

# ICCAT-GBYP STEERING COMMITTEE MEETING REPORT – 01/2012

## 07-08 February 2012

### 1. Opening of the meeting

The GBYP Steering Committee (SC) meeting was held at the ICCAT Secretariat on February 7-8, 2012, with the participation of Messrs. Jean-Marc Fromentin, Driss Meski, Tom Polacheck and Josu Santiago. Messrs. Pilar Pallarés (ICCAT Assistant Executive Secretary), Laurence Kell, Juan Antonio Moreno, Mauricio Ortiz, M'Hamed Idrissi (GBYP Assistant Coordinator) and Antonio Di Natale (GBYP Coordinator), from the ICCAT Secretariat, also attended the meeting..

All reports concerning the activities done in Phase 2 had been circulated to the Steering Committee in advance. Other documents, including the executive summaries of the activities and all information on budget and budget simulation, were distributed immediately before the meeting and paper copies were made available at the meeting.

Dr. Santiago, the chair of the meeting, welcomed all the participants. After a short introduction, the Agenda (Annex 1), was discussed, and the GBYP Coordinator was asked to provide the details on the annotated agenda. The following report includes all points discussed during the Steering Committee meeting, following the Agenda.

### 2. Summary and Revision of the activities in 2011

#### 2.1 *Review of the project activities and procedures*

Considering that most of the data were already presented and approved in previous meetings, the GBYP Coordinator provided in advance a brief updated summary report concerning the six main activities carried out so far in Phase 2 (from December 2010 to December 2011), included in the annotated agenda (Annex 2). The Coordinator explained about the extension of Phase 2 up to April 21, 2012, agreed by the EU, for completing all the activities and for administrative reasons.

#### 2.2 *Coordination*

Taking note of the number of calls for tenders (11) and subsequent 23 contracts monitored during GBYP phase 2, and all the 17 deliverables produced by GBYP (Annex 3), the Steering Committee (SC) acknowledges the important work accomplished by the coordination team and the Secretariat and its heavy workload. Furthermore, the SC acknowledges the achievements in coordinating all activities. The SC recommends that the Data Specialist hired on October 2011 with a short term contract would be most appropriately considered as Coordination Staff and recommended that her cost should be included under this item. The SC recalls the need for hiring one additional staff for the administrative duties, as agreed since the beginning of the GBYP<sup>1</sup>. The SC recommends an improvement of the salaries and levels of the Coordination staff in recognition of their outstanding performance and heavy workload required to implement the GBYP activities. .

#### 2.3 *Data mining and data recovery*

More than 118.000 fishing operations, primarily from traps but also from other gears, have been recovered along with data on more than 23 million individual BFT and 87.000 size frequencies, for the period 1955-2010. A preliminary report was provided to the SC which gives a general overview of the various data received under the various contracts, and individually checked. The SC recognised the important results obtained by this GBYP activity. So far it has provided a large amount of data that fills several gaps in the ICCAT data base. The results were well beyond what was anticipated in the original objectives. In particular, the SC pointed out both the importance of historical data for detecting long term fluctuations and the immediate relevance of the most recent data sets (1995-2010). These latter are particularly significant for their potential to improve the bluefin tuna assessment.

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<sup>1</sup> See the revised advice on this point under point 5.1.1, taking into account the activities to be done in Phase 3.

The Symposium on Trap Fishery for Bluefin Tuna, conducted under this budget item, provided more than 20 SCRS papers. These are intended to be incorporated into a special issue of the ICCAT red books. Some papers are still to be delivered to the Secretariat and the SC recommends setting a cut-off date. The SC endorsed its previous recommendation that this special issue be produced as it would ensure a wide-spread dissemination of the knowledge provided to the Symposium on this ancient bluefin tuna fishery.

The SC re-endorsed its previous recommendation concerning recovering data on the Eastern Mediterranean trap fisheries from the Ottoman archives.

#### *2.4 Aerial Survey*

The aerial survey was extensively discussed in previous SC meetings and by the SCRS. The situation has been further clarified after the completion of the analyses that have been carried out by the contracted team. Based on the results obtained in Phase 1 and 2, the techniques developed and employed have the potential to be able to provide a useful fishery independent index of spawning biomass for use in the stock assessment, although there are still some unresolved technical issues relative to calibration among observers. The SC was informed also about a close correspondence between the aerial survey observations in the last two years and several sources of observations at sea (e.g.: the Spanish larval survey and the purse seine fisheries). This correspondence provides some qualitative confirmation of the potential of this methodology to provide a fishery-independent index. However, (not unexpectedly given the likely CVs achievable with this technique), a survey would need to extend for a minimum of 6/7 years (for detecting a 20% recovery rate) or 9/10 years (for detecting a 5% recovery rate) in order to be informative for the stock assessment or for detecting a trend. Moreover, current understanding of the distribution of spawners and inter-annual variability throughout the Mediterranean (included updated the spatial modeling taking into account the SST variable done under the GBYP) indicates that, in order for aerial surveys to be able to provide a robust index, the spatial coverage would need to be much more extensive than was possible to achieve during Phases 1 and 2.

The SC recognised the valuable and extensive work done so far under the GBYP coordination and the fact that the current technique is able to fulfill the objectives in a medium term but, at the same time, recalls that without the guaranty of permits for accessing all areas and a proper funding level for an extensive coverage for a minimum of 6/7 years, this survey will not be able to provide a reliable index of abundance<sup>2</sup>.

#### *2.5 Biological and genetic sampling and analyses*

In addition to the report provided at the previous SC and to SCRS, the SC was informed about the activities, carried out by the large consortium contracted for this work (13 Research Institutions and 5 Subcontractors, from 10 different countries), lead by AZTI. The contract has been extended up to April 2012 in order to fully complete the main analyses<sup>3</sup>. The main sub-areas, as specified in the original sampling design, have been covered. It is important to note that this activity has initially been seriously constrained due to the absence of a legal framework allowing for the sampling within the ICCAT bluefin tuna management plan. This issue was resolved after the Commission meeting in Istanbul in November 2011 (Rec. 2011-06) and this should not be a problem in future sampling activities.

The SC acknowledges the important work done so far towards fulfilling the objectives, particularly in light of the legal constraints. It also noted that the deliverables required by the EU grant agreement were particularly onerous and time consuming for the consortium members and sub-contractors. It expressed its appreciation to all those involved for their persistence and patience and recommended that efforts be made to simplify and streamline these in the future. The SC also recognised the positive benefit of having a large consortium conducting this activity and recommended that an extension of the contract be used to carry out this work in Phase 3, with necessary adjustments.

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<sup>2</sup> See also the discussion on point 3.2 and 5.2.3.

<sup>3</sup> In total, the consortium has sampled so far 927 otoliths, 755 spines, 66 gonads and 1052 muscle/fins tissues. The analyses will include a total of 400 otoliths and 300 spines for ageing, 400 otoliths for microchemistry, 51 gonads for histology and 960 muscle/fin tissues for genetic.

## 2.6 *Tagging activity*

### 2.6.1 *Tagging programme deployment*

In addition to the report provided at the previous SC and to SCRS, the SC was updated about the most recent conventional tagging activities being carried out by a Spanish consortium of 6 partners, lead by IEO. The contract was extended up to April 2012 in order to reach a higher percentage of the targeted number of releases. A number of problems were encountered that prevented the target being reach. These included (1) the late beginning of the actual tagging work, (2) the absence of a legal framework allowing for scientific tagging under the ICCAT bluefin tuna management plan (this was resolved after the Commission meeting in Istanbul in November 2011 by the Rec. 2011-06), (3) bad weather conditions, (4) some unexpected problems carrying out the activities at sea, (5) high mortality when tagging from purse seiners and (6) a poor strategy for where to fish adopted by the contractor in one of the areas. The achievements in terms of the target number of releases, so far, are about 62% (102% in the Bay of Biscay, 9% in the Western Mediterranean, 47% in the Central Mediterranean. Tagging activities in the Strait of Gibraltar are still in progress, so some improvement with respect to the overall and Western Mediterranean targets are expected. Overall 40% of the releases were double tagged. The situation with respect to not having achieved the target number of releases is posing a problem as to whether payment should be made for the third set of invoices submitted by the Contractor and the Coordinator requested the advice by the SC on this matter.

The SC acknowledges the large effort of the Coordination staff and the consortium in implementing the tagging program on short notice and dealing with the problems noted above. The SC expressed concern about the problems noted above particularly with respect to tagging from purse seiners and the fishing strategy adopted in some areas. It noted that there are opportunities for revising and improving the tagging operations in 2012. As concerns the evaluation of the accomplishments of the field activity against the contract, the SC noted that it is very difficult, if not impossible, to guarantee that a targeted number of release can be achieved within a fixed period or budget as weather and local availability of fish cannot be precisely predicted ahead of time. As the number of vessel days at sea is the basic unit and principle the cost of the tagging operation, the SC suggested that this be used as the basis for evaluating performance relative to contract as long as the tagging efforts were judged to be done in good faith. The SC also endorses the current extension of the contract up to the end of Phase 2.

In addition to the report provided at the previous SC and to SCRS in 2011, the SC was updated about the electronic tagging activity carried out in Moroccan traps by a team of Government and research institutions, NGO and fishing industry. This tagging had no budget implication for the GBYP. It provided extremely interesting and unexpected information about the movements of bluefin tuna in the Eastern Atlantic. The SC was also informed that, based on the previous recommendations by the SC, 50 mini-PATs were purchased with the intention that they will be possibly used in Phase 3 for tagging activities in Morocco and in the Central Mediterranean. The SC was also updated about preliminary meetings which have been held with WWF-MedPO and some Spanish scientists for planning electronic tagging activities.

