

ICCAT GBYP

ATLANTIC-WIDE BLUEFIN TUNA RESEARCH PROGRAMME 2010

ACTIVITY REPORT FOR 2009-2010 (PHASE 1)

1.0 Introduction

The Atlantic-wide research programme for bluefin tuna was officially adopted by SCRS and the ICCAT Commission in 2008, after a long process. In 2003, as an input of the Working Group established by Rec. 02-11, SCRS presented the Commission with a research plan to improve knowledge on bluefin tuna, with a special focus on mixing between the two stocks (ICCAT, 2004, Col. Vol. Sci. Pap. ICCAT, 56(3): 987-1003). The various research elements included in this first proposal are still pertinent today, even if some other activities have been included in the following years. During the Marrakech Commission meeting (2008), the SCRS chair met with all the scientists present at the meeting and a detailed proposal was forwarded to the Commission. The proposal was adopted by the Commission in plenary (ICCAT Report 2008-2009 (I), 1: 40) and resulted in a first official document, Res.08-06, which covered only the 2004 SCRS proposal but under a broader title. At the same time, the Commission approved the STACFAD Report (ICCAT Report 2008-2009 (I), 1: 42), which included the agreement to endorse the Atlantic-wide research programme (ICCAT Report 2008-2009, (I), 1, Appendix 10 to Annex 9: 284-287), establishing three priorities in 2009 (Coordinator, data mining and Aerial surveys), other action to be further discussed by SCRS in 2009 and the provision for the programme to be adjusted in the following years taking into account the evolution of its implementation and research needs. The total budget of the programme was estimated at about 19 million Euros in 6 years, with the engagement of the European Community and some other Contracting Parties to contribute to this programme in 2009 and in the following years.

The SCRS, in 2009, reviewed the updated research proposal submitted by SCRS chair, as it was discussed and presented to the Commission at its meeting in 2008 (ICCAT Report 2008-2009 (II), 1: 224 and ICCAT Report 2008-2009 (II), 2: 223-224). The SCRS indicated the priorities identified in the 2008 document, as follows:

- a) Improve basic data collection;
- b) Improve understanding of key biological and ecological processes;
- c) Improve assessment models and provision of scientific advice on stock status.

A number of Contracting Parties expressed a willingness to make extra-budgetary contributions to such a programme with a view towards initiation of activities in 2009 related to programme coordination, data mining, aerial surveys, and tagging design studies, with additional research activities to be undertaken in the following years. The first phase costs were set at 750,000 Euro and voluntary contributions sufficient to initiate the year 1 activities were jointly committed by the European Community (80%), United States, Japan, Canada, Norway, Croatia, Turkey and Chinese Taipei, while Morocco indicated its interest in future contributions. The provision to accept additional contributions from various entities and private institutions or companies was also agreed.

2.0 Coordination activities

The GBYP officially started on 12 October 2009, with the signature of the agreement between the European Community and the ICCAT Secretariat. The GBYP co-ordination full-time activity officially started on March 3, 2010, after hiring the Coordinator (Dr. Antonio Di Natale).

The very first period was devoted to set-up a detailed weekly workplan for 2010 and to organise the coordination structure at the Secretariat, The ICCAT Secretariat set up the administrative structure and the administrative rules were agreed and established, accordingly with the ICCAT system and taking into account the GBYP administrative needs.

During the 1st Phase of GBYP, the coordinator participated officially to the 15 meetings in various Countries. Furthermore, the GBYP coordinator is providing a scientific support to all the national initiatives which are potentially able to increase the effectiveness of the GBYP and its objectives. For this reason, he was also asked to join the Steering Committee for the bluefin tuna programmes of the NOAA, together with other members of the GBYP Steering Committee. All the activities were carried out after publishing Call for Tenders.

The detailed report is available on document SCRS/2010/135.

3.0 Steering Committee

The GBYP Steering Committee was nominated on March 13, 2010); the members are the Chair of SCRS, Ph.D. Gerald Scott, the BFT-W Rapporteur, Ph.D. Clay Porch, the BFT-E Rapporteur, Ph.D. Jean-Marc Fromentin, the ICCAT Executive Secretary, Dr. Driss Meski, and an external expert, Ph.D. Tom Polacheck, who kindly accepted this duty.

The activity of the Steering Committee included continuous and constant e-mail contacts with the GBYP coordinator, who provided all the necessary information. The Steering Committee held various meetings (23-24 April 2010; 19 June 2010; 4-5 September 2010; 10-11-12 September 2010 and 30 September 2010) to discuss various aspects of the programme, providing guidance and opinions. During the first two meetings in September, the Steering Committee provided also the detailed plans for Phase 2 and Phase 3 of the GBYP, under two different scenarios, a budget according to the original figure and a reduced minimum budget.

4.0 Aerial surveys

The aerial surveys have the scope to provide fishery independent indices, concerning various fractions of the stock. The aerial surveys targeting spawning aggregations can potentially provide trends and indices for the spawning stock biomass, while aerial surveys targeting aggregations of juveniles can potentially provide indices for the recruitment. Surveys shall be conducted with a statistically sound design and for several years in order to get reliable indices.

