DRAFT REPORT

ICCAT GBYP STEERING COMMITTEE MEETING

Madrid, 10-12 February 2015

A) Appointment of Chair and Rapporteur

Driss Meski welcome all participants (Annex 1) to the meeting on behalf of the ICCAT secretariat. David Die was appointed as meeting Chair and rapporteur for agenda items A-D, and G5; Antonio Di Natale was rapporteur for item E, Sylvain Bonhommeau for item F and Tom Polacheck and Clay Porch for items G1-G4.

B) Adoption of Agenda

The draft agenda developed by the GBYP coordinator was reviewed, modified and edited and approved as the final agenda (Annex 2).

C) List of Documents

A draft list of information documents was provided by the GBYP coordinator and modified by adding additional reference documents used during the meeting (Annex 3). All documents in the initial list were circulated by the GBYP coordinator to the meeting participants prior to the meeting. Additional references used in this report appear in item I of this report.

D) Matters Outstanding

The SC agreed to develop a list of outstanding matters to be examined at the beginning of every meeting. Such list was not available for this meeting but the list for next meeting is presented on Annex 6.

E) Summary and Revision of the activities in Phase 4

Review of the project activities and procedures) **The work conducted in the first part of Phase 4 was reviewed by the SC at its Dec 2013 meeting (provide report reference). As such, at this meeting, the SC focused on the work carried out during the Phase 4 extensions (i.e. the work completed in 2014 and in the first part of 2015).**

a) Coordination

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The administrative activities of Phase 4 have been all finalized. A total of 25 contracts were providet to several entities. The coordination staff was reduced to the assistant only at the beginning of 2014 and then even the assistant moved to another ICCAT position in March 2014.

The coordination followed all scientific and administrative duties for the last part of Phase 4, taking care of revising the final reports, preparing all necessary reports for the Commission and revising several times all necessary documents for the EU Grant request, working with the Secretariat for getting all necessary documents from other CPCs. All final documents concerning the activities and all scientific papers produced in Phase 4 are now on the ICCAT GBYP web pages.

The SC pointed out that the GBYP web page has a complicated structure with some pages/links that are obsolete.It can be difficult to retrie detailedinformation about the project, even if all documents are on the site. The SC supports the proposal that the maintenance and update of the information contained in the BGYP webpage should be the responsibility of the assistant to the GBYP coordinator who should work with the ICCAT secretariat in charge of updating such pages.

b) *Data Recovery*

Of the three markets, auction and trade data sets recovered by the GBYP during the last part of phase 4 (see SCRS/2014/042), the SCRS approved two of them, but the third data set (trade data mostly from Western Atlantic) was not accepted because it requires considerable additional processing before it can be considered to be useful and reliable (see SCRS BFT Species Group Report, 2014). This data set, however, may be potentially valuable because it contains 2.2 million records of fish sizes for the period 2004-2014. The SC requested information describing the work required to process these data so that they could be reconsidered by the SCRS. . However, the SC was informed that CP scientist are now expected to possibly undertake these analyses and as such no further analyses will be conducted under the GBYP in Phase V.

c) Aerial survey

During the first part of Phase four, a survey had been conducted and the results were presented and discusses at previous SC meetings. Because of lack of funds, no additional work was undertaken during the Phase four extension. During phase four extension period, a number of issues that reduced the usefulness of the aerial survey data collected were discussed:

- Difficulties of obtaining enough spatial coverage
- Lack of data calibration for factors affecting detectability (particularly spotter differences with respect to sightings on the trackline.
- Lack of data to calibrate estimates of school size (in weight and number) and fish sizes among spotters both within a plane and between planes
- Inability to standardize observations from different observers/planes across areas
- Lack of agreement on the process to be used to incorporate aerial survey data in the assessment

All of these issues had been already identified in earlier phases of the GBYP and the SC reiterated the importance of resolving these issues in any future aerial surveys.

d) Bio-genetic program (final report, total cost);

The objectives set for this budget item were satisfied, with the allocated budget. Sampling was over the target and most of the analyses were completed on time. Additional results were provided for the genetics under a small contract for data mining. All results up to September 2014 were presented to the SCRS and the final reports have been duly approved.

It was not possible to collect YOY biological samples from Malta because of the lack of permit from the local fishery authorities. YOY sampling in the Bay of Buiscay and the Ligurian Sea was not possible due to the lack of YOY in these areas in the final part of the year.

e) Tagging activity (final reports, tag recovery, total cost);

During the Phase four extension, very limited conventional tagging was conducted under the GBYP because of lack of funds; as a matter of fact, only complimentary tagging activities were carried out and the report was presented to the SCRS. All final reports are on the ICCAT GBYP web page. The total cost was withing the budget, as it was modified in the various extensions. .

In Sardinia during 2014 only 95 fish were tagged. . The SC discussed the usefulness of tagging reports and noted that it is essential to have information on the number of tags released and recaptured by fish size category and location but separated by whether recoveries were from scientific tagging or not. The coordinator reported on the difficulties of getting CPCs to provide detailed data on tag releases of conventional tags. The SC discussed the need to have staff resources in the GBYP program that can contact CPCs for such data, working side-by-side with the Secretariat, and supported the proposal that such activity would be one of the tasks which is the responsibility of the assistant to the GPYP coordinator, a position which is being proposed to be reinstated.

The PIT tagging contract was supposed to address the issues of health hazard, but a call for tender was never released. The SC discussed that it would be important to conduct a study to review documenting tag experiments that used PIT tags on fish that are caught and later on exported to Asian markets (eg. Patagonian toothfish exported from Australia to Japan can have such tags). The review should seek to evaluate the extent of this practice, and report on any associated documented health problems and review any risks that may have been identified (or the lack of risks).

f) Tag awareness program

The SC noted that it is difficult to evaluate the usefulness of the tag awareness program because of the lack of quantitative measures of its effectiveness. However, intensive tag promotion and awareness campaigns are essential for tagging experiments dependent on returns from commercial fisheries and have been shown to be highly effecitive in other tuna tagging experiments particularly when they include direct contact with fishermen. The SC also pointed out that even if such measures are not available one of the most important and critcal things increasing the value of tagging programs is to be able to have estimable (ideally in time and space) reporting rates. Presuming then that the awareness program has had an unknown but positive effect it would be best to maintain it so as to increase the chances of having a stable reporting rate. The GBYP coordinator pointed out that recovery rates (ratio recovered/released) for tagged fish in phase 4 are high in comparison to the same rates calculated for previous ICCAT tagging programs. The SC noted, however, that such ratios are a function of many things, not exclusively of reporting rates.

g) Modelling approaches

This subcomponent of the project was completed on time and on budget.

h) Use of Research Mortality Allowance (ICCAT GBYP RMA)

This item is discussed later on section F of this document.