The SC acknowledges the work done in Phase 2 under this item and recommends concentrating the activities in areas where the results can lead to direct use in the stock assessment in the near future and the need to continue and further improve the activity. However, a minimum of several years of conventional tagging and recovery operations are required to provide such information and then only if high and estimable tag reporting rates can be obtained.

### 2.6.2 *Tag awareness programme*

The SC was informed about delivery of the majority of tag reward and promotional material (three types of posters for a total of 9400 copies, 12000 stickers, in 9 languages, and 2160 T-shirts in three colors). The distribution of the promotional material to the stakeholders and institutes was already initiated. Contacts with journalists were already initiated and one article was published .The official ICCAT press release will be done as soon as all the materials are ready. Contacts in various countries have already established and a detailed distribution list for promotional material by country was established as well. All Institution contracted by the GBYP for the various activities and the ROPs will be

used for further distribution and tag recovery activities. Some meetings abroad have been already identified, and the GBYP is invited to the world congress of the International Sport Fishing Federation in Melilla for disseminating the material and increase the awareness.

The SC acknowledged the activity carried out so far and appreciated the type of material already produced. The SC reemphasised that the promotional and recovery activity are critical for achieving success in obtaining high tag reporting rates. The SC noted that a list of activities had been identified at its last meeting and which it had recommended be undertaken with respect to attempting to obtain high reporting rates and the estimation of these rates. The SC was concerned that many of these had not been initiated as of yet. It noted that now that tags had been released recaptures could be expected to have already occurred and will continue to occur. The delay in initiating the promotional and tag recovery activities means that much of the information and value from the first set of releases may be lost. The SC strongly reiterates its previous recommendation of hiring one dedicated staff for this activity and, also the need to identify and (hire where necessary) various tag liaison persons in each of the major landing ports for juvenile bluefin tuna for visiting vessels to promote the program and collect rewards. It noted that such direct personal contact with the fishermen and the immediate provision of rewards for return tags has been found to be critical for ensuring high reporting rates in other tuna tagging programs. . Specific short-term contracts should be provided for this activity before the 2012 fishing season. The SC also recommends further improving contacts with journalists and media, for increasing awareness of the tagging programme.

The SC noted its previous discussion about the essential need to ensure that reporting rates were estimable from at least the major fisheries capturing juvenile tuna. In this regard, the SC reiterated its previous recommendation with respect to ensuring the cooperation of observers in the pole and line fishery and tag seeding and tag reporting in the cages in Croatia.

### *2.7 Modeling approaches*

The SC was informed about the progress in Phase 2, which involved three contracts: Risk Analysis, Management Strategy Evaluation and Stock Assessment Modeling (the last report was distributed in advance of the meeting). The anticipation of these activities in Phase 2 is considered a very positive step.

The SC acknowledges the positive results obtained since the last meeting and encourages for strengthening the investments in this activity. The SC also encourages its members to increase the internal communication and exchange of opinions on this activity. In order to facilitate this opportunities for working meetings outside the home laboratories should be defined and encouraged.

### *2.8 Budget implementation*

The SC recommended that full use be made of the residuals of funds still available for Phase 2 (447,389.78 euro), particularly taking into account the budget short fall and the activities to be done in Phase 3. The SC considers that the extension period up to April allows GBYP the opportunity for improving the various activities as they were planned and adapting the planning to the needs already identified by the SC for Phase 3. The SC considers that budget adjustments will be necessary while retaining the same total budget.

### *2.9 Discussion on 2011 activities*

The SC considered that the discussions on the past activities, carried out under the previous agenda items, were sufficient, given the shortage of time.

## **3. Status of the GBYP – Review of General Planning**

### *3.1 Current situation*

The review of the current situation is included in point 2 of this report.

### *3.2 Need to re-define the general programme and get a new approval by the Commission*

The Coordinator briefly reviewed the GBYP history, starting from the official approval by SCRS and the Commission in 2008 and the further refinements in 2009, concerning a 6-year project having an overall budget of more than 19 million Euro. Just after starting the project, it was clear that several economic constraints meant that the full budget would not be available and the world economic crisis worsened the situation. The funds available after the first year, ranging between 1.9 and 2 million euro per year, obliged the SC to redefine objectives and to redo the Phase 3 activities. Taking into account the budget's reduction and research needs, the Coordinator suggested that a strategy be pursued of extending the GBYP over a longer time period with approximately the same level of annual funding as has been available so far, distributing funds in a coherent manner among the various activities, keeping into account all recommendations issued so far by the SC and the SCRS. The Coordinator proposed that the SC recommends that an initial informal meeting be held with the CPCs engaged in the bluefin tuna fishery for discussing possible revisions and updating of GBYP plan, possibly taking advantage of another ICCAT intersessional meeting in 2012.

The SC considered it premature at this point to be seeking such a major extension prior to more concrete results being available and without a more detailed consideration and evaluation of the activities to be included and their budget requirements. The question of the longer term future of the GBYP is a matter which needs further attention and careful consideration. It would be beneficial to have additional in depth discussion on this matter including a long term research plan and strategy for its implementation,

The objectives of the GBYP are ambitious, both in term of sampling and analyses. For instance, there is for the first a coordinated large-scale biological sampling and tagging program over the whole Mediterranean Sea and Northeast Atlantic. Therefore, the SC once again stressed that all of the main objectives of GBYP require more than a single year of research work to be achieved. As such, it is crucial to get a multi-year commitment to achieve the proper and efficient implementation of the research and for achieving the best scientific results. The value of any single year's result can be highly compromised if there are insufficient resources for the necessary work in following years. As such, the SC stressed the importance of having multi-year funding commitments to achieve the proper and efficient implementation of the research and for achieving the best scientific results. It also noted that the problem of not knowing the annual budgets in advance and being able to commit funds prior to the commencement of the year causes major problems, particularly for activities which need to be commenced or are ongoing in the first part of the year. A more clear commitment in terms of longer term funding commitments by the Commission and the Commissioners is therefore absolutely necessary to achieve medium-term and ambitious research activities. However, given the current situation, the SC had no option but to recommend yearly plans of activity along with a corresponding annual budget, even though it recognizes that these have multi-year implications and commitments.

The SC emphasises the achievements gained during the first two years of GBYP activities in terms of establishing the aerial survey methodology, the data recovery activities, the biological sampling and the genetic analyses. The results provided by these components are providing a better knowledge about stock structure, a basis for improving the estimation of biological parameters and increased information on catches, size and effort in the bluefin fisheries. All of these should make important contributions to improving the stock assessment.

### *3.3 Future activities*

#### *3.3.1 Data mining*

The SC recommends limiting, in the future, data mining to data from the Eastern Mediterranean and particularly those of Ottoman archives. Furthermore, the SC recommends to make the data recovered available to scientist interested in perform long term fluctuation analyses by promoting this first under the SCRS, It was also discussed the option to get

environmental data associated with some of the historical series, although the general comment was that it was a goal far to reach.

### 3.3.2 *Aerial surveys*

It was pointed out that the Commission had required as part of the GBYP the development of fishery-independent estimates of abundance trends for at least one component of the BFT stock. The SC had recommended that aerial surveys be used to develop such a fishery independent index of the spawning stock. The problems in obtaining flight permits along with the short fall in funding mean that this is not viable option in the short run. It was suggested that enlarging the survey to cover some Atlantic areas might be informative but it was unclear how this would help to resolve the basic problem of obtaining comprehensive spatial coverage within the Mediterranean. It was suggested that switching the focus of the aerial survey to juveniles might be an alternative way to achieve the objective of a fishery independent abundance index for at least one component of the stock. The SC noted that the spatial distribution of juveniles seems less extensive than for spawners (thus reducing the overall flying effort that would be required). It was also noted that most of the areas that would need to be surveyed are areas in which flight permits would be expected to be relatively easy to obtain. It was further noted that advanced video recording technology had the potential to eliminate some of the problems with school size and fish size estimates but noted that this would entail substantial additional costs. The majority of the SC considered that the possibility of shifting the future aerial surveys to juvenile aggregations should be further considered, explored and investigated, particularly as the problems which lead to the suspension of the adult survey are not likely to be resolved in the near future. In order to be able to evaluate this suggestion of shifting the aerial survey to the juvenile stock, the SC recommended that before committing any funds for such a survey that a short-term study under contract be undertaken to identify the areas which would need to be surveyed based on existing data and understanding of juvenile spatial dynamics. Based on the results of this study, the SC would then evaluate whether an aerial survey for juvenile should be considered a viable and feasible option.

### 3.3.3 *Tagging*

The SC noted previous discussions on the potential for tagging experiments to provide independent or at least fishing effort independent estimates of abundance and/or fishing mortality rates for use in the stock assessment. Tagging thus constituted an alternative to aerial surveys for accomplishing the Commission's objective discussed above. The SC briefly discussed the potential of genetic tagging as an alternative to conventional tagging for producing such estimates. Two options were noted. One based on tagging and recapturing individuals from the same cohort and the other is based on sampling spawners and subsequent year classes of juveniles and testing for close kin relationships. This approach is being used with SBT and appears promising for providing absolute estimates of spawning biomass. One advantage of this latter approach is that both "tagging" and "re-sampling" can be done from samples of the catch and do not require vessel time. The SC recommended that exploring the feasibility and cost/benefits of applying either one or both of these genetic tagging activities to the conventional tagging activities (or even eventually replacing the latter). The tagging activity should be also used for providing biological samples.

