Review of the Maltese Fishery Statistical System and options for its improvement.

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Executive summary

The Government of Malta avows that appropriate fishery and aquaculture management passes through an accurate and timely control of the phenomena influencing the sector (fishery and aquaculture statistics in the broad sense).

The Government also recognises the need to reorganise the Fishery Department to better respond to the above requirements. During the reorganisation process the Government took the opportunity of the existing sub-regional FAO Project "COPEMED" to seek technical assistance in building up national capabilities for data collection and information systems.

Immediate consultations held with FAO and COPEMED resulted in a project activity supported by the Project aiming at directly assisting the Government of Malta to build up adequate infrastructures for the establishment of a sound national data collection and information system for fishery and aquaculture.

In November 1998, the first FAO-COPEMED mission (Mr. R. Robles, Director COPEMED, and Mr. S. R. Coppola, FAO Fisheries Resources Officer, system designer and activity team leader) visited Malta with the twofold task of,

a) finalising the commitment and resources involved, and
b) undertaking a preliminary assessment of the Maltese fishery infrastructure and the current data collection system, considered as prerequisites for the task to be carried out.

The prepared plan, subsequently approved by the Maltese Government, fixed a working methodology consisting of the following:

a)　　Establishing a Statistical Unit in the Fishery Department
b)　　Designing a Data Collection and Statistical Programme based on short-medium term requirements as well as in compliance with the current FAO-GFCM, EU and COFI (Compliance Agreements) recommendations.
c)　　Securing, through upgrading the infrastructure (staff, resources, methodologies), the self-sustainability of long-term implementation of the data/information component within the Fishery Department.

During the months following this mission, the Maltese Government:

✓ established the Statistical Unit in the Fishery Department;
✓ identified staff and assigned them to the new duties;
✓ drew up the terms of reference for a scientific officer to cover the statistics and data processing domain, and put forward a request for his recruitment;
✓ identified and assigned adequate computer resources to the Unit;
✓ made preliminary contacts with the Central Statistical Office and the Fishermen's Associations.

In April 1999 the preliminary design was completed and its implementation started.

1.   Introduction

The General Directorate of Fishery and Aquaculture in Malta decided some time ago to tackle in a rational way the problem of the reliability of the fishery statistical data produced. Its resolution is indispensable for a modern planning of the fishery sector. This is also dictated by the forthcoming event of Malta joining the European Union, where the problem of fishery statistics for the management of common Mediterranean resources is a standing issue. The opportunity for an in-depth revision of the data collection system in Malta is given by the presence of the sub-regional project COPEMED that could help to overcome certain difficulties, highlighted below. The activity was accepted by the FAO's Marine Resources Service, Department of Fisheries within its mandate to directly assist member countries of the General Fishery Commission for the Mediterranean.

2.   The present situation

A preliminary critical assessment of the present status of the fishery data collection system in Malta highlighted a constant deteriorating quality of the fishing records and the lack of systematic catch data collection. This trend is mainly due to problems of methodology and implementation. Should it continue, one of the major difficulties envisaged is the loss of control over the size, structure and organisation of the Catch Assessment, preventing the authorities from having a system to support their decisions.

The reason lies principally in the difficulty of the Fishery Department to obtain specialised expertise in Fishery Statistics (methodology and data processing) which is not present in the Department. The Department was also concerned that introducing a radical change could upset present commitments (data flow from the Department of Fishery to other governmental and non-governmental offices).

The revision and proposals contained in this document are the result of consultations and discussions held between qualified staff of the FAO, Department of Fishery, and COPEMED as well as an in-depth analysis of the statistical requirements and the objective situation that resulted in the design of a new Fishery Statistical System for the country. Mapping material as well as other information in this paper have been provided by the staff of the Maltese Fishery Department (See Appendix 1).

The objective review of the situation, also taking into account a note prepared by the Department's fishery officers and other supplementary information gathered during the discussion, highlights the following aspects:

An inventory of fishing vessels was conducted by the Central Institute of Statistics of Malta (1996) and published. However, since fisheries management was not the specific objective of this inventory, it is of limited use by the Fishery Department.

There is an ongoing Fish Marketing Scheme, as described in the appendix. This consists of a data collection system of fish catch brought to the central fish market of Valletta, and sold by auction to fishmongers. This task involves three Fishery officers and three Office clerks (one with computer skills plus two 2 assistants)

No adjustments based on statistical models are performed in order to correct the discrepancy.

The process has been described as totally manual and time consuming. Taking into account the limited results produced, it can objectively be classified as a poor cost/benefit exercise.

In Gozo Island (port of Mgarr), there is a team of a Fishery officer with some assistance which undertakes daily duties related to fishery operations, practically without any interaction with the centre for statistical matters.

The Department can count on the part-time (about 30%) assistance of a fishery biologist dealing with fishery management issues.

The whole process of Fishing Licensing is manual and occasionally updated.

For more information related to the situation vis-à-vis the fishing industry in Malta, in Appendix 6, a summary is given from the national report to the GFCM -Working Party on fishery statistics and economics, Rome, 2-5 March 1998. (See References)

3.   Introductory considerations

Hereafter are reported some of the necessary administrative/logistic inputs that were taken into account in planning the new statistical system. These inputs, as well as some others, will be part of the statistical documentation supporting the work being carried out.

The options presented here were widely discussed and evaluated by the group, and refer mainly to a programme of work rather then an activity. In formulating this approach the following basic concepts were taken into consideration:

The work must be done by and with the staff of the fishery department, limiting external aid only to fill the gaps (methodological and financial resources)

The system to be adopted should be as close as possible to the working practices and conditions of the staff involved and also be rational with the technological and operational environment.

The risk should be kept to the minimum, by guaranteeing the present outputs at no cost to the Administration, by introducing computerised systems as well as different mechanisms for handling assigned tasks.

Reassignment and re-qualification of the fishery officers and clerks to successfully undertake the new tasks without neglecting their other responsibilities (including preparing new terms of reference/job descriptions).

The need for supplementary resources from the Administration should be kept to the minimum.

4.   Objectives

The primary objective of the proposed programme is the production of reliable fishery statistics and to supply the Fishery Department with modern and dynamic tools for data administration.

Hereafter the most significant outputs that this programme should produce are briefly reported.

✓ Establishment of a systematic data collection system of the national fishery industry, covering the Census data as well as Catch and Effort statistics..

✓ Construction of a network of statistical data collection and monitoring formed by specialised staff.

✓ Setting up of a "Statistical Unit" for fishery statistics at the Directorate General for fishery and aquaculture able to autonomously manage the above system. This unit must be seen as a "Unit or Service" in the administrative concept and as a working group with rules, mandates, assigned tasks, co-ordination, budget, etc. This Unit will also manage the collection of forms and questionnaires, as well as the whole data processing and production of reports.

✓ Automatic transfer of data and information to the Central Statistical Institute (content and format must be agreed on).

✓ Data compilation and reporting to for the Ministries, as well as Regional and International Organisations and Institutions. (Content and data formats to be agreed on).

✓ Provide fishing co-operatives, fishing companies, shipyards, association of fishery suppliers, etc., with access to statistical reports.

✓ Build up detailed time series useful for scientific workers.