Budget and grant implementation

The SC recommends that remaining funds originally budgeted for coordination and not spent because of the transfer of the GBYP research assistant to another ICCAT position should be allocated to the purchase of additional electronic tags and urged the program coordinator to attempt to purchase such tags before the deadline of expenditure of these funds is reached. The coordinator informed that it will be possible to buy additional electronic tags at the very last moment only within the administrative limits imposed by the grant.

Discussion on Phase 4 activities

The SC highlighted generally positive outcome of the GBYP and specially of phase 4. The number of useful outputs produced in phase 4 is impressive (Annex 1 in Di Natale 2014). This progress was achieved in spite of the administrative challenges related to the funding framework of the GBYP and its impact on the administration of the program. The difficulties in maintaining, through the whole of phase 4, the staff supporting the coordinator's administrative responsibilities has created bottlenecks in the administration of the program. The annual funding cycle of the program has made the process of issuing call for tenders and awarding contracts (Annex 2 in Di Natale 2014) difficult , especially in regards to timing contracts so as they can match the natural cycle of BFT and the seasonal cycle of its fisheries. The SC reiterated its previous recommendation that the process of issuing and awarding tenders commence as soon as the activity to be tendered has been identified by the SC even if the money required to award the tender is not yet available to the GBYP. This would simply require the call for tenders to include language indicating that the award of the tender was subject to the availability of funds to the program. The Executive Secretariat recomfirmed that this is possible within the scope of ICCAT's administrative rules.

The SC expressed concern about the postponement of activities due to delays of funding from voluntary contributions from some CPCs. The SC requested the ICCAT Executive Secretary to write a letter to the EU explaining the need to consider modifying the award conditions to facilitate funding of long term research activities such as GBYP. The SC asked the SCRS chairman to raise this issue during the dialogue meeting between scientists and managers in 2015.

F) SCRS and ICCAT Commission discussions

1) Summary of ICCAT SCRS discussions on GBYP

The 2014 SCRS endorsed and continued to support GBYP activities. In particular, the SCRS confirmed (ICCAT 2014) the need to:

- establish fisheries-independent abundance indices;
- improve the scientific knowledge about the population structure;
- continue the development of new modeling approaches.

Moreover, the improvement on methods to estimate age from size have been recommended, e.g. through otolith/spine sampling. The revision of Task I and II will be also a critical outcome from GBYP to improve age-structured models used by SCRS.

The documents reporting the Phase 4 outcomes and defining the future of GBYP were presented to the SCRS in 2014 (SCRS/2014/194 and SCI/005/2014). The proposal for extending the GBYP and its future focus was endoursed by the SCRS and approved the the Commission. The SCRS also recommended to the Commission to postpone the new stock assessment to 2016 instead of 2015 as initially planned. The SCRS also recommended to the Commission to reconsider previous proposals for a scientific quota to ensure a multi-year stable source of funding for GBYP (SCI005-2014; ICCAT 2014). The Commission rejected this proposal.

2) Summary of ICCAT Commission discussions on GBYP

The Commission acknowledged the work done through GBYP and fully support the continuation of the GBYP activities according to the plan proposed by the SCRS in 2014. However, no other funding system for GBYP was envisaged And the SCRS proposal for a scientific quota was rejected owing to legal contraints raised by some CPCs. A specific point was made about the use and cost of external experts to participate to the GBYP Steering Committee. The Commission also adopted the recommendation to conduct a full stock assessment of BFT in 2016.

3) Discussion of the issues raised at the Commission Meeting and SCRS

a. Use of External experts

The cost and the use of experts external to the ICCAT process that are not CPC scientist was questioned during the Commission meeting in Genova (2014). The Panel 2 Chair indicated that the Secretariat should review current expenses for the external expert and try to reduce them, where possible.. The SC noted that a 50% reduction of the costs for the external expert was already included in Phase 5 budget at the SC September 2014 meeting. The Steering Committee reaffirmed that the participation of an independent external expert is critical to the functioning and the efficiency of the SC meetings. The SC however acknowledges that to ensure the best experts are chosen and do it in a transparent manner it should develop a set of rules to describe the process of choosing these external experts. The SC therefore propose to define a set of guidelines to select the external expert, including conflict of interest rules following the guidelines used by ICCAT for choosing independent reviewers for stock assessments and those used by other peer review programs in fisheries (de Bruyn et al 2014, Die and Shivlani 2014). These guidelines are to be used for the selection of the external expert for the SC and the coordinator of the modelling group because both of these positions are up for renewal for the start of phase 5 of the GBYP. The SC also agreed to identify additional candidates for these positions. It is important to note that the current external expert did not participate to this discussion or in the definition of guidelines for external experts.

b. Other

The Steering Committee noted the rejection of the scientific quota to ensure the funding of GBYP activities. The reality is that the need to establish a stable source of funding for research activities continues to be an important issue, especially for large programs such as GBYP. This funding source will be also useful for other ICCAT species that also need improvement in the scientific knowledge. This potential source of funding should be discussed during the ICCAT SWGSM meeting.

The SC also recommends that at the next BFT data preparatory meeting the BFT working group should discuss the sampling design for the collection to support the estimation of age-length keys, and to define the analyses to be done with the available aerial survey data.

G) Planning of activities for Phase 5 (24/02/2015 – 23/02/2016)

1) *Phase 5 Revised budget*

The GBYP coordinator presented the revised budget.

2) Activities

a. Coordination

The SC reviewed the proposed activities to be included within the coordination component of the Phase 5 of the GBYP. The SC noted the large workload and effort required to implement, administrate, report and coordinate activities of the GBYP. The SC re-iterated its previous recommendation for the need for additional assistance both in coordinating the GBYP activities and in ensuring that all data collected by the GBYP were appropriately included within the general ICCAT database system. In this regard, it recommended that two additional staff be recruited to assist in the coordination activities. This is a similar level of support that was available prior to the shortfall in funding in 2014. The SC reviewed the previous position description (e.g. duties, responsibilities, qualifications and responsibilities) for these two additional staff. It noted that for the data specialist position that there was a need for a person with extensive database and IT qualifications that could develop the needed database structures required for inputting numerous data types that are being collected as part of the GBYP but are not currently part of the current ICCAT database structure (e.g. electronic tagging, aerial survey data, market statistics, genetic data, micro-chemistry, direct aging, etc). In regards of the Assistant Coordinator, the SC noted that the primary need was for assistance in the administrative and project management activities. Taking these into account, the SC recommended revisions to the draft position descriptions provided as documents to the meeting. The recommended revised versions are documented in Annex 4 and 5. The SC noted that there would be an ongoing need for this level of support for the remainder of the GBYP. As such, it recommended that the recruitment for these two positions be equal to the duration of the GBYP, contingent on adequate annual funding being received.

