GBYP Steering Committee Meeting

Madrid, 15-16 February 2018

The meeting of the GBYP Steering Committee (SC) was held at the ICCAT Secretariat in Madrid on 15-16 February 2017, with the participations of the SC members David Die (SCRS Chair), Gary Melvin (W-BFT Rapporteur), Ana Gordoa (E-BFT Rapporteur) and Miguel Neves dos Santos (ICCAT Assistant Executive Secretary, delegated by Driss Meski, ICCAT Executive Secretary). Francisco Alemany (GBYP Coordinator), Antonio Di Natale (former GBYP Coordinator), Alfonso Pagá García (GBYP Database Specialist) and Stasa Tensek (GBYP Assistant Coordinator) joined the meeting, invited by the Steering Committee.

David Die welcomed all the participants and opened the meeting. In the name of the Steering Committee, he thanked the former GBYP Coordinator Antonio Di Natale for his dedication and successful work during the ages of his services. The tentative agenda, as proposed by the GBYP Coordinator (**Annex 1**) was approved. Stasa Tensek was appointed as rapporteur.

Regarding the Amendment of the grant agreement for the Phase 7, GBYP Coordinator informed the SC that the EU still needs some clarifications to be presented before approving it, mainly in regards to extra expenses which occurred due to the retirement of the former GBYP Coordinator, since not all these costs could be accounted for in the Amendment. It was decided, following EU suggestions, that any future budget planning include a reserve for any extra expenses and benefits that might occur for the staff.

The Coordinator then gave a brief presentation on the activities that had been carried out during the Phase 7 and informed the SC on the status of each contract (**Annex 2**). Special attention was dedicated to the review of all electronic tagging activities carried out within the Programme so far and a brief analysis of the cause of the tag detachment was presented as well. The recently developed Shiny application for filtering and visualizing information available from etags was shown to SC members, and SC concluded that it was a very useful tool that should be further used as a reference for taking project management decisions.

The discussion then moved on to the planning of activities in Phase 8. The budget table was presented, focusing on the comparison between the budget for Phase 7, actual costs incurred and the tentative budget for Phase 8. Since the proposal of the grant agreement for Phase 8 still hasn't been approved by the EU, it was decided to change some details according to the new priorities that were going to be decided during the meeting and to incorporate them into the new proposal. It was also decided that a cover letter would be prepared by the SC to accompany the grant agreement proposal, responding to the concerns from EU about the apparent lack of progress in relation to previous Phases, pointing out the achievements of the GBYP in regards to the BFT stock assessment and other objectives.

Communication strategy

Driss Meski joined the meeting and informed the SC on some negative feedback on the Programme he had received from some CPCs, in view of unnecessary repeating of same tasks year after year instead of moving forward and progressing. Mr. Meski stated that the Programme reached a critical moment when some important changes in the management had to be introduced and the future activities had to be re-planned, taking into account the current priorities and not just carrying out the follow-up of the different activities. The SC acknowledged

that since the activities in the Programme have been organized by main types of activities (i.e. aerial survey, biological studies, data mining etc.), which were set at the beginning of the programme considering priorities stated by the SCRS and have not changed (since some gaps remains and also because some of these activities are still necessary for providing information required by the assessment), it might have caused the impression that the same tasks were repeating, although this was not the case. It was pointed out that the priorities and the specific objectives and activities changed in each phase, even though the methodologies stayed the same.

It was affirmed that the principal objective of the GBYP is filling the gaps in regards to the bluefin tuna stock assessment and that it is necessary to continue such a programme in forthcoming years. It was also noted that there are some long-term activities within GBYP, like aerial survey, biological sampling or ageing, which are necessary to be carried out annually for providing the data to the MSE and assessment, although they shouldn't necessary be considered innovative research, but rather monitoring activities. It was mentioned that it is to be decided by the Commission if these long term activities, which have proven to be useful for the assessment, are still to be done within the framework of GBYP, or another mechanism for their funding should be developed. The SC agreed that the Commission at its annual meeting in 2018 should take a decision on which assessment priorities are to be addressed through GBYP, following the inputs and recommendation of the SCRS.

The SC also noted that lately the Programme hasn't been successful in communicating all the achievements to the ICCAT scientific community and the Commission and, therefore, it was decided to develop a new communication strategy. To that end, it was decided to dedicate one whole day during the BFT species group meeting in September for the general discussions on GBYP and to devote it more time during the SCRS meeting. A comprehensive report will be prepared to inform the SCRS on the detailed achievements and the progress of the GBYP. It was decided that a broad review should be prepared by contracted experts (to be identified by the SC) in collaboration with the Coordinator. A total amount of 10,000/12000 € is envisaged to cover this task. Based on such a review of the GBYP and current assessment priorities, the SCRS should develop a recommendation with respect to the Programme, to be presented to the Commission on the annual meeting.