✓ Establishment of a Register of Fishing Vessels associated to Fishing Licences, with automated routines for monitoring, releasing, and updating them.

5.   The expected data structure of the proposed system.

The new system, once introduced, will be finalised through a series of modifications and refinements that may occur during its implementation. However, at the moment of designing it, the following situation can be foreseen:

National context:

Area coverage and stratification.

The country will be divided into Statistical strata according geographical and administrative criteria, as well as the characteristics of the fishery. The exact localisation and geographical references of all fishing ports, landing places, fish markets in the country will be classified according to geographical, administrative and fishery-statistical characteristics.

Localisation and definition of all fishing zones and grounds of interest to the Maltese fleet, and preparation of detailed grid maps with agreed resolution.

In order to produce statistics according to the administrative background of Malta, the whole country will be stratified, for statistical purposes, into two Main Strata: 1 - Malta, 2 - Gozo and Comino. Further stratification, to classify the population data according to the characteristics of the fishing industry, will be established after the completion of the Frame Survey.

Fishing Vessel Data Coverage (Frame data):

The Frame will cover all the existing fishing boats owned in Malta, that include, among others, Trawlers, Multi-purpose vessels, Traditional fishing units, Occasional (amatorial) fishing units

Vessel characteristics by area (regions/port) and by typology of the fishing industry.

<u>Catch and Effort Data Coverage</u>:

Landing catch statistics by landing area, by fishing zone and by typology of the fishing industry (vessels). Specifically, the system should be able to produce:

Monthly catch and effort estimates by typology of the fishing industry;
Monthly catch and effort estimates by type of boat/gear class
Monthly catch and effort estimates by fishing zones (statistical)
Monthly catch and effort estimates by landed species.
Monthly catch and effort estimates by any combination of the above.

Regional and international contexts.

The codification structure of the Maltese fishery system will follow the UN, FAO standards. It will be divided into two sub-systems: A first set of International references that nationals will not be authorised to change, and a second set of National or Local references that the nationals can develop and manage. The international references will be used to prepare reports for internal and external use, whereas the Local references will be used for national items and do not appear in international communications. Should some of the Local references deal with data to be exchanged, they will be combined, grouped or reorganised and reconnected to the international ones.

The International Plan of Action for the Management of Fishing Capacity which was adopted by COFI in 1999 states (paragraph 18) that: *States should support the establishment by FAO by the end of 2000 of an international record of fishing vessels operating on the high seas, following the model indicated in the Compliance Agreement".* According to it, "Each Party shall make readily available to FAO… omissis (see reference)".

The GFCM, on various occasions, recommended the collection and submission of data concerning the fishing vessels in the member countries. In spite of the many recommendations, this item is still a standing problem. The FAO currently collates vessel and landing statistics for the GFCM. Various reports presented at the GFCM Working Party on Fishery Statistics have highlighted the need to be more active and punctual in this respect.

Should Malta be successful in its effort to join the EU, it is believed that the system will also be compliant with the EU directives in terms of the fishery statistics submission.

In response to the above, it is believed that the proposed system will be compliant with the directives of the FAO, COFI, etc., not only in the data structure, but also in producing and timely submitting automated statistical reports, and as much as possible in the required formats.

6.   <u>The proposed programme</u>

At the request of the Directorate of Fishery and Aquaculture, the present proposal has been prepared for discussion and further consideration. It has been prepared coherently with the financial and

human resources that would probably be available. The main attention was focussed to enable the Department of Fishery to proceed carefully (though slowly), introducing a new system without interrupting the existing one. Only at the end of the programme, will the new system, if found satisfactory, replace the old one. The bridging period should also enable the Department of Fishery to make a comparative analysis to see whether would it be possible to construct a regression model(s), in order to revise the national time series retrospectively. In order to give adequate guarantees to achieve it, the first item proposed, is a prerequisite.

It is worth underlining that some administrative, functional and logistic, reorganisation within the Fishery Department of Malta is needed. This arrangement is proposed to compass with two major constraints: i) that only a very limited human resources could be eventually added, and therefore it is done only by reorganising and re-assigning tasks accordingly and, ii) the present data collection system must not be interrupted till the new one demonstrate its validity.

a) **Establishment of the Statistical Service, and nomination of a Service Chief**.

The Service will be made of three Units:

Data Processing Unit: Three Data Clerks supervised by the Senior Data Processing Clerk at present all assigned to the Fish Marketing Scheme

Field Support Unit: Three Fishery Officers headed by the Senior Fishery Officers at present assigned to data collection, inspection and fishery administration. (One officer assigned to Gozo Is). Four Fishery Recorders (field work) will be recruited or temporary secured.

Methodology Unit: A Junior Statistician, or graduate from the Mathematics and Computer faculty should be provided by the Administration

At the Departmental level, the following assignment should be confirmed: Data/Information Liaison with COPEMED, and the Data/Information Liaison with SIPAM.

As far as resources to be assigned to this Service are concerned, it is important that the present hardware/software used for statistical purposes should be re-assigned to the Statistical Service, including that for COPEMED and SIPAM. Two new desktop workstations just received at the Department should be assigned to the Statistical Service. Concerning the extra financial resources that may be assigned to this task, in compliance with the new internal financial rules of the Fishery Department, a budget line should be created to be used specifically by this Service. This budget line should deal with eventual financial support from COPEMED and other Organisations or Projects.

b) **Guarantee the present level of data collection**

Design and implement an automated system to process Fish Marketing Scheme data, limited to data entry from the "auction vouchers" and production of the statistical statement, with the following immediate results:

Continue to fulfil commitments vis-à-vis the Central Statistical Institute
Start training desk staff in data processing
Involvement of two desk clerks in this work (1 data processing, 1 administrative support)
Release from this work of three fishery officers and one clerk who will be re-qualified for the statistical experiment.

c) Build the national Fishery Frame.

Design and launch a Quality Check Survey of the Census of fishing vessels through Area approach, in order to extend the coverage (including all types of fishing vessels in the country) and integrate all the vessel characteristics in the existing Inventory made by the Central Statistical Institute.
Its main objectives are: i) to provide detailed and accurate information on the present size, structure and localisation pattern of the primary marine fishing industry, i.e., number of fishing vessels by type category, fishing methods and equipment used, fishing labour force, etc., and the distribution pattern of the fishing vessels in space and, ii) to construct the Sampling Frame for the Catch and Effort Sample Survey. Build up the statistical stratification.

d) Build the DataBase management system of the Fishery Frame Data

Design and development of a computerised system (DataBase) to memorise and manage Census data. Once the system as a whole (the statistical system and the associated database management system) is completed, more functions will be added to the system. By adding specialised routines, this Fishery Frame DataBase, should be able to assist the Administration to manage the fishing licence undertaking, monitor fishing fleet modifications, keep the DataBase up to date, including the notary component (ownership/partnership), to automatically compile reports for national and international institutions according to specific formats (See Appendix 3 - Main data elements).

e) Introduce Catch and Effort Survey.