The SC also reviewed the proposal for a short term contract for an external expert to deal with the data base and analyses needs in relationship to electronic tagging. The SC noted that the work under this contract was specifically related to the tagging activities of the GBYP. As such, if such a contract was to go ahead, it considered that this was more appropriate to be included within the tagging activities of Phase 5. The SC recommended that as a general principle that contracts for activities related to a single and specific component of the GBYP should be included within the work and budget for that activity and that the activities included within the Coordination component should be those directly related to the general implementation and administration of the overall program. It was further noted that, given the SC recommended revision to the data specialist duties (Annex 5), that the work intended under this proposed short term contract for an electronic tagging data specialist should be incorporated within the work of the Database Specialist Position discussed above.

The SC confirmed the recommend level of travel funds proposed in the coordination budget for Phase 5. It noted that there was a need in some instances for the GBYP Coordinator to be able to obtain on-the-ground and direct information related to the implementation, monitoring and reviewing of the various research activities being carried out by the GBYP. The SC recommended that travel be under taken by the coordinator, as appropriate, for this purpose. It noted that the total recommended budget for travel was intended to include funding for this purpose as well as to cover the travel costs associated with the SC meetings.

b. Data Mining

The SC confirmed it previous recommendation that the historical genetic analyses be continued under Phase 5 with a budget of 20,000 euro. It also recommended that this work be undertaken as an extension to the previous contract and that there was no need for a new call for tenders for this work.

The SC discussed whether there was a need for further data mining activities related to the work undertaken within Phase IV related to the Japanese Market data. It noted that two of the data sets collected from the Japanese Market statistics had been fully validated by the SCRS and were to be incorporated into the ICCAT data system. These data are available for use and analyses. It is anticipated that analyses of these data relative to the size distribution and total catches will be undertaken by CP scientists as part of the preparatory work for the 2016 assessment and utilized, as appropriate, within this assessment. Thus, the SC considered that there was no need for the GBYP to undertake any further work or analyses in relationship to these two data sets. The SC noted that there was a third data set examined as part of the Phase IV activities but extensive further validation work was required. The SC noted that it would not be possible to complete the necessary validation work required for this data set to be considered within the 2016 assessment. Given the available budget and priorities, the SC did not consider that this validation work should be undertaken as part of Phase V. However, it did consider that there was a need to complete the validation of this third data set in the longer term and it recommended that validation of this data set be considered within the possible work to be undertaken after Phase 5.

The SC noted the work that had been carried out under Phase IV in relationship to the data collected on size frequency data from farm cages using stereo video camera systems. The SC noted that there is now a requirement for 100% monitoring of transfers using a video monitoring. These data are potentially highly informative for providing estimates of the size distribution of the purse seine catches, which is a critical component of the stock assessment. It noted that there are extensive numbers of video tapes that could be analyzed to provide information on the size distribution of some of the past purse seine catch for farming. A preliminary review of the stereoscopic camera data collected and submitted was completed and documented in SCRS/2014/141. Sufficient information is not available, however, about the details of how these videos are being taken to allow for comprehensive analyses of such video collection (see SCRS Report 2014 section– 18.2). As such it has not been possible to complete a definitive analyses evaluating this, potentially important, information source. The SC noted it would be highly valuable to obtain definitive estimates of the size distribution for the catches monitored by these video tapes. However, it noted that the amount of resources and time required for this was extensive and beyond the scope of what could be undertaken within Phase V.

It is also unclear whether the missing information on the technical specifications of the stereoscopic cameras could be obtained from those operating them. The SC noted, however, that Commission Rec. 13-08 paragraph 6 that requested the SCRS to review the technical specifications of the use of stereoscopic cameras systems as defined in paragraphs 1 to 5 of this recommendation. The recommendation also stated that the SCRS shall also provide any recommendations to improve the system. The SCRS was not able to progress this issue. The SC considered that there was a critical need to develop detailed specification and protocols for the use of the stereoscopic camera systems, the analyses of the data obtained from these systems and the required data that should be provided with the submission of video tapes

The SC noted that further analyses of video data from stereoscopic cameras will have to wait until the work of collecting specifications on the camera systems used is completed. Nevertheless, the SC considered that further work and analyses of these data are highly desirable and that those should be considered as very valuable.

c. Biological Sampling

The SC noted that as part of the recommended plan for the future of the GBYP (SCRS/2014/194) that a key element of the future GBYP should be the collection and analyses of biological samples that would allow for annual estimation of the age distribution of the catch and determination of the geographic stock/sub-stock origin of the catch. This plan for the future of the GBYP was recommended by SCRS and approved by the Commission. As such, the biological sampling to be undertaken under Phase V needs to ensure that adequate samples are collected to allow for the annual estimation of the age distribution of the catch (i.e. appropriate age-length key) and geographic origin of the catch. The SC noted that the GBYP Sampling design (http://www.iccat.int/GBYP/Documents/BIOLOGICAL%20STUDIES/PHASE%202/Rapport%20final%20design%20echantillonnage%20biologique%20ICCAT-GBYP.pdf) in Table 8, provided a general guideline for the relative distribution of samples by fishery and size ranges that should be collected to provide appropriate sampling coverage for this purpose.

The SC reviewed the TOR for the past biological sampling and noted that the sampling was to be conducted based on the sampling distribution in Table 8. It also reviewed the actual samples that had been collected. It noted that the reported number of samples that had been collected by fisheries were roughly consistent with the recommendations in this table. However, further examination of the number of samples collected indicated that the sampling did not necessarily conform to the size classes recommendation by fisheries. Further that while samples numbers were reported by fisheries that in some cases the samples had not been collected directly from the catches of the fishery but only from the area in which that fishery occurred, for various practical reasons. In particular, the SC noted that a very high percentage of the samples reported as having been obtained from the purse seine fishery were for age/size classes 0-3 and in fact were not obtained directly from the PS catches. As the purse seine fishery catches essentially no fish from these age/size classes, these samples are not informative for constructing ALK for this fishery component. The SC was informed that currently collection of otoliths or other biological samples directly from the purse seine catches that are transferred from

farms has not been possible to undertake. There is a lack of formal or informal arrangement which would allow for this to be accomplished. Given the PS fishery constitute >60% of the total eastern BFT catches, the SC noted that this is a serious short coming in the past biological sampling and that if the adopted objective of being able to obtain annual estimation of the age distribution of the catch and determination of the geographic stock/sub-stock origin of the catch that a solution for obtaining the necessary biological samples from the PS catches is essential. The SC noted that the most efficient and cost effective way would be to have this included with the duties of the ROP observers and recommended that consideration be given to including this as part of their official duties.