Phase 8 Activities

Data recovery

Although some arguments were presented by some CPCs against these activities, the SC concluded that data recovery should be in place as long as its results are considered useful for SCRS. Regarding the recovery of the recent Italian LL data, which was done in previous phases, it was recalled that these data were used for developing the CPUE, they had not been provided within EU data collection programme and were not available otherwise. It was decided to explore the possibility of including the current ICCAT data needs into the EU data collection framework.

It was explained that the Coordination team had been informed of the possible availability of some ICES data from 1940-70, from Canada, USA, Germany, Norway and some other countries, currently archived in NOAA SEFSC laboratory in Miami, that provide information on BFT individual length and weight. The expenses for recovery of these data were not esteemed high because only digitalizing and recording of the data has to be done. It was recommended that this task be undertaken by students from Rosenstiel School of Marine and Atmospheric Science.

As for the trap data, it was explained that the owner diaries of one trap located in Trapani, covering periods prior to XIX century, had been found, which might provide relevant information to be used for filling gaps in the trap data time series. It was decided to obtain the preliminary summary on type of information comprised in the diaries, including the total number of fish and weights, in order to estimate if this information would be really useful or not. In addition, GBYP Coordinator informed SC members on a set of electronic tags data offered by Barbara Block. SC decided to choose only the tags that are considered interesting from the list provided and offer the same price per tag as in the Phase 6.

In conclusion, the SC recommended lowering the current budget dedicated to Data recovery and identified three potential activities to be done in the Phase 8, dealing with the specific data sets already identified: 1) recovery of data from ICES, 2) recovery of trap data and 3) recovery of electronic tag data.

Aerial survey

The SC reiterated the importance of this survey for the BFT stock assessment and indicated that it has to be done annually in order to produce the fisheries independent index of abundance used in the MSE model. Given that the aerial survey design and strategy implemented in Phase 7 were proved efficient, it was decided to keep the same in the Phase 8. Given that developing of new design is not needed, the budget might be reduced accordingly. Nevertheless, given that the costs of the survey itself in the Phase 7 were underestimated, it was recommended to increase the corresponding budget figure in the Phase 8.

Tagging

It was decided to continue focusing in the Phase 8 onto electronic tagging, keeping the conventional tagging only as an opportunistic activity. In order to address the mixing issues, it was decided to implant electronic tags in North-eastern Atlantic and North Sea. In order to inform about transatlantic movement, it was decided to deploy tags in Portuguese traps, after the exit of bluefin from the Mediterranean. It was also recommended to change the methodology for implanting the tags in Portuguese traps, doing it on board instead of underwater, in order to decrease the possibility of premature detachments. The number of the tags to be implanted will depend upon the available budget. It was also decided to buy some more Wildlife Computers electronic tags, according to budget available, to ensure that the stock of tags, including those remaining from previous phase and the new ones, is enough for covering the scientific needs. Regarding the processing of the tracks, it was decided not to contract CLS services and use free Wildlife Computers GPE3 software for this purpose, which proved to provide information precise enough on the BFT movements considering MSE needs. Nevertheless, CLS will still be paid for Argos services. It was decided not to plan any future activities in connection with the close kin mark recapture tagging, because it was demonstrated that such method is not adequate for the Atlantic bluefin tuna, given the complexity of its population structure and spatial patterns, and also because the recent results of the close kin study on southern bluefin tuna proved the methodology not to be as good as expected.

Biology studies

The maintenance of the GBYP tissue bank was considered a priority and it was decided to start developing a contingency plan for the future years. It was decided to continue with the sampling activities in order to obtain ALK representative of catches. For that purpose, sampling of the adult BFT in the farms will be continued, with the goal of collecting 1200 samples (both otolith

and tissues for genetics) from 4 spawning areas, where the target per area will be proportional to the respective level of catches. Given that the targets for the YOYs set in the previous phases have been reached, further sampling of YOY will not be carried out. Collecting samples in the Eastern Atlantic, including Gibraltar area, was also recommended in order to provide samples useful for addressing the mixing. The number of samples will depend on the available budget.

Since determining the catch-at-age is still considered a high priority, it was decided to continue with the ageing of otoliths. For that purpose, it was envisaged to read 2000 otoliths (or less, according to availability), which are to be selected in a way to be representative of the different fisheries and years. Provided the good result of the ageing activity in the Phase 7, it was decided that the reading be done by the same laboratory. It was also decided to perform an inter-calibration exercise, including 5 laboratories that have already contributed in reading the otoliths within the GBYP. The exercise is to be done on 100 already read otoliths, which are to be carefully selected in order to be representative. Ana Gordoa offered to perform the daily ageing of 50 otoliths free of charge, in order to continue the study initiated in Phase 7 in greater depth and obtain more conclusive results. Pursuant to her offer, it was decided to provide her with the required samples (52 YOYs of 2016), even though they will be destroyed after the exercise.

It was also decided, depending on the available budget, to continue with the analyses of the samples collected in the Atlantic to address mixing, prioritising the samples from Portuguese and Moroccan traps or any other site which had proven to show interannual variability in western/eastern stock proportion. Given the budget constraints, it was decided to analyse the samples using either micro chemical or genetic analysis, giving priority to the method that costs less. Regarding the analyses that were initiated in the Phase 7 with the goal of identifying genetic markers for bluefin sex identification, it was decided to continue the analysis only if the budget permits it, giving priority to other activities.