The activity that will follow is the catch assessment survey. In the initial phase it is not possible to determine which approach will be used. In fact, the Ministry is also planning to rehabilitate or construct a new, modern and automated fish market. Should the survey method be based on the sample approach at the landing place, a preliminary assessment showed that, based on the resources at present available, three ports (the major ones) could be selected for the survey, plus two or three more to cover minor or seasonal fisheries.
Regardless of the approach chosen, this survey is expected to provide reliable estimates on a monthly basis of the catch landed and the effort exerted by the fishing industry by sector (coastal, offshore, oceanic) and by fishery. Catch and effort estimates should be reported by area, by vessel/ gear used and by species. The Catch and Effort Sample Survey should also contribute to define the mobility pattern of the fishing units and the pressure they exert on the fishing grounds (See Appendix 4 - Main data elements) .

f) Consolidation of the National System

Once the programme of work is implemented through this activity, the Statistical Service, in co-operation with the Central Institute of Statistics of Malta, should create a Permanent Expert Group to monitor the System, introduce adjustments, keeping the variance to the minimum possible levels. The Expert Group should also be given the responsibility for producing ad hoc analyses using the System data to assist the Maltese Government in its decision making. It is also foreseen that a WorkStation be connected on line with the Central Statistical Institute to give them access to the data and to improve data and information exchange.

A further activity that the Expert Group should be involved in, is the establishment of a National Information System for Fishery and Aquaculture. The System should host the outcome from the Statistical System, from SIPAM, interact with COPEMED and the GFCM, and with any system

developed or being developed dealing with data referring to fishery, aquaculture and their environments. In this connection, consideration of the ''Medfish'' model, that was presented and endorsed at the GFCM Working Party of Statistics and Economics held in Rome on 1997, was discussed.

Further considerations and recommendations.

For a correct and fruitful return on the investment made, it is worth underlining a few points that need to be considered before the system is finalised and consolidated.

The largest part of this programme is based on field work, both due to the constant changes in the structural characteristics of the fishing vessels and their operational status and to the interviewing of the fishermen at the time of landing the catch. These interviews occur at many different hours, even at night, and therefore outside the accepted "office hours". Moreover, the recorder is given different levels of responsibility, which juridically belong to different categories of worker, and is also allowed a high degree of initiative.

The statistical methodological component of this activity is a point that needs to be clarified in more detail. COPEMED and FAO can provide assistance, but it is important that a statistician or biologist with statistical background be provided. It is expected that at the end of this biennium, the whole programme of work be entirely transferred to the national staff.

The data processing component of this activity will be covered by external assistance working with a Maltese team who will, the end be the responsible group for this component.

Lastly, the four Fishery Officers should be charged with the data collection in three ports in Malta, and one on Gozo Island. Two Officers working in Malta should be assisted by two technicians (general service staff) provided by the administration. The Fishery Officer in Gozo already has an assistant. This is considered very important because, apart from relieving the Fishery Officers of some of the work, after the implementation phase when the survey should stabilised, the Fishery Officers can be assigned other duties.

7.   The System Design and its implementation plan

It is suggested that the entire programme be implemented over two years (1999-2001) and be divided into two phases. This division, though a little artificial, is dictated by budget and organisational exigencies. From the FAO-COPEMED point of view, these two phases are characterised by a different level of involvement: timely and frequent during the first year, monitoring and *ad hoc* intervention during the second

Preliminary phase

The preliminary phase encompasses most of the items indicated in the previous pages. It has been decided to run the old system in parallel and to establish the Statistical Service of the Department of Fishery.

A critical analysis of the methodology and results of the CSI study of the fleet and other work being carried out in the country has been made, and on-the job training of the national staff has been carried out. This was done mainly by sharing with them all the tasks being undertaken. A Network

via Internet, E-mail and FTP (File Transfer Protocol) will soon be set up with hosting facility in FAO-Rome, linking the Fishery Department of Malta, the National Aquaculture Centre, the Central Statistical Office, FAO Rome, National Research Council of Italy - IRPEM (Ancona), and the COPEMED project. This network will serve as on-line technical support and data and information sharing, and will be active during the whole survey time.

The staff of the Central Statistical Office (CSO) of Malta were also invited to join the discussion. They showed a great deal of interest in this system, and also made a valuable contribution to the discussion. It should be mentioned that the CSO offered to participate in this exercise by associating to the fishery statistical team a statistician concerned with statistical methodology, out-posting for two three months two enumerators to assist in the field work, and providing two data entry operators to help during the heavy data processing operation that such systems require.

Phase One

Define list of Ports, Landing Places and Fish Markets in the Country. (See Appendix 2)
Define fishing Zones with appropriate grid.(See Appendix 3)
The data items to be included in the Census Structure are listed in Appendix 4.
Design the methodology of the Maltese statistical system for revising, updating and completing the Census. Launch the field programme involving only national staff.
Design and develop the Database to manage Census data. Develop, among other things a sound reporting system to satisfy the day-to-day needs of the Administration. At the request of the Administration, the Statistical System will also handle the storage, management (administrative and financial), monitoring and issuance of the fishing licences in the country.
Establish the statistical area stratification.

As far as the methodological design for implementation of the Census and the Catch and Effort Sample Survey was concerned, it was decided to follow the already-tested approach applied in Italy (PESTAT-1985) and, mainly, the more recent approach developed under the EU project 94/36 "Sampling System for the Collection of Fishery Statistics" that was endorsed by the DG XIV. A consultant from the NRC of Italy (IRPEM – Ancona) and an assistant were recruited under short term assignment to help in this re-elaboration of STARFISH.
The overall codification system related to Vessel, Gear, Species, etc., will follow and be compatible with those of FAO.

Phase two

Following the successful completion of the Frame Survey component, an in-depth analysis will take place to find out the best Sampling approach to be chosen to produce Catch and Effort estimates. Selection of the sample scheme for the systematic collection of the fish catch and effort data (See Appendix 5) will be performed soon after completion of the Frame Survey.
If everything goes as expected, it can be anticipated that there are two main candidates for this task. 1) A classic catch and effort sample survey based on landing interviews, integrated by a series of ad hoc surveys at the market place, whose results will be used as control characteristics of the estimates, and to evaluate the values of the landings and 2) a catch assessment survey based on the Market Approach. This mostly depends on the status and on the decision by the Administration regarding the construction of a new Central Market with automated transaction functions that could contain the evaluation of the catch and some effort estimates. In such a case a systematic Quality Check Survey based on landings will be set up in order to: i) integrate and correct monthly catch estimates and, ii) provide better data for the preparation of effort estimates. A partial evaluation will

be made after 3 months and 6 months of implementation and changes will be introduced whenever needed . In any case, Sampling errors and coefficients of variations of the means will be calculated in order to give month by month a level of accuracy of the estimates. At the end of the first year, undertake an analysis of the results and produce estimates of fish catch and effort.

<u>Phase three</u>

Analysis and critical analysis of the whole system put in place. If satisfactory, the old system could be discontinued and all the resources focussed on the new system. Consolidation of the system by assigning permanent functions to the staff will be one of the primary actions.

Develop integrated and specific software for the central and peripheral offices necessary for data collection, verification, exchange and processing. Set up a Permanent Expert Group (Joint Group between the Fishery Department and the Central Statistical Office) to monitor, improve and expand the system as necessary. At this stage the setting up of a National Information System to manage fishery data will be initiated.

