

Annex 3

Biological data collection for fisheries on highly migratory species

The project(s) dealing with biological data for fisheries on highly migratory species should carry out the following elements:

Work package 1

On the basis of what has been achieved in 2016-2017 relevant to regional cooperation (in regional grants, studies, RCMs, STECF, ICES, JRC, EUROSTAT, scientific publications etc.), the beneficiaries shall propose a set of prerequisites for the functioning of the Regional Coordination Groups (RCGs) [the applicants dealing with biological data are advised to cooperate on this point]: suggest number of standard meetings per year and timing, subgroups (RCG-specific and pan-regional), communication methods within and between RCGs (including different means of collaboration), rules of procedures, formal communication with end users, formal communication of RCG work to stakeholders, expertise needed (can be linked to WP 6) etc. The relevant Regional Coordination Meetings will analyse and assess the proposed prerequisites.

Work package 2

A regional sampling plan for 2019 covering selected large pelagic fisheries that should be included in the current EU Multiannual Programme. The following stocks are proposed as candidates for a regional sampling plan: (i) Bluefin Tuna, (ii) Mediterranean swordfish, (iii) tropical tunas (ICCAT) and (iv) tropical tunas (IOTC), referring to purse seiners and long lines. The proposed plan should represent a first attempt of a regional Work Plan, that may replace the relevant parts of the Member States' national Work Plans, including all the necessary elements to realise it. The existing work plan template can be used, or modifications can be suggested [the applicants dealing with biological data are advised to cooperate on this point]. The regional sampling plan should cover data collection, analysis, data management and storage. The regional sampling plan should apply to all concerned Member States involved in large pelagics fisheries (even if they are not part of the consortiums to which the grant are awarded).

Designing a regional sampling plan will require the following tasks to be completed, while building on the experience and knowledge acquired either under the previous grants (without duplicating work already carried out in the previous grants) or specific to large pelagics (eg. coordination between Spain and France on tropical purse seine fisheries):

- a. **Definition of data needs and priorities**, depending on: (i) the level of existing EU cooperation and (ii) the priority of fisheries in terms of EU involvement as well as end user needs. The output should be the list of stocks/ species per geographical tuna Regional Fisheries Management Organisation (tRFMO) to be coordinated regionally and the time scale for achieving this (either in the short- or longer-term).
- b. **Data sharing** among all Member States exploiting the same stock(s) in the relevant region(s). Based on the experience of the previous grants, the

applicants should actively demonstrate, through the setting up of data sharing agreements or similar actions, that data will be shared.

- c. **Apply and/or refine previously agreed guidelines and best practice methodologies** to be followed for establishing and implementing data sampling, processing and management. These guidelines and best practice should be made available to all relevant actors in the region, for example through a website or SharePoint.
- d. **Apply and/or refine reference (or code) lists** to be used by Member States in the region, in accordance with the rules of the relevant tRFMO, to ensure harmonized reporting on their data, and to enable regional pooling and analysis of data [the applicants dealing with biological data are advised to cooperate on this point]. These reference lists should be made available to all relevant actors in the region, for example through a website or SharePoint.
- e. Carry out **simulations** of proposed regional sampling plans, to provide evidence for their feasibility.
- f. Develop rules on how to **allocate tasks or costs** between Member States [the applicants dealing with biological data are advised to cooperate on this point].
- g. **Evaluate the cost implications** for 2019 and beyond if concerned Member States implement this regional sampling plan, compared to the "business as usual" approach. Re-allocation of sampling may need new agreements to be put in place. Propose realistic solutions that will lead from the current set up to the proposed set up, taking into consideration potential implications and practical implementations.
- h. Propose solutions for regional storage systems, data processing, management and raising of data, taking into account current situation, ongoing studies and developments. Propose alternative scenarios where relevant and create a roadmap with timeline and specific milestones.
- i. **Lessons learned.** Propose a set of rules and recommendations to be used as reference in the establishment of future regional sampling plans. This point should be discussed and, if possible agreed upon, in work package 7.
- j. Document the whole process in the form of a **repository**. This repository can be used as a reference point for future regional sampling plans.

Work package 3

Pilot studies specific to tropical tuna stocks:

- a. Propose **improvements for data collection** methods of tropical tuna fisheries, with the aim to clearly **separate data between free schools and fish aggregating devices (FADs)**. The catches, by catches and environmental impact stemming from the use of drifting FADs (dFADs) need to be better documented, in relation to free schools. Currently the number of dFADs at sea is unknown. In addition, tuna RFMOs have recently called for management plans with the goal of monitoring and managing FADs. As a result, they have limited the number of active buoys at any one time. However, the set thresholds are not based on sound science and are likely too high with poor expected impacts. The recent CECOFAFAD project provided insights into the definition of the fishing effort associated with (dFADs). Building on existing

knowledge, a proposal for data requirements under the DCF should be presented, in order to address the abovementioned gaps.

