SECOND COUNTRY REPORT

FIELD WORK MISSION TO GREECE

20\textsuperscript{TH} TO 22\textsuperscript{ND} JUNE 2012

This specific contract No 4, SI2.611417 “Field work specific contract for Greece”, has been implemented within the framework contract, MARE/2009/08 “Assistance for the monitoring of the implementation of national programmes for the collection, management and use of data in the fisheries sector”, funded by the DG Mare.

Pavel SALZ, Photis NANOPoulos,
Christine ALBERTI-SCHMITT

Report delivery date
30\textsuperscript{th} July 2012

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# ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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</thead>
<tbody>
<tr>
<td>AEPRI (Ethiage)</td>
<td>Agricultural Economic and Policy Research Institute (in MinAGRI)</td>
</tr>
<tr>
<td>CG</td>
<td>Fishery department of coastal guard (in MinCivil)</td>
</tr>
<tr>
<td>DCF / DCR</td>
<td>Data Collection Framework / Regulation</td>
</tr>
<tr>
<td>DF</td>
<td>General Directorate of Fisheries (in MinDCS)</td>
</tr>
<tr>
<td>DFA</td>
<td>Directorate of Fisheries application (in MinDCS)</td>
</tr>
<tr>
<td>EFF</td>
<td>European Fisheries Fund</td>
</tr>
<tr>
<td>ELSTAT</td>
<td>Hellenic Statistical Authority</td>
</tr>
<tr>
<td>ENEIAGE</td>
<td>Hellenic Agricultural Organisation (in MinAGRI)</td>
</tr>
<tr>
<td>EOGOI</td>
<td>Direction of Supervised Organisations and Foundations</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>FRI (Ethiage)</td>
<td>Fisheries Research Institute (in MinAGRI)</td>
</tr>
<tr>
<td>HCMR</td>
<td>Hellenic Centre for Marine Research (HCMR) falls under the Min. of Development. It is composed of several institutes, one of which is IMBR.</td>
</tr>
<tr>
<td>IMAS-Fish</td>
<td>Integrated Management System to support the sustainability of Greek Fisheries resources (Integrated database &amp; GIS fisheries information system)</td>
</tr>
<tr>
<td>IMBR</td>
<td>Institute of Marine Biological Resources. IMBR is responsible for implementation of DCF.</td>
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<tr>
<td>JMD</td>
<td>Joint Ministerial Decision</td>
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<tr>
<td>JRC</td>
<td>Joint Research Centre</td>
</tr>
<tr>
<td>MEDIAS</td>
<td>Mediterranean International Bottom Acoustic Survey</td>
</tr>
<tr>
<td>MEDITS</td>
<td>Mediterranean International Bottom Trawl Survey</td>
</tr>
<tr>
<td>MinDCS</td>
<td>Ministry of Development, Competition and Shipping</td>
</tr>
<tr>
<td>MinAGRI</td>
<td>Ministry of Rural Development and Food</td>
</tr>
<tr>
<td>MinEduc</td>
<td>Ministry of National Education</td>
</tr>
<tr>
<td>MinCivil</td>
<td>Ministry of Civil Protection</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>NAGREF</td>
<td>National Agricultural Research Foundation</td>
</tr>
<tr>
<td>NC</td>
<td>National Correspondent</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PGECON</td>
<td>Planning Group on Economic Issues</td>
</tr>
<tr>
<td>STECF</td>
<td>Scientific, Technical and Economic Committee for Fisheries</td>
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<tr>
<td>VMS</td>
<td>Vessel Monitoring System</td>
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</table>
1. **EXECUTIVE SUMMARY**

The DevStat mission visited Greece 20-22.6.2012 and met with all relevant staff members of the Ministry of Education as well as the research institutes involved in the implementation of the DCF programme. It can be unambiguously concluded that the Greek DCF staff is eager to initiate the data collection as soon as possible. The starting of the activities will depend upon the payment of the first advance of EU bailout tranche. The report reflects the situation as of 22.6.2012, when new government had been installed, but its organization was not yet fully settled.

The Law 4072/2012 was passed in April, resolving the main administrative and financial obstacles. Once all new ministries will be in place, an Inter-Ministerial Decision will be signed, which is required to allow the transfer of the necessary resources from the Ministry of Finance to the Ministry of Development, Competition and Shipping, which will further transfer them to the Fisheries Research Institute, the main responsible organization.

The necessary infrastructures and methodologies are in place, although not all methodologies have been fully and formally documented. Sufficiently experienced permanent staff of the institutes is available to initiate and guide the data collection, approx. 15 senior researchers. Field staff of some 30 persons will be hired in the most important ports and equipped with laptops/PC. IMBR maintains a large database with data from DCR, DCF (until 2008) and various individual projects. The database needs minor further development to be used for the DCF programme.