The SC recommended that the terms of reference for the biological sampling in Phase V need to be explicit in stating that sampling needs to be conducted to ensure that otolith and genetic samples are collected by fishery over the size range of fish actually captured by that fishery. http://www.iccat.int/GBYP/Documents/BIOLOGICAL%20STUDIES/PHASE%202/Rapport%20final%20design%20echantillonnage%20biologique%20ICCAT-GBYP.pdf provides a reasonable guide for 2015 for what the target sample proportions should be by fishery and size class. However, while the SC recommends that this should be the target sampling objectives, it is not clear whether this is possible. The SC is highly concerned that a feasible approach for obtaining the required samples from all the major fisheries is not currently available. Such an approach is essential and will require developing appropriate cooperation with the industry. This needs to be considered as a high priority for the biological sampling work in Phase V. The SC noted that it may be possible to purchase heads directly from the farms at the time of harvest to obtain the required biological sampling from the purse seine fishery. The SC recommended that determination of whether this is possible should be done as soon as possible as a matter of high priority. The SC noted that it was necessary not only to collect the otoliths but to also obtain the length of the fish associated with each fish and also noted that morphometric measurements for each head would be useful to validate the body length measurements. The SC noted that the ROP observers could assist with this.

The SC noted the importance of the age reading calibration work for the overall objective of obtaining annual ALK and the progress that had been made on this during Phase IV. The SC recommended that this work be continued and funded in Phase V with a budget of 15,000 euro.

The SC noted that on two previous occasions it had recommended the co-funding of a larval workshop, but that the workshop had not been held, as a result of various budgetary adjustments. The SC continues in principle to support such a workshop. However, before recommending funding it as part of Phase V, the SC considered that there was a need to clarify whether in fact the workshop was likely to be during Phase V and whether the current objectives for the workshop remain consistent with the overall needs and objectives of the GBYP.

d. Fishery Independent Indices of Abundance

The SC had extensive discussions on various aspects of the aerial survey implementation including issues related to calibration.

The SC confirmed it previous recommendation about the area to be covered by the survey based on the map developed last year (Figure 3 in Di Natale 2014). It recommended that the current contract is extended to provide the survey design (i.e. tracklines and coverage by area) and for the basic analyses of the survey results. It also considered that a pre-survey training course for the survey personnel was essential. The SC recommended that 15,000 euro be budgeted for this course which would include travel costs for participants and salary for an external experts.

The SC discussed whether there was a need to continue to use inclinometers to determine the distance to sighting. It was reported that this was problematical in the previous survey and entailed substantial lost in actual searching effort and possible missed schools by spotters because of the distraction and time required to obtain the data with the inclinometers. The SC noted that the survey for BFT was a closing mode survey and thus the position of the sighting relative to the trackline was collected via GPS positions. As such, the inclinometer data was a duplication. Given the problems encountered in using the inclinometers in the previous survey, the SC recommended that they not be required in the survey to be conducted in Phase 5.

The SC discussed whether there was a need to have 2 scientific spotters on each plane and whether bubble windows should be used. The SC noted that currently there were no analyses of whether the scientific spotters were actual contributing substantially to the number of primary sighting detected by the survey planes or whether most of the sightings (particularly in the vicinity of the trackline) were made by the commercial spotter and the commercial/spotter pilot in the front seat of the plane. The SC also questions whether the bubble windows were effective in ensuring a high level of detection of schools in the vicinity of the trackline (e.g. were there substantially higher proportion of near trackline sightings made by the scientific observer when planes had bubble windows?). The SC noted that a relatively short analysis of the available survey data should be able to answer these questions. It recommended that a short term contract by undertaken as soon as possible to do this. If the results of these analyses indicate that there is little to be gained by having two scientific spotters or by having bubble windows, then the SC recommends that these not be included in the Phase V survey and the saving in cost be used to increase the amount of sampling effort.

In the past the SC had extensively discussed the need and feasibility of conducting calibration experiments including consideration of the material presented in the SWOT analysis (ICCAT 2013, ICCAT 2014b). These reports noted that the reason for the calibration was to reduce biases and variability in the aerial survey estimates arising from the use of different airplane platforms and a large number of different spotters. Ideally, there is a need to calibrate the detection functions in terms of g(0) for schools at the surface for different survey platforms and spotter teams. It noted that having an absolute estimate of g(0) was not essential in terms of the ability of the survey to yield a meaningful relative abundance index, however, it does require that the value of g(0) remains relatively constant between and within surveys. Not calibrating for g(0) will induce additional, unaccounted variance in the annual survey indices. This may be substantial depending upon the variability in the actual g(0) across survey platforms and teams and how these are distributed in time and space relative variability in the spatial distribution. In this regard, the SC noted concerns about the use of different airplanes with likely different detection functions in terms of g(0). Different planes have been used to survey the

different strata within a single survey. It is not clear to what extent the use of different planes may or may not be contributing to the variability in the survey results. Ideally, this could be accounted for if relative estimates of sighting efficiency could be obtained from calibration experiments. The SC noted the considerable technical and logistical problems in conducting such calibration experiments as documented in the SWOT analyses. It further noted that successful calibration of survey platforms and teams for estimating g(0) is difficult to achieve in any case. As such, the SC considers that given the available resources and the technical issues involved that it could not recommend that calibration experiments be conducted for this purpose. However, the SC noted that this does have implications for the potential overall utility of the aerial survey as an index of abundance.

The SC noted that the other reason for undertaking calibration experiments was to be able to standardized estimates of school size (both in terms of weight and number) and fish size across the large number of different spotters involved in the survey. The SC noted that the estimate of mean school size is a direct multiplier in the overall survey estimate and as such large variability and temporal biases estimating school sizes will introduce large variability and potential biases into any overall abundance index. It further noted that it is not necessary to calibrate such estimates in terms of the absolute size of the school but only to standardize them to ensure that the relative estimates are consistent across time and space. In lieu of this, additional unaccounted for variance will be introduced into the survey results, which can be substantial. In other surveys and regions, substantial variability in school and fish size estimates have been found among professional tuna spotters making independent estimates for the same school. The SC considered that it was important to obtain data to estimate the amount of variability in the estimates of school and fish sizes among the spotters in the aerial survey and if possible to standardize the estimates across spotters. It noted that one successful approach for this attempted in other surveys has been to have each of the professional spotters within a plane when the survey is being conducted to make independent estimates of school and fish sizes for each sighting made during a survey. Such data can then be used to calibrate the estimate of one spotter relative to another. By rotating spotters during the course of a survey, one is then able to calibrate estimates across a large number of spotters. Using this approach, calibration experiments can be done with minimal additional cost to the overall survey. However, it is essential that the estimates made by the two spotters are truly independent (e.g. without discussion between them or subsequent feedback on the estimates made). The data collected by scientific spotters are critical for ensuring that this does in fact occur.

