

Call for Expression of Interest

Population Structure of IOTC species and sharks of interest in the Indian Ocean: Estimation with Next Generation Sequencing Technologies and Otolith Micro-chemistry

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INTRODUCTION

This call for Expression of Interest (EOI) is published following a grant received from the European Union to the Indian Ocean Tuna Commission (IOTC), within the Food and Agriculture Organization of the United Nations (FAO), that will describe the population structure and connectivity of a range of tuna and tuna-like species within the Indian Ocean (and adjacent Pacific and Atlantic waters as appropriate), as well as some of the key shark species that interact with IOTC fisheries. It will also result in key stock assessment and management implications being defined and provided to the Commission, via the relevant subsidiary bodies. Collaboration with regional partners will be sought to increase the overall budget (in-kind or cash contributions) and enhance capacity for future monitoring and analysis within IOTC Contracting Parties and Cooperating Non-contracting Parties (CPCs).

This project was conceptualised following the recommendation in 2013 by the Working Party on Neritic Tunas (WPNT) which recommended that research on stock structure of neritic tunas under the IOTC mandate should take two separate approaches (i) genetic research to determine the connectivity of neritic tunas throughout their distributions: such studies should be developed at the sub-regional level and (ii) tagging research to better understand and estimate exploitation rates, the movement dynamics, possible spawning locations, natural mortality, fishing mortality and post-release mortality of neritic tunas from various fisheries in the Indian Ocean. The Scientific Committee subsequently endorsed the Recommendation of the WPNT at its 2013 meeting and this was also endorsed by the Commission at its annual Session in 2014. Thus, a core focus of the project will be on the neritic tuna species under the IOTC mandate.

This document provides detailed information on the content, the selection process and the implementation of projects to strengthen regional cooperation in the area of stock structure determination.

All the relevant information to this call for proposals can be found and downloaded in the following website: www.iotc.org.

The objective of this call for expressions of interest is to generate a list of qualified external partners who will be evaluated against the objectives and deliverables of the proposal and, once selected, contracted to deliver the outputs of this project.

DEADLINE: EOI's are due to the IOTC Secretariat (secretariat@iotc.org) **NO LATER** than **31 May 2015 at 17:00 (UTC+04:00)**. Late submissions will not be considered.

OBJECTIVES AND PRIORITIES

Objective of the IOTC

The Indian Ocean Tuna Commission (IOTC) is an inter-governmental organisation responsible for the management of tuna and tuna-like species in the Indian Ocean, as well as the species impacted by IOTC fisheries.

The specific objective of the Indian Ocean Tuna Commission, as detailed in the IOTC Agreement is: to promote cooperation among the Contracting Parties (Members) and non-Contracting Cooperating Parties of the IOTC with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks covered by the organisation's establishing Agreement and encouraging sustainable development of fisheries based on such stocks. The Commission has four key functions and responsibilities, which enable it to achieve its objectives. They are drawn from the United Nations Convention on the Law of the Sea (UNCLOS), and are:

- to keep under review the conditions and trends of the stocks and to gather, analyse and disseminate scientific information, catch and effort statistics and other data relevant to the conservation and management of the stocks and to fisheries based on the stocks;
- to encourage, recommend, and coordinate research and development activities in respect of the stocks and fisheries covered by the IOTC, and such other activities as the Commission may decide appropriate, such as transfer of technology, training and enhancement, having due regard to the need to ensure the equitable participation of Members of the Commission in the fisheries and the special interests and needs of Members in the region that are developing countries; to view the current capacity building activities of the Commission;
- to adopt – on the basis of scientific evidence – Conservation and Management Measures (CMM) to ensure the conservation of the stocks covered by the Agreement and to promote the objective of their optimum utilisation throughout the Area,
- to keep under review the economic and social aspects of the fisheries based on the stocks covered by the Agreement bearing in mind, in particular, the interests of developing coastal States.

Objective of the Proposal for an ‘*Expression of Interest (EOI)*’

The project seeks to describe the population structure and connectivity of a range of tuna and tuna-like species within the Indian Ocean (and adjacent Pacific and Atlantic waters as appropriate), as well as some of the key shark species that interact with Indian Ocean Tuna Commission (IOTC) fisheries. It will also result in key stock assessment and management implications being defined and provided to the Commission, via the relevant subsidiary bodies. Collaboration with regional partners will be sought to increase the overall budget and enhance capacity for future monitoring and analysis within IOTC Contracting and Cooperating Non-Contracting Parties (CPCs). The core deliverables will include:

- A population structure atlas for a range of IOTC species and sharks based on the combined genetic and hard structure (otolith, shark vertebrate) micro-chemical analysis.
- Capacity building among developing IOTC CPCs on sampling protocols, stock structure determination and connectivity (population genetics and hard structure micro-chemical analysis) and understanding the role of stock structure in the management of IOTC species and associate sharks.
- Working documents describing key results and implications for assessment and management of each species, to be submitted to relevant IOTC Working Parties and the Scientific Committee.