### 3.3.4 *Other issues*

The SC noted that the VMS data are a rich source of information about the details of fishing effort (e.g. the amount of time and detail location on searching and setting activities). The lack of such detail information has been a major obstacle in developing methods for standardizing effort and obtaining a useful CPUE index from the PS fisheries. Consequently, the SC recommended that analyses of the VMS data from bluefin tuna purse-seiners, with a frequency of signal substantially lower than the 6 hours that VMS data currently available to the SCRS have (e.g. at the level at which the data are actually received), be undertaken with the objective of evaluating whether these data in combination with other data on catches could be used to provide a meaningful CPUE index from this fishery. The analyses would entail analyzing the spatial and temporal fishery patterns (and the related fish aggregation patterns) and developing statistical methods for standardization of effort for a CPUE index. In the presentation of any analyses, it is critical that the confidential aspect of individual vessels' activities be maintained. The fine scale spatial and temporal data are essential for this purpose. Consequently, the SC recommended that the ICCAT Secretariat applies for access to the high-resolution VMS data held

by the EU (DG-MARE and JRC). The SC recommends that a short-time contract should be provided to a specialist for analysing the VMS data once they are available.

#### *3.4 Contacts and agreements with the CPCs or entities*

As noted in the discussions above, the SC is concerned about the funding commitments and arrangements for the GBYP, particularly the needs for a longer term time horizon and a more stable, multiyear funding base if the program is to achieve its objectives. In this regard, the SC considers it important to provide the Commission and CPs with a mid-term review of the GBYP and a proposal for the future. The best way and timing for this needs further discussion intersessionally and at the next SC meeting,

### **4. Planning of activities for Phase 2 extension (activities in the period January-April 2012)**

The Coordination presented a list of activities and possible funding levels which he developed based on previous SC meetings (Annex 4). The list was used to help structure the discussion. Some choices will be necessary, taking into account the available budget and the administrative constraints.

#### *4.1 Coordination*

The SC recommends continuing and strengthening the coordination activity in this first part of the year. The Coordinator staff should take care also of being in touch with the CPCs, the scientific institutions and the stakeholders for ensuring the necessary cooperation and implementation of the programme. Several trips will be necessary. The Coordinator should also ensure the continuation of the data preparation activity for all data collected so far for the data workshop that should be organised as recommended by the SC and the short-term contract with the data analyst shall be continued.

The SC noted its recommendation for upgrading the salaries of the Coordination staff in point 2.2 of this agenda.

The contract for the external member of the SC under Phase 2 shall be extended to April, taking into account an additional work load during this period, which includes planning Phase 3 activities.

The SC recommended the proposal for additional hardware and software for facilitating the GBYP activities.

#### *4.2 Data recovery and data mining*

The two offers for different data sets received after the ICCAT-GBYP Call for tenders 11-2011 were presented for the final decision. One offer includes many data sets for a LL fleet for the years 2010 and 2011 (catch data by set, CPUE,  $\pm 10,000$  length frequencies,  $\pm 25,000$  weight frequencies) and some ancient data for the years 1831-1837 for one tuna trap); the second offer includes 190 days of tuna auction in 2010 and 2011 in Japan, for about 8,000 specimens. The preliminary check against the ICCAT data base confirmed that these data are not available, at least for the years prior to 2011.

The SC recommends rejecting both offers, because the SC considers that each CPC is already obliged by ICCAT to provide complete data concerning the recent activities in their fisheries in the convention area. All CPCs are expected to provide complete and representative data for 2011 in June 2012 which may include data collected outside the official data collection system. In terms of the auction data, the SC noted that in the absence of nearly comprehensive data from all markets and additional data on the marketing of fish in Japan such data are unlikely to be informative with respect to the stock assessment. The SC reiterates the recommendation that data of the year should not be considered as part of the data mining activities of the GBYP and, in this regard, provision of the 2011 in the proposals was considered particularly problematical. The SC remains interested in recommending funding the recovery of ancient data set from the tuna traps.

#### *4.3 Tagging and tag awareness activities*

The Coordinator presented the funding needs under this budget item during the Phase 2, extension period. These include the printing of posters in Mandarin and Russian, printing of additional copies of posters, the costs for printing the leaflets currently under review, the costs for the satellite data for the mini-PATs, and an additional number of conventional tags (single barb, small double barb and big double barb types). Furthermore, the operational meeting on tagging, for discussing the details of the strategies and the technical issues will be necessary, as discussed during the SCRS; this operational meeting will be held together with the meeting on biological sampling, with the purpose of allowing the attendance of more scientists and for reducing the costs.

The SC recommends the activities proposed by the Coordinator for the extension period. It noted that these tags can provide invaluable information on the spatial movement of juveniles which will be important in the analyses of the tag return data as well as for improving understanding of stock structure. The more tags that can be deployed within the available funds will increase the information and statistical power of the data provided by these tags. Furthermore, the SC recommends buying a sufficient number of internal archival tags to be used during the tagging activities. The number of these tags to be purchased will be determined from the balance of the residual funds of Phase 2 against the other costs incurred during the extension period. Given the recommendations below for the implementation of the tagging program phase 3 (which has implications for the work in the extension period), the SC recommends that the tagging coordinator be hired or contracted as soon as possible and that funds from the extension period be used for this. The SC also recommended that activities in terms of setting up tag liaison representatives in the landing ports, coordinating with national observers for tag recoveries and tag seeding in the Croatian cages be carried out during the extension of Phase 2 and funds, where required, be used for this purpose.

#### *4.1.4 Biological and genetic sampling and analyses.*

The Coordinator presented the funding needs under this budget item during Phase 2 extension period, including the operational meeting on biological and genetic sampling, for discussing the details of the strategies and the technical issues, as discussed during the SCRS. This operational meeting will be possibly held together with the meeting on tagging, with the purpose of allowing the attendance of more scientists and for reducing the costs. The Coordinator also informed the meeting about the request for organising a workshop on bluefin tuna larval survey, for a more close cooperation with the twin US-GBYP and the EU groups working on the same issue. The Coordinator was also informally informed by the Consortium about a possible improvement of biological and genetic sampling and analyses activities in this first part of 2012, which will be in addition to the activities already contracted; the proposal is still to be submitted and it will be examined with a high priority.

The SC recommends the above mentioned activities proposed by the Coordinator for the extension period. It recommends also taking into account the notes above made on point 4.1.3.

Furthermore, the SC noted the critical importance of knowing the number of fish captured going into farms cages and their size distribution for the stock assessment. As such, it recommends analysing the underwater video related to tuna transfer from purse-seiners to cages, obtained by the ROP observers in 2011, with the goal of setting the minimum requirements videoing during transfers and establishing protocols for stereo-video recording the transfers of tunas. The total number of video to be analysed is 250, for a total of about 500 hours of images. For this purpose, the SC recommends releasing a short-time contract to a specialist, taking into account the available scientific literature on this issue, and for the work to be completed during Phase 2 extension periods.

#### *4.1.5 Aerial survey*

The SC was informed that the external expert requested by the SC for providing a comprehensive assessment of the aerial survey activities in Phase 1 and Phase 2 and for attending the SC meeting had some health problems. The cost will be included in the extension period only if a report will be provided before April 21, 2012.

#### *4.1.6 Modeling approaches*

The Coordinator indicated that there was a need for one of the two workshops under this budget item in the extension of Phase 2.

Based on discussion, the SC noted that the objectives for these workshops could be more effectively and efficiently be achieved through informal consultative meetings and that the timing of these would need to be after the end of the Phase 2 extension period, as such no costs will be incurred during this period. The SC noted that the BFT WG recommended an inter-sessional meeting in 2013, to review progress in modeling approaches, including mixing.

#### *4.1.7 Budget for the extension period of Phase 2.*

The SC recommended the budget figures in the table in annex 4. The Coordinator will need to make any necessary administrative arrangements with the EU for all the budget variations. The modifications will be requested after clarifying the pending situation.

### **5. Phase 3**

The Coordinator presented a table identifying activities and budget implications for the various activities previously agreed by the SC and the SCRS, taking into account the GBYP planning and various budget reductions (Annex 5). Another table shows the possible system for co-funding the GBYP, taking into account the contributions already received the possible level of funding by the EU, and the proportional share of the most relevant CPCs fishing for bluefin tuna, according to their quota (Annex 6). This table includes also a second pessimistic scenario, with even a lower budget figure<sup>4</sup>.

The SC acknowledged the preparatory work done by the Coordinator and decides that the list of activities will be defined by the following points of this agenda.

#### **5.1 Activities:**

##### *5.1.1 Coordination*

The SC recommends the following:

- Including the salary of the data specialist in the Coordination cost.
- Upgrading positions and salaries of the Coordination staff taking into account the original budget figure;
- Travel cost should be reduced, but ensuring a sufficient level for covering travels of both Coordination staff and SC members, taking into account the support duties for all the activities.
- Hardware and software cost will be set at a minimal level
- The contract for external SC members is reduced to one according to the Commission decision and is further reduced taking into account that a part of the duties will be in Phase 2 extension period.

The SC recommended not hiring an administrative staff for Phase 3, because of the shortage of funds and because the administrative load is expected to be reduced with the suspension of the aerial survey and hiring/contracting of a tag coordinator (see below).