Pursuant to the recommendation of the GBYP Workshop on BFT reproductive biology which was held in the Phase 7, the SC decided to incorporate as a goal of the Phase 8to affirm or reject the hypothesis of substantial differences in reproductive biology parameters between the eastern and western stocks. To this end it was recommended to contract two independent experts to review the available information on east/west differences, dedicating 10,000 € for this purpose, who would elaborate a reference report that would facilitate the discussions and a final agreement on this topic within the framework of the workshop on BFT reproductive biology that was planned to be done in Phase 8. The general agenda and the list of participants of such workshop were developed during the aforementioned workshop held in the Phase 7.

Modelling

The status of the development of bluefin tuna MSE was briefly described by Paul De Bruyn (ICCAT Head of the Department of Research and Statistics), who was invited to the meeting by the SC. It was explained that, given that some members of the Core Modelling and MSE group don't actively participate to the MSE development, and having in mind the new requirements, it would be reasonable to revise the list of members. It was decided that GBYP Coordinator, in collaboration with Doug Butterworth and Paul De Bruyn, proposes a list of members and submit it to SC for further improvements. It was noted that it was planned to hold one meeting of the Core Modelling and MSE Group during Phase 8.

Regarding the role of Doug Butterworth, it was clarified that, although formally not a Coordinator, he acts as *de facto* coordinator, facilitating the interaction between Tom

Carruthers and the members of the Core Modelling and MSE Group. The SC gratefully acknowledged his valuable work and dedication and decided that his travel expenses for participating to the meetings connected to the development of BFT MSE have to be covered. Regarding the role of communicator, it was explained that this figure will not be needed within the GBYP, but eventually on the level of all ICCAT MSEs, if Commission decides so. In that case, GBYP will have to share a part and therefore it was decided to reserve some amount within the budget for that purpose.

Regarding the work of Tom Carruthers, his progress was esteemed satisfactory and according to plan and, therefore, it was decided to continue his contract in Phase 8. Given that the proposed amount of the contract is higher than the previous one, it was decided to ask for clarifications from Carruthers in order to justify the amount (does the contract require full time dedication or not, the definition on daily rates or rates charged, the work plan and the time framework necessary for the completion of the work). It was also noted that it has to be clarified if his travel expenses will be included in the budget.

The SC was also informed that the Secretariat organizes three MSE training courses in order to build the technical MSE capacity of SCRS scientists. Given that the travel of some EU scientists (Fulvio Garibaldi and Daniela Rossi) which will participate to this course will not be funded by any institution, and their engagement in the MSE process has direct interest for BFT assessment, it was decided that GBYP assumes their travel costs.

Other issues

Regarding the innovative ideas for GBYP already proposed by various scientists in Phase 6, it was decided that the Coordinator identifies the priorities and potential new initiatives and informs the SCRS, possibly within the extensive report on GBYP that is to be presented during the BFT Species group meeting.

With respect to communication with the SC, it was decided to maintain monthly reports in Excel, but also to quarterly draft a newsletter on latest progress of the Programme, which will not only be used for informing the SC, but will also be published on the GBYP web page.

As for the contract of the external member of the GBYP Steering Committee, the SC assumed taking charge of preliminary communication with the potential candidates within the next week and informing the Coordinator on the results.

It was decided to hold the next SC meeting on 18 or 19 April 2018, in the afternoon or in the morning, respectfully, back to back with MSE meeting. Following meeting was envisaged in September, during the BFT species group meeting.

Annex 1

GBYP STEERING COMMITTEE MEETING

15-16 February 2018

TENTATIVE AGENDA

1) Review of Phase 7:

- Amended budget (latest news from DG Mare…). *GBYP Coordinator*
- Reporting on activities status, problems and achievements. *GBYP Coordinator*

2) General info on Phase 8 proposal:

- Submitted application (justification of budget allocation, status of CPCs contributions, etc). *GBYP Coordinator*
- Overall comments on Phase 8 budget allocation by main activities. *SC members*

3) Detailed plans for Phase 8:

- Tagging activities:
    - Review of tagging objectives, preliminary analysis of electronic tagging results and tagging strategies effectiveness. *GBYP Coordinator*
    - EoI received (tagging in Norway and expanded tagging in North Sea). *GBYP Coordinator*
    - Planning of 2018 tagging activities. *SC members*

- Modelling activities:
    - General info on current MSE work status: Expert (Tom Carruthers) new proposal, forthcoming meetings, contract for MSE communicator, questions posed by Core Modelling Group coordinator (Doug Butterworth). *GBYP Coordinator & Paul de Bruyn*
    - Discussion on MSE matters. *SC members*

- Aerial surveys:
    - Summary of results, problems and achievements. *GBYP Coordinator*
    - Planning of 2018 Aerial surveys. *SC members*

- Biological studies:
    - Summary of results, problems and achievements. *GBYP Coordinator*

        - EoI received and pending studies (larval studies in GOM, development of genetic test for sex determination, Close Kin). *GBYP Coordinator*
        - Planning of 2018 Biological Studies. *SC members*

- Data recovery:
        - EoI received (e-tags and acoustic tag data. *GBYP Coordinator*
        - Planning of 2018 data recovery activities. *SC members*

4) Other matters and conclusions. *SC members*
- Reconsideration of already provided EoIs in Phase 6 (new ideas)
- Protocol for communication between SC and Coordination Team
- External Steering Committee member
- Other matters.