It is expected that hiring and training field staff will require about 3 months. This means that in the most optimistic scenario collection of biological (on boards and market sampling) and economic data would start in October. This means that at most three months of biologic data can be collected in 2012. Economic information regarding the year 2011 can be collected from larger firms, having formal accounting. However, small scale fleet as well as other small firms without such accounting, require regular visits throughout the year, so that compilation of a full data set on 2011 or 2012 may not be possible.

The MEDITS survey requires hiring commercial vessels and obtaining permits from all coastal prefectures. This is a relatively long procedure, and it is uncertain whether it can be completed in time to carry out the survey in September. The MEDIAS survey is carried out with a research vessels owned by IMBR, so that its execution in September or October should be possible.

The IMAS-Fish database is very sophisticated. It can be used to make an efficient use of data collected among in different projects. It provides elaborate outputs using GIS and advanced statistical software. It also includes an interesting functionality describing the legislation in force in each marine area which could be quite useful. This database contains much more than DCF requirement. Using IMAS-Fish for DCF will require some slight further development, which can be concluded within approximately 15 working days.

In general, it can be concluded that the DCF programme is likely to start before the end of 2012. Most of the collected data will regard only about the last quarter of this year. Initiation of DCF in 2012 will assure its full implementation in 2013.
2. INTRODUCTION

This report presents the situation as of 22.6.2012. At this time the new government was being formed and the number of ministries was to be reduced. Therefore it is uncertain which ministries will be involved in the implementation of DCF.

2.1. Terms of reference of the mission

The mission to Greece focused therefore on:

1. Determining Greece's readiness to implement the DCF once the above steps have been taken, including an
2. Assessment of any time lags or problems which can be anticipated in implementation. The mission should then evaluate whether Greece has the appropriate:
   a. infrastructure
   b. methodologies to implement the DCF (databases, vessels or access to vessels etc.),
   c. staff resources and experience (how many staff working on the DCF have been 'lost'
      since Greece stopped implementing the DCF,
   d. how many new staff need to be hired,
   e. how long would this take
   f. The mission should also provide an overview of when data collection incl. national
      surveys and joint surveys like MEDITS, will take place throughout the year.
   g. Based on all this, the mission will provide an assessment of whether it seems
      likely/possible that data collection could still take place in 2012.

2.2. Programme and people met

People met:

- Ms Marina Petrou, Acting General Director for Fisheries in the Ministry of Development, Competitiveness and Shipping.
- Mr Apostolos Karagiannakos, National Correspondent for DCF in Greece, staff member of the Directorate of Marine Fisheries, Ministry of Development, Competitiveness and Shipping.
- Mr Argyris Kallianiotis, Director of the Fisheries Research Institute in Kavala (Ethiage).
- Mr Alkis Oikonomou Interim Director of the Institute of Marine Biological Resources (Elkethe)
- Mr Athanasis Machias, Head of DCF programme in Athens, IMBR
- Mr George Tserpes, head of DCF programme on Crete, IMBR
- Mr Stephanos Kavadas, Mr John Dokos and Mr. Agios Kosmas, responsible for IT and data base development, IMBR, Athens
- Ms Irene Tzouramani, Agricultural Economics and Policy Research Institute (EAPRI, Ethiage), responsible for implementation of the DCF - economic data on catching sector
- Mr Nikiforos Philippou and Ms Elpida Bekiari, DG Fisheries Applications, Ministry of Development, Competitiveness and Shipping, involved in collection of indicators on fish processing
Programme:

**Wednesday 20.6:** Meeting at Directorate of Fisheries, all persons except Ms Tzouramani, Mr Kavadas and Mr Dokos.

**Thursday 21.6:** Meeting at Directorate of Fisheries with all persons except Mr. Nikoferos, Ms Beka and Mr Dokos

**Friday 22.6:** Meeting at Directorate of Fisheries with Mrs Marina Petrou, Mr Apostolos Karagiannakos.

Meeting at IMBR Athens with Mr Kavadas, Mr Dokos and Mr. Agios Kosmas IMBR, Athens

3. **GENERAL OVERVIEW**

3.1. **Legislative situation and budget**

The Law No 4072/2012 (Article 205) has been published in the Government Gazette (Government Gazette Series I, No 86, 11 April 2012) governing matters related to ‘shipping, harbours and fisheries and other provisions’ for the award of the compulsory implementation of the national fisheries data collection programme to the National Agricultural Research Institute (ETHIAGE) and the Hellenic Centre for Marine Research (ELKETHE) and the funding of this programme from the regular budget. The law delegates to the FRI the responsibility for dealing with community budgetary contributions. It also determines that the Directorate for Fisheries is the data owner and responsible for dissemination.