References

Bazigos, G., Cingolani, N., Coppola, S., Levi, D., Mortera,J., Bombace, G. - A qualitative assessment of the Italian fisheries statistical system (PESTAT), Part I: Fishing fleet statistics. Quaderni dell'Istituto Ricerche Pesca Marittima. IV (1 Suppl.) XVI + 358 pp. , Ancona, 1984

Bonello, J. 1988 GFCM Working Party on Fishery Statistics and Economics, Rome, 2-5 March 1998, National Report of Malta

Central Office of Statistics (Malta), Census of Fisheries. 1997.

Cingolani, N., Coppola, S., Garofalo, G., Belardinelli, A. 1998. Sampling System for the Collection of Fishery Statistics.
Final Project Report on European Community Funded Project EC XIV/94/036, VIII + 109 pp.

Cingolani, N., Coppola, S. and Mortera, J. - A qualitative assessment of the Italian fisheries statistical system   (PESTAT), Part II: Catch and fishing effort statistics. Quaderni dell'Istituto Ricerche Pesca Marittima. V (1 Suppl.) I & II parte 754 pp., Ancona 1986.

Coppola, S., Cingolani, N. 1987 – Definition and preliminary evaluation of the Italian fishing zone exploited by the national fleet. Cinqueme consultation technique sue l'evaluation des stock dans l'Adratique. pp 40, Bari, Italie 1-5 Juin 1987.

Coppola, S. - SIPAM - An Information System for the Promotion of Aquaculture in the Mediterranean Region. Conceptual design. Rome, FAO. Project UNDP/FAO/RAB/89/005/12. 1992. 33p

Coppola S. - Aerial Frame Surveys. An application of Remote   Sensing to Fishery Statistics. Report of the 12th. International Training Course on the Contribution of Remote Sensing to Marine Fisheries. pp. 215-254. Rome, Italy, 11-30 May 1987.

Coppola, S. and Cingolani, N. - Assessment of Catch and Effort by Fishing Areas of Italian fleet based on PESTAT data. GFCM - Working Party on Fisheries Economics and Statistics. (Part 1: Discussion - Part 2:Appendices) pp.51+176 .Rome - Italy 27-31 May 1991.

Coppola S. - MEDFISH - A Data and Information Model for Decision Support to Fishery and Aquaculture Management for the Mediterranean - GFCM - Working Party on Fishery Statistics and Economics. April 1997. pp 27.

de Leiva Moreno, J. I. "International agreements and fleet registers". Information document presented at the FAO-COPEMED Project Working Group:
"Shared Means and Communication Networks". Sidi Bou Saïd, Tunisia, 23-27 June 1997

MaltaStat – Fishery Statistical System of Malta. The Frame Survey - Manual and User Guide (in preparation wit the staff of the Maltese Fishery Department)

"International Initiatives of Relevance to Fishery Statistical Programmes". Second Session of the Working Party on Fisheries Economics and Statistics. General Fisheries Commission for the Mediterranean. GFCM: WP/98/Inf.4. Rome, Italy, 2-5 March 1998.

Sipam Development Team. - SIPAM - An Information System for the Promotion of Aquaculture in the Mediterranean Region. User Guide - Release 2.0 Rome, FAO. Project UNDP/FAO/RAB/89/005/12. 1998. 72pp.

Figure 1 . General Map of Malta. Source Department of Fishery of Malta

Appendix 1 – People participating in this task.

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Salvatore R. Coppola, Fishery Resources Officer, FAO-FIRM.

Appendix 2 – The Area Stratification

Stratum Code	Area Code	Management Unit Code	Position North	Position East	Position in decimal		Port Code	Port Name
GOZ	KEM	37.2.2.e	35° 57,67'N	14° 20,50'E	35.961166	14.341666	M3122	Anchor Bay
GOZ	GOZ	37.2.2.e	35° 59,43'N	14° 21,42'E	35.990501	14.357000	M4122	Armier
GOZ	GOZ	37.2.2.e	35° 56,47'N	14° 27,40'E	35.941166	14.456667	M4512	Bahar ic-Caghaq
GOZ	GOZ	37.2.2.e	35° 54,96'N	14° 29,80'E	35.916000	14.496667	M1092	Balluta Bay
GOZ	GOZ	37.2.2.e	35° 49,60'N	14° 31,76'E	35.826668	14.529333	M2241	Birzebbuga (Pretty Bay)
GOZ	GOZ	37.2.2.e	35° 49,39'N	14° 31,98'E	35.823166	14.533000	M2211	Birzebbuga (St. Georges Bay)
GOZ	GOZ	37.2.2.e	35° 57,19'N	14° 24,53'E	35.953167	14.408834	M4422	Buggiba
GOZ	GOZ	37.2.2.e	36° 01,07'N	14° 20,23'E	36.017834	14.337167	G1272	Comino
GOZ	GOZ	37.2.2.e	36° 03,07'N	14° 19,00'E	36.051167	14.316667	G1211	Dahlet Qorrot
MLT	WES	37.2.2.e	36° 03,30'N	14° 11,51'E	36.055000	14.191833	G1122	Dwejra
MLT	NEA	37.2.2.e	35° 49,71'N	14° 25,46'E	35.828499	14.424334	M3062	Ghar Lapsi
MLT	NEA	37.2.2.e	35° 55,30'N	14° 20,50'E	35.921665	14.341666	M3092	Gnejna
MLT	VAL	37.2.2.e	35° 54,22'N	14° 29,70'E	35.903667	14.495000	M1181	Gzira (Lazzaretto Creek)
MLT	SWE	37.2.2.e	35° 54,28'N	14° 29,92'E	35.904667	14.498667	M1151	Gzira (Sliema Creek)
MLT	SWE	37.2.2.e	36° 01,77'N	14° 19,38'E	36.029499	14.323000	G1241	Hondoq-ir-Rummien
MLT	NEA	37.2.2.e	35° 53,42'N	14° 31,52'E	35.890335	14.525333	M1511	Kalkara (Kalkara Creek)
MLT	WES	37.2.2.e	35° 59,44'N	14° 21,58'E	35.990665	14.359667	M4152	Little Armier
MLT	WES	37.2.2.e	35° 59,27'N	14° 20,68'E	35.987835	14.344666	M4062	Marfa
MLT	VAL	37.2.2.e	35° 59,30'N	14° 19,88'E	35.988335	14.331333	M4032	Marfa Point (Cirkewwa)
MLT	VAL	37.2.2.e	35° 53,08'N	14° 29,80'E	35.884666	14.496667	M1361	Marsa
MLT	VAL	37.2.2.e	36° 04,40'N	14° 15,65'E	36.073334	14.260834	G1181	Marsalforn
MLT	NEA	37.2.2.e	35° 51,81'N	14° 33,78'E	35.863499	14.563000	M2031	Marsaskala
MLT	NEA	37.2.2.e	35° 50,43'N	14° 32,86'E	35.840500	14.547667	M2091	Marsaxlokk (Il-Maghluq)
MLT	NEA	37.2.2.e	35° 50,45'N	14° 32,69'E	35.840832	14.544833	M2121	Marsaxlokk (Ix-Xatt)
MLT	VAL	37.2.2.e	35° 50,27'N	14° 32,58'E	35.837833	14.543000	M2151	Marsaxlokk (Kavallerizza)
MLT	SWE	37.2.2.e	35° 58,00'N	14° 21,38'E	35.966667	14.356334	M4212	Mellieha Bay
MLT	SWE	37.2.2.e	36° 01,69'N	14° 17,90'E	36.028168	14.298333	G1031	Mgarr
MLT	SWE	37.2.2.e	36° 01,32'N	14° 16,35'E	36.021999	14.272500	G1062	Mgarr Ix-Xini
MLT	SWE	37.2.2.e	35° 57,62'N	14° 23,43'E	35.960335	14.390500	M4242	Mistra Bay
MLT	NEA	37.2.2.e	35° 53,66'N	14° 29,81'E	35.894333	14.496834	M1241	Msida (Msida Creek)
MLT	NEA	37.2.2.e	35° 49,98'N	14° 32,11'E	35.833000	14.535167	M2181	Qajjenza
MLT	VAL	37.2.2.e	35° 57,20'N	14° 25,50'E	35.953335	14.425000	M4452	Qawra
MLT	SWE	37.2.2.e	36° 04,76'N	14° 15,14'E	36.079334	14.252334	G1152	Qbajjar
MLT	NEA	37.2.2.e	35° 59,25'N	14° 21,10'E	35.987499	14.351666	M4092	Ramia tal Qortin
MLT	NEA	37.2.2.e	35° 59,62'N	14° 21,93'E	35.993668	14.365500	M4182	Ramla Tat Torri
MLT	NEA	37.2.2.e	35° 53,60'N	14° 31,63'E	35.893333	14.527166	M1542	Rinella
MLT	VAL	37.2.2.e	35° 56,96'N	14° 25,40'E	35.949333	14.423333	M4482	Salina
MLT	NEA	37.2.2.e	35° 53,10'N	14° 31,19'E	35.884998	14.519834	M1421	Senglea (Dockyards Creek)
MLT	VAL	37.2.2.e	35° 53,36'N	14° 30,92'E	35.889332	14.515333	M1391	Senglea (French Creek)
MLT	VAL	37.2.2.e	35° 54,52'N	14° 30,22'E	35.908669	14.503667	M1121	Sliema (Sliema Creek)
MLT	VAL	37.2.2.e	35° 55,67'N	14° 29,28'E	35.927834	14.488000	M1032	St. George's Bay
MLT	VAL	37.2.2.e	35° 55,23'N	14° 29,50'E	35.920502	14.491667	M1061	St. Julians Bay
MLT	VAL	37.2.2.e	35° 57,08'N	14° 23,33'E	35.951332	14.388833	M4272	St. Pauls Bay (Il-Fekruna)
MLT	NEA	37.2.2.e	35° 57,04'N	14° 24,42'E	35.950668	14.407000	M4392	St. Pauls Bay (Il-Gillieru)
MLT	NEA	37.2.2.e	35° 56,82'N	14° 23,12'E	35.946999	14.385333	M4332	Il-Vecca
MLT	NEA	37.2.2.e	35° 57,05'N	14° 24,00'E	35.950832	14.400000	M4362	Tal-Ghazzenin