Annex 2

A brief overview of the activities realized in GBYP - Phase 7 (2017-2018)

1. Coordination

Due to retirement of Dr. Antonio Di Natale at the end of Phase 7, the new coordinator Dr. Francisco Alemany was appointed, who assumed the responsibility from 15th January 2018. In Phase 7, a total of 6 calls for tenders were issued, as well 2 invitations and one direct contract. The total list of contracts awarded in Phase 7 is shown in the **Annex 3**. The external Steering Committee member was not appointed in this phase.

2. Data recovery

In Phase 7, two contracts awarded for obtaining the recent data from Italian longline fishery, while the offer for tagging-recapture data from Norway (1956-1962) was withdrawn due to incapacity to meet deadlines. One contract provided recovery of the LL datasets for the years 2014-2016 and is related to a total catch of 4,958 Bluefin tunas and a total weight of 231,719 kg. Individual length or weight or both was provided for all those 4,958 Bluefin tunas. The other contract provided the recovery of additional LL datasets for the years 2011, 2012 and 2016, which included a total catch of 15,744 Bluefin tunas, with a total weight of 844,850 kg. Among those 3,172 individuals were sampled individually, and their weighs or length data provided. These data have already been presented to SCRS.

3. Aerial survey

In Phase 7, the new design for Aerial Survey in 2017 was drafted and protocols and forms were updated. In addition, in ICCAT HQ a training course was held for pilots, professional spotters and scientific observers that were engaged in the activity. Aerial survey was carried out on 4 overlapping areas by 3 companies. The surveys were mostly carried out according to the plan. Although not all planned transects were done, the total effective transect length was similar to the average in previous years. Some logistical problems that were encountered in this year included delayed issuing of permits, restricted access to some areas, lack of fuel in some airports, bad weather, poor visibility etc. A new strategy of weekly checking of individual reports that was employed this year allowed for elaborating summary report just two weeks after the conclusion of field activities and data were presented to SCRS during Stock Assessment Session. The BFT sightings in 2017 on and off effort are shown on the **Figure 1**.

Aerial survey index of abundance (5-years series) is used in OM-MSE, but not yet in the BFT assessment.

Design developed in 2017 is standardized for 4 overlapping areas and 4 replicates. The results are comparable with previous surveys and the same design can be used for future GBYP aerial surveys.

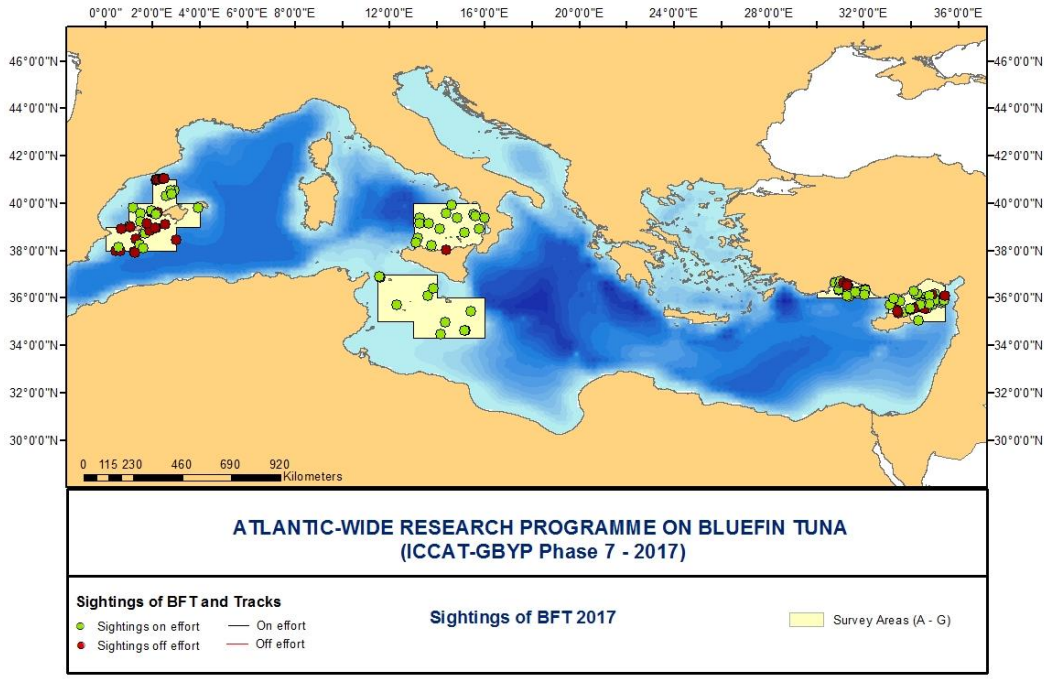

Figure 1. Aerial survey for BFT spawning aggregations in 2017 – Sightings on and off effort

