

Terms of Reference for the pilot fisheries-dependent data collection survey in Egypt

The pilot study is aiming at improving the data collection activities of the Mediterranean fisheries of Egypt. The pilot study will be conducted by two international experts and be carried out in close collaboration with the General Authority for Fish Resources Development of Egypt (GAFRD) and national institutions and agencies. The study stems from consultations held during the visit of the project coordinator to Egypt in March this year as well as from conclusions reached at the recent EastMed inception meeting in Athens.

1. Introduction

The Mediterranean fishery sector of Egypt continuously undergoes biological and ecological changes that are not fully documented. In addition, there is an evident absence of an adequate programme to provide reliable fisheries data for government officials, industry executives and other decision makers. There is a general view that several marine fisheries resources are fully, or close to fully, exploited. Well-based statistics confirming recently reported increases of fishing pressure is urgently required.

There is a substantial need for cost-effective data collection systems based on reputable, robust and sustainable procedures. There is also an urgent need of upgrading the technical capacity of the present GAFRD staff both at data collection and data analysis/dissemination levels.

2. Priority application sectors

According to GAFRD the highest priority at present is the establishment of a basic but robust and sustainable data collection programme for catch/effort assessment. Such a programme should be capable of regularly providing typical indicators of fish exploitation and fleet performance such as catch, effort and CPUE by boat/gear category, species composition of the total catch, average species size by boat/gear category and first-sale prices and values. Such a programme will necessitate the implementation of three parallel but inter-related systems relating to:

- Spatial extrapolation factors for fishing effort (i.e. boat counts by homeport and boat/gear category);
- A sample-based data collection system for catch/effort;
- A supporting sample-based data collection system of basic biological data for priority species.

The proposed pilot study will set-up a prototype data collection system of limited scope to serve as a model for a full-scale data collection programme covering the entire Mediterranean coastline.

2.1 Setting-up boat counts by homeport and boat/gear category

This operation (equivalent to a rapid frame survey of limited scope) is expected to be swift and effective as it will be conducted only in a pilot area of the Mediterranean coastline. Its output will be a simple table (probably in the form of an Excel worksheet) that will be used for the sole purpose of furnishing spatial extrapolating factors (i.e. boat counts) for the subsequent estimating of fishing effort by boat/gear category.

The exercise will also examine the feasibility of obtaining boat counts automatically from existing or to-be-developed vessel databases covering the entire Mediterranean coastline. The feasibility study will take into account development and implementation aspects relating to alternative database applications as well as operational requirements in terms of training, equipment and human and financial resources.

2.2 Data collection on catch, effort and other basic variables

GAFRD has been operating for years a data collection system that primarily focuses on catches and operates on a complete enumeration basis. This set-up is not flexible enough to remedy cases of incomplete enumeration, neither is it modular to cater for unforeseen types and frequencies of fishing activities. The continuing absence of a modern and cost/effective fisheries statistical monitoring programme (FSMP) constitutes a serious impediment to GAFRD in fulfilling its data commitments toward national, sub-regional (EastMed), regional (GFCM) and international (FAO) statistical data collections. It is thus believed that the immediate implementation of a national FSMP is by far the first priority since such a system would be central to other important applications such as stock assessment and socio-economic studies.

The pilot study will initiate a sample-based data collection programme involving basic variables such as catch, effort, first-sale prices and average fish size. The area covered will be limited but, in operational terms, representative enough of the Mediterranean coastline. The general characteristics of the system in terms of objectives and principal outputs should be in line with GFCM and FAO standards.

The statistical methodology will be based on standard procedures and methods publicly accessible through the FAO web. Field and office operations should be flexible and modular enough to allow for different data collection schemes according to specific needs. No software development will be needed as GAFRD has developed and fully tested procedures for catch/effort estimation from samples (SAMAC-2 system) as well as for the integration of monthly estimates into a database containing monthly and annual estimates on catch, effort, CPUE, prices, values and average fish size (SAMAC-3 system).

With regards to boat categories, gear types and species the system should be harmonized with FAO and GFCM standards and classifications. Species identification

in particular will be given major attention and for this purpose a specialized expert will support the work of the fisheries statistician. Both experts should ensure that the national counterparts become familiar with appropriate sampling techniques on catch and effort by fishing technique so that they can be ready to recognize the operational units (OUs).