##### *5.1.2 Data recovery, data mining and data elaboration*

The SC noted the significant results already obtain under this part of the GBYP. Taking into account, the partial lack of meaningful responses to recent tender calls and the current budget situation, the SC considers there is no need for

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<sup>4</sup> After the completion of the meeting, the SC was informed by the ICCAT Executive Secretary that preliminary informal contacts revealed that some CPCs may have problems for funding the GBYP up to the level of a total of 2 MEuro. Then, for avoiding further delays, the ICCAT Executive Secretary invited the SC to consider via subsequent e-mail discussion the implication of a budget at 1.9 MEuro level for Phase 3 and suggest recommendations for additional budget reductions.

continuing the data mining and data recovery activity in Phase 3 with the exception of the ancient data sets in the Ottoman Archives. The SC would be open to further work in this area in later phases if in fact significant data sets were subsequently identified. As noted above, the SC recommended that a working group for starting the analyses of the data collected so far should be possibly convened in Phase 3 to ensure that the data are best utilized and incorporated into the stock assessment process. Funding for this should be provided (if required) but the details of this will be decided later in the year. The SC also recommended that if the VMS analyses contemplated under the phase 2 extension were not able to be done in this period that this should be done in Phase 3, if funds permit.

The SC recommends the following, in order of priority:

- Initiate a working group for incorporating recovered data into the stock assessment
- Undertake data mining from the Ottoman Archive data;
- Issue a short-time contract for analysing the VMS data

The SC recommends keeping a part of the budget under a line to be defined before April, for ensuring the data analysis work or for providing the analysis of the video provided by the observers in case it will not be possible to finalising this activity in the extension period of Phase 2.

### *5.1.3 Aerial survey*

The SC recommended not carrying out any aerial survey field activity in Phase 3, taking into account the impossibility for ensuring the necessary flight permits for a comprehensive survey (see discussion above) and the fact that budget is insufficient to cover the cost of both the aerial survey and tagging activities. The SC did recommend that a feasibility study on the potential to conduct a comprehensive aerial survey for juveniles be undertaken as reported above.

### *5.1.4 Tagging*

The SC considered that the tagging program should be modified based on the experience and knowledge gained in the first year's experience. Modifications are to be expected in the early implementation phase of any large scale research program. The SC was concerned about the problems of obtaining reliable reporting rates and the problems encountered in developing and implementing some of the activities required to ensure high reporting rates and an actual estimation of them. It is also concern that the number of tags likely to be recovered may be too low to allow meaningful statistical analyses, It considered that an alternative was to include "research" fishing for tag recovery as well as tag releases, The same vessels while undertaking tagging could be used for the research recaptures. In order for this to be feasible, the number of tagged fish would need to be greatly increased and the amount of fish recaptured to see if they had tags would need to be substantial – particularly in subsequent years. The SC recommended increasing the target number of tagged fish to 10,000/20,000 individuals keeping the 40% double tagging. It also recommended that in future years, increased recapture and release activity by the tagging vessel (i.e. all fish capture would not be tagged but a scientific observer would observe all fish for the presences of a tag and record their size/age class). This activity should allows estimate of absolute abundance (e.g. using a Peterson estimator). Recaptures over 2 or 3 years can be pooled increasing the precision of the estimate over the time. If sufficient returns are obtained, this approach along with returns from the commercial fisheries data may allow for the estimation of total mortality (Z) and possibly separating F and M if reliable estimates of reporting rates are available. The SC also stressed that it is critical that tags are released and recapture activity takes place in all areas where major juvenile aggregation occur. This will minimize the effects of incomplete mixing, allow for analyses to determine the extent of non-mixing and to account for non-mixing effects in the estimation of abundance and mortality rates. The SC recognized that this approach is not without risk as the precision of the estimate will be dependent upon successfully meeting the tagging targets and to be able to undertake extensive recapture activity. It noted that if the number of juveniles is much larger than currently estimated in the current stock assessment than the number of recoveries will be small, but in this case the experiment will still be informative for the stock assessment in terms of providing estimates of the minimum abundance.

The SC also discussed a number of implementation issues and expressed the need to improve some of those previously used based on the experience gained during the first year of tagging. These are summarized in the recommendation below

and were considered critical for improving the efficiency and cost effectiveness of the tagging operations. Without these changes the SC was concerned that it would be difficult to achieve the target number of releases and the overall objective of the tagging program. The SC also noted that the tagging teams would be able to collect biological and genetic samples for juveniles and thus, reduce the sampling effort and funds required by the consortium conducting the biological sampling of the GBYP. This should be taken into account in the specification of the contract for the biological sampling during phase 3.

As regards the 50 mini-PATs already purchased, the SC considered that the objective for these tags should be modified in light of the suspension of the aerial survey for which these tags were originally acquired. The SC recommended that these tags should now be used for helping to assess the movements of juvenile tunas. Thus, it recommends that the mini-PATs should be used in the same areas where the conventional tagging will take place, implanted by the same teams and equally shared by area. The SC also recommends implanting the maximum possible number of internal archival tags in juvenile bluefin tunas, equally shared among all areas where conventional tagging activity is planned, including the Bay of Biscay. The purpose of these is to understand the spatial dynamics of juveniles among areas, to assist in analyses of whether incomplete mixing exists and to provide data for estimating mixing rates.

The SC recommended the following with respect to tagging in Phase 3:

- a. a target 10,000 to 20,000 juveniles (ages 1-3) should be tagged with conventional tags, with 40% of these double tagged;
- b. The 50 mini-PATs purchased previously should be equally shared among the various areas where conventional tagging will be carried out; these electronic pop-up tags will be set for the longest possible time frame and will be implanted by the same teams in charge of conventional tagging;
- c. The maximum number of internal archival tags that the budget can provide should be implanted, equally sharing them among all areas where conventional tagging will be carried out; these electronic tags will be implanted by the same team in charge of conventional tagging;
- d. the age range of tagged fish shall be 1 to 3 years.
- e. the time-frame for tagging shall be mid-August to mid-October;
- f. bait-boats shall be used for all tagging operations; purse-seiners results in too high mortality rates and operation difficulties at sea;
- g. research tag-recovery operations shall be carried out by the same vessels in the same areas as where the fish were originally tagged. Recovered tagged fish shall be recorded and released again as well as the size/age class of all fish captured and examined for tags, the possibility of increasing the number of observers on board for this purpose and fishing effort should be considered, particularly in following years;
- h. it shall be necessary to further implement cooperative agreements with ROP observers in cages for ensuring a full tag reporting and recovery of any tagged fish;
- i. a cooperative agreement should be reached with national observers on board of bait-boats in the Bay of Biscay to ensure that 100% of tags recapture during periods of observation are reported and also the size of all fished observed for tags whether a tag exists or not;
- j. the possibility of placing tag recovery technicians aboard vessel without observers should be explored for the specific purpose of recording the number and size distribution of all fish caught along with the number of tags recovered with the aim of placing such technicians in 2013 fishing season;
- k. a cooperative agreement and arrangements with Croatia, with the local scientific institutions, the local tuna farms and the ROP observers working should be reached for ensuring high tag reporting rates and the collection of data for their estimation (i.e. tag seeding of fish in the cages), because this is one of the very few fisheries targeting juvenile bluefin tuna within the Mediterranean;
- l. All of the tag promotion and recovery activities outline in previous reports be implemented as matter of priority. In particular, the SC recommended the establishment of tag liaison personnel in the landing ports in which significant numbers of juvenile tuna are landed.

For reaching these objectives, the SC recommends the following:

- Hiring as soon as possible a tagging activity coordinator having a specific experience in large scale tagging activities for tunas; the tagging coordinator, hired should work with the ICCAT Secretariat under the direct

control of the GBYP Coordinator. The tagging coordinator should be responsible for directly managing all field activities, the vessels, the scientific teams on board, their training and monitoring (TORs should be provided by the SC after the meeting). The person should be contracted for the entire Phase 3 period with the possibility of extending this contract in subsequent years if performance is satisfactory. In the non-tagging period, the tagging coordinator would be responsible for implementing and overseeing the recovery and promotional activities. As there are only a limited number of individuals with the appropriate experience and qualification for this position, the SC suggests that directly contacting potential individuals with the requested qualifications to determine their interest and availability. Having such a coordinator is considered essential for the successful implementation of the program. The hiring of this person should be a high priority and done as soon as possible.

- Contracting/chartering a minimum of three bait-boat vessels for carrying out the activities in the Bay of Biscay, in the Gibraltar area, in the western Mediterranean and in the Adriatic Sea. Possibly, additional small bait-boat vessels should be hired in the Gibraltar area, for improving tagging in the Strait of Gibraltar and in the western Mediterranean Sea. The total time at sea should be in aggregate a minimum total of 6 month among all vessels (e.g. ~ 2 months per vessel) and should be extended to the maximum period that funds will permit. The vessels would be expected to have full insurance for all individuals on board (including the tagging team) as is the requirement in most chartering arrangements. The EU - DG MARE should be contacted to assess with obtaining permits for accessing national areas.
- Contracting or hiring tagging teams for each bait-boat vessel with short-term contracts. Each team should possibly include a tagging specialist and a student on training for decreasing the cost. The total time at sea should be an average of 2 months per person, for a total of 6 month/person, with some additional time for training and travels. The tagging coordinator would be responsible for training and coordinating the logistic of the tagging work.

The ICCAT Executive Secretary noted its concern that ICCAT administrative and regulatory rules should be followed for the implementation of such recommendations. Also, there are evident permit problems to be faced for entering into national waters of several CPCs and for a civil responsibility behind a direct engagement in field activities (additional insurance costs will be high); furthermore, it is always essential to respect the ICCAT Staff rules for hiring any additional staff, along with the absolute need of ensuring transparent procedures. The necessary arrangements for carrying out the tagging activities in Phase 3 will be set by ICCAT according to the best administrative procedures.