MLT	NEA	37.2.2.e	35 57,00'N	14 23,13'E	35.950001	14.385500	M4302	St. Pauls Bay (Xemxija)
MLT	NEA	37.2.2.e	35 51,33'N	14 33,92'E	35.855499	14.565333	M2062	St. Thomas Bay
MLT	NEA	37.2.2.e	35 53,83'N	14 29,57'E	35.897167	14.492833	M1211	Ta-Xbiex (Msida Creek)
MLT	NEA	37.2.2.e	35 54,02'N	14 31,12'E	35.900333	14.518666	M1301	Valletta (Grand Harbour)
MLT	SWE	37.2.2.e	35 54,05'N	14 30,57'E	35.900833	14.509500	M1271	Valletta (Marsamxett)
MLT	VAL	37.2.2.e	35 53,82'N	14 30,95'E	35.896999	14.515833	M1333	Valletta (Pixkerija)
MLT	VAL	37.2.2.e	35 53,08'N	14 31,22'E	35.884666	14.520333	M1451	Vittoriosa (Dockyard Creek)
MLT	VAL	37.2.2.e	35 53,25'N	14 31,59'E	35.887501	14.526500	M1481	Vittoriosa (Kalkara Creek)
MLT	VAL	37.2.2.e	35 49,27'N	14 27,17'E	35.821167	14.452833	M3032	Wied iz-Zurrieq
MLT	VAL	37.2.2.e	35 53,33'N	14 32,93'E	35.888832	14.548833	M1572	Xghajra
MLT	VAL	37.2.2.e	36 01,88'N	14 13,08'E	36.031334	14.218000	G1092	Xlendi
	GOZ	G1000					G1000	Gozo (administrative area)
	VAL	M1000					M1000	Valletta (administrative area)
	SWE	M2000					M2000	South West (administrat. area)
	WES	M3000					M3000	West (administrative area)
	NNE	M4000					M4000	North/ North-east (admin.area)

Localisation of the major ports in Malta (Source: Fishery Department of Malta)
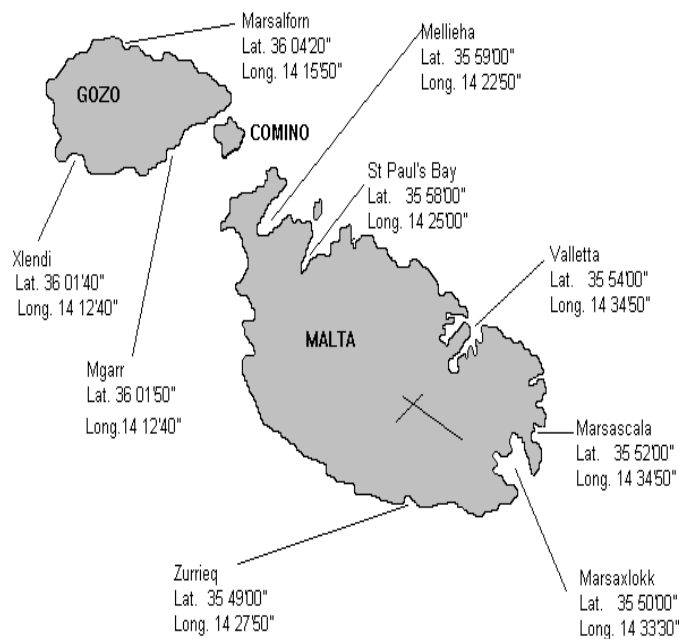
Appendix 3