The budget available (300,000 Euro) for the first phase was not enough to cover all areas and all needs (spawning aggregations and juvenile aggregations) and then it was decided to concentrate all efforts and resources only on bluefin tuna spawning aggregations.

4.1 Aerial survey design

The preliminary work was devoted to identify the most relevant areas and it was carried out at the ICCAT Secretariat, by using the 2008 and 2009 VMS data from purse-seine vessels. It was agreed to concentrate the efforts only on areas where the PS fishing activity was more intense in these last two years and 6 sub-areas were identified.

The study for the tagging design was awarded to a well-known specialist, who provided a detailed design, statistically sound and able to balance the available funds with the flight hours required. After two revisions, the design was provided on May 1, 2010 and the ICCAT Secretariat provided the file to submit the survey data.

4.2 Aerial survey on spawning aggregations

The aerial survey on spawning aggregations was carried out by three companies, selected over seven tenders and the contracts were discussed and agreed from 11 to 13 May 2010. All tenders were able to get the flight permits from Spain, Italy, Malta, Cyprus and Turkey in due time, but it was not possible to get flight permits from Libya and Tunisia, while the permit from Egypt was changed and withdrawn when the aircraft entered within the Egyptian airspace. All these problems imposed a revision of the contracts and, at the same time, a revision of the aerial sampling design. The aerial survey started on May 24 and ended on August 3.

Two sub-areas were cancelled and another was reduced, creating a serious problem for the survey in general, because the biological information on bluefin tuna spawning and behaviour in these areas were almost not existing. In agreement with the Steering Committee, it was decided to define two additional sub-areas, where the fishing activity on spawners was anyway present in 2008 and 2009, providing in emergency a new aerial survey design for those new sub-areas and amending one contract accordingly.

The monitoring of the sea surface temperatures and sea state and winds was carried out by the coordinator and data were provided to the various teams in real time. The unfavourable weather conditions and the cold water temperatures in spring 2010 created additional operational problems to the aerial survey, prolonging the time required to fulfil the necessary flight time. A delay in bluefin tuna spawning activities was noticed in several sub-areas. Five aircrafts and teams conducted the surveys in the various sub-areas. The aerial survey data have been provided on schedule by all teams and the individual reports are already available.

A contract was provided to a company on August 6, 2010, to analyse the aerial survey data. The report was provided on due time (September 27, 2010) and the results are considered very useful for improving the aerial survey activities in the following years. This first year activity of aerial surveys is considered essential and extremely useful to better plan and refine the next aerial surveys, including the necessary preliminary official contacts with all CPCs interested by the Aerial Survey activities, in order to inform the local Authorities and get flight permits on time.

5.0 Data mining and data recovery

The first preliminary activity was conducted at the ICCAT Secretariat. An analysis of the ICCAT data base on bluefin tuna was carried out, with the purpose to identify the most relevant gaps in the data series which are potentially useful

for the stock assessment; this gap analysis was provided by GBYP to the SCRS Scientists and National statistical correspondents to help them in detecting the lacking data.

Three Calls for Tenders were issued on this item and five contracts were awarded on July 30, 2010, to various entities, public and private. The various proposed data sets, actually missing from the bluefin tuna data base, concerns about 180,000 specimens and a wide range of years and gears, and should improve the knowledge on several fisheries in various areas. A common format for transmitting the data to the ICCAT Secretariat was provided to all the contractors, with the purpose to get the data “ready to use” and in a format allowing their immediate incorporation in the bluefin tuna data base. Many data sets have been already provided to the GBYP on due time. The final report must be submitted by October 4, 2010.

6.0 Tagging design

This item is considered extremely relevant, because it should provide a better estimate of natural mortality rates (M) by age or age-groups and/or total mortality (Z); it should provide also updated tagging reporting rates by major fisheries and areas, and it should improve the knowledge on the habitat utilisation and movement patters of bluefin tuna in the various areas. It shall provide the base to carry out the tagging activities in the following years, with important implications on the GBYP budget. It was largely discussed, at first at the Secretariat level, and then with the Steering Committee, because of the various possible option of tagging techniques and their different possible use for the assessment. At the end of the discussion, a Call for Tender was issued on July 26, 2010 and a single bid was received. The Steering Committee (4-5 September, 2010, in agreement with the ICCAT Secretariat and the GBYP Coordinator, asked the tender to modify the proposal, in order to get a tagging design limited to the Eastern Atlantic and the Mediterranean, for conventional tags and PITs (and electronic tagging in Phase 3), asking to verify the practical tagging possibilities with tuna trap owners and purse-seine fishermen, and including a manual for tagging. The official request to modify the offer, also taking into accounts the revised and reduced budget adopted by the Steering Committee, was delivered on September 14, 2010 and the revised offer arrived on September 24, 2010 and it is under examination.

7.0 Definition of GBYP Publication Policy, Editorial and Data Rules

The need to have a clear and defined publication policy, along with editorial and data use rules, was one the first issue tackled within the GBYP coordination. The discussion was carried out at the Secretariat level, taking into account the ICCAT rules in this sector and the SCRS statements, and the final document was officially adopted on March 15, 2010.

