



Madrid – July 28, 2010

GBYP/ICCAT CIRCULAR # 3122 / 2010

**SUBJECT: TERMS OF REFERENCE - CALL FOR TENDERS – 01T/2010 – TAGGING
DESIGN (ICCAT GBYP – 2010)**

I have the honor to transmit to you the attached the Terms of Reference - Call for Tenders 01T/2010 for the “**Tagging Design**” of the ICCAT Atlantic-Wide Research Programme on Bluefin Tuna (GBYP).

Please circulate this to potential applicants.

Please accept the assurances of my highest consideration.



Driss Meski
ICCAT Executive Secretary

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cc : Head Scientists

Attachment: Terms of Reference – Call for Tenders 01T/2010

TERMS OF REFERENCE - CALL FOR TENDERS – 01T/2010 TAGGING DESIGN

ATLANTIC-WIDE RESEARCH PROGRAMME ON BLUEFIN TUNA (ICCAT/GBYP – 2010)

One of the major research tasks under the ICCAT Atlantic-Wide Bluefin Tuna Research Programme (GBYP) is a large, wide and intensive scientific tagging program to address several important biological and ecological topics regarding Atlantic bluefin tuna. This particular call is for the design of tagging experiment(s) that would address several specific objectives. The scientific tagging program is scheduled to start in 2011 and to be active for 3 to 5 years, with wide geographic distribution in the western North Atlantic, the Gulf of Mexico, the eastern Atlantic and the Mediterranean Sea. The program should target the main fisheries operating Atlantic-wide including mobile fisheries (longline, purse seine, baitboat, recreational and sport fisheries) as well fixed operations (traps and tuna farms). Tagging should include both conventional and electronic tags and include targets for recovery and reporting rates to address each particular objective. The tagging design proposal should also include information on how the proposed methodology and data analyses will reach the programme objectives.

The specific objectives of the tagging design protocol are:

- a) Validation of the current stock status definitions for populations of bluefin tuna in the Atlantic and Mediterranean Sea. If the hypothesis of two stock units (eastern and western stocks) holds, the tagging design should provide estimates of mixing rates between stock units by area and time strata (ICCAT main area definitions and quarter at least). It is also important to consider possible sub-stock units and their mixing or population biomass exchange, particularly in the Mediterranean Sea.
- b) Estimate the natural mortality rates (M) of bluefin tuna populations by age or age-groups and or total mortality (Z).
- c) Estimate tagging reporting rates for conventional tags, by major fishery and area, using the observer programs currently deployed in the Mediterranean fisheries.
- d) Evaluate habitat utilization and movement patterns (spatio-temporal) of the spawning population within the Mediterranean Sea, with emphasis on: (i) vertical and horizontal distribution patterns of the spawning stock, to help calibrate the aerial surveys and estimate sighting probabilities; (ii) investigating how mature specimens use the spawning grounds (e.g., do bluefin tuna visit the same spawning grounds every year to the exclusion of all others, or do they visit several spawning sites and, if so, over what periods).
- e) Similar to (d), but for the Gulf of Mexico spawning grounds.

The budget for the tagging design protocol(s) is 40,000 Euros.

Background and objectives

The main objectives of the ICCAT Atlantic-Wide Bluefin Tuna Research Programme (GBYP) are to improve (a) the understanding of key biological and ecological processes, (b) current assessment methodology, (c) the management procedures and (d) advice.

Key tasks are to reduce uncertainty in stock assessment and to provide robust management advice. This requires improved knowledge of key biological processes and parameters. However, currently almost all the data used in stock assessments are obtained from the fisheries-dependent data. It is therefore important to obtain data from alternative sources, such as tagging studies, in order to verify the assumptions made when conducting the assessments.

Many assumptions used in the previous assessments, such as stock structure and natural mortality, have been called into question by recent studies, e.g. Carlsson *et al.* (2003) who suggest that bluefin have a complex population structure with genetic differences within the Mediterranean and central North Atlantic. The GBYP also includes an Aerial Survey and therefore knowledge about behavior that influences sighting probability, such

as vertical habitat utilisation and movement between survey areas, is important when deriving indices of abundance. As well as mixing between the bluefin tuna management units, the existence of a meta-populations is an important issue to be considered. A well-designed tagging programme will therefore be important in improving our understanding of bluefin tuna ecology and ethology and for developing better stock assessment methods.