The SC noted that the implementation of the recommendations above are similar to those that have been used successfully by other RFMOs and have been found to provide a very efficient and effective approach for implementing tagging programs. This is the reason behind the above recommendations. The SC recognizes that ICCAT administrative and regulatory rules must be adhered to in the implementation of the GBYP and appreciates that the Secretariat will do its best effort to implement the above recommendations within the ICCAT constraints.

The SC considers that it is necessary to further improve the tag awareness campaign in order to ensure as a high a recovery rate as possible and improve on the very low rates obtained in previous tagging programmes. For reaching this objective, the SC reiterates its previous recommendations as note aboved and additionally recommends: :

- Hiring a tag awareness and recovery staff, dedicated to contacting all stakeholders, distributing the materials produced by GBYP, ensuring the follow-up of any recovered tag from bluefin tuna and providing the necessary information to each person recovering a tag, directly visiting the main tuna landing ports and areas in each CPC for identifying local persons who will be in charge of monitoring landing and ensuring a local reference contact. This role can now be covered in large part by the tagging coordinator with assistance from the rest of the coordination staff.
- Hiring by short-term contracts (lump sums) persons in charge of locally disseminating the awareness material, monitoring landings for tag recovery and reporting activities, in the most relevant areas, ports and CPCs, for ensuring the largest possible coverage and a local reference contact. Some additional bonus should be given to these persons for tags recovered.
- Seeking advertising possibilities in relevant trade magazines; facilitating the publication of articles in local newspapers and relevant trade magazines and encouraging the presentation of interviews and relevant

documentary material in local TV and Radio programming. This activity should be done in cooperation with the twin U.S. Tagging Programme, also because some recoveries may occur in western Atlantic waters.

#### 5.1.5 *Biological and genetic sampling and analyses*

Taking into account the limited budget, the priority being given in Phase 3 to the tagging activity and the opportunity of collecting biological and genetic samples during the same tagging activity, the SC recommended reducing the budget figure previously proposed.

The SC recommends the following activities in Phase 3:

- extending the current contract to the same contractor, which proved the ability of fulfilling the obligations, eventually enlarging the partnership or the subcontracting partnership to other institutions;
- biological and genetic sampling, to be conducted in all areas, according to the design already approved, but taking into account the number of samples which can be collected during the tagging activities;
- analytical work shall be conducted on the maximum possible number of samples, according to the available budget.
- Participation in the dissemination of the awareness campaign, and provision of the adequate contacts to the different teams involved in tagging activities to facilitate their work.

The SC also recommended to significantly reducing the bureaucratic burden of this activity in order to lighten the workload of the consortium in non-productive work.

#### 5.1.6 *Modeling approaches*

The modeling coordinator suggested that having technical consultation meetings with appropriate experts and where possible in conjunction with other scientific gatherings would be a more efficient way to achieve the same outcomes the modeling work planned for Phase 3 rather than the two formal workshops that were previously planned, The SC recommended that this approach be followed given the reduced budget and taking into account the priority given to the tagging activity. Based on this the SC recommends the following activities in Phase 3:

- 2 technical consultations on modeling approaches.
- 1 short-term contract for conducting a risk analysis.
- 1 short-term contract for conducting the analysis of existing data and providing the distribution map of areas by season where juvenile bluefin tunas might concentrate and which would need to be covered in an aerial survey. The report would provide recommendations on the minimal area and appropriate time periods that would need to be surveyed for designing a comprehensive and robust juvenile abundance index using aerial survey methodology.
- Performing simulation trials, to be conducted partly with external short-time contracts.

#### 5.1.7 *Budget for GBYP Phase 3*

The SC recommended a reduced total budget figure for GBYP Phase 3 of 2 million euro. If further shortfalls occur, there would be a need to consult with the SC for their recommendation where cuts should be made. The details are in Annex 7.

## **6. Milestones and deliverables**

### **6.1 *Milestones (yearly SC and SCRS reviews and approval procedures)***

Time did not permit this point to be discussed.

### **6.2 *Deliverables (GBYP summary reports, GBYP detailed reports, sub-programmes reports by tenders, products, powerpoint presentations, WEB info, obligations by the grant agreement).***

Time did not permit this point to be discussed.

## **7. Other issues**

### **7.1 Proposal for an Atlantic-wide workshop/meeting on BFT eggs and larval surveys (submitted by IEO);**

This issue was discussed under point 4.1.4.

### **7.2 Critical review of the ROP programme (by ICCAT Secretariat)**

The SC considered that this issue did not fall into the GBYP terms of references. It recognized the critical importance of the ROP for management purposes and the potential for the ROP to provide useful data for stock assessment purpose. As such, consideration of a review could be considered after a specific request from SCRS or the Commission.

### **7.3 Critical review of the effects of the management plan (by ICCAT Secretariat)**

This issue concerns mostly an evaluation of the effects of the bluefin management plan on the bluefin tuna stocks. A part of this activity should be conducted within the various items of the modeling approaches. Possibly, a specific working group could be established in the next Phases.

### **7.4 Other issues**

The SC recommends again enlarging the SC membership to another external member.

The ICCAT Secretariat, having no objections in principle, noted that this request needed go through the normal ICCAT process, because it is necessary to amend the formal decision already in place since the GBYP SC was established. In the meantime, the Secretariat suggested that external experts might be hired for specific purposes, e.g. for providing the SC and the GBYP coordinator with expertise with the technical planning and implementation of particular aspects of the GBYP

**ICCAT-GBYP STEERING COMMITTEE MEETING – 01/2012****07-08 February 2012****DRAFT AGENDA****A) Summary and Revision of the activities in 2011****1) Coordination activity – Review of the project activities and procedures**

Considering that most of the data have been already presented and approved in previous meetings, the GBYP Coordinator will provide in advance a short summary report concerning all the activities carried out so far in Phase 2, with budgets details by item, including the followings:

- a. Data Recovery (calls and results, decision on the last Call);
- b. Aerial Survey ( activities in 2011, total cost, analysis report):
- c. Biological and genetic sampling (activity in 2011, total cost)
- d. Tagging activity (tagging in Morocco, tagging programme activity in 2011, total cost)
- e. Tag awareness programme
- f. Modelling approaches (activities in 2011, results, total costs)

**2) Budget implementation****3) discussion on 2011 activities****B) Status of the GBYP – Review of General Planning**

- a. Current situation
- b. Need to re-define the general programme and get a new approval by the Commission.
- c. Contacts and agreements with other CPCs or entities

**C) Planning of activities for 2012****1) Phase 2 prorogation**

- a. activities in the period January-April;

**2) Phase 3**

- a. Identification of the best possible scenario (limits and opportunities)
- b. Activities:
  - Coordination (activities and budget);
  - Data recovery and elaboration (task I and Task II data, priorities, environmental data; improvement of the forecast model for aerial survey data, budget);
  - Tagging (electronic and conventional, strategy, extended to other areas, need for preliminary contacts, Operational meeting on tagging, need for periodic monitoring, scientific copyright issues, budget);
  - Tag awareness (plan of contacts, distribution of posters, external meetings, improvement of the web site, ROP cooperation, budget);

- Biological and genetic sampling (plan, strategy, and activities extended to other areas, need for preliminary contacts, Operational meeting on biological and genetic sampling, ROP assistance, need for periodic monitoring, budget);
- Modeling approaches (strategy and activities, 2 workshops for Modeling Approaches, budget);
- if necessary: aerial survey (strategy, minimum acceptable, sampling design, if any aerial survey will be included, a workshop and a training course, need for preliminary contacts, budget).

**c. Milestones and deliverables**

- milestones – yearly SC and SCRS review and approval
- deliverables – GBYP summary reports, GBYP detailed reports, sub-programmes reports by tenders, products, powerpoint presentations, WEB info, obligations by the grant agreement.

**3) Other issues**

- Proposal for an Atlantic-wide workshop/meeting on bft eggs and larval surveys (by IEO);
- Critical review of the ROP programme (by ICCAT Secretariat)
- Critical review of the effects of the management plan (by ICCAT Secretariat)
- Others tbd

### Documents produced by ICCAT-GBYP in 2011

#### Report of 2010 activity

1. GBYP Phase 1. Annual Report 2009-2010 – March 10, 2011: 1-22 and Annex 1-691.

#### List of deliverables produced within the EC Grant Agreements n. SI2.585616

- 1) B1.1 – Report on the ICCAT-GBYP expected improvements in Phase 2 - January 31, 2011: 1- 15.
- 2) B1.2 – Report on the ICCAT-GBYP Symposium on Trap Fishery for Bluefin Tuna – June 27, 2011: 1-14 and Annex 1-351.
- 3) B1.3 – Report on the ICCAT-GBYP Data Recovery Activity in 2011 – June 27, 2011: 1-4 and Annex 1-103.
- 4) B1.3.2 – Updating Report on the ICCAT-GBYP Data Recovery Activity in 2011 – October 11, 2011: 1-4 and Annex: 1-103.
- 5) C1 – Report on the ICCAT-GBYP Workshop on Aerial Surveys for Bluefin Tuna – March 21, 2011: 1-23 and Annex: 1-294.
- 6) C2 – Report on the ICCAT-GBYP Training Course for Aerial Survey for Bluefin Tuna Spawning Aggregations – June 27, 2011: 1-5 and Annex 1-74.
- 7) C3 – Report on the Revision of the GBYP Aerial Survey Design for Bluefin Tuna Spawning Aggregations in 2011 – April 28, 2011: 1-12 and Annex 1-72.
- 8) C4 – Report on the GBYP Aerial Survey for Bluefin Tuna Spawning Aggregations in 2011 – October 11, 2011: 1-12 and Annex: 1-162.
- 9) D1.1 – ICCAT-GBYP Operational Meeting on Tagging – March 21, 2011: 1-17 and Annex: 1-54.
- 10) D1.2 – Report on the ICCAT-GBYP Tagging Activity – July 31, 2011: 1-10 and Annex: 1-66.
- 11) D2.2 – Updating Report on the ICCAT-GBYP Tagging and Tag Awareness Activity – October 11, 2011: 1-5 and Annex: 1-60.
- 12) E1.1 – ICCAT-GBYP Operational Meeting on Biological Sampling for Bluefin Tuna – March 21, 2011: 1-15 and Annex: 1-106.
- 13) E2 – Report on the GBYP Biological and Genetic Sampling and Analyses in 2011 – October 11, 2011: 1-18 and Annex: 1-35.
- 14) F1.1 – Report on the ICCAT-GBYP Modelling Approaches. July 12, 2011: 1-5 and Annex 1-47.
- 15) F1.2 – Updating Report on the ICCAT-GBYP Modelling Approaches. October 21, 2011: 1-4 and Annex: 1-84.
- 16) All Tasks. 1 – GBYP mid-term Scientific and Technical report for Phase 2- 2011 Activities. July 31, 2011: 1-23 and Annex 1-26.