3. Tagging

In Phase 7, a total of 40 electronic tags were deployed off Portugal and 18 in Skagerrak (Sweden/Denmark). The offer for tagging in Norway was not provided and the offer for tagging in Ireland was rejected because the required budget was esteemed as too high. In addition to the electronic tagging, some low-level opportunistic conventional tagging was done as well, on various sites. Preliminary tagging results have already been communicated to SCRS (September 2017) and already available processed tracks have been forwarded to Matt Lauretta and Tom Carruthers. In addition, the electronic tags database was developed for GBYP tags, along with Shiny application for visualisation of tracks, temperature and depth data. It was presented to SCRS but it has not been implemented yet. As a complementary activity, a research on post-release mortality was carried out and preliminary results indicate higher mortality than expected. In this phase, a total of 10,000 conventional tags have been purchased and 22 electronic tags remain unemployed and are available for future tagging.

Preliminary results of electronic tagging indicate that a total of 53 PSATs have already popped off, while 5 are still deployed. Average time on fish is 40 days and max 158 days. The available tracks of Phase 7 are shown on **Figure 2**. It has to be noted that a total of 13 out of 53 tags popped off prematurely due to a broken pin and the producer Wildlife Computers will provide warranty replacement tags for each.

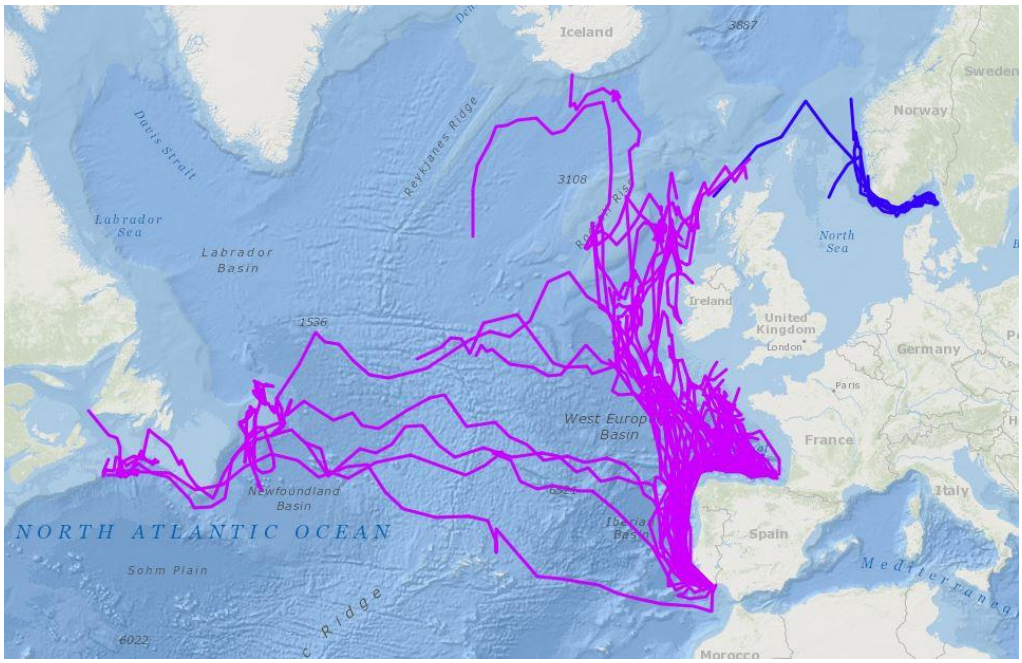

Figure 2. Electronic tags deployed in GBYP Phase 7 - Available tracks

In the scope of tag awareness and recovery, 900 T-shirts have been purchased for replenishment of the reward T-shirt stock. In Phase 7, the total recovery rate is just a bit more than 2% and the number of recovered tags in 2017 (a total of 136 tags of various types) was lower than in previous year, although these are only preliminary results.

4. Biological studies

4.1 GBYP tissue bank

For the first time this activity was formalized in the contract with the consortium headed by AZTI and a special amount in the budget was dedicated for the purpose. A preliminary database of available samples in the Bank has already been provided. In addition, the Shiny application was developed https://aztigps.shinyapps.io/bluefin/ for visualisation of collected samples on the map (allows filtering by area, year, month, size class and tissue type).