Many issues must be considered when designing a tagging programme. The basic information on bluefin stock assessment and management can be found in the relevant SCRS Reports and the ICCAT Collective Volumes of Scientific Papers (available from the ICCAT web site www.iccat.int), including information on previous tagging activities. Currently, there is a very low recovery rate of conventional (i.e. spaghetti) tags, which range from a maximum of about 5% in the Bay of Biscay to a minimum of about 1% in the Mediterranean Sea. Pop-up satellite electronic archival tags (PATs) have a “recovery” rate of around 50% in the western and eastern Atlantic Oceans and the Mediterranean Sea, with a higher percentage in the West and a lower percentage in the Mediterranean. In the Mediterranean, electronic noise sometimes prevents data recovery by the Argo satellites. New technology (miniPATs) appears promising but it is still under development. Internal archival tags can also provide a lot of useful information, but the recovery rate is very variable, being highest in the western Atlantic and minimal in the Mediterranean Sea, where so far only a few of the released tags have been recovered. To date, PIT tags have never been used for Atlantic bluefin tuna, but this may be an additional method to consider for a separate pilot project, particularly if tuna fattening cages can be equipped with detectors.

Various tagging options exist. For example, in the western Atlantic the best opportunity identified so far is the rod and reel fishery, which allows either conventional tagging or electronic tagging of spawners in the Gulf of Mexico and pre- and post-spawners along the eastern North-American coast. The best opportunity for massive conventional tagging in the eastern Atlantic is provided by the baitboat fishery on juvenile bluefin tunas in the Bay of Biscay (June to August), which can be also be used for electronic tagging. Massive conventional tagging and electronic tagging can also be conducted in the Mediterranean Sea by chartering baitboat or/and purse seiners. During May-July there is the possibility to tag spawners, while in autumn (September-November) it is possible to tag juveniles. Additional opportunities for either conventional or electronic tagging are the traditional tuna traps in Morocco (Atlantic coast), Spain and Portugal (Atlantic coast) and Italy (Mediterranean), where it is possible to tag adult pre-spawners by buying fish or at the end of the fishing season when some tunas may be released into the wild. Opportunistic conventional tagging will be conducted by sport fishermen, since several Federations are voluntarily engaged in catch-and-release programs. The GBYP Coordinator (antonio.dinatale@iccat.int) can provide additional information on request.

The estimated budget of the tagging program is about 3 million Euros per year for the first three years and about 0.5 million Euros for the following years. It includes large-scale conventional tagging to be carried out in 2011, 2012 and 2013, which includes at least 10,000 fish per year in the eastern stock and 1,000 fish per year in the western stock, and electronic tagging to be carried out between 2011-2015, with at least 150 tags per year.

- The tagging design protocols should specified the optimal allocation between conventional and electronic tagging as well the distribution in time and space for the tag releases among the main fisheries or scientific surveys, if available.

The costs and benefits of alternative strategies in meeting the objectives of the tagging programme should be evaluated in order to allow research priorities to be identified (for example, by conducting a power analysis and evaluating the value of the new information obtained).

Scientific institutes and public or private entities are asked to submit tenders to provide a tagging design which takes into account the various objectives and options.

Contractor tasks

The Contractor, who will work in close consultation with the ICCAT GBYP Coordinator and the Steering Committee, will provide a recommendation for a tagging design following a review of alternative designs. The recommendation will be based on an evaluation of the design against the scientific objectives of the programme. The design will also include milestones which allow progress to be monitored with respect to the programme’s objectives and a summary of how the data collected will be used in stock assessment.

The tender shall provide a detailed description of the design and the associated methods for according to the time frame specified by the tender, but not later than 27 September 2010.