#### List of scientific papers:

- |               |  |
|---------------|--|
| SCRS/2011/037 | The literature on Eastern Atlantic and Mediterranean tuna trap fishery. Di Natale A. ICCAT-GBYP Symposium on Trap Fishery for Bluefin Tuna, Tangier, May 23-25, 2011.  |
| SCRS/2011/036 | The iconography of tuna traps: an essential information for the understanding of the technological evolution of this ancient fishery. Di Natale, A. ICCAT-GBYP Symposium on Trap Fishery for Bluefin Tuna, Tangier, May 23-25, 2011. |
| SCRS/2011/038 | Factors to be taken into account for a correct reading of tuna traps catch series. Di Natale A. and Idrissi M. ICCAT-GBYP Symposium on Trap Fishery for Bluefin Tuna, Tangier, May 23-25, 2011.                                      |
| SCRS/2011/039 | Tuna trap data in the ICCAT data base and GBYP contributions. Ortiz M., Palma C., Pallarés P., Kell L., Idrissi M. and Di Natale A., ICCAT-GBYP Symposium on Trap Fishery for Bluefin Tuna, Tangier, May 23-25, 2011.                |
| SCRS/2011/152 | New data about the historical distribution of bluefin tuna ( <i>Thunnus thynnus</i> L.), in the Arctic Ocean. Di Natale A.   |
| SCRS/2011/110 | A generic Operating Model to evaluate the implications of population structure in tuna stocks: a bluefin tuna example. Kell L., <i>et al.</i> (in preparation)   |
| SCRS/2011/166 | ICCAT GBYP – Atlantic-wide Research Programme for Bluefin Tuna 2011. GBYP Coordination Detailed Activity Report for Phase 2. Di Natale A., Idrissi M.  |

SCI/037/2011

ICCAT GBYP Atlantic-wide Research Programme for Bluefin Tuna. Activity Report for 2011 (Phase 2).

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Bluefin tuna and Oceanography: how a careful analysis of the ancient bibliography can contribute to enlarge our knowledge on the distribution of this species. 1<sup>st</sup> Conference of the Historical Oceanography Society, Porto Venere. Di Natale A. (in preparation)

## STEERING COMMITTEE MEETING (February 7-8, 2012)

### EXPANDED AGENDA – COORDINATOR REPORT

#### 1. Summary and Revision of the activities in 2011

All budget information is related to the period January 1 to December 31, 2011, including all contracts; pending payments are included.

##### 1.1 Coordination activity – Review of the project activities and procedures

The total budget for this item was 453,000 Euro, total engaged budget is equal to 275,818.10 Euro (including costs to be paid for 15,115.86 Euro) and the residuals are 177,181.90 Euro.

The coordination activity was extremely hard in this second year, because it was necessary not only to properly follow the schedule for all the activities, but also for the need to solve the many practical problems under the various activities, trying to help the 22 contractors reaching the targets. The monitoring was in real time, but sometimes some contractors were not fully confident in providing the information on real time when they had difficulties and this now will impose the need of more strict and direct monitoring in the following phases. The bureaucracy due to the many administrative rules implies a considerable workload either for the ICCAT Secretariat staff or the GBYP staff, but at the same ensures a double checked administration of the programme, which is very positive. The total workload was much higher than the official working time set for this programme. The staff now includes an assistant (Dr. M'Hamed Idrissi) and a specialist for the data bank (Dr. Ana Justel), the latter being paid under the Data analysis budget issue.

##### a. Data Recovery (calls and results, other activities);

The original budget for this item was set at 149,000 Euro and total engaged budget is equal to 150,986.19 Euro (including costs to be paid for 33,407.79), with a negative balance of 1,968.19 Euro. Three Calls for tenders have been released in Phase 2. Two Calls have been already concluded and the report was approved by SCRS; they provided about 24,000,000 new entries for tuna traps and about 33,000 new entries for other fisheries, plus the SST data for 2011; the total expenditure for the data recovery was 106,986.27 Euro, for 8 contracts; the contractors provided a very huge amount of data, better described in the draft report made by Ana Justel; these data could be used in the next full stock assessment, providing a much broader overview of the historical catches (five centuries), various effort data and a very huge amount of new size data. The third Call expired on January 2012 and two bids have been proposed, one on auction data and the other one on very recent size and effort LL data from the most important fleet in the Mediterranean and a few additional historical data on one trap. The decision about these bids should be adopted during the SC meeting. The critical and detailed review of the data obtained so far is almost completed and now it is necessary to properly incorporate the data in the ICCAT data base for the species group. Ana's duties had a cost of 5,490.54 Euro till December 2011.

The papers submitted at the Tuna Trap Symposium in Tangier (which had a total cost of 28,466.88 euro) are now under revision and, if possible, they should be published on a special volume.

The analysis of the aerial survey data was provided on schedule (the cost was 10,042.50 euro, against a budget of 12,000 Euro), along with the requirements for an extended survey and the various hypotheses (those have been already discussed by the SC).

##### b. Aerial Survey ( activities in 2011, total cost, analysis report):

The total budget for this item was set at 465,000 Euro, the total expenditures were 306,628.41 Euro and the residuals are 158,317.59 Euro.

The workshop on aerial survey has a cost of 9,623.68 Euro (against a budget of 30,000 Euro).

The Training Course had a cost of 12,811.53 Euro (against a budget of 21,000 Euro).

The revision of the aerial survey design had a cost of 2,150 euro (against a budget of 4,000 Euro).

The aerial survey carried out in 2011 has been already discussed by the previous SC and by the SCRS. The original budget directly related to the survey (410,000 Euro) was well balanced, but after the problems in Turkey and the lower flight time in the Balearic area, the final cost was 282,097.20 Euro and there is an important residual (127,902.80 Euro).

c. *Biological and genetic sampling (activity in 2011, total cost)*

The total budget for this item was set at 505,000 Euro, the total engaged budget is 475,814.26 Euro (including costs to be paid for 172,300 Euro) and the residuals are 29.185,74 Euro.

The results of the activities carried out by the Consortium in charge of the biological and genetic sampling programme up to the end of October have been already presented to the SC and the SCRS; the draft “final” report was submitted on schedule (it was distributed to the SC), showing that the field activity was almost done (taking into account a 10% tolerance), besides of the many difficulties due to the late issue of the contract and the lack of a specific regulation allowing the sampling (which is now in place with Rec. 06-2011). The prorogation of Phase 2 allowed the Coordination to agree an extension of the contract for Phase 1, with the purpose of completing the analyses without modifying the budget. The total cost of the activity is 470,000 Euro, but some payments are still pending (172,300 euro), both because not all the components of the Consortium delivered their invoices on time and because the final amount shall be paid according to the contract requirements. The biological sampling design had a cost of 5,000 euro.

The operational meeting on biosampling had a cost of 814.26 Euro.

d. *Tagging activity (tagging in Morocco, tagging programme activity in 2011, total cost)*

The total budget for this item was set at 890,000 Euro, the total engaged budget is 817,144.53 Euro (including costs to be paid for 291,657.21 Euro) and the residuals are 72,855.47 Euro.

The results of the activities carried out by the Consortium in charge of the tagging programme up to the end of October have been already presented to the SC and the SCRS; the draft “final” report was submitted on schedule (it was distributed to the SC), showing that the field activity had some problems and it was not possible reaching the target in all areas for either some strategic mistakes or some external factors, including the late issue of the contract and the lack of a specific regulation allowing the tagging activities after the fishery closure (which is now in place with Rec. 06-2011). The prorogation of Phase 2 allowed the Coordination to agree an extension of the contract for Phase 1, with the purpose of completing the tagging and approaching the target of 5,000 fish (with 10% tolerance), without modifying the budget. Actually, a total of about 3200 bluefin have been tagged (about 40% double tagging). The total cost of the activity is 576,016.05 Euro (against a budget of 570,000 Euro), but some payments are still pending (291,657.21 euro), both because not all the components of the Consortium delivered their invoices on time and because the final amount shall be paid according to the contract requirements. The pop-up tagging activity in Morocco, made by a team of institutions, where GBYP helped in reaching a general agreement without any budget implication, was conducted for the first time, revealing the high scientific interest of continuing in the following years.