- b. Describe state of play and propose improvements for the **consolidation of data in longlines**. Procedures relating to data consolidation have been established for tropical tuna purse seine fisheries by cross checking information extracted from logbooks, sales notes, observer reports and sampling programmes. Similar methods should be developed for longlines.
- c. Investigate in a pilot study the feasibility of applying **Electronic Monitoring Systems (EMS) for longlines**. Based on end user feedback (IOTC, WCPFC), an increase in observer coverage is needed for some longline fleets. EMS has been tested in purse seines and minimum standards have been developed for those fleets. The applicability of this technology for longlines should be explored, as an alternative to data collected by human observers.

Work package 4

Develop **standardisation of CPUE in tuna fisheries**. An important number of tuna assessments are implemented on the basis of CPUE from a few fleets/countries, as access to relevant data differs between Member States. This results in partial coverage and associated uncertainty in the interpretation of outcomes (eg. whether observed changes in CPUES are actual changes in abundance or the result of changes in fishing strategy of the relevant fleets). In the particular case of tropical tuna, there is no approach to discriminate the contribution of purse seines operating in free schools and in FADs. In addition there is no consensus in the estimation of the contribution to effort of the supply vessels. Use of non-conventional information, such as use of acoustic signals to measure abundance, could be used as an additional source of information. Based on the outcomes of a recent workshop on CPUE standardisation, specific methods to standardise CPUE should be proposed, taking into account the issues mentioned above.

Work package 5

Procedures to assess the quality of biological data stored at regional level, following up on the work done in the previous regional grants, RCMs, relevant WGs [the applicants dealing with biological data are advised to cooperate on this point]. This will require the following tasks to be completed:

- a. Based on current data collection work plans (Table 5A), identify areas for regional cooperation and harmonisation on a sea basin level. Agree on a set of **national data quality assessments** (updating existing work where appropriate), after consulting Member States and end users. This compilation should be divided into the essential minimum quality checks that all Member States should carry out before regional quality assessment can take place, and additional ones that Member States could choose to carry out.

- b. Propose methodologies to address issues linked to data quality, like data coverage, risk analysis linked to stock assessment processes, assumptions associated with assessment models etc.
- c. Based on quality checks currently carried out on a regional level (for example, as part of regional storage systems and/or checking of data for data calls), identify areas for improvement. Work already carried out by other initiatives should not be duplicated. Agree on a set of **regional data quality assessments**, after consulting Member States and end users. These could include comparison of age-length keys between Member States, or tools to coordinate age-reading between Member States. The grants should identify which set(s) of information/results of the regional quality assessments should be shared with end users.
- d. **Establishing a detailed annual calendar per data set** for the national and regional quality checking process, bearing in mind: (i) timing when end users would need the data; (ii) availability of data by data collectors. Existing information on data availability should be included (Table 6A of national Work Plans). The applicants should provide justification for the proposed calendar and propose different options, where applicable.
- e. **Document methods used** for transparency and future use and improvement.

If automatic quality checks are developed, the IT products developed should be open-source so as to be available to other potential users, including other regions. A gradual implementation of the data quality tools should be scheduled.

Work package 6

Training of Member State experts. The applicants should demonstrate the main outcomes - especially on a technical level - to experts involved in data collection from all Member States involved in large pelagics fisheries - either participating in the grant consortium or not – including all relevant institutes participating in data collection of large pelagics in each Member State. In preparation for/ during this exercise a mapping of available expertise is recommended, highlighting gaps and possible solutions.

Work package 7

Input from a regional consultation: The applicants should consult all Member States involved in the relevant fisheries and region(s) – either participating in the grant consortium or not - on the outputs developed under points 1-6 above. A written consultation should be included. The report should consist of an overview with main points, which should be summarized using quantitative indices. The applicants should include consensus outputs, as well as points of disagreement. The applicants should propose how to tackle any potential points of disagreement, as well as directions/measures to be taken to strengthen regional coordination. Work packages 7 & 8 can be combined. In addition, the applicants should foresee the presentation of the outcomes in the respective RCM(s)/RCG(s).

Work package 8

Synergies with other RCM(s)/RCG(s). The RCM Large Pelagics currently operates under the umbrella of RCM Med & Black Sea. While carrying out the current work, the applicants should investigate common areas of work with other RCMs, where applicable. The result should be a proposal analysing whether RCG Large Pelagics should stay under the umbrella of RCG Med & Black Sea, another RCG or be a stand-alone RCG. The analysis should highlight synergies and differences and suggest advantages and disadvantages of working together (or not) with other RCGs/ economists groups.