After the publication of the above law and in accordance with the relevant national legislation in force, the Directorate General for Fisheries (of the Ministry of Development, Competitiveness and Shipping - Secretariat-General for Shipping) requested that an appropriation of EUR 4,425,430 be included in the Regular Budget (Document No 9112.3.1/17/2012 of 24 April 2012 to the Financial Affairs Directorate-General of the Ministry of Development, Competitiveness and Shipping) and advocated the immediate commitment of part of that amount, for the smooth start of the programme and the progressive commitment of the rest of the amount, in line with progress implementing the programme.

The Joint Ministerial Decision (JMD) is a prerequisite for entry of the appropriations in the Regular Budget the issue of, which is provided for in Article 205(6) of Law 4072/2012, and will lay down the details of the programme’s funding and implementation. The Directorate General for Fisheries has already drawn up a draft JMD which will have to be co-signed by the Ministers concerned.

Furthermore, the national institutes which will implement the programme have already prepared a preliminary Memorandum of Understanding (MOU) on cooperation, specifying the tasks and budget for each action they will undertake.

These details will be set out in an agreement which will be signed by the Institutes with the Directorate-General for Fisheries, after the JMD has been signed.
As regards the timetable for the above actions, at the time of the mission the Directorate-General for Fisheries hoped and expected that the above procedures will be completed relatively quickly, although a precise timing could not be provided due to the recent election and the following formation of the cabinet and new ministries.

As soon as all the procedures will be completed, the DF intends to request an advance of 1 million euro to allow the institutes to start with the implementation of the programme.

### 3.2. Organization

Organization chart of the main involved institutions is presented in figure 1.

The National coordinator is belonging to the DF of the Ministry of Development Competition and Shipping and is the focal point for the transmission of data to outside.

Regarding the data collection, the main institutions involved are:

- Two institutions from the Hellenic Agricultural Organisation (ETHIAGE) belonging to the Ministry of Rural Development and Food:
  - The Fisheries Research Institute (FRI) for the collection of the biological data.
  - The Agricultural Economics and Policy Research Institute (AEPRI) for the collection of economic data on the catching sector.
- The Institute of Marine Biological Resources (IMBR) belonging to the Hellenic Centre for Marine Research, which is under Ministry of Development. IMBR has two main locations in Athens and in Crete. Both will be involved in the collection of biological data. The Athens centre will also be responsible for the management of the economical and biological data in an integrated database.
- The Fishery Department of Coastal Guard in Ministry of Civil protection is providing fleet register information and paper information on logbook and sales notes.

FRI will be the main responsible institute, for the implementation of the programme in all aspects, i.e. scientific as well as financial.

All biologic data will be collected by FRI in cooperation with IMBR. Senior staff members of these two institutes will be responsible for specific tasks. This applies also to execution of surveys (MEDITS and MEDIAS). IMBR foresees to involve 5 out its 12 permanent researchers in DCF and 10 of its 30 technicians. As for the permanent staff of FRI 3 researchers and 10 technicians will work on DCF.

Furthermore, 30 freelancers will be hired and shared between the two institutes to collect the biological data in the field.

Economic data on the catching sector will be collected in the field by same freelancers who will collect the biologic data. This staff will be guided by AEPRI which foresees to dedicate one researcher and 2 technicians to assist in the field data collection and capture the paper information.

Economic data on the processing sector will be collected by 3 staff members of FRI, in cooperation with the DG Fisheries Applications (DFA), which has been already compiling some indicators over the past few years.

Economic data on aquaculture will be collected by a private company, the winner of an open (international) tender which will be launched for this purpose. This approach is considered necessary as neither IMBR nor FRI have the required knowledge and access to the large Greek aquaculture firms.
The freelancers will be contracted in the main ports and will work from their own premises.

Organization is presented in figure 1 and table 1.

**Fig. 1. Organizational structure by institution (as of 22.6.2012)**

Implementation of the DCF will be organized according to tasks. One senior researcher will be responsible for each task. The data collectors in the field may carry out several tasks so that they will be guided by several task leaders. This applies for example to the collection of biological data and economic data on the catching sector.
Table 1. Main tasks DCF by institutes

<table>
<thead>
<tr>
<th>Institute</th>
<th>FRI / (Ethiage)</th>
<th>IMBR (Elkethe)</th>
<th>AEPRI (Ethiage)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biologic data</strong></td>
<td>Ionian S. (GSA 20) – all 3 sub-areas</td>
<td>Aegean S (GSA 22) – 5 southern sub-areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aegean S. (GSA 22) – 3 northern sub-areas</td>
<td>Crete area (GSA 23) – 1 sub-area</td>
<td></td>
</tr>
<tr>
<td><strong>MEDIT survey</strong></td>
<td>3 commercial vessels to be contracted</td>
<td>Participates in data analysis</td>
<td></td>
</tr>
<tr>
<td><strong>MEDIAS survey</strong></td>
<td>Participates in data analysis</td>
<td>Carried out with IMBR vessel</td>
<td>Trains and guides data collectors contracted by FRI and IMBR Processes primary data</td>
</tr>
<tr>
<td>Economic data – catching sector</td>
<td></td>
<td>Economic data – Processing sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Census carried out in cooperation with Directorate of Fisheries Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic data – Aquaculture</td>
<td>Survey to be sub-contracted to a private firm in a tendering procedure.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Staff of the main institutes (between brackets foreseen for DCF)