The PITs readers (which cannot be used and which had a cost of 34,443.60 Euro against a budget of 80,000 Euro, including PITs that were stopped) are available and they should be put on the market for recovering some additional funds.

The conventional tags have been regularly ordered and delivered (26,839.91 Euro, against a budget of 60,000 euro). In the first extension part, it was possible to place the order for 50 miniPATs to be used in Phase 3 (149,315.99 euro), but this cost was not included so far.

Other costs, for a total of 2343.96 Euro (against 50,0000 euro in the budget), include the operational meeting and some translations.

e. *Tag awareness programme (budget costs are included in the tagging item)*

The implementation is almost on schedule, besides of the complexity of the various products. A tender partly won the Call issued on this issue and it was possible to produce poster in nine languages (Spanish, English, French, Arabic, Japanese, Italian, Portuguese, Greek and Turkish) and three sizes (A4, A3 and A1), plus stickers in 9 languages; all the material was delivered at the end of January 2012. The T-shirts in three colors were delivered at the beginning of January 2012. So far, the total cost was 27,685 Euro (including 702 euro of rewards). The leaflet in three languages is still under revision and should be ready in February. The distribution was already initiated, but needs time and effort, besides of the many direct contacts for properly launch the campaign. An official ICCAT press release will launch the campaign as soon as all the material will be ready. We are in touch with some journalists and several organizations for disseminating the campaign in a capillary manner. Meetings with stakeholders will be organized in many countries. There was still a large availability under this budget sub-item (122,315 euro), because it is not possible to put aside the fund for the rewards; this money was used for buying miniPATs.

f. *Modelling approaches (activities in 2011, results, total costs)*

The total budget for this item was set at 40,000 Euro, the total engaged budget is 28,164.73 Euro (including costs to be paid for 5,000 Euro) and the residuals are 11,835.27 Euro.

There were two Calls for tenders, providing three contracts. The first two have been already discussed and approved by the SCRS, while the third report was distributed to the SC a few days ago. Furthermore, the workshop on modeling was held during the species group meeting and another working meeting was held in Sete.

## **1.2 Budget implementation**

The budget used so far accounts for 2,054,610.22 euro over a total budget of 2,502,000 Euro. We have already engaged also about 300,000 euro, which should be paid for Phase 2 activities to be completed. The various residuals, coming from coordination (177,181.90 euro), aerial survey (158,317.59 euro), biological sampling (29,185.74 euro), tagging (72,855.47 euro at least) and modeling (11,835.27 euro), should be used in the extension period for paying the list of activities and initiatives provided on a separate list.

## **1.3 Discussion on 2011 activities**

# **2. Status of the GBYP – Review of General Planning**

## **2.1 Current situation**

The first two years of GBYP demonstrated the feasibility of several research activities, which have been very successful even if they have been sometimes innovative in the area. The data mining and data recovery provided an unexpected huge amount of data, which now should be properly used. Other activities showed very clearly their potentiality if further developed over the years. The

activities done so far provided a very high value for money, much more than the normal, due to the huge efforts done by the ICCAT Secretariat and the GBYP Coordination.

The prorogation forced by the various administrative problems for funding Phase 3 has both positive and negative aspects. The positive ones are mostly linked to the possibility of better reaching the targets for the biological programme and the tagging activity, but also for the tag awareness activity and for extending the data mining and data recovery, particularly for most recent data to be used for the updating of the assessment. The negative ones are particularly linked to the huge reduction of the budget, the high uncertainty of the budget figure until the very last moment, the uncertainties about the funding method (actually not defined and leaved to voluntary contributions), the partial overlapping of Phase 2 and Phase 3 at the beginning of 2012, the clear impossibility for carrying out all the requested activities in 2012. Furthermore, it is very clear that the general situation in the Mediterranean is still imposing limits to some research activities. Decisions are necessary.

## **2.2 Need to redefine the general programme and get a new approval by the Commission.**

The GBYP, as it was approved by the SCRS and the Commission, is clearly now out of the reality. The budget by year was not implemented so far, the research activities were reduced accordingly and some have been fully cancelled (larval survey). These problems now impose a full revision of the GBYP, either in terms of research planning or duration. It is very clear that ICCAT CPCs approved a yearly budget figure that they are not ready to properly fund, also considering the general economic crisis. The SCRS approved a programme which is still valid and the concept was correct according to the knowledge at that time. The first two years of activities showed that some adjustments are necessary, also taking into account external limits which were not there when the programme was adopted. The Coordination proposal is revising the full schedule and restructuring the research plan, for fulfilling the main objectives decided by the Commission:

- Improve basic data collection, including fishery independent data;
- Improve understanding of key biological and ecological processes;
- Improve assessment models and provision of scientific advice on stock status.

See the attached draft proposal.

## **2.3 Contacts and agreements with other CPCs or entities**

At the same time, the Coordination proposes to held a first informal meeting with all CPCs concerned with bluefin tuna fishery, by using the first opportunity of another ICCAT meeting where these CPCs will be participating, for presenting the proposal. The revised GBYP should be then proposed to the SCRS in 2012 for the discussion and final approval, before being submitted to the Commission in 2012 for the official modification and approval. The funding system need to be also reviewed and officially adopted. The EU system imposes serious limits for external co-funding in kinds, because the research activities need mostly real money and supports in kinds, even if they are extremely welcome and positive, cannot be automatically transformed in budget components. The obligation, imposed by the EU, to have a yearly grant, poses extremely serious limits which must be taken into account in planning the research activities.

# **3. Planning of activities for 2012**

## **3.1 Phase 2 prorogation**

- a. activities in the period January-April;
  - complete some data recovery issues;

- held the workshops before April (tagging and biosampling?)
- carry out the tag awareness activity
- plan the electronic tagging activity and release the Call asap
- plan the conventional tagging activity and release the Call asap
- plan the biosampling activity and extend the contract with the Consortium (with the necessary adjustments) (there is maybe the need of anticipating the activity)
- publish the special volume on the Trap Symposium
- prepare the EU Grant Agreement

### 3.2 Phase 3

a. Identification of the best possible scenario (limits and opportunities)

b. Activities:

- Coordination (activities and budget);
- Data recovery and elaboration (task I and Task II data, priorities, environmental data; improvement of the forecast model for aerial survey data, budget);
- Tagging (electronic and conventional, strategy, extended to other areas, need for preliminary contacts, Operational meeting on tagging, need for periodic monitoring, scientific copyright issues, budget);
- Tag awareness (plan of contacts, distribution of posters, external meetings, improvement of the web site, ROP cooperation, budget);
- Biological and genetic sampling (plan, strategy, and activities extended to other areas, need for preliminary contacts, Operational meeting on biological and genetic sampling, ROP assistance, need for periodic monitoring, budget);
- Modeling approaches (strategy and activities, 2 workshops for Modeling Approaches, budget);
- if necessary: aerial survey (strategy, minimum acceptable, sampling design, if any aerial survey will be included, workshop and a training course, need for preliminary contacts, budget).

### 3.3 Milestones and deliverables

- milestones – yearly SC and SCRS review and approval
- deliverables – GBYP summary reports, GBYP detailed reports, sub-programmes reports by tenders, products, powerpoint presentations, WEB info, obligations by the grant agreement.

## 4. Other issues

- Proposal for an Atlantic-wide workshop/meeting on bft eggs and larval surveys (by IEO);
- Critical review of the ROP programme (by ICCAT Secretariat)
- Critical review of the effects of the management plan (by ICCAT Secretariat)
- Others tbd

**ICCAT GBYP PHASE 2 - Extension period  
January-April 2012**

residual 2011	447.389,78
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		total	var./budget
<b>Coordination</b>		140.000,00 €	-11,54%
salaries	74.000,00 €		
travels	15.000,00 €		
software & hardware	24.000,00 €		
SC additional costs	15.000,00 €		
SC meeting (Feb. 2012)	12.000,00 €		
<b>Data mining and analyses</b>		44.000,00 €	27,48%
data mining	4.000,00 €		
Special volume on Tuna trap Symposium (1)	40.000,00 €		
<b>Tagging and tag awareness</b>		208.000,00 €	15,19%
leflets	5.000,00 €		
additional posters	4.000,00 €		
delivery costs for the awareness material	5.000,00 €		
Additional conventional tags	40.000,00 €		
CLS satellite costs for miniPATs	37.500,00 €		
Tagging operational meeting (2)	10.000,00 €		
Internal archival tags (3)	106.500,00 €		
<b>Biological and genetic sampling</b>		50.000,00 €	4,12%
Additional activities (4)	tbd		
Biological operational meeting (2)	10.000,00 €		
Analysis of ROP videos (ext. Contract) (5)	30.000,00 €		
Workshop on larval survey on bft	10.000,00 €		
<b>Aerial survey</b>			
Aerial survey expertise for assessing the reports	5.000,00 €		-34,06%
Modelling approaches		- €	-29,56%
1 workshop	- €		
<b>total</b>	447.000,00	447.000,00 €	

**notes:**

- 1) If editorial constraints will delay the publication, then this budget will be moved to archival tags
- 2) The tagging and biological sampling meeting will be conducted together, one after the other.
- 3) The cost of archival tags will be balanced with the available residuals when defining in details the components.
- 4) The additional biological sampling activities are still to be defined.
- 5) If by any reason it will not be possible completing this activity in Phase 2, then the budget will be moved to archival tags