The overall impacts are:

- The genetic tools developed will provide the basis for ongoing monitoring of population structure, and will support emerging population estimation methods (e.g. genetics-based mark-recapture techniques based on the identification and re-identification of individuals or the observed frequencies of closely-related pairs).
- The revised insight into population structure will permit more effective assessment and management options and tools to be applied to the Indian Ocean populations (including the parameterisation of operating models for management strategy evaluation, and catch decomposition sampling requirements for mixed-stock fisheries).
- Improved understanding of the population structure and connectivity will assist the Commission, and in particular developing coastal state CPCs to more effectively manage IOTC species.

Focus species

The species listed below includes all of the 16 species under the IOTC mandate (with the exception of southern bluefin tuna) and seven shark species that are frequently caught in association with fisheries targeting IOTC species. The intention is that those listed as 1st Stage species' will be the first to be examined, followed by the 2nd Stage species, all of which are funded under this call for EOI's. Those listed in the 3rd Stage shall be examined only if additional funds become available and will be subject to an additional call for EOI's.

1st Stage species

- 1) Neritic species
 - Longtail tuna (*Thunnus tongol*)
 - Kawakawa (*Euthynnus affinis*)
 - Narrow-barred Spanish mackerel (*Scomberomorus commerson*)
- 2) Tropical species
 - Skipjack tuna (*Katsuwonus pelamis*)
- 3) Temperate species
 - Albacore (*Thunnus alalunga*)
- 4) Billfish species
 - Swordfish (*Xiphias gladius*)
- 5) Shark species
 - Blue shark (*Prionace glauca*)
 - Scalloped hammerhead shark (*Sphyrna lewini*)

2nd Stage species

- 1) Other tropical species
 - Yellowfin tuna (*Thunnus albacares*)
 - Bigeye tuna (*Thunnus obesus*)
- 1) Other Billfish species
 - Striped marlin (*Tetrapturus audax*)
 - Indo-Pacific sailfish (*Istiophorus platypterus*)

3rd Stage species (additional funding will be required)

- 1) Other neritic species
 - Bullet tuna (*Auxis rochei*)
 - Frigate tuna (*Auxis thazard*)
 - Indo-Pacific king mackerel (*Scomberomorus guttatus*)
- 2) Other billfish species
 - Black marlin (*Makaira indica*)
 - Blue marlin (*Makaira nigricans*)
- 3) Other shark species
 - Bigeye thresher shark (*Alopias superciliosus*)
 - Oceanic whitetip shark (*Carcharhinus longimanus*)
 - Pelagic thresher shark (*Alopias pelagicus*)
 - Shortfin mako shark (*Isurus oxyrinchus*)
 - Silky shark (*Carcharhinus falciformis*)

TIMETABLE AND PLANNED ACTIVITIES

The project will be completed over a maximum of 3.5 years ([Table 1](#)), with the option to extend should additional funds become available. The majority of the project work shall be completed within the first 2.5 years, with the third year devoted to project finalisation and the commencement of tagging work, if the Steering Committee agrees on the need. Contractual arrangements with service providers will be through the Food and Agriculture Organization of the United Nations (FAO) and according to FAO's rules and regulations, as applicable. All EOI's are required to expand upon the below phases by outlining how the EOI will undertake each Phase, including a detailed scope and methodology.

Table 1. Program of Work

TIMETABLE FOR EACH STAGE OF THE [ACTION]/ [WORK PROGRAMME] SHOWING MAIN DATES AND EXPECTED RESULTS FOR EACH STAGE												
2015 (project commencement) – 2018												
Project months	1	2	3	4	5	6	7	8	9	10	11	12
Phase 1												
1: Literature search	X											
2: Methodological comparison		X	X	X	X							
3: Sample collection			X	X	X	X	X	X	X	X	X	X
4: Genetic analyses					X	X	X	X	X	X	X	X
5: Otolith microchemical analysis								X	X	X	X	X
6: Statistical analyses & population structure synthesis					X	X	X	X	X	X	X	X
Reporting					X				X			
Project months	13	14	15	16	17	18	19	20	21	22	23	24
1: Literature search												
2: Methodological comparison												
3: Sample collection	X	X	X	X	X	X	X	X	X	X	X	X
4: Genetic analyses	X	X	X	X	X	X	X	X	X	X	X	X
5: Otolith microchemical analysis	X	X	X	X	X	X	X	X	X	X	X	X
6: Statistical analyses & population structure synthesis	X	X	X	X	X	X	X	X	X	X	X	X
Reporting	X				X				X			
Project months	25	26	27	28	29	30	31	32	33	34	35	36
1: Literature search												
2: Methodological comparison												
3: Sample collection	X	X	X	X	X	X						
4: Genetic analyses	X	X	X	X	X	X	X	X	X	X	X	X
5: Otolith microchemical analysis	X	X	X	X	X	X	X	X	X	X	X	X
6: Statistical analyses & population structure synthesis	X	X	X	X	X	X	X	X	X	X	X	X
Reporting	X				X				X			
Closing (finalisation of Reporting to the EU)	X	X	X	X	X	X						

Project phases

Phase 1: Literature search to identify prior (and current) population structure work for the target tuna and tuna-like species within the Indian Ocean and other oceans, as well as the main shark species listed in the species above. The Principle Investigator, in collaboration with the IOTC Secretariat shall draft the scope of this project element, which will focus on the priority species groups.