<table>
<thead>
<tr>
<th>Institute</th>
<th>Researchers</th>
<th>Technicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCMR - IMBR – Athens</td>
<td>12 (5)</td>
<td>30 (10)</td>
</tr>
<tr>
<td>HCMR – IMBR – Crete</td>
<td>7 (3)</td>
<td>20 (10)</td>
</tr>
<tr>
<td>DEMETRA–FRI</td>
<td>8 (1)</td>
<td>Unknown (2)</td>
</tr>
</tbody>
</table>

Source: Mission meeting

3.3. IT infrastructure and IMAS-Fish database

The standard definition for IT infrastructure consists of the equipment, systems, software, and services used in common across an organization, regardless of mission/program/project.

Premises and equipment

The IMBR has two agencies: one in Athens and one in Crete. FRI is located in Kavalla. The three agencies have all the necessary equipment and staff to perform the biological analysis.

The IMBR Crete has its own vessel used for MEDIAS survey. Commercial vessels to perform MEDIT survey have to be hired.

The data collectors have no specific office in the country; they are working from their home.

The data will be centralised in an integrated database and GIS Fisheries Information System called IMAS-Fish which supports the Data Collection program as well as other projects on fisheries and environment. The main server of the network is located in the IMBR-HCMR building in Athens. Users will connect to the IMAS fish database via their web browser. A log-in and password will give them access to certain data.
capture screens, certain functionalities. There are currently 56 users registered and more than 10 projects using the storage database and its applications.

**IMAS-Fish database and application**

In the past, the IMBR of Crete compiled the data on economics, fishing effort and landings for Greece in an Access database. Subsequently, the data was passed on to the IMAS database. Under the new DCF programme the data will be entered in the IMAS directly.

IMAS-Fish was developed between 2003 and 2006 in the framework of a project involving the Aegean and Thessaly universities and two private companies “Q&R” specialised in databases and infoMAP specialised in GIS. The database and applications are now operational and fully maintained and upgraded by M. Kavadas and M. Dokos at IMBR-HCMR -Athens.

During the development of the IMAS-Fish databases, a particular attention was attached to design the system to fulfil the requirement of the Data Collection Regulation in force at that time as this data collection project is one of the main activities of the centre. The system in place needs now to be updated to fit with the new DCF requirements. The work load was estimated by M. Kavadas to 15 working days: this includes the update of the database structure, the update/building of forms and the update of the query tool. This task will be undertaken by M. Kavadas and Dokos.

In addition, supplementary tests will be done to ensure the system is working properly and is able to provide the expected results. The database contains more information than what is required for the DCF but the data extraction functions needs to be revised, possibly adapted to be able to extract easily certain information (like the JRC data call ) from the IMAS-Fish database. This specific extraction can also probably be performed by writing specific sql queries directly in the oracle database.

A detailed documentation is available in Greek. It should be refreshed after the update linked to the implementation of the DCF regulation.

System description: The system is a 3 tier architecture platform meaning a three way interaction from a client server environment. The client/server is run from a web server.

- The user interface: stored on the client side will require to download a small application. It will display the information on the client side.
- The bulk of the business application logic is stored in the IMBR-HCMR –Athens server.
- Data are stored in an oracle 10 database.

**Fig. 2. Structure of IMAS fish database**
Ten major groups of data were incorporated, each one including a series of relevant datasets:


5) Fleet Census (Commercial fishing fleet registry)

6) VMS data (VMS tracks for vessels > 15 m of length)

7) Oceanographic and Meteorological

8) Satellite imagery data

9) Species taxonomic classification and life history data

10) Legislation

The implementation in whole consists of 167 tables and 68 data views, holding more than 100,000,000 records. The available DCR biological data were loaded in the database but not the economic data.

Biological datasets like demersal species, acoustic, ichthyoplankton were combined with other environmental data sets (Satellite images, currents, meteorological data), to allow additional data processing.
The business application is working with a fisheries data base and presents the results of the analysis with the help of a GIS system. The application allows users to:

- access “Data entry forms”: built up for each project. This module allows entering the information in the database. Quality control can be applied through a series of checks, embedded in the forms to ensure consistency inside the records.