ICCAT-GBYP PHASE 3 (Jan-Dec.2012) - BUDGET SCENARIOS							
		SCENARIO 1a		SCENARIO 1b		SCENARIO 1c	
	ALLOCATION	extreme reduction of funds		current hypothesis		current hypothesis with limited Aerial survey	
ACTION		detail	total Phase 3	detail	total Phase 3	detail	total Phase 3
<b>A</b>	<b>Coordination</b>		396.300,00 €		391.300,00 €		380.800,00 €
A.1	Coordinator and supporting staff; salaries and benefits	280.380,00 €		280.380,00 €		280.380,00 €	
A.2	Travels and subsistence (including SC)	64.920,00 €		59.920,00 €		50.000,00 €	
A.3	Computer hardware and software	4.000,00 €		4.000,00 €		5.000,00 €	
A.4	Consumables and supplies	2.000,00 €		2.000,00 €		3.000,00 €	
A.5	Contracts for external Steering Committee members	30.000,00 €		30.000,00 €		30.000,00 €	
A.6	ICCAT Secretariat overhead	15.000,00 €		15.000,00 €		12.420,00 €	
<b>B</b>	<b>Data mining, data retrieval and data elaboration (external contracts)</b>		61.200,00 €		78.200,00 €		26.200,00 €
B.1	Data mining and data retrieval exercise						
	Ottoman archives:	10.000,00 €		12.000,00 €		10.000,00 €	
	Recent (2000-2011) data recovery:	30.000,00 €					
	Historical data gaps including environment; model with thermocline data	20.000,00 €		15.000,00 €		15.000,00 €	
	SST data 2012:	1.200,00 €		50.000,00 €			
				1.200,00 €		1.200,00 €	
B.2	Aerial survey data elaboration.						
<b>C</b>	<b>Aerial surveys</b>		0,00 €		0,00 €		320.000,00 €
	Workshop on aerial survey (direct costs, including travels and subsistence for external experts)						
C.1	Training course (direct costs, including external experts)					20.000,00 €	
C.2	Survey design revision and adaptation (external contract)						
C.3	Calibration trials						
C.4	Aerial surveys 100000 km (external contracts)					300.000,00 €	
C.5							
<b>D</b>	<b>Tagging</b>		797.500,00 €		835.500,00 €		658.000,00 €
D.1	Conventional tagging (external contracts) and operational meeting	550.000,00 €		550.000,00 €		535.000,00 €	
D.2	Electronic tagging (external contracts)	70.000,00 €		80.000,00 €		70.000,00 €	
D.3	electronic tags	122.500,00 €		140.000,00 €			
D.4	conventional tags and applicators	20.000,00 €		20.000,00 €		20.000,00 €	
D.5	Tags recapture trials (external contracts)						
	Tag awareness and rewards campaign (partly external contracts)	30.000,00 €		40.000,00 €		30.000,00 €	
D	other costs	5.000,00 €		5.500,00 €		3.000,00 €	
<b>E</b>	<b>Biological sampling (external contracts)</b>		515.000,00 €		565.000,00 €		485.000,00 €
E.1	Hard parts sampling (including travels for samplers); Sampling operational meeting	320.000,00 €		350.000,00 €		300.000,00 €	
E.2	Genetic sampling (including design) and operational meeting	80.000,00 €		100.000,00 €		80.000,00 €	
E.3	Analysis of samples	110.000,00 €		110.000,00 €		100.000,00 €	
E	other costs	5.000,00 €		5.000,00 €		5.000,00 €	
<b>F</b>	<b>Modelling</b>		130.000,00 €		130.000,00 €		130.000,00 €
F.1	2 Workshops on modelling	20.000,00 €		20.000,00 €		20.000,00 €	
F.2	Risk analysis (external contract)	20.000,00 €		20.000,00 €		20.000,00 €	
F.3	Historical data analysis (external contract)	30.000,00 €		30.000,00 €		30.000,00 €	
F.4	Alternative management advice frameworks (ext. contracts)	40.000,00 €		40.000,00 €		40.000,00 €	
F.5	Performing simulation trials (partial external contracts)	20.000,00 €		20.000,00 €		20.000,00 €	
	<b>Total revised reduced minimum budget</b>		<b>1.900.000,00 €</b>		<b>2.000.000,00 €</b>		<b>2.000.000,00 €</b>

## ICCAT GBYP

## ESTIMATED SHARED CONTRIBUTION

2010	%	2011	%	CPC	2012 scenario 1 (SC)	%	2012 scenario 2 (MIN)	%
600.000,00 €	80,000%	2.000.000,00 €	79,43%	European Union	1.400.000,00 €	70,00%	1.400.000,00 €	73,68%
10.000,00 €	1,333%	42.398,00 €	1,68%	Japan	43.704,08 €	2,19%	43.704,08 €	2,30%
71.200,00 €	9,493%	177.700,07 €	7,06%	USA	187.500,00 €	9,38%	187.500,00 €	9,87%
22.500,00 €	3,000%	75.060,00 €	2,98%	Turkey	40.416,00 €	2,02%	27.836,23 €	1,47%
- €	0,000%	30.000,00 €	1,19%	Morocco	92.323,78 €	4,62%	63.587,35 €	3,35%
15.000,00 €	2,000%	22.000,00 €	0,87%	Canada	22.000,00 €	1,10%	22.000,00 €	1,16%
7.000,00 €	0,933%	10.000,00 €	0,40%	Croatia	28.339,89 €	1,42%	19.518,90 €	1,03%
20.000,00 €	2,667%	20.000,00 €	0,79%	Norway	20.000,00 €	1,00%	20.000,00 €	1,05%
3.000,00 €	0,400%	3.000,00 €	0,12%	Chinese Taipei	3.000,00 €	0,15%	3.000,00 €	0,16%
- €	0,000%	50.000,00 €	1,99%	Libya	68.171,57 €	3,41%	46.952,68 €	2,47%
				Algeria	10.420,51 €	0,52%	7.177,05 €	0,38%
				China	2.337,31 €	0,12%	1.609,81 €	0,08%
				Korea	5.843,28 €	0,29%	4.024,52 €	0,21%
				Tunisia	72.943,58 €	3,65%	50.239,38 €	2,64%
- €								
1.300,00 €	0,173%	71.841,93 €	2,85%	ICCAT Secretariat	3.000,00 €	0,15%	2.850,00 €	0,15%
750.000,00 €	100,00%	2.502.000,00 €	99,36%	TOTAL	2.000.000,00 €	100,00%	1.900.000,00 €	100,00%
841,92 €		16.000,00 €		Others				
<b>750.841,92 €</b>		<b>2.518.000,00 €</b>		<b>BUDGET</b>	<b>2.000.000,00 €</b>		<b>1.900.000,00 €</b>	

ICCAT-GBYP PHASE 3 (2012) - BUDGET APPROVED BY THE SC			
ACTION	ALLOCATION		
		detail	total Phase 3
<b>A</b>	<b>Coordination</b>		260.000,00 €
	Coordinator's and supporting staff (G2 and P2) and salary and benefits	€ 193.000,00	
<b>A.1</b>	Travels and subsistence (including SC)	€ 40.000,00	
<b>A.2</b>	Computer hardware and software		
<b>A.3</b>	Consumables and supplies	€ 3.000,00	
<b>A.4</b>	Contracts for external Steering Committee members	€ 15.000,00	
<b>A.5</b>	ICCAT Secretariat overhead	€ 9.000,00	
<b>A.6</b>			
<b>B</b>	<b>Data mining, data retrieval and data elaboration (external contracts)</b>		€ 70.000,00
<b>B.1</b>	Data mining and data retrieval exercise:		
	Ottoman archives:	€ 10.000,00	
	Recent (2000-2011) data recovery:	€ -	
	Historical data gaps including environment; model with thermocline data	€ -	
	SST data 2012:	€ -	
	Analysis of video collection from transfers (1)	€ 30.000,00	
<b>B.2</b>	VMS Data Analysis	€ 30.000,00	
<b>C</b>	<b>Aerial surveys</b>		€ -
<b>D</b>	<b>Tagging</b>		€ 1.180.000,00
	Conventional and electronic tagging and tag recapture trials (external contracts) including tagging expert coordinator (50000), taggers (30000) and 6 month/vessel	€ 1.100.000,00	
<b>D.1</b>	Electronic tagging (external contracts)	€ -	
<b>D.2</b>	electronic tags	€ -	
<b>D.3</b>	conventional tags and applicators	€ -	
<b>D.4</b>	Tag awareness and rewards campaign (partly external contracts)	€ 70.000,00	
<b>D.5</b>	other costs	€ 10.000,00	
<b>E</b>	<b>Biological sampling (external contracts)</b>		€ 430.000,00
<b>E.1</b>	Biological and genetic sampling; Sampling operational meeting	€ 320.000,00	
<b>E.2</b>	Sampling operational meeting	€ 10.000,00	
<b>E.3</b>	Analysis of samples	€ 100.000,00	
<b>E.4</b>	other costs		
<b>F</b>	<b>Modelling</b>		€ 60.000,00
<b>F.1</b>	Technical meetings on modelling	€ 10.000,00	
<b>F.2</b>	Risk analysis (external contract)	€ 20.000,00	
<b>F.3</b>	Historical data analysis (external contract)		
	Distribution analysis of areas where juveniles may concentrate	€ 10.000,00	
<b>F.4</b>	Alternative management advice frameworks (ext. contracts)		
<b>F.5</b>	Performing simulation trials (partial external contracts)	€ 20.000,00	
	<b>Total revised reduced minimum budget</b>		<b>€ 2.000.000,00</b>

NOTE: (1) In case it will be possible to complete the activity in Phase 2, than this budget will cover other data analysis activities.