Contractor minimum qualifications

- Documented multi-year experience in tagging design, possibly applied to tunas or other large pelagic species.
- Knowledge of the ICCAT system and ICCAT assessment procedures.
- University degree in one of the following: Fisheries Science, Marine Biology, Mathematics, Statistics, Natural Sciences, Biological Sciences or Environmental Sciences or closely related fields (in case of individual scientists).
- Excellent working knowledge of one of the three official languages of ICCAT (English, French and Spanish). A high level of knowledge of English is highly desirable.

Request for bids

Interested entities should submit an offer to the attention of Mr. Driss Meski, the Executive Secretary of ICCAT, at the following address: driss.meski@iccat.int and, in copy, to gbyp@iccat.int by **13 August 2010**, including:

- a) Acknowledgment of this Call for Tenders;
- b) A detailed offer, which shall include: (i) the estimated amount of work required; (ii) the time frame within which the report will be delivered to ICCAT; (iii) the full cost of the tagging design; and (iv) the specific methods proposed to develop, compare and contrast the efficacy of different designs in providing stock status information in support of stock assessment.
- c) The date for the preliminary interim report and the date for the draft final report (27 September 2010 at the latest);
- d) The *Curriculum vitae* of the tender (in case of individual scientists) and of any collaborator;
- e) The Curriculum of the institution (if an institution is the tender), including any documented experience in studies on bluefin tuna or other large pelagic species or in data collection, recent and relevant contracts for the same or similar items and other references (including contract numbers, points of contact with telephone numbers and other relevant information);
- f) The name, address, and telephone number of the tendering body;
- g) The institutional and administrative background of the tendering body (e.g., statutes, type of institution, annual budget, budget control procedures, etc.), if applicable.
- h) A detailed list of any subcontracting activities;
- i) The declaration that the offering entity shall refer to the ICCAT assessment procedures and format needs.
- j) A declaration that all the comments eventually made on the draft final report will be incorporated in the final report prior to submission to the ICCAT SCRS.
- k) A statement specifying the extent of agreement with all terms, conditions, and provisions herein included.

Offers that fail to furnish the required documentation or information, or that reject the terms and conditions of the Call for Tenders will not be considered.

Contractors can be either research institution, such as government or private laboratories, universities, or private consultancy firms, or individual scientists or other entities having the qualifications required.

The Contractor should be available to report to any meeting requested by ICCAT.

The ICCAT Secretariat will make a selection of the offers in consultation with the ICCAT GBYP Steering Committee. Following the selection process, the ICCAT Executive Secretary will notify the entity selected for the contract.

Deliverables

- 1) A preliminary very short report to be submitted at the latest by **6 September 2010**, including the various options considered and the preferred option.
- 2) The draft final report to be submitted at the latest by **1 October 2010**, including:
 - a) Full description of the work carried out in developing the design
 - b) Recommendation of a design based on how it will meet the programme objectives
 - c) Milestones against which the progress of the tagging study can be monitored
 - d) Detailed description of the tag release strategy
 - e) Identification of potential shortcomings of the design, e.g., low reporting rates.
 - f) Description of methods used to analysis the results, taking into account the relevant literature
 - g) An Executive Summary for the ICCAT Commission
- 3) A short PowerPoint presentation of the main results to the ICCAT SCRS 2010 or to any other ICCAT SCRS meeting.
- 4) The definitive final report, to be prepared taking into account the eventual comments provided by ICCAT and to be submitted by **8 October 2010** at the latest.

Payment details

Disbursements will be made according to the following schedule:

- 1) 30% of the total amount of the contract upon signing of the contract;
- 2) 70% after the approval of the final report by the ICCAT SCRS upon incorporation of comments by the ICCAT GBYP Steering Committee.

Logistics

All documents provided by the Contractor must be in MS Word or compatible software; tables must be in Excel format or compatible; figures and pictures must be in JPEG or TIFF format or compatible. All documents submitted must be in English, French or Spanish.

Copyright

All the material produced by the Contractor will remain the property of ICCAT GBYP, will be kept confidential, and cannot, in any case, be circulated by the Contractor selected. The scientific use of the data by the Contractor shall always be notified to ICCAT in advance for clearance.

For information concerning this call for tenders, please contact the Program Coordinator at the following address: antonio.dinatale@iccat.int .