4.2 Sampling

Sampling of adult BFT was carried out on all major spawning grounds in the Mediterranean (more than 300 samples collected in each area: Balearic Sea, Tyrrhenian Sea and Central/South Mediterranean; and almost 300 in Levantine Sea). Sampling of YOY was also carried out on major spawning grounds and on other areas, but generally the targets were not reached (in Gibraltar 100, in Tyrrhenian less than 100, in Central/South Mediterranean almost 100, in Levantine sea above target more than 300 samples). In addition, complementary sampling was carried out on other areas (more than 200 adults in Norway). For the first time, some samples were collected by ROPs. The overall results indicate that collecting otoliths is still a problem due to the way the fish is killed in the farms.

4.3 Analyses

Due to the budget constraints, the biological analyses were reduced in the Phase 7.

4.3.1 Otolith microchemistry (performed by AZTI Consortium): The analysis of nursery origin of BFT in mixing zones was performed on 50 BFT caught in Morocco in 2016 and the results show that in 2016 80-100% of fish were of Eastern origin. The analysis taking into account the previous results (**Figure 3**.) indicates that mixing of Eastern and Western population in Moroccan traps occurs at variable rate

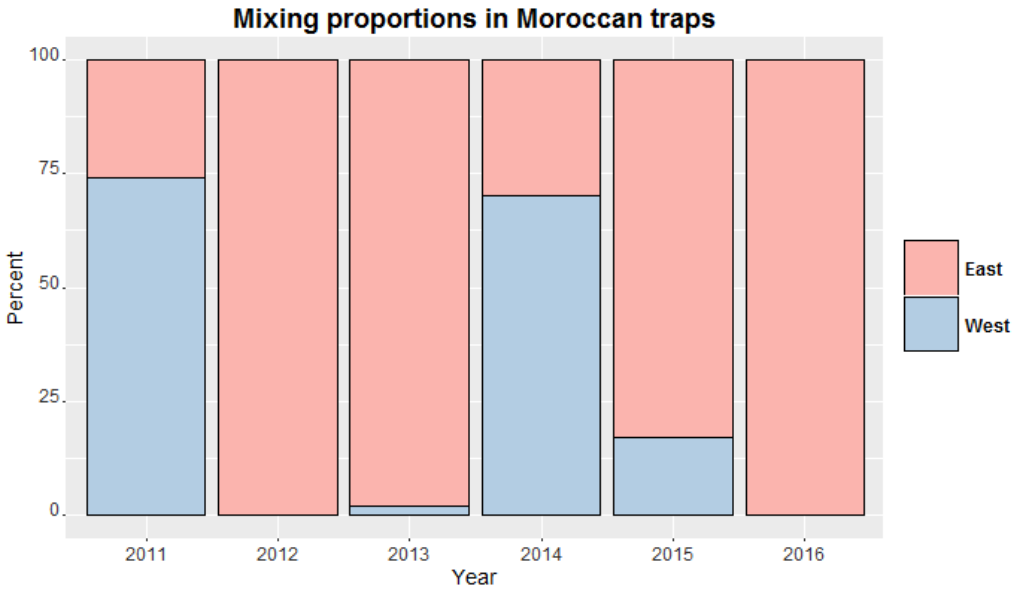

Figure 3. Mixing proportions in Moroccan traps 2011-2016

4.3.2 Genetic analyses of transcriptomic and genomic data for defining genetic variability of the species (performed by UNIBO-ComBioMa) - Genome-wide annotation of protein-coding genes have been performed and 41,508 protein-coding genes were identified.

4.3.3 Experimental trials for genetic sex determination (performed by UNIBO-ComBioMa) – Up to 32 some possible sequences of sex determining genes and markers have been identified, located in different areas of the genome. To develop a test for sex identification further work, based on known sex individuals, should be carried out.

4.3.4 Closing gaps in reproductive biology of BFT in NW Atlantic (performed by Tag a Tiny, SEE) - Some previous analyses indicated that the endocrine profiles of the fish sampled in the Slope Sea (spawning in the late summer) might be different from those from GOM (spawning earlier). The intention in this study was to obtain endocrine profile (gonadotrophins quantity in the pituitary gland, hypothalamus and liver) of the BFT sampled in SW Nova Scotia in order to identify the spawning period, consistent with the presence of larvae in the North Slope Sea. However, due to logistic constraints the sampling targets were not reached and the study have not been carried out. However, the other main objective of this activity, to create a collection of slides for histological analysis from gonads samples available in LPRC and NOAA Panama, have been accomplished, in spite the work is still ongoing and the analysis of these samples pending.

4.3.5 Daily aging (performed by AZTI Consortium) – The analysis was performed on 20 YOYs caught in Mediterranean in 2016, whose larger than expected size suggested that they might have been born before the assumed spawning season (before mid-May). The results indicate that all were born in June-July period, rejecting the original hypothesis, although confirming that the growth rates can vary a lot between individuals born in the same season. Specifically, one group of individuals sampled in August in the Tyrrhenian presented an apparently abnormal quick growth (see **Figure 4.).**