The SC recommended that this approach be utilized in the aerial survey in Phase 5. It recognized that there may be considerable logistic problem in achieving this. It recommended that the following approach be used for structuring the contracts for the aerial survey in order to achieve this. One call for tenders would be made for companies to supply aircrafts with a profession spotter pilot to undertake the survey work in the various areas to be surveyed. The TOR for this contract would specified that the plane would also be required to carry an additional spotter and one or two scientific spotters that would be supplied independently under a separate contract) and that the spotter these spotters could be changed during the course of the survey (the names and rotational plans for these spotters would need to be set prior to survey in order to obtain the requisite permits). While the SC considers that this approach should be feasible, there remains some uncertainty about whether all the

details may achievable for the Phase 5 survey, given the very short timeframe for implementing the survey. As such, the SC recommends that this approach be adopted in planning for the survey but that it may be necessary to modify it given the potential logistic problems and the short timeframe. It noted that at the very least independent estimates for each sighting should be obtained from the two professional spotters on each survey planes as a routine part of the data to be collected. The Coordinator will investigate the logistical and any technical issues with implementing this recommendation. Depending on the results of this investigation, he will consult with the SC before launching Call for tenders if modification to the above may be necessary, noting that the preferable option is that recommended.

The SC noted that the estimated CVs from the aerial surveys conducted to date are high (i.e. the estimated CV for the 2013 survey was 35%). It noted that the actual CVs are likely to be considerably higher as the result of not accounting for variability in g(0) among sighting platforms and in the estimates of school sizes. In additional, there is additional unaccounted for variance in the proportion of schools at the surface and variability in the proportion of total spawning stock which is in the survey area. The indication from survey results to date is that these additional sources of unaccounted variance may be substantial. Thus, variability between the survey estimates for the three "inside" areas that have survey in all three years in which have been conducted is very large (i.e. the estimates span the range of 9,000 to 42,000). There is also very high inter-survey variability in the overall estimates for the main inside survey areas and for the estimates of mean school sizes. The SC notes that some of the sources of variability may be reduced by the extended survey coverage, efforts to calibrated school size estimates and potentially by increased survey effort. Nevertheless, the SC is concerned about the implication of the high level of variability associated with the aerial survey estimates (both the sampling variability achievable with a reasonable of survey effort and the additional unaccounted/unaccountable sources of variance). It is unclear given whether a meaningful signal can be derived in terms of changes in abundance within the orders of magnitude that would be useful for stock assessment purposes given the likely level of resources for conducting the survey combined with the underlying variability in spatial and surfacing behavior. This issue needs to be seriously addressed after the completion of the 2015 survey. It is essential to establish an evaluation process and timeline for determining whether in fact the aerial survey is likely to be able to meet its primary objective of providing a meaningful fishery independent index of abundance.

d. Stock Structure and Spatial Dynamics

The Committee reviewed the progress of the scientific tagging program using conventional (spaghetti) tags in the Eastern Atlantic and Mediterranean Sea. The tagging campaigns directed at juvenile Bluefin tuna in the Bay of Biscay, Strait of Gibraltar and Adriatic Sea were largely successful in 2013; over 7,700 fish were tagged. However, it remained difficult to tag juvenile fish outside these areas. Moreover, the campaigns could not be conducted in 2014 owing to the late and very reduced reception of funds. The tag awareness campaign appears to have increased the reporting rate from several fisheries, but the overall reporting rate remains low and it does not appear likely that the tag recoveries from fisheries will figure prominently in the 2016 stock assessment in terms of providing estimates of fishing or natural mortality rates.More importantly, because of not being able to either use PIT tags or tag seeding into cages, no feasible approach is available for estimating reporting rates, which is essential

for the quantitative use of the returns from the commercial fisheres. On the other hand, there may be enough recoveries from the successive scientific tagging expeditions in the Bay of Biscay and Gibraltar to develop estimates of population size and/or mortality that might be useful for the 2016 assessment. With this in mind, there was some discussion of the merits of continuing the scientific conventional tagging in the hopes of getting more scientific recaptures. However, it was pointed out that the fish tagged in 2013 were now 4 or more years old and largely unavailable to vessels fishing in the target areas. In view of this, and the observation that it remains difficult to tag juveniles in much of their range, the Committee recommended not to suspend the scientific tagging with conventional tags in 2015. Complimentary activities with conventional tagging will be welcome.

The group discussed the merits of suspending the conventional tagging program with one based on only electronic "pop-up" tags, where perhaps more but different information could be obtained from deployments of fewer tags, particularly because it has not been possible to obtain the necessary data for estimating reporting rates from the commercial fisheries. Pop-up tags can provide useful information on stock structure and spatial dynamics but are unlikely to provide data for estimating fishing mortaility rates, which was the primary objective of the conventional tagging. To the extent that fewer tags are required, it should be possible to achieve more synoptic coverage of the Eastern Atlantic and Mediterranean than could be achieved by conventional tagging. However, most of the pop-up tags recovered to date were found to have released well in advance of their programmed dates, often with times at large that were considerably less than the year intended. The group agreed that it would not be cost-effective to pursue a synoptic tagging campaign with electronic tags until the problem of pre-mature releases was solved. Nevertheless, the Committee recognized that some electronic tagging might still be useful, particularly in the eastern Mediterranean where little is known of Bluefin tuna movements. To this end, the Committee asked Dr. DiNatale to explore the possibility of chartering sport fishing vessels to deploy approximately 40 pop-up tags in Cyprus, Turkey or elsewhere in the eastern Mediterranean, or exploring any possible alternative. Other areas that could be of interest for further electronic tagging are off Morocco, where a surprising number of tagged fish have been observed to travel into the western Atlantic, and in the Central Mediterranean (e.g. from Sardinian traps), where little or nothing is known about Bluefin movements. The Committee felt that, while the Eastern Mediterranean was the higher priority, it may be worth investing similar effort in these two areas if funds permit.

Preliminary results from studies on the genetics of Bluefin tuna have been very encouraging both in terms of discriminating stock structure and in discriminating between individuals. It would seem therefore that there is a lot of potential for replacing the conventional tagging campaign with one based on Genetic tagging. The primary advantages of genetic tagging are that the tags cannot be shed and the misreporting rate (in this case misidentification rate) is generally low and quantifiable. As a result, it should be possible to derive estimates of mortality, and potentially abundance, from representative samples of the landings (provided of course the tagged population is well-mixed with the untagged population). The Committee also discussed the merits of a close-kin analysis similar to that being conducted on western Atlantic Bluefin. In that case the juveniles essentially serve as tags for the adults and the execution of the study is potentially simplified by obtaining representative samples of juveniles from the fishery or perhaps even larval surveys. The committee recommended funding a study in phase 5 of the feasibility of a genetic tagging program and close-kin analysis, using

the data and lessons learned from the previous tagging and genetic studies sponsored by the GBYP. It is expected that this study will provide the framework and protocols for a large scale field study to begin in 2016.