8.0 GBYP web page

The ICCAT Secretariat, in agreement with the GBYP Coordinator, decided to add a GBYP page to the official ICCAT web page, with the purpose to provide full and transparent information about all the activities carried out by the GBYP. The page was set-up by the Secretariat staff and the contents were provided by the GBYP Coordinator. The page will be regularly updated.

9.0 Following activities

The next phases of the Atlantic-Wide Research Programme for Bluefin Tuna will include only activities able to provide fishery independent data and indices within the time-frame of the whole programme and in agreement with the GBYP general plan adopted by the SCRS and the ICCAT Commission. Due to the limited budget available for Phase 2 (2010-2011) some activities already included in the original general planning have been temporarily excluded (i.e.: eggs and larval survey, intercalibration of aerial surveys), others have been delayed (i.e.: electronic tagging), while others (i.e.: conventional and PITs tagging) have been considerably reduced. The Steering Committee and the GBYP Coordinator agreed to keep only the activities already initiated or absolutely essential for the programme, but confirming the need to follow the original list and volume of activities whenever appropriate funds will be available. For this reason, GBYP Phase 2 is considered a contingency minimal programme, while a similar strategy is temporarily planned for Phase 3.

GBYP Phase 2 (under the reduced minimum budget perspective) will include the following activities:

- 1) **Coordination**, reinforcing the coordination team with two additional staff (1 G2.1 and 1 P2), due to the workload, and with contracts for the external members of the Steering Committee.
- 2) **Data mining, data retrieval and data elaboration**, including data collection on juveniles from small scale and recreational fisheries, elaboration of VMS, environmental and aerial survey data, and a Symposium on tuna trap data issues.
- 3) **Aerial surveys**, including a workshop to refine the activity, the revision of the aerial survey design, a training course for pilots, spotters and observers, and the 2nd year survey on spawning aggregations.
- 4) **Tagging**, including conventional and PITs tagging and activities to improve tag reporting and tag recovery, with related rewards.

- 5) **Biological sampling**, including hard parts sampling for ageing and micro-constituent analysis, genetic sampling and related analysis.
- 6) **Modelling**, including only a workshop on modelling approaches.

GBYP Phase 3 (still temporarily under the reduced minimum budget perspective) will include the following activities:

- 1) **Coordination**.
- 2) **Data mining, data retrieval and data elaboration**, including data collection on juveniles from small scale and recreational fisheries, elaboration of VMS, environmental and aerial survey data, and a Symposium on tuna trap data issues.
- 3) **Aerial surveys**, including the yup-dating of the aerial survey design and the 3rd year survey on spawning aggregations.
- 4) **Tagging**, including conventional and PITs tagging, a limited electronic tagging and activities to improve tag reporting and tag recovery, with related rewards.
- 5) **Biological sampling**, including hard parts sampling for ageing and micro-constituent analysis, genetic sampling and related analysis.
- 6) **Modelling**, including modelling trials.

GBYP Phase 3 budget and activities will be revised by the Steering Committee and SCRS in the last part of Phase 2, according to the updated budget perspectives and the research needs.

The provisional calendar for the meetings is the following:

- Symposium on Tuna Trap Fishery and data standardisation: May 2011 (in Italy, Morocco or Spain, 3 days);
- Training course for aerial survey staff: May 2011 (ICCAT Secretariat, 2 days)
- Modelling Workshop: July 2011 (ICCAT Secretariat, 5 days).

Table 1. GBYP Budget in Phase 1 (2009-2010)

Contributors	Amount (€)	Allocation	Amount (€)
European Community	600.000,00	Coordination	210.000,00
United States	71.200,00	Data mining and data recovery	200.000,00
Turkey	22.500,00	Aerial survey	300.000,00
Norway	20.000,00	Conventional tagging design	40.000,00
Canada	15.000,00	Total	750.000,00
Japan	10.000,00		
Croatia	7.000,00		
Chinese Taipei	3.000,00		
ICCAT Secretariat	1.300,00		
Total	750.000,00		

Table 2. GBYP reduced minimum budget for Phase 2 (2010-2011) and Phase 3 (2011-2012)

GBYP PHASE 2 (2010-2011)		GBYP PHASE 3 (2011-2012)	
Allocation	Amount (€)	Allocation	Amount (€)
Coordination	443.000,00	Coordination	448.980,00
Data mining, data recovery, data elaboration, Trap Symposium	149.000,00	Data mining, data recovery, data elaboration	123.000,00
Aerial survey (including updating design, workshop and training course)	465.000,00	Aerial survey (including updating design)	404.080,00
Tagging (conventional, PITs, tag recovery and reporting, rewards)	890.000,00	Tagging (conventional, PITs, PATs, tag recovery and reporting, rewards)	965.000,00
Biological sampling (including hard parts, genetic sampling and analysis)	505.000,00	Biological sampling (including hard parts, genetic sampling and analysis)	490.000,00
Modelling (workshop)	40.000,00	Modelling trials	90.000,00
Contingencies	10.000,00	Contingencies	13.000,00
Total	2.502.000,00	Total	2.534.060,00