Malta - Statistical System - Fishing Area Codes	
Fishing areas Each area appox. 60Nm/50Nm:	
AB00	Lat. 37º - 38º Long. 10º - 11º
A000	Lat. 37º - 38º Long. 11º - 12º
B000	Lat. 37º - 38º Long. 12º - 13º
FF00	Lat. 37º - 38º Long. 13º - 14º
GG00	Lat. 37º - 38º Long. 14º - 15º
C000	Lat. 37º - 38º Long. 15º - 16º
CI00	Lat. 37º - 38º Long. 16º - 17º
DD00	Lat. 36º - 37º Long. 10º - 11º
D000	Lat. 36º - 37º Long. 11º - 12º
E000	Lat. 36º - 37º Long. 12º - 13º
F000	Lat. 36º - 37º Long. 13º - 14º
G000	Lat. 36º - 37º Long. 14º - 15º
H000	Lat. 36º - 37º Long. 15º - 16º
ID00	Lat. 36º - 37º Long. 16º - 17º
JJ00	Lat. 35º - 36º Long. 10º - 11º
J000	Lat. 35º - 36º Long. 11º - 12º
K000	Lat. 35º - 36º Long. 12º - 13º
L000	Lat. 35º - 36º Long. 13º - 14º
M000	Lat. 35º - 36º Long. 14º - 15º
N000	Lat. 35º - 36º Long. 15º - 16º
O000	Lat. 35º - 36º Long. 16º - 17º
PP00	Lat. 34º - 35º Long. 10º - 11º
P000	Lat. 34º - 35º Long. 11º - 12º
Q000	Lat. 34º - 35º Long. 12º - 13º
R000	Lat. 34º - 35º Long. 13º - 14º
S000	Lat. 34º - 35º Long. 14º - 15º
T000	Lat. 34º - 35º Long. 15º - 16º
U000	Lat. 34º - 35º Long. 16º - 17º
PV00	Lat. 33º - 34º Long. 10º - 11º
VV00	Lat. 33º - 34º Long. 11º - 12º
V000	Lat. 33º - 34º Long. 12º - 13º
W000	Lat. 33º - 34º Long. 13º - 14º
X000	Lat. 33º - 34º Long. 14º - 15º
Y000	Lat. 33º - 34º Long. 15º - 16º
Z000	Lat. 33º - 34º Long. 16º - 17º
QV00	Lat. 32º - 33º Long. 12º - 13º
RW00	Lat. 32º - 33º Long. 13º - 14º
SX00	Lat. 32º - 33º Long. 14º - 15º
TY00	Lat. 32º - 33º Long. 15º - 16º
UZ00	Lat. 32º - 33º Long. 16º - 17º
YY00	Lat. 31º - 32º Long. 15º - 16º
ZZ00	Lat. 31º - 32º Long. 16º - 17º
Malta Fishing Zone (within 25 miles) Each area approx. 20Nm / 16Nm:	
F600	Lat. 36º20'- 36º40' Long. 13º40' – 14º00'
G400	Lat. 36º20'- 36º40' Long. 14º00' – 14º20'
G500	Lat. 36º20'- 36º40' Long. 14º20' – 14º40'
F900	Lat. 36º00'- 36º20' Long. 13º40' – 14º00'
G700	Lat. 36º00'- 36º20' Long. 14º00' – 14º20'

G800	Lat. 36º00'- 36º20'	Long. 14º20' – 14º40'
G900	Lat. 36º00'- 36º20'	Long. 14º40' – 15º00'
L300	Lat. 35º40'- 36º00'	Long. 13º40' – 14º00'
M100	Lat. 35º40'- 36º00'	Long. 14º00' – 14º20'
M200	Lat. 35º40'- 36º00'	Long. 14º20' – 14º40'
M300	Lat. 35º40'- 36º00'	Long. 14º40' – 15º00'
N100	Lat. 35º40'- 36º00'	Long. 15º00' – 15º20'
L600	Lat. 35º20'- 35º40'	Long. 13º40' – 14º00'
M400	Lat. 35º20'- 35º40'	Long. 14º00' – 14º20'
M500	Lat. 35º20'- 35º40'	Long. 14º20' – 14º40'
M600	Lat. 35º20'- 35º40'	Long. 14º40' – 15º00'
Territorial Waters (within 12 miles) Each area approx. 5Nm / 4Nm:		
G711	Lat. 36º15'- 36º20'	Long. 14º00' – 14º05'
G721	Lat. 36º15'- 36º20'	Long. 14º05' – 14º10'
G731	Lat. 36º15'- 36º20'	Long. 14º10' – 14º15'
G741	Lat. 36º15'- 36º20'	Long. 14º15' – 14º20'
G811	Lat. 36º15'- 36º20'	Long. 14º20' – 14º25'
F942	Lat. 36º10'- 36º15'	Long. 13º55' – 14º00'
G712	Lat. 36º10'- 36º15'	Long. 14º00' – 14º05'
G722	Lat. 36º10'- 36º15'	Long. 14º05' – 14º10'
G732	Lat. 36º10'- 36º15'	Long. 14º10' – 14º15'
G742	Lat. 36º10'- 36º15'	Long. 14º15' – 14º20'
G812	Lat. 36º10'- 36º15'	Long. 14º20' – 14º25'
G822	Lat. 36º10'- 36º15'	Long. 14º25' – 14º30'
G832	Lat. 36º10'- 36º15'	Long. 14º30' – 14º35'
F943	Lat. 36º05'- 36º10'	Long. 13º55' – 14º00'
G713	Lat. 36º05'- 36º10'	Long. 14º00' – 14º05'
G723	Lat. 36º05'- 36º10'	Long. 14º05' – 14º10'
G733	Lat. 36º05'- 36º10'	Long. 14º10' – 14º15'
G743	Lat. 36º05'- 36º10'	Long. 14º15' – 14º20'
G813	Lat. 36º05'- 36º10'	Long. 14º20' – 14º25'
G823	Lat. 36º05'- 36º10'	Long. 14º25' – 14º30'
G833	Lat. 36º05'- 36º10'	Long. 14º30' – 14º35'
G843	Lat. 36º05'- 36º10'	Long. 14º35' – 14º40'
F944	Lat. 36º00'- 36º05'	Long. 13º55' – 14º00'
G714	Lat. 36º00'- 36º05'	Long. 14º00' – 14º05'
G724	Lat. 36º00'- 36º05'	Long. 14º05' – 14º10'
G734	Lat. 36º00'- 36º05'	Long. 14º10' – 14º15'
G744	Lat. 36º00'- 36º05'	Long. 14º15' – 14º20'
G814	Lat. 36º00'- 36º05'	Long. 14º20' – 14º25'
G824	Lat. 36º00'- 36º05'	Long. 14º25' – 14º30'
G834	Lat. 36º00'- 36º05'	Long. 14º30' – 14º35'
G844	Lat. 36º00'- 36º05'	Long. 14º35' – 14º40'
G914	Lat. 36º00'- 36º05'	Long. 14º40' – 14º45'
L341	Lat. 35º55'- 36º00'	Long. 13º55' – 14º00'
M111	Lat. 35º55'- 36º00'	Long. 14º00' – 14º05'
M121	Lat. 35º55'- 36º00'	Long. 14º05' – 14º10'
M131	Lat. 35º55'- 36º00'	Long. 14º10' – 14º15'
M141	Lat. 35º55'- 36º00'	Long. 14º15' – 14º20'
M211	Lat. 35º55'- 36º00'	Long. 14º20' – 14º25'
M221	Lat. 35º55'- 36º00'	Long. 14º25' – 14º30'
M231	Lat. 35º55'- 36º00'	Long. 14º30' – 14º35'
M241	Lat. 35º55'- 36º00'	Long. 14º35' – 14º40'
M311	Lat. 35º55'- 36º00'	Long. 14º40' – 14º45'
M321	Lat. 35º55'- 36º00'	Long. 14º45' – 14º50'
L342	Lat. 35º50'- 35º55'	Long. 13º55' – 14º00'