The SC noted its discussion above to re-recommend a short term review to evaluate the extent of PIT use in other fisheries practice, and any associated documented health problems and review any risks that may have been identified (or the lack of risks). It agreed that this was important to determine whether recommencing conventional tagging could be considered as an options in latter phases of the program.

e. Reproductive Biology

The GBYP coordinator pointed out that only a limited number of reproductive samples have been obtained from existing sampling programs in recent years. It was also recognized that there remains considerable confusion with respect to the definition of maturity in the physiological sense and the actual reproductive contribution of an age class (i.e., young fish may be mature, but contribute little to the spawning potential of the stock). The Committee recognized that this question could best be answered via a synoptic sampling program that representatively samples all age classes throughout the possible spawning period, but that this was unlikely to be possible in practice for a broadly distributed species like Bluefin tuna. It recognized, however, that there may be other several ways to characterize the reproductive contribution at age (bioenergetics, next of kin analysis etc…) and recommended a call for proposals on the matter.

f. Analyses and Modelling

Dr. Laurie Kell reviewed the progress of the GBYP-sponsored MSE meeting in Madrid including the DLM tool and Bayesian utility functions (ICCAT 2014b).

The Committee was generally satisfied with the work completed to date and accepted the Core modelling group report provided. The Committee agreed that it was important to develop and adopt the candidate operating models for the project during Phase 5 (by the end of 2015).

The SC reviewed the proposal of the Core Modelling Group to provide a full time contract to the current expert Dr. Tom Carruthers for the amount specified in the report of the MSE workshop (€125 k euro). A discussion on whether to support such contract ensued. It was concluded that there are no other candidates that have been identified that could do such job because of its technical complexity and the need to have continuity on the development of current MSE software products. The cost of the contract also contains the overhead associated with contracting Dr. Carruthers which was deemed to be what can be expected from a contract to a University like UBC. The SC therefore agreed to recommend the contract be issued to Dr. Caruthers in the amount requested to ensure his full commitment to this activity (€ 125,000). The Committee recommended that this contract stipulate that the recipient assume direct responsibility for facilitating the communication of the technical

details of the project between the core modelling group and other interested scientists and stakeholders. This should relieve some of the responsibilities now placed on the MSE Coordinator, freeing him or her to focus on interfacing with the remainder of the ICCAT Scientific and Management community.

The Committee expressed some concerns about both the availability and high overhead associated with the contract of the current Coordinator and recommend exploring alternative candidates for coordinator position.

Finally, the Committee noted that the deadline for providing information for the 2016 assessment is only about a year away, yet many of the analyses expected of CPCs have not yet materialized. Accordingly the SC recommended a separate call be made by the BFT rapporteurs to CPC scientists asking them to synthesizing the data collected from the various GBYP programs into information that can be used directly in assessment models. This would include analyses of the electronic and conventional tagging data, the Japanese market data and biological sampling data (genetic, micro-chemistry, otoliths) for information on stock structure, mixing rates, age-length keys, total catch, size distribution of the catch and reproductive information.

3) Budget Allocation Recommendations

These were reviewed by the SC. The SC requested that budget tables provided to the SC be organized around scientific tasks of the project and coordination tasks to facilitate the review of activities funded by the program, as it was done so far, while the same budget items can be presented with a different structure for specific grants.

4) Program monitoring

a) Monthly reports
These will continue to be provided by the GBYP Coordinator.

b) Milestones and deliverables
The SC did not review in detail this list because of the many adjustments made to the schedule of deliverables made by the SC during the current meeting. The GBYP coordinator needs to develop this list and provide it to the SC for comment.

5) Other issues

The SC discussed problems encountered last year that made difficult to conduct the SC meeting during the September Species Group meeting of the SCRS. The SC agreed to meet next time during the meeting of the SWGSM or to explore the use of video conferencing meetings to reduce the time required to meet in person and have more timely interactions between SC members.

The SC did not have time to discuss how the GBYP is fulfilling its Response to External Review of the Program and this item should be tabled at the next meeting.

H. Adoption of the Report

The report was not completed or adopted during the meeting, however, rapporteurs provided the meeting Chair with all draft sections of the report completed during the meeting. The chair circulated a first draft of the report the day after the completion of the meeting and the report was edited and modified by the members of the SC by correspondence.

I. References

de Bruyn, P., Santiago, J. and Kell, L.. 2014. Suggested revisions and clarifications to the peer review process in ICCAT. ICCAT Coll. Vol. Sci. Pap. 70: 2058-2063

Die D.J. and Shivlani M. 2014. Some key issues in peer reviews of stock assessments: Lessons from the US Center of Independent Experts. ICCAT Coll. Vol. Sci. Pap. 70: 2812-2819.

ICCAT 2014a. Report of the Standing Committee on Research and Statistics (SCRS). 348 p.

ICCAT 2014b. Report of the 1st Meeting of Core Modelling Group. 1-4 December 2014. 6 p.

Annex 1. List of participants

Clay Porch. Western BFT Rapporteur. GBYP SC Member

Tom Polacheck. GBYP External Expert. GBYP SC Member

Driss Meski. ICCAT Executive Secretary. GBYP SC Member

David Die. SCRS Chair. GBYP SC Member

Sylvain Bonhommeau. Eastern BFT Rapporteur. GBYP SC. Member

Antonio Di Natale. GBPYP Coordinator (Ex-officio), invited

Lawrence Kell[1]. ICCAT population dynamics expert. GBYP Modelling group member (Ex-officio), invited

[1] Only present during discussions on item G4

Annex 2. Final agenda

ICCAT GBYP STEERING COMMITTEE MEETING – 01/2015

Madrid, 10-12 February 2015

AGENDA

A) Appointment of Chair and Rapporteur

B) Adoption of Agenda

C) List of Documents

D) Matters Outstanding

E) Summary and Revision of the activities in Phase 4

1) Review of the project activities and procedures

a) Coordination
b) Data Recovery
c) Aerial survey
d) Bio-genetic program
e) Tagging activity
f) Tag awareness program
g) Modelling approaches
h) Use of Research Mortality Allowance

2) Budget and grant implementation

3) discussion on Phase 4 activities

F) SCRS and ICCAT Commission discussions

1) SCRS discussion and recommendations

2) Summary of ICCAT Commission discussions on GBYP

3) Discussion of the issues raised at the Commission Meeting and SCRS

a. Use of External experts
b. Other

G) Planning of activities for Phase 5 (24/02/2015 – 23/02/2016)