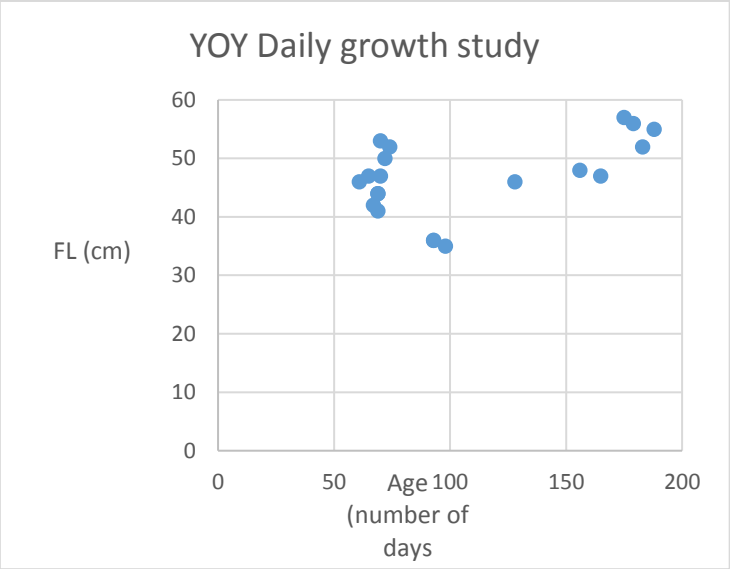

Figure 4. YOY 2016 daily growth study results

4.3.6 Ageing (performed by Fish Ageing Services, Australia) – It seems it has been successfully carried out on 2000 samples, waiting for results.

4.4 Workshop on BFT reproductive biology was held in ICCAT HQ at the end of the Phase 7 and it included participation of 7 scientists, apart from Steering Committee members.

5. Modelling

One of the activities of Phase 7 was holding a Technical WG Meeting for external experts (Laurie Kell, Abdelouahed Ben Mhamed, Anders Nielsen) with the goal of development of SAM assessment for E-BFT. The results of the assessment have already been presented to SCRS. In addition, three meetings of GBYP Core Modelling and MSE Group were held in this phase. The work of Tom Carruthers has been developed in line with the objectives and schedule.

Some of the major achievements in the work of Tom Carruthers in Phase 7 were the following:

1. Examples based on agreed trials, output statistics, conditioning diagnostics - In the July 2017 CMG meeting, the format for operating model fitting diagnostics was finalized. These were used in SCRS/2017/223 to describe the fit of the 12 operating models to data. SCRS/2017/224 provides results of two MPs tested using the ABT-MSE R framework including a detailed account of their programming and integration into the package (SCRS/2017/225). The package now includes standard MSE diagnostics and figures so that users can produce comparable outputs for their custom MPs.

2. Drafted papers on applications of MSE - Three papers were drafted (SCRS/2017/223-225)

3. Updated repository, SDP, test unit, meta database - These updates are planned to occur before the end of February 2018, after finalization of example MPs and operating models.

4. Evaluation of Management Procedures implemented by 3rd parties - A list of prospective MP developers was produced at the September 2017 Core modelling MSE group meeting. The next step is to reach out to MP developers and provide supporting materials (the ABT-MSE R package and manual / supporting papers). Following this, a short webinar demonstrating MP development and testing in the package might help to further encourage MP development. Finally, MP developers could co-author an SCRS paper (or series of SCRS papers) evaluating MP performance.