| M112	Lat. 35º50'- 35º55'	Long. 14º00' – 14º05'
M122	Lat. 35º50'- 35º55'	Long. 14º05' – 14º10'
M132	Lat. 35º50'- 35º55'	Long. 14º10' – 14º15'
M142	Lat. 35º50'- 35º55'	Long. 14º15' – 14º20'
M212	Lat. 35º50'- 35º55'	Long. 14º20' – 14º25'
M222	Lat. 35º50'- 35º55'	Long. 14º25' – 14º30'
M232	Lat. 35º50'- 35º55'	Long. 14º30' – 14º35'
M242	Lat. 35º50'- 35º55'	Long. 14º35' – 14º40'
M312	Lat. 35º50'- 35º55'	Long. 14º40' – 14º45'
M322	Lat. 35º50'- 35º55'	Long. 14º45' – 14º50'
M113	Lat. 35º45'- 35º50'	Long. 14º00' – 14º05'
M123	Lat. 35º45'- 35º50'	Long. 14º05' – 14º10'
M133	Lat. 35º45'- 35º50'	Long. 14º10' – 14º15'
M143	Lat. 35º45'- 35º50'	Long. 14º15' – 14º20'
M213	Lat. 35º45'- 35º50'	Long. 14º20' – 14º25'
M223	Lat. 35º45'- 35º50'	Long. 14º25' – 14º30'
M233	Lat. 35º45'- 35º50'	Long. 14º30' – 14º35'
M243	Lat. 35º45'- 35º50'	Long. 14º35' – 14º40'
M313	Lat. 35º45'- 35º50'	Long. 14º40' – 14º45'
M323	Lat. 35º45'- 35º50'	Long. 14º45' – 14º50'
M124	Lat. 35º40'- 35º45'	Long. 14º05' – 14º10'
M134	Lat. 35º40'- 35º45'	Long. 14º10' – 14º15'
M144	Lat. 35º40'- 35º45'	Long. 14º15' – 14º20'
M214	Lat. 35º40'- 35º45'	Long. 14º20' – 14º25'
M224	Lat. 35º40'- 35º45'	Long. 14º25' – 14º30'
M234	Lat. 35º40'- 35º45'	Long. 14º30' – 14º35'
M244	Lat. 35º40'- 35º45'	Long. 14º35' – 14º40'
M314	Lat. 35º40'- 35º45'	Long. 14º40' – 14º45'
M324	Lat. 35º40'- 35º45'	Long. 14º45' – 14º50'
M431	Lat. 35º35'- 35º40'	Long. 14º10' – 14º15'
M441	Lat. 35º35'- 35º40'	Long. 14º15' – 14º20'
M511	Lat. 35º35'- 35º40'	Long. 14º20' – 14º25'
M521	Lat. 35º35'- 35º40'	Long. 14º25' – 14º30'
M531	Lat. 35º35'- 35º40'	Long. 14º30' – 14º35'
M541	Lat. 35º35'- 35º40'	Long. 14º35' – 14º40'
M611	Lat. 35º35'- 35º40'	Long. 14º40' – 14º45'
M442	Lat. 35º30'- 35º35'	Long. 14º15' – 14º20'
M512	Lat. 35º30'- 35º35'	Long. 14º20' – 14º25'
M522	Lat. 35º30'- 35º35'	Long. 14º25' – 14º30'

Appendix 4

Malta Statistical System – Fishing Vessels Frame – Main Data Elements
Frame Survey Identification Recorder Name, Year, Month, Day of completion of the form. Etc.
Localisation of the Registration Office Stratum and Main office where the fishing vessel is registered.
Identification of the Fishing Vessel Name, Registry Number, Registration date, Ownership, Home port.
Fishing Vessel Category. Type/class of the Vessel, Age, Shipyard details, Country of origin. Etc.
Fishing Vessel Structural Parameters Material of the Hull, GT, Length(m), Height (m).
Fishing Licensing.   Fishing Licence, Main gear authorised. Other authorised gears Operational status. Etc.
Fishing Operations Accessory fishing units, Lights, Underwater assistance, Gear activation tools, Drums, Etc.
Engine Parameters Main engine, Inboard/outboard engines, Manufactories, Type of propeller, Age, HP.
Navigation Equipment Radio, VHF, Radio Signal, Type, Number, Age
Fishing Aids Devices Type and identification of Echosounders, Sonars, Net sonds,
Manpower Number, position and skill of expected Fishermen.
Operating Ports / Fishing Operations Describe the mobility pattern of the Fishing Vessel by Port and Seasons, Number of expected outings.
Fishing Areas Identification and activity intensity of exploited Fishing Areas
Fishing Gear Used. Identification of Fishing Gear used (and the units) by Vessel and Fishing Zone.
Species Caught Group of Target and non Target Species caught by Gear (Vessel and Fishing Zone)
Fishing Periods Describe fishing Periods and Seasons by Gear / Vessel / Fishing Zone. Etc
Fish Processing on board Identify the type and utility of Fish processing system operating on board.
Safety Equipment on board Identify and quantify Safety Equipment on Board.

Appendix 5

Malta Statistical System – Catch and Effort Survey – Main Data Elements
Related Frame Survey Identification Define Linking keys to Associate the actual CAS to its Frame Survey.
CAS Round identification. Stratum and temporal position of the CAS. (Sequential Number of the Survey in that Year).
Sampling Frame data Extraction of the Sampling Frame from the Frame Data. (Fishing Vessels Registered in the Country, by Stratum / Port or Landing Site / Vessel-Gear Category , their Operational Status, etc.)
Dynamic Updates of the Sampling Frame at the Round Level. Operational Status of the Fishing Vessels and any variations in the size and distribution of the fleet at the moment of the Sample Period, Expected fishing days in that month.
Sample Data reporting. Stratum, Sample site, Number of Vessels Fishing the day of the interview, Number of Sampled Vessel, Landings by Sampled Vessels, by Species, Fishing Zone, Gear used and Effort parameter. Etc. Fishermen involved in each operation.
Other Associated Data Other data elements to construct Statistical Estimators.

