economic data by Group of vessels						Country	CYPRUS	MP	
						NP-year	2005		
Fleet segment	Parameter	Year to which data refer	Measure(s) used	Data source(s)	Methodology	Targeted population	Sampling strategy	Sample rate (%)	Precision achieved
Purse seiner	Investment (asset)	2005	Current Evaluation Cost	DFMR's survey, Owner's estimate	DFMR's calculation	Entire segment	Exhaustive	All	
	Production cost								
	-- crew (incl. social cost)	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- fuel	2005	Actual cost paid	Logbooks, FVR, Questionnaires	Formula & face-to-face interview	Entire segment	Exhaustive	All	
	-- Repair and Maintenance	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	-- Other operational cost	2005	Actual cost paid	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Prices/species	2005	Price per species	DFMR's survey (from fishmongers)	National Database	All recorded landings	Exhaustive	All	
	Effort	2005	Days at sea, GT, KW	Logbooks, FVR	National Database, FVR	Entire segment	Exhaustive	All	
	Fleet	2005	GT, KW, Age, Gear	FVR	FVR	Entire segment	Exhaustive	All	

	Income	2005	Total Gross Revenue	Purse seiner production report, Questionnaire	National Database, Face-to-face interview	Entire segment	Exhaustive	All	
	Fixed Cost	2005	Depreciation Opport. Cost of capital	Company accounts, Owner's estimate, DFMR's estimate	Formula	Entire segment	Exhaustive	All	
	Financial Position	2005	Ratio of own capital to the borrowed capital	Company accounts, Questionnaires	Face-to-face interview	Entire segment	Exhaustive	All	
	Employment	2005	Persons employed full-time or part time	Fishing license applications	National Database	Entire segment	Exhaustive	All	

13. Module K – Data concerning the fish processing Industry.

13.1. MP – Required and achieved sampling

The 2005 Cyprus National Programme committed to undertake a pilot study. It is scheduled to be submitted by the end of October 2006.

14. Databases

14.1 Database development and data management

Cyprus applied for financial support from the EC for the development of a database to store all the data collected regarding the DCR. There was little progress concerning the improvement of the existing database. There were no expenditures incurred regarding the database development during 2005.

14.2 Other relevant issues

The problems encountered regarding the database development were of a technical and procedural nature. There were difficulties in the procedures needed to be carried out regarding the purchasing of a database to the specification requested by the DFMR, and in particular the formulation of technical criteria for tenders.

15. National and international co-ordination

15.1 National co-ordination

There were no plans for a National co-ordination meeting in 2005.

15.2 International co-ordination

Cyprus participated in the international coordination meetings indicated in table 15.1.

15.3 Follow-up of RCM recommendations and initiatives

Since 2005 was the first year that Cyprus implemented the DCR and participated in the Mediterranean RCM meeting, no actions were taken on previous Mediterranean RCM recommendations.

15.1. - Summary table International co-operation		Country		CYPRUS	
		NP-year		2005	
Meeting / Workshop / Inter-calibration exercise	Venue	Month	No. MS's participants	Eligible under DCR	
MEDITS-Working group	Nantes, France	March 2005	1	Yes	
Planning group for the Atlantic and Mediterranean tuna tagging	Bari, Italy	April 2005	1	Yes	
RCM Mediterranean waters	Athens, Greece	June 2005	4	Yes	
Workshop on small scale fisheries	Kavala, Greece	Sept 2005	2	Yes	

16. List of acronyms and abbreviations

BFT	Bluefin tuna
CFP	Common Fisheries Policy
DCR	Data Collection Regulation 1639/2001 & Amendment 1581/2004
DFMR	Department of Fisheries and Marine Research
EP	Extended Programme
FAO	Food and Agriculture Organisation
FVR	Fleet Vessel Register
GTR	Guidelines of Technical Reports DCR
GT	Gross Tonnage
HP	Horse Power (engine power)
ICCAT	International Commission for the Conservation of Atlantic Tuna
Kw	Kilowatt
MeditS	Mediterranean Trawl Survey
MP	Minimum Programme
MS	Member States
N.AG.RE.F.	National Agricultural Research Institute
NP	National Programme
PGTT	Planning Group on Tuna Tagging
RCM	Regional Coordination Meeting

ANNEXES

ANNEX 1: Fishing vessel used in MEDITS-CY 2005 survey

Country Code	Vessel name	Vessel Code	Length (m)	Tonnage (GRT)	Power (kW)	No of hauls	Duration (days)
CY	Evagelistria	EVA	29.1	59.45	497	25	11

ANNEX 2: List of participants in the Medits –CY 2005 survey

FRI Personnel	
Name	Specialty
A. Kallianiotis	Coordinator of the project, head of the mission, biologist
P. Vidoris	Head assistant of the mission, environmentalist
G. Ghitarakos	Biologist
K. Efthimiadis	Fisheries technologist
V. Lekkas	Biologist
T. Papadopoulos	Environmentalist
N. Kamidis	Environmentalist
DFMR Personnel	
Name	Position / Specialty
N. Hadjistephanou	DFMR Officer A', Biologist
S. Kanios	DFMR Inspector A'
M. Ioannou	DFMR Officer, Economist
C. Charilaou	DFMR Officer, Biologist
G. Payiatis	DFMR Officer, Biologist
L. Vassiliades	DFMR Officer, Biologist
Ch. Prodromou	DFMR Inspector
N. Sarris	Skipper (DFMR employee)
Other participants	
Name	Specialty
A. Petrou	Biologist
Ch. Christodoulou	Skipper
G. Christodoulou	Skipper