1) ***Phase 5 Revised budget***

2) Activities

a. Coordination
b. Collection and Analyses of Biological Sampling for Ageing and Determination of the Origin of the Catch
c. Fishery independent indices of abundance
    i. Aerial Survey
    ii. Tagging
d. Stock Structure and Spatial Dynamics
    i. Electronic tagging
    ii. Genetics

iii. Mico-chemistry

e. Reproductive biology

f. Analyses and modelling

3) Budget Allocation Recommendations

4) ***Program monitoring***

a) Monthly reports

b) milestones

c) deliverables

5) Other issues

a. Long term and multi-year funding – possible strategies

b. SC Coordination and Functioning

c. Planning Ahead - Phase VI and timing of SC meetings

d. Review how GBYP is fulfilling its Response to External Review of the Program

e. Table of action items

H. Adoption of the Report

Annex 3: List of documents provided to participants

Di Natale A. 2014. ICCAT Atlantic-wide research program for Bluefin tuna (GBYP). Activity Report for the first part of phase 4 (2013-2014). SCRS/2014/051. 50p.

Di Natale A. 2015a. ICCAT GBYP Phase 4 Incl. 2nd Extension. Estimated budget of the action table. (unpublished report). 1p

Di Natale A. 2015b. ICCAT GBYP Phase 5. Detailed budget, co-funding and budget as reflected in EU grant agreement tables. (unpublished report). 3p

Di Natale A. 2015c. ICCAT GBYP Phase 5. Revised budget. (unpublished report). 3p.

Di Natale A. 2015d. Draft Profile Assistant GBYP. (unpublished report). 1p.

Di Natale A 2015e. Draft Profile data specialist GBYP. (unpublished report). 1p.

Di Natale A 2015f. Draft Profile external expert for electronic data GBYP –(unpublished report). 1p.

Di Natale A. 2015g. Tentative SWOT analysis for the calibration of ICCAT GBYP aerial survey. (unpublished report). 11 p.

Di Natale A. 2015h. Tag deployment and Tag recovery tables. (unpublished report). 3p.

ICCAT 2013. ICCAT GBYP Steering Committee Meeting Report. Madrid 28-29 September 2013. 17 p.

ICCAT 2014a. Time to plan for the future of GBYP. SCRS/2014/194. 11p.

ICCAT 2014b. ICCAT GBYP Steering Committee Meeting Report. Madrid 24 September 2014. 4 p.

Annex 4 Draft Profile Assistant GBYP

POSITION ANNOUNCEMENT
ICCAT ATLANTIC-WIDE BLUEFIN RESEARCH PROGRAMME FOR THE BLUEFIN TUNA (GBYP) - COORDINATOR ASSISTANT

The ICCAT Atlantic-wide Research Programme for the Bluefin Tuna (conventionally ICCAT-GBYP) is an ambitious initiative to improve the Commission's knowledge of Atlantic bluefin tuna in order to better assess its status and therefore improve its management of this valuable resource. The program, already started in 2009, is financed with voluntary contributions and is intended to last for five or six years.

Program elements are contained in ICCAT, 2004, Col. Vol. Sci. Pap. ICCAT, 56(3): 987-1003 (although note that the priorities and level of funding will be adjusted as necessary) and in ICCAT Report 2008-2009, (I), 1: 42. Recent refinements of the programme are included in the document SCRS/2014/194 (http://www.iccat.int/GBYP/Documents/STEERING/PLAN_FOR_THE_FUTURE_OF_GBYP.pdf). The programme for year following 2014, as it was adopted by the ICCAT Commission in 2014, includes additional duties which require a coordinator assistant for the GBYP Coordinator.

Duties and Responsibilities

The position is related to the ICCAT Atlantic-wide Research Programme for Bluefin Tuna (GBYP) and will be a fixed-term contract for the duration of the GBYP program with one year probationary period. The position could be extended for the duration of GBYP.

The position will be under the supervision of the GBYP Coordinator and the post holder will work on the following areas:

- Assisting the GBYP Coordinator in the activities of the GBYP.
- Assist in administrative duties (contracts, cost controls, budget control, etc.).
- Assist in monitoring the regular development of the programme and reporting activities.
- Cooperate with the scientific staff of the ICCAT Secretariat in relation to GBYP activities.
- Assist in writing or editing all necessary documents of the programme.
- Assist in preparing publicity for the GBYP, such as web page, posters, leaflets, etc.
- Assist in organising meetings, workshop and symposia held under the GBYP.
- Assist in the preparation of GBYP annual reports to the SCRS and Commission.

Qualifications and Experience - Essential

- Master University degree with administrative skills, and demonstrated experience.
- Demonstrated capacity related to the management of complex projects. Ability to follow and monitor projects, create, follow and monitor workplans including field activities, and to communicate these orally and in writing.
- Ability to work well under pressure and to work effectively and harmoniously with people of different national and cultural backgrounds. High skill for communicate with people at different levels is essential.
- Excellent working knowledge of one of the three official languages of ICCAT (English, French or Spanish). And, high level of knowledge of English if non-native English-speaker.
- Excellent knowledge of the main office software (Excel, Word, etc.).
- Applicants should be in good health.

Additional Desirable Qualifications

- Knowledge of the principal fisheries for bluefin tuna within the ICCAT Convention area and high degree of knowledge of tuna biology.
- Ability to conceptualize and quantify scientific problems associated with assessment and fisheries management and to communicate these orally and in writing to diverse type of audiences.
- Knowledge and experience of databases, programming languages for data analysis and visualisation (e.g. R or Splus) and GIS.

Salary and remunerations

The position will be classified according to the United Nations Scheme at the Professional Level (P-1/P-2), (details to be provided by the Secretariat).

Application for the position

Candidates should submit a *Curriculum Vitae*, to be received at the Secretariat by **23 March 2015**. The CV should include documented educational background, professional experience, a list of relative published works, as well as three references (two professional and one character reference are preferred).

Applications should be sent to:

Mr. Driss Meski
Executive Secretary
ICCAT
C/ Corazon de Maria, 8
28002 Madrid, SPAIN
(driss.meski@iccat.int)

Please indicate the earliest time you can start working with the Commission. The position is expected to be filled as early as March/April 2015.

A personal interview may be required as well as a comprehensive medical examination.

The successful candidate will receive a notice of appointment from the Executive Secretary. The starting date of employment will be mutually agreed upon between the successful candidate and the Executive Secretary but should target March/April, 2015, at least one month before the 2015 bluefin fishing season starts.