The outputs of the pilot system should be available the earliest possible in well-known and popular formats (such as MS Excel, MS Access, etc.) and be shaped into any structure and format required by EastMed. The pilot study should ensure that, when operational at full-scale, the envisaged system would constitute a quick and reliable solution to present pressing data requirements, given that EastMed will soon need regularly produced data at both national and sub-regional levels.

One of the major outputs of the pilot study will be the preparation of a detailed implementation plan for the entire Mediterranean coastline, including operational requirements in both human and financial resources. The plan should encompass all aspects of a regular fisheries statistical programme, such as training, equipment, mobilization of staff and contractual arrangements with other agencies and institutions.

2.3 Collection of biological data

The pilot study will examine the possibility for the establishment of an intensive sampling programme for the collection of biological data (length, maturity, sex, etc.) to be used for the formulation of a number of typical stock-orientated indicators. Initiation of such studies should first focus on a limited number of priority species. Priority species are characterized as such based on criteria adopted in GFCM Meetings (GFCM:SAC10/2007/Inf. 8). The pilot study will set-up protocols/templates that can be translated to Arabic if needed, for the immediate initiation of data collection activities for biological information. Establishment of partnerships between GAFRD, project and academic and national institutions will be possibly explored.

Local staff will be trained on:

- Species identification on the field. Fish identification cards prepared by FAO and essentially modified by the project so as to be used in the field will be circulated to the local technicians.
- Estimating biological parameters (Total length and weight) on the field. Equipment if deemed will be provided by the project
- Biological sampling. Parameters such as length and weight per specimen, sex, maturity stage, gonad weight and otoliths useful for the study of population dynamics can be only taken in the Lab. At this end local staff should be trained taking appropriate sample per fishing technique

One of the major outputs of the pilot study will be the preparation of a detailed implementation plan for the collection in the medium-term of biological data for the entire Mediterranean coastline, including operational requirements in both human and financial resources. The plan should encompass all operational and infrastructure aspects of a regular fisheries statistical programme for biological data and resource

assessment exercises, such as training, equipment, mobilization of staff and contractual arrangements with other agencies and institutions.

3. Mission planning and costs

The pilot study will be conducted by two international experts:

- Team Leader: Senior Fisheries Statistician (SFS).
- Fisheries Biologist (FB).

The pilot study will be conducted in two missions: the first to set-up guidelines and operational modalities for a pilot programme and, the second to follow-up, evaluate/report results and set-up a plan for a progressive expansion of the pilot programme to the entire Mediterranean coastline. In the interim period between the two missions pilot activities will be carried out by national staff.

The first mission will examine the methodological and operational aspects of a pilot data collection programme encompassing the three components 2.1, 2.2, and 2.3 described in Section 2. The primary objective of the mission will be the preparation of a technical document incorporating guidelines, data collection forms and operational modalities for the pilot implementation of all three components in selected locations.

Once the technical document has been finalized, the national experts will use it as a guiding tool for the initiation, in the interim period, of data collection activities pertaining to the three components (i.e. frame survey, catch/effort and biological data). Progress on these activities will be monitored by the project which will determine the moment for review and evaluation activities to be undertaken by the same experts and by means of follow-up assignments. It is envisaged that the findings and conclusions of the study would be documented and made available by the project by the first quarter of 2011.

One of the primary outputs of the follow-up assignments will be a detailed implementation plan concerning the progressive expansion of the pilot programme to cover the entire Mediterranean coastline. The plan should encompass all operational and infrastructure aspects of a comprehensive fisheries statistical programme encompassing vessel, catch/effort and biological data. Training, equipment, mobilization of staff and contractual arrangements with other agencies and institutions should also be analyzed and quantified to the largest extent possible.

The pilot study will consist of two missions of one month each. The two missions will be conducted in November 2010 and April 2011 respectively and will each be split into the following four stages:

- Briefing at EastMed offices, Athens, 2 days.
- Travel to Cairo and Alexandria, 21 days.
- De-briefing at EastMed offices, Athens, 2 days.
- Report finalization (home), 5 days.