- run more or less advanced queries or Statistical analysis on the data. These queries allow applying advanced filter, viewing the results and exporting them in Excel.
The use of Splus was initiated to run advanced statistical techniques and modeling to be able for example to analyze spatial & temporal trends of stocks, obtain unbiased stock abundance estimations alongside predictions, investigate temporally short-term spatial relationships between species abundance distribution and environmental parameters, investigate seasonal and annual relationships between commercial fish production and environmental parameters, provide measures of uncertainty in the status of stocks, generate and advance expressions of risk in terms of performance measures:

- present some results using available geographical data on a map using GIS functions
- present the legislation in force in a given marine area.

The platform developed was very innovative. It allows compiling scientific information derived from various research projects which can be combined and deeper analysed with embedded advanced tools (like advanced queries, statistical software, GIS). It leads to a powerful but complex application requiring resources for its maintenance and development. Advanced queries can mainly be done by the technicians maintaining it.

3.4. DCF implementation 2012/2013

The actual initiation of the implementation of DCF depends on three factors:

1. Signing of the inter-ministerial decision, by the responsible ministers. The text of the decision has been drafted by the DG Fisheries and is to be submitted to the respective ministries as soon as the government and subsequently the ministries will be formed.
2. Completion and signing of the MoU between the two institutes. Financial arrangements as well as division of tasks have been drafted, although a few details remain to be finalized. Signing of the MoU is a matter of days.

3. Transfer of the financial resources from the ministry of Finance to FRI.

Regarding the transfer of the financial resources, the following comments must be made:

- The transfer is subject to the availability of next tranche of fund from the EU, agreed under the austerity programme.
- The ministry of Finance must provide payment of the full annual costs, i.e. the national contribution and an advance of the EU contribution.
- Various initial expenses were budgeted in the NP for the year 2011, but will be required in 2012 and 2013. It will have to be ascertained that these expenses will be eligible for EU funding, despite the delay.
- The expenses of DCF in 2012 are not yet precisely known. DF will request a payment of 1 million Euro from the Ministry of Finance. The DF was informed that this amount will be made available as soon as the Joint Ministerial Decision will be signed. Considering that the DCF will run for about 2-3 months in 2012, it is expected that approximately 25% of the budget will be required. However, this percentage will also depend on the execution of the two surveys.

Once the financial resources are available to FRI, the operational phase of the DCF can be initiated and the following steps will be taken:

- Hiring and training of about 30 field data collectors. It is estimated that approximately 3 months will be required.
- Acquisition of computers for the field personnel.
- Call for tender for the collection of aquaculture data.
- Preparation of questionnaires for the collection of economic data on the catching and processing sector.
- Adaptation of databases to meet the DCF definitions and requirements.

In the ‘most optimistic scenario’, actual collection of biological data may start in October. Consequently, only 2-3 months of data will be available for 2012. In order to justify the expenses, at least some data for 2012 must be delivered, albeit its scientific value seems uncertain. The biologic data collected on board or in the market will reflect only the last few months of the year. This is also the case for the economic data, as the small scale fishermen do not maintain formal bookkeeping and will have to rely on their memory as to their annual earnings and costs.

Execution of the MEDITS survey in 2012 seems uncertain for a number of reasons. Preparation of the survey is relatively time consuming as commercial vessels have to be hired through tendering and administrative permits have to be obtained from all coastal prefectures. As survey may be executed only in September / October the data will require further adjustments. (see details section 7.1)

Execution of MEDIAS is relatively simpler because this survey is done with a vessel owned by IMBR. Implementation of survey in September will be feasible, subject to availability of funding. Although late implementation is not ideal, it was decided by IMBR together with the Regional Coordination Meeting that late data is better than none.
Both, MEDITs and MEDIAS surveys will be carried out with the present staff of IMBR\(^1\), who has been involved in this work before and has the necessary experience.

The situation regarding the collection of economic data on larger fishing vessels and fish processing sector is different. This data regards performance in 2011 and would be collected only in the second half of 2012 in any case. Although some initial problems must be expected, in particular in obtaining access to the firms willing to make this data available, the data collection can be initiated and it may be possible to collect the relevant data on 2011.

Collection of economic data on small scale fleet can be completed at best for the last 3-6 months of 2012. The accounting and catching records of this fleet are not maintained regularly. Reliable annual accounting can only be obtained through regular (monthly) visits to the fishermen concerned.

Aquaculture data will be compiled by the winner of the tender which will be launched in this respect. If this international tender is launched timely, the data collection may start before the end of 2012. Similarly to other economic data on established firms, the data to be collected will regard 2011, which can be also completed by the beginning of 2013. However, the Greek representatives were not sure whether expenses for collection of data on 2011 would be still eligible if the tasks are carried out only in 2013 and not in 2012\(^2\).