Annex 3

ICCAT-GBYP CONTRACTS (PHASE 7)								
ICCAT GBYP DATA RECOVERY								
PHASE	**YEAR**	**CALL FOR TENDERS or ACTIVITY**	**RETAINED PROPOSAL**	**main contact**	**working schedule**		**COST €**	**NOTES**
					initial date	**final date**		
7	2017-2018	03/2017	*Data recovery plan* - Necton Soc.Coop. A r.l. - Italy	Antonio Celona, e-mail: info@necton.it	21/06/2017	07/07/2018	6.500,00 €	
		03/2017	*Data recovery plan* - Ricerca Mare Pesca s.c.a.r.l. - Italy	Marcello Bascone, e-mail: marcellobascone@libero.it	02/06/2017	07/07/2018	17.500,00 €	
ICCAT GBYP AERIAL SURVEY								
PHASE	**YEAR**	**CALL FOR TENDERS or ACTIVITY**	**RETAINED PROPOSAL**	**main contact**	**working schedule**		**COST €**	**NOTES**
					initial date	**final date**		
7	2017-2018	01/2017	*Aerial survey design* - Alnilam - Spain	Ana Cañadas, e-mail: anacanadas@alnilam.com.es	24/04/2017	31/07/2017	25.000,00 €	
		02/2017	*Aerial Survey* - Grup Air-Med - Spain	Francisco Javier Hevia Bousoño, e-mail: javier@grupairmed.com	16/05/2017	19/07/2017	164.930,00 €	
		02/2017	*Aerial Survey* - Unimar-Italy and Aerial Banners-Italy	Adriano Mariani, e-mail: a.mariani@unimar.it	19/05/2017	19/07/2017	74.090,00 €	
		02/2017	*Aerial Survey* - Action Air Environnement - France	Alexis Giordana, e-mail: agiordana@action-air.net	15/05/2017	19/07/2017	136.161,00 €	
		cost reimbursement	*Aerial Survey Training Course*	Antonio Di Natale, e-mail: antonio.dinatale@iccat.int	15/05/2017	15/05/2017	8.521,28 €	
ICCAT GBYP TAGGING PROGRAMME								
PHASE	**YEAR**	**CALL FOR TENDERS or ACTIVITY**	**RETAINED PROPOSAL**	**main contact**	**working schedule**		**COST €**	**NOTES**
					initial date	**final date**		
7	2017-2018	04/2017	*Tagging programme* - Technical University of Denmark, as leader of a Consortium including 2 more institutions (1 Sweden, 1 Netherlands)	Brian MacKenzie, e-mail: brm@aqua.dtu.dk	28/06/2017	04/12/2017	87.952,00 €	
		07/2017	*Tagging programme (Area B)* - Tunipex S.A. - Portugal, as leader of consortium including one more Portuguese institution	Alfredo Poço, e-mail: alfredo@tunipex.eu	11/07/2017	28/12/2017	43.500,00 €	
		purchase order	*Tagging awareness campaign* - Refurbishment of T-shirts - Fun Fashion - Spain	Juan Carlos Vázquez, e-mail: funfashiont@gmail.com	14/12/2017	15/02/2018	3.582,00 €	
		purchase order	*Tagging programme* - Purchase of conventional tags - Floy Tag & Manufacturing - USA	Betsy Amick, e-mail: betsy@floytag.com	15/12/2017		$ 6.725,00	Original cost $ 6.725,00
ICCAT GBYP BIOLOGICAL SAMPLING AND ANALYSES								
PHASE	**YEAR**	**CALL FOR TENDERS or ACTIVITY**	**RETAINED PROPOSAL**	**main contact**	**working schedule**		**COST €**	**NOTES**
					initial date	**final date**		
7	2017-2018	05/2017	*Sampling for BFT adults* - AquaBioTech Ltd - Malta, as the leader of consortium including three more Maltese institution	Simeon Deguara, e-mail:dsd@aquabt.com	02/06/2017	10/02/2018	98.072,00 €	
		05/2017	*Sampling for BFT adults* - Balfegó & Balfegó S.L. - Spain	Begonya Mèlich Bonancia, e-mail: bmelich@grupbalfego.com	29/06/2017	10/02/2018	36.171,35 €	
		05/2017	*Sampling for BFT adults* - Taxon Estudios Ambientales S.L. - Spain, as a leader of consortium including one more Spanish institution	Antonio Belmonte Ríos, e-mail: antonio.belmonte@taxon.es	24/05/2017	10/02/2018	40.000,00 €	
		09/2017	Ageing 2000 otoliths - Fish Ageing Services - Australia	Kyne Krusic Golub, e-mail: kyne.krusicgolub@fishageingservices.com	12/06/2017	10/02/2018	$ 97.580,00	Original cost $ 97.580,00
		08/2017	*Biological studies* - Fundación AZTI - Spain, as leader of a Consortium including 9 more institutions (2 Italy, 1 Malta, 1 Turkey, 1 Spain, 1 USA (w/o budget), 1 Ireland (w/o budget), 1 Japan (w/o budget), 1 France (w/o budget) (+ 4 subcontracts: 1 Turkey, 1 Portugal, 1 Italy, 1 Spain)	Haritz Arrizabalaga, e-mail: harri@azti.es	10/07/2017	15/02/2018	132.597,91 €	
		08/2017	*Biological studies* - Social and Environmental Entrepreneurs - Tag a Tiny Programme - USA	Molly Lutcavaga, e-mail: melutcavage@gmail.com	10/07/2017	15/02/2018	127.800,00 €	
		08/2017	*Biological studies* - University of Bologna - Italy, as leader of a Consortium including 1 more institution (Italy)	Alessia Cariani, e-mail: alessia.cariani@unibo.it	10/07/2017	15/02/2018	42.109,38 €	
ICCAT GBYP MODELLING APPROACHES								
PHASE	**YEAR**	**CALL FOR TENDERS or ACTIVITY**	**RETAINED PROPOSAL**	**main contact**	**working schedule**		**COST €**	**NOTES**
					initial date	**final date**		
7	2017-2018	06/2017	*Modelling Approaches: Support to Bluefin Tuna Stock Assessment* - Blue Matter Science - Canada	Thomas Robert Carruthers, e-mail: t.carruthers@fisheries.ubc.ca	24/04/2017	21/02/2018	83.000,00 €	
		cost reimbursement	*External expert assistance for DPM and assessment* - Abdelouahed Ben Mhamed and Anders Nielsen	Antonio Di Natale, e-mail: antonio.dinatale@iccat.int	15/05/2017	19/05/2017	3.500,00 €	approximate cost
		cost reimbursement	*ICCAT GBYP Core Modelling and MSE group* meeting	Antonio Di Natale, e-mail: antonio.dinatale@iccat.int	19/07/2017	23/07/2017	4.382,80 €	