Annex 5 Draft Profile data specialist GBYP

OSITION ANNOUNCEMENT
ICCAT ATLANTIC-WIDE BLUEFIN RESEARCH PROGRAMME FOR THE BLUEFIN TUNA (GBYP) – DATA-BASE SPECIALIST

The ICCAT Atlantic-wide Research Programme for the Bluefin Tuna (conventionally ICCAT-GBYP) is an ambitious initiative to improve the Commission's knowledge of Atlantic bluefin tuna in order to better assess its status and therefore improve its management of this valuable resource. The program, already started in 2009, is financed with voluntary contributions and is intended to last up to 2021.

Program elements are contained in ICCAT, 2004, Col. Vol. Sci. Pap. ICCAT, 56(3): 987-1003 (although note that the priorities and level of funding will be adjusted as necessary) and in ICCAT Report 2008-2009, (I), 1: 42. Recent refinements of the programme are included in SCRS/2014/194 (http://www.iccat.int/GBYP/Documents/STEERING/PLAN_FOR_THE_FUTURE_OF_GBYP.pdf). The programme for year following 2014, as it was adopted by the ICCAT Commission in 2014, includes additional duties which require a data-base specialist for the GBYP.

Duties and Responsibilities

The position is related to the ICCAT Atlantic-wide Research Programme for Bluefin Tuna (GBYP) and will be a fixed-term contract for the duration of the GBYP program with one year probationary period. The position could be extended for the duration of GBYP.

The data-base specialist will be under the supervisory responsibility of the GBYP Coordinator, working closely with the Statistics department at ICCAT, and will also collaborate with the SCRS in general.

The duties are the followings:

- Collaborate with ICCAT for developing the new data bases for those data not already managed by ICCAT.
- Enter all data collected by GBYP into the ICCAT data bases, carrying out coherence and quality-controls in strict contact with the ICCAT Statistical Department.
- Maintain an inventory (i.e. meta-database) of data collected under the GBYP.
- Maintain databases that combined the data collected under the GBYP, including: aerial survey data and images, historical catch and effort data, size samples and size frequency data, RMA, biological sampling, tagging (both electronic and conventional) and environmental data.
- Produce regular reports and analyses as required by the GBYP Coordinator, the GBYP Steering Committee and the SCRS.
- Develop standardized data summary reports.
- Develop automatic software routines to produce standardized data summaries.
- Collaborate as required with other aspects of the GBYP.

Qualifications and Experience (Essential)

– A degree in Computer Science or a related field.
– Proven knowledge and experience of database management, e.g. MySQL, PosgreSQL, MS-SQL, SQL, MS-Access or other databases, including an understanding of relational database structure, input and output queries protocols, methods for validation and data exchange formats.

- Proven knowledge and experience with computer software for data analysis such as R.
- Proven knowledge of GIS uses.
- Excellent working knowledge of one of ICCAT's three official languages (English, French or Spanish).

Qualifications and Experience (Desirable)

- Knowledge in Marine Sciences, Ecology, Statistics or a related field.
- Knowledge of spatial and mapping programs such Arc-View, GIS, R, Mapper
- English medium/excellent reading and writing level.
- Demonstrated capacity to conceptualise and quantify scientific problems and to communicate these orally and in writing.

Salary and remunerations

The position will be classified according to the United Nations Scheme at the Professional Level (P-1/P-2), (details to be provided by the Secretariat).

Application for the position

Candidates should submit a *Curriculum Vitae*, to be received at the Secretariat by **23 March 2015**. The CV should include documented educational background, professional experience, a list of relative published works, as well as three references (two professional and one character reference are preferred).

Applications should be sent to:

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Please indicate the earliest time you can start working with the Commission. The position is expected to be filled as early as March/April 2015.

A personal interview may be required as well as a comprehensive medical examination.

The successful candidate will receive a notice of appointment from the Executive Secretary. The starting date of employment will be mutually agreed upon between the successful candidate and the Executive Secretary but should target March/April, 2015, at least one month before the 2015 bluefin fishing season starts.

Annex 6. List of action items agreed by the GBYP Steering Committee

Action	Responsible person(s)	Date due	Comments
Complete Report documenting activities conducted in phase 4	GBYP coordinator	24 Feb 2015	
Order the maximum possible number of additional electronic tags	GBYP coordinator	23 Feb 2015	
Describe unresolved issues with western Atlantic trade data	GBYP coordinator	TBD	Not a priority for phase 5
Develop table of tag releases and recoveries by program phase, fish size category, location and scientific/fishery recovery	GBYP coordinator / Tagging Consortium	before September 2015	To be presented at BFT 2015 Species Group meeting
Develop terms of reference for call for tenders for feasibility study for genetic tagging/close kin study for BFT	GBYP SC	March 30 2016	The SC wants to consult with the BFT WG prior to finalizing these TORs
Determine the appropriate number of age samples by fishery and fish size category required to develop an age-length key	Consortium for biological collection	March 2 2015	Needs to be completed so that sampling can be adjusted to have enough samples to develop an age-length key prior to BFT data prep meeting of 2016
Issue new contract to Tom Caruthers	Executive Secretary	10 March 2015	Yearly contract for € 125,000
Contact alternative candidates for External expert for SC	GBYP SC[2]	15 March 2015	
SC considers candidates for external expert for SC and decides who to contract	GBYP SC[1]	30 March 2015	
Issue contract for external expert for SC	Executive Secretary	April 7 2015	
Contact alternative candidates for Coordinator for GBYP modelling group	GBYP SC	15 March 2015	
SC considers candidates for Coordinator for GBYP modelling group and decides who to contract	GBYP SC	30 March 2015	
Issue contract for Coordinator for GBYP modelling group	Executive Secretary	April 7 2015	

[2] except current external expert

Speed up the issue of tenders and contracts by adding wording to contracts that recognize offers are subject to funds being available	GBYP coordinator	asap	
Circulate among SC ICCAT guidelines for selection of independent peer reviewers/external experts	SCRS Chair	March 10 2015	
Raise the issue of a stable source of funding for large research programs during the SWGSM in 2015	SCRS Chair	June 22 2015	
Ask the BFT WG to discuss designs for collection of data for age length keys and analysis of current aerial survey data	BFT Rapporteurs	March 2 2015	
Call on CPC to synthesize available GBYP data in a form that can be used for 2016 assessment	BFT Rapporteurs	March 2 2015 and Sep 21 2015	Rapporteurs to make this request at every BFT meeting in 2015
Organize next meeting of the SC during the WGSAM meeting	GBYP coordinator		Meeting of the WGSAM to take place June 22-26 2015
Update list of milestones and deliverables for phase 5 and circulate to SC	GBYP coordinator	March 30 2015	
Update budget table for phase V using research categories	GBYP coordinator	March 30 2015	
Revise position announcements and advertise positions for Assistant to GBYP coordinator and GBYP data specialist	GBYP coordinator	Feb 24 2015	