It can be concluded that any implementation of DCF in 2012 must be primarily regarded as ‘starting-up’ of the programme, in order to have it fully operational by the beginning of 2013.

3.5. Users request management

Exchange of data is taking place within various (inter)national projects. Considering that DCF has not been applied since 2007 (with the exception of 2\(^{nd}\) half of 2008), there was no requests for data directly related to DCF.

Data request from JRC are received by the NC and passed on to the relevant institutes (it will be mainly IMBR-Athens for the next data collection). The institutes prepare the data and provide them to the NC who uploads the data to the JRC website. The NC keeps all records of data requests on his PC and in a paper copy in a file.

Requests for data or information from other users, like universities and other institutes are dealt with in an informal way. Each researcher responds individually.

It was recommended to formalize a bit more the user request. The national coordinator should be informed of every data request.

\(^1\) Staff which must be hired and trained will carry out data collection in the field, i.e. on-board and market sampling and collection of economic data on fleet performance.

\(^2\) Review of financial aspects related to the DCF is not part of the present project.
4. BIOLOGICAL DATA

4.1. Methodology and processing

The collection of biological information will be carried out by FRI in cooperation with IMBR. About 15 permanent staff members are available for preparation and coordination of the programme as well as participation in its implementation. Although four experienced researchers have been lost due to various reasons, the management of the institutes is convinced that ample expertise is available to start implementing DCF as soon as the resources will become available. There is a description of tasks to be carried out and the allocation of responsibilities between the two institutes.

The data collection will take place according to three GSAs (20, 22 and 23), which were further subdivided into 12 sub-regions. Each institute will be responsible for the data collection in specific sub-regions. (Table 1 and Map 1).

- FRI will be responsible for the three sub-areas in the Ionian Sea and the three northern sub-areas in the Aegean Sea.
- IMBR will be responsible for the five southern sub-areas in the Aegean Sea and the area around Crete. The latter will be covered by the IMBR institute located on Crete.

Some specific tasks, e.g. reading of otoliths, will be assigned to specific researchers within each of the institutes according to their knowledge.

It can be noted that map 1 highlights 32 main ports and it is foreseen to hire about 30 freelancers for the field data collection, i.e. one per port. This will eliminate losses in time and travel costs.

Map 1. Map of Greece indicating the sampling areas and the major landing ports

Source: NP 2011-2013
At present, hiring temporary staff by public institutions is subject to severe restrictions. Therefore, the 30 data collectors will be hired as freelancers. They will be equipped with laptops/PCs acquired within the DCF budget, but otherwise they will work from their own homes or offices. However, at the moment freelancers cannot be hired for more than two years. This means that after the expiration of this period new freelancers may have to be hired and trained again. The management of the institutes has indicated that they will attempt to avoid such loss of expertise. Clearly, this is not of immediate concern, but will have to be addressed in 2014. It will be attempted to hire persons who were involved in data collection earlier – until 2008.

Each data collector will be responsible for one or two specific ports. He will carry out market sampling as well as data collection at sea. In relation to the latter it was noted that many vessels are too small to carry an additional person to collect data directly at sea. This presents specific problem in relation to some of the DCF obligations. It is foreseen that senior staff of the research institutes will visit the data collectors to give them the necessary guidance and support.

The current sampling methodology is based on random sampling. Nevertheless, the selection of the boat to be visited is made by the inspector based on his field experience and vessel accessibility (willingness to cooperate) and is not made purely randomly.

4.2. Data processing and databases

The data processing foreseen is:

- The data collector will fill paper forms in the field. Data collector will also collect fish and store it in a freezer until its shipment for otolith analysis to the responsible center.
- The data collector will connect to the IMAS-Fish application from his laptop at home to enter the data. Different kinds of checks are performed. They are directly embedded in the data capture form or run on a set of items by the IMBR-HCMR Athens. These checks are format checks, code checks, limit checks, cross validation check between data items, missing data checks. The above checks are expected to ensure that both recording errors and omissions made during computer data entry can be detected and corrected.
Detailed biological data are organised as follow in the database:

- A master table contains information per the trip and per haul. This is detailed by species and the specie information is completed by detailed measurement information.
- The same structure is duplicated for different kind of gears as the information are slightly different.

If new projects are collecting identical information, they will be added to existing table and associated to a given project type. If the structure is different specific table will be created by the maintenance team.
Capture forms will be designed as well based on the structure and made accessible to users depending on their logging name and related functions within one project.

5. **RECREATIONAL FISHERIES**

Greece has derogation in relation to the collection of catches of Bluefin tuna by recreational fisheries. Other species do not apply.