Appendix 6
Malta – Fishing Zone Definition (artisanal fishery)

MALTA FISHING ZONE (within 25 miles)
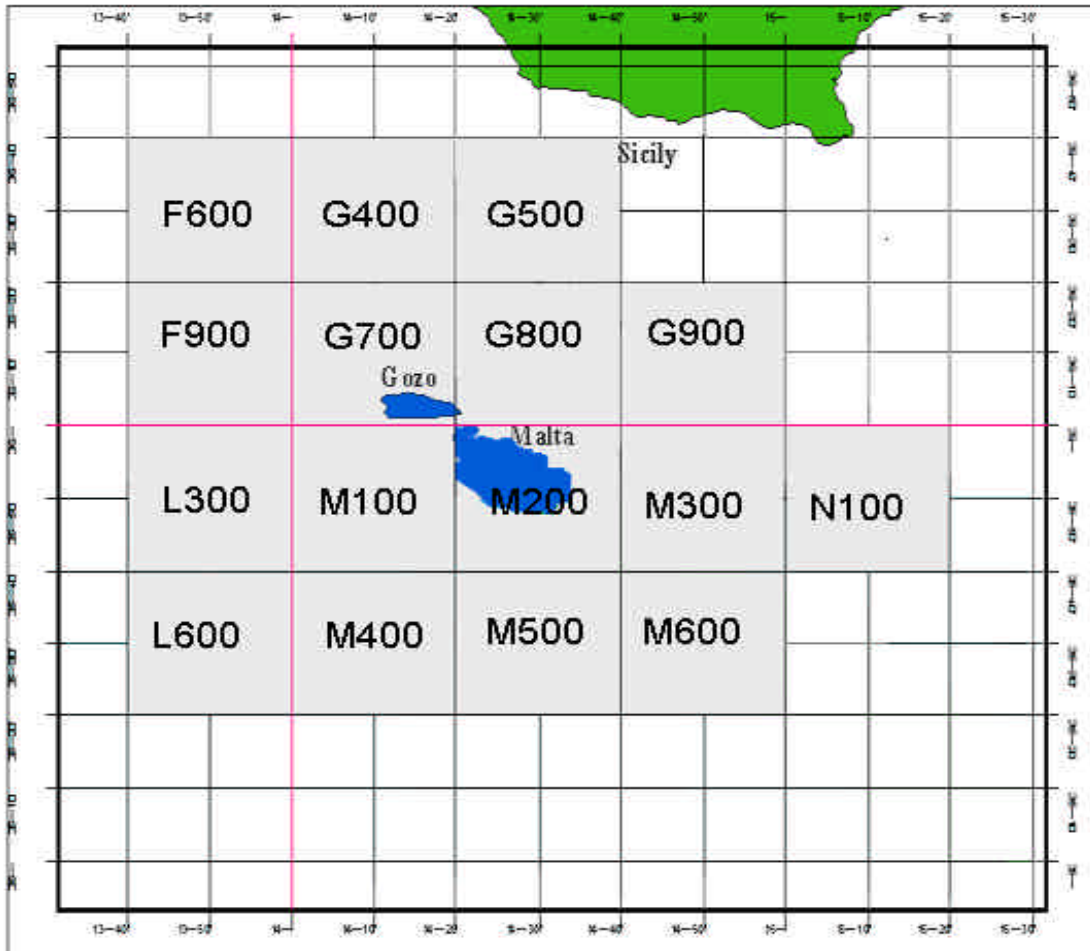
Each box appoximately 20Nm / 16Nm

Appendix 7

Extract from the : GFCM - Working Party on Fishery Statistics and Economics, Rome, 2-5 March 1998 - J. Bonello

Malta is an archipelago situated almost exactly in the centre of the Mediterranean Sea between Southern Europe and North Africa. The archipelago is located 80 kilometres south of Sicily and 290 kilometres from the nearest point on the African coast.

The total area of the archipelago is 316 square kilometres, of which Malta, the largest island, occupies 246 square kilometres, and Gozo, a sister island lying a few kilometres to the north-west occupies 67 square kilometres.

The hottest summer month is August, having an average maximum temperature of 30.6 degrees centigrade. The coldest winter month is February, having an average minimum temperature of 9.2 degrees centigrade. The average annual rainfall is 521 millimetres of which 478 on average fall between late September and March.

The population of the Maltese islands is approximately 375,000, of whom 186,000 are males and 189,000 are females. Malta is economically classified as a developing country.

The Maltese economy has grown rapidly and continuously in recent years, with GDP at market prices reaching Lm1,201.6 million in 1996. In 1996, Agriculture and Fisheries contributed around 3 per cent to total GDP, down from a sectoral share of 4.42 per cent in 1986.

In Malta the need to update the statistical records for the fishing sector has long been felt. In 1996, the Central Office of Statistics of Malta was given the necessary green light to prepare for a Census of Fisheries.

Notwithstanding the fact that the total fishing population of Malta is extremely limited, the preparation to conduct the census took several months and preparatory meetings between officials from the Fisheries and Statistics Departments were required. It must be stated here that the Fisheries Department extended all possible co-operation and assistance. The fishing fleet of the Maltese Islands as on 31 December 1996 stood at 1627 licensed boats, of which 1503 were surveyed.

The actual enumeration exercise of the census was carried out in February and March 1997 and the response rate was an impressive 92.4 per cent. The census data was then inputted into a statistical programme created by our own staff. The official results of this census will be published within the next few weeks.

The results obtained from the census indicate a total catch of 2,193,660 Kgs for a wholesale value of Lm2,217,292. This is substantially more than the officially declared weight of 840,000 Kgs valued at Lm1,408,481. These figures are for the calendar year 1996. Moreover it should be noted that the total number of boats surveyed was 1503, or 92.4 per cent of the total number of boats registered with the Department of Fisheries and Aquaculture.

The Maltese fishing fleet is mostly composed of the following vessel types : Trawlers, Long Liners/Netters, Luzzu, Kajjik, and some other minors.

The Fishing methods adopted in Malta may be classified in four categories:
Traditional fishing consisting mainly of: inshore long-lining, Trammel nets, Drift nets, and various Traps.
Modern fishing consists of deep-sea long-lining

Trawling for Demersal species such as Prawns, Hake, Red Mullet, and other related species.

Lampara fishing is undertaken by purse seining when strong lights are used to attract pelagic species such as Mackerel, Bogue, Horse Mackerel, Allice Shad and Sardines.

Due to their commercial market value the most targeted species by Maltese fishermen are:
Blue Fin Tuna, Swordfish, Blue Fin Dorado, Stone Bass, Groupers, Snappers, King Prawns, Red Mullet, Break, Hake, Octopus, Squid, Mackerel, Bogue and Horse Mackerel.

The fishing seasons are determined by the particular species being targeted. Currently, the most commercially viable fish are the Blue Fin Tuna (May through to July); Blue Fin Dorado (September through to December); Stone Bass / Groupers / Snappers (January through to April) and Mackerel / Bogue / Horse Mackerel / Allice Shad / Sardines (March through to July).

Swordfish is also one of the more targeted species. However since the upsurge of Tuna catches, and the opening of the Japanese market for Tuna, the peak period for swordfish landings has shifted from Spring / Summer to Autumn / early Winter.

Bottom trawling may also be divided in two distinct seasons during which different demersal species are targeted. During the milder weather of Spring and Summer, local trawlermen seek deep water in search of King Prawns, Prawns and Norway Lobster. During the Autumn / Winter period, when days are shorter, fishing is done in shallower water. Red Mullet, Red Bream, Octopus, Squid and other demersal species are targeted during this period.

The use of Trammel nets is mainly confined to Autumn and Winter.

On the 31 December 1996, the total registered fishing population stood at 1707, according to the official figures available at the Department of Fisheries and Aquaculture. Of these, 321 were registered as full time fishermen (whose main source of income is derived from fishing), plus 1386 registered as part-timers.

During the census enumeration process, a total of 1951 fishermen were surveyed. Obviously, because of the propaganda exercise put up by the Central Office of Statistics even non-registered fishermen presented their data.