Under the National Management Plan for Eel, the recreational fishery for this species is not permitted. However, under the Data Collection Programme there will be an action for recording if there is any recreational Eel fishery in the study areas (catches that come from non-professional fishermen and not recorded by any state service). In addition, effort will be exerted in order to quantify any gap of past data concerning this activity.

6. **TRANSVERSAL VARIABLES**

6.1. Methodology and planning

**Fleet:**

All professional fishing vessels must possess a license and are registered in the fleet register. Changes of vessel specifications are first registered by the local port authorities/prefectures and passed on to the Ministry to update the national fleet register. Up to date information does not present any serious problems.

**Effort and catches:**

Data on effort and catches of the vessels over 10m should be monitored through logbooks and sales notes\(^3\). As of 1/1/2012 the Greek fleet was composed of some 16,661 vessels of which only about 1,586 were larger than or equal to 10 m, so that the logbook and sales notes did not apply. Furthermore, the catches per species often do not exceed 50 kg, so they do not have to be registered. The contents of the available logbooks and sales notes are in general considered weak.

For small scale fishery effort and landings should be estimated on the bases of a survey. Such a base line survey has not been carried out and is not foreseen. This implies that allocation of the fleet to specific métiers, as presented in the NP 2011-2013, can be only based on historical data obtained from individual projects and experience on the ground.

Only 627 vessels are over 15m, being obliged to carry VMS. This source is therefore only relevant for very specific applications.

It must be concluded that collection of transversal variables on effort and landing presents major practical problems.

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\(^3\) Control regulation 1224-2009
6.2. Databases

The Single fisheries information system at the Ministry of Civil Protection (MinCivil) manages among other the fleet register, the fishing licences and authorisation, infringements, the fishermen registers and fisheries legislation⁴.

MinCivil manages also VMS information for vessels over 15m. This information is provided on request to IMBR-HCMR Athens as well as fleet register information.

The logbook and sales notes collected by the Fishery Department of coast guard belonging to MinCivil are transmitted on paper to the MinDev. MinDev follows attentively the Bluefin tuna, swordfish, albacore catches which are subject to quotas but no specific database has been created for the purpose. No specific databases on logbook are sales notes are available.

7. SURVEYS AT SEA

7.1. Methodology and planning

Greece is obliged to participate in two surveys MEDITS and MEDIAS.

Execution of the MEDITS survey in 2012 seems uncertain for at least four reasons:

- Three commercial vessels have to be contracted, but this requires an open tendering procedure, which takes at least 2 months.
- Once the vessels are selected, fishing permits must be obtained from all coastal prefectures, as the survey may be operating in areas and with gears for which special permits and/or derogations are required. This is an intensive administrative procedure.
- As the main fishing season of the large commercial vessels starts in October the costs of contracting the vessels after September will be significantly higher, than if the survey would be executed earlier. It remains to be seen whether sufficient resources have been allocated in the budget for this event.
- It must be decided at the level of the Steering committee of MEDITS whether late execution of the survey is still relevant, as the data collected will require additional adaptations and processing to achieve consistency with data collected in June-July by other vessels. This regards in particular catches of the new year-class of juvenile fish.

Execution of MEDIAS is relatively simpler because this survey is done with a vessel owned by IMBR. Implementation of survey in September will be feasible, subject to availability of funding. Although late implementation is not ideal, it was decided IMBR in dialogue with the MEDIAS Steering committee that late data is better than none.

7.2. Databases

⁴ (see report STUDY ON INFORMATION SYSTEMS SUPPORTING FISHERIES CONTROLS IN THE EUROPEAN UNION CFCA/2010/B/02 National Report: Module 5 – Greece).
Surveys at sea can be register in the IMAS-Fish database like other biological data. They are specific forms to register the information collected by MEDIT and MEDIAS survey.

8. ECONOMIC DATA - CATCHING SECTOR

8.1. Methodology and planning

Economic data on the catching sector will be collected under the guidance of AEPRI. AEPRI has been involved in various data collection projects in relation to agriculture in general and Fadn-RICA in particular. Therefore it can be expected that it has sufficient expertise to guide the data collection process for the catching sector. AEPRI staff participates in meetings of STECF working groups related to the topic (PGECON). Three staff members of AEPRI will be available for implementation of tasks under DCF – guidance of data collectors, data entry, checking, processing and preparation of responses to data calls.

In the first months of DCF, AEPRI will design questionnaires and train the data collectors. It is foreseen that the same 30 data collectors who will collect the biological data will also collect the economic data on the catching sector. AEPRI indicated that they intend to cooperate with IREPA in order to exploit its expertise in this area.

It can be expected that for the larger vessels, which maintain formal accounting, it will be possible to collect acceptable quality of data on 2011, as books can be processed end of 2012 and further in 2013. However, collecting data from small scale fleet, without formal accounting, may have to take place regularly (e.g. monthly) throughout the year. In that case feasibility of collecting reliable data on 2011 and 2012 will be limited.

8.2. Databases

Database operated till 2006 at IMBC Crete (Excel / Access) is not operational any more. There are currently table/forms for economic data in IMAS-Fish database/application but it is not in use yet. In addition, no data from previous economic data collection have been loaded in the economic table.

The structure and the forms for economic data need to be finalised within the coming months in coordination with AEPRI.

9. ECONOMIC DATA – AQUACULTURE

9.1. Methodology and planning
It is foreseen to launch an international tender for the collection of economic data on aquaculture. The tendering procedure will take place under the responsibility of FRI, which does not need to overcome any further administrative ‘hurdles’. It is expected that 8-10 weeks will be required between the launching of the tender and signing of the contract. Launching the tender in July/August would allow the winner to start the data collection in October/November. Considering that part of the data collection will be based on firms’ accounts, this timing is quite suitable as these accounts are usually consolidated by the end of the following year. The collection of data regarding 2011 can be than completed in the beginning of 2013 (if no problems regarding eligibility of expenses, mentioned earlier, would arise). The winning organization will provide individual data to FRI, where it will be further aggregated and processed.

In order to evaluate the proposals, specific expertise will be required in relation to operational as well as financial aspects of the survey, definition of selection criteria, etc. At the moment it is not clear where this expertise will be obtained, considering that the staff of FRI are researchers. Furthermore it remains to be seen how a tenderer will be able to assure his access to the required data. Cooperation of a sufficient number of enterprises and individual fish farmers will be essential. If the number of cooperating firms remains too low, the data may not be publishable for confidentiality reasons. Neither the tenderer nor the Ministry can oblige the aquaculture firms to provide the required information as DCF does not fall under the general legislation regarding statistics (Greek Statistics Law 3832/2010).

9.2. Databases

Database containing economic data for aquaculture will have to be designed. Considering the limited amount of data to be processed, an application in Excel / Access is expected to be sufficient. It was not yet clear whether this would be a task within the tender or whether the data would be also included in IMAS.

10. ECONOMIC DATA – PROCESSING INDUSTRY

10.1. Methodology and planning

At present two staff members of the DG Fisheries Applications carry out an annual survey (census) of all fish processing firms, collecting information on type of processing, raw material, products and ex-factory prices. This data is used to respond to requests of organizations like OECD and FAO. Economic data is not collected. DFA disposes of a list of fish processing firms, compiled by the local fishery officers of the Ministry, working in different prefectures. The list includes also small firms with less than 10 employees, which is an important group in Greece.

FRI will assign 2-3 staff members who will execute the survey of the fish processing industry, using the list of firms compiled by DFA. Cooperation between these two organizations is foreseen. It is foreseen to send all firms paper questionnaire to be returned to FRI, where the data will be digitalized.

10.2. Databases

No database exists until now.

5 This problem occurs also in other countries.
In view of the relatively small number of fish processors in Greece (approx. 100), data can be easily processed in Excel.

11. VARIABLES ON THE EFFECTS OF FISHERIES ON THE MARINE ECOSYSTEM

Ecosystem data is closely related to the biological data. Therefore its quality and availability will be determined by the quality and availability of data collected during the last months of 2012:

- Indicators 1-4 (conservation status of fish species, proportion of large fish, mean maximum length and size at maturation) can be collected during the surveys.
- Indicators 5-7 (distribution of fishing activities, aggregation of fishing activities and areas not impacted by mobile gears can be compiled through VMS data, although only 627 vessels are equipped with VMS at present.
- Indicator 8 (discarding rate) can be only observed during on-board presence, some data may be collected during the last three months of 2012.
- Indicator 9 (fuel efficiency) can be, at least partially, estimated from the data of the economic survey.

12. CONCLUSIONS

Collection of biological data (on board and market sampling) will start in October, at the earliest. Implementation of the MEDITS survey is uncertain because of high time pressure. MEDIAS survey can be probably implemented in September.

Economic data on the larger fishing vessels regarding the year 2011 can be initiated in the last months of 2012 and completed in the beginning of 2013. It may be difficult to compile sufficiently reliable data on the small scale fleet on 2011.

At least some economic data from the fish processing sector and on aquaculture regarding 2011 can be collected in the last quarter of 2012 and the beginning of 2013. The willingness of the individual firms to cooperate and provide the requested data will be the most important bottleneck.

In general, the implementation of the DCF during the last 3 months of 2012 must be seen as the initial phase of the data collection required to carry out the full programme in 2013.

The IMAS-Fish database is very sophisticated integrating data collected from different projects This database contains much more than DCF requirement. Using IMAS-Fish for DCFD will require some slight further development. Extractions can only be performed by the technicians.