Performance Indicators:

- 1) Contractor: Draft paper due to the IOTC Secretariat 12 days from Phase 1 commencement.
- 2) Contractor: Final paper due to the IOTC Secretariat 15 days from Phase 1 commencement.

Timeframe: to be completed within one (1) month from commencement of the project.

Phase 2: Methodological comparison and Standard Operating Procedure (SOP)

Principle Investigator shall outline the planned methodology for each phase and how any genetic methodological comparison shall be carried out to identify the most effective genetic tools for discriminating population structure and species identification.

Standard Operating Procedure (SOP) for tissue sample collection, handling and processing: The Principle Investigator shall develop a standardised sampling procedure to ensure all tissue collections throughout the study area provide sufficiently high quality specimens for genetic or other analysis. The SOP will be used as a guideline and reference by all collaborators (researchers and enumerators) in the field for tissue sample collection and preservation for laboratory analysis. The SOP will be submitted to first meeting of the Project Technical Committee for its comment and suggested modification within 3 months of the project commencement and final endorsement by the Steering Committee. At a minimum, the SOP shall include the following:

- 1) Objectives: To standardise the tissue sample collection of focus species in the Indian Ocean and out-groups for genetic study. This is necessary to obtain reliable data and comparable data for stock/population clarification.
- 2) Target species identification: Species identification.
- 3) Sampling numbers and areas: Species specific sampling locations, based on the Project document and the numbers and types of samples to be taken.
- 4) Sampling materials and methods:
 - a. Tissue sample collection and preservation procedure
 - b. Hard structure collection and storage procedure
 - c. Data collection forms
- 5) Transportation of samples
- 6) Key references

Performance Indicators:

- 7) Contractor: Draft paper due to the IOTC Secretariat 3.5 months days from Phase 2 commencement.
- 8) Contractor: Final paper due to the IOTC Secretariat 4 months from Phase 2 commencement.

Timeframe: to be completed within one (5) months from commencement of the project.

Phase 3: Sample collection will be employed using an adaptive sampling scheme, depending on i) existing sample collections held by collaborators, ii) availability of local sampling staff that can insure species

identification reliability and low tissue contamination probability, iii) species priorities, iv) likelihood of obtaining a high proportion of multiple target species whenever possible. The SOP (Phase 2) will dictate how the samples will be collected.

Sampling locations:

Priority locations: Will include approximate extremes of the known species specific population range in the Indian Ocean, plus out-group populations in the Pacific and/or Atlantic oceans for species that appear to form a continuum across oceans (e.g. albacore and swordfish).

Intermediate locations: Depending on the initial evidence for species-specific population structure, additional intermediate populations will need to be added at the appropriate scale (i.e. midpoint within the Indian Ocean). The sample locations would probably be selected from the following, depending on logistics and known species range (with subsequent sample locations to be repeated, with up to two additional locations selected depending on the initial observed structure, the spatial gaps and the possible connectivity with out-group populations).

Western Indian Ocean

- i. North-West – e.g. waters in and/or near Oman or U.A.E.
- ii. South-West – e.g. waters in and/or near South Africa, Tanzania, La Reunion, Mauritius or Seychelles

Eastern Indian Ocean

- iii. North-East – e.g. waters in and/or near Indonesia or Thailand
- iv. South-East – e.g. waters in and/or near south-western Australia, western Australia

Out-group

- v. Out-group – Eastern Atlantic and/or western Pacific (species specific)

Intermediate locations

- vi. Central – e.g. waters in and/or near Maldives, India or Sri Lanka

Sampling design (suggested)

- Target of 50–100 samples per species and location and time period (methodology dependent, including time period: annually or by quarter etc.).
 - Year 1: Initial broad-scale sampling at the extremes of the population range in the Indian Ocean, plus out-groups if applicable.
 - E.g. Longtail tuna: 50-100 Oman, 50-100 Tanzania, 50-100 Indonesia, 50-100 western Australia (total of 200-400 to be initially sampled)
 - E.g. Longtail tuna: 50-100 western Pacific (does not occur in the Atlantic).
 - TOTAL year 1 = 250-500 (5 locations)
 - Year 2: Replication over two years is recommended as an assessment of marker stability, however the Principle Investigator should also consider inter-annual sampling on a species by species basis.
 - E.g. Longtail tuna: 50-100 Oman, 50-100 Tanzania, 50-100 Indonesia, 50-100 western Australia (total of 200-400 to be initially sampled)
 - E.g. Longtail tuna: 50-100 western Pacific (does not occur in the Atlantic).
 - Sub-TOTAL year 2 = 250-500 (5 locations)
- Finer scale sampling if stock structure detected at broad-scale.

- E.g. 2 additional site (Central and/or other) 50-100 per site in Year 2 = 100-200
 - Sub-TOTAL year 2 = 100-200 (2 locations) Additional funds may be needed if other sites are to be sampled.
- Total number of samples: 600-1200 per species x 8 = 4,800-9,600 High priority species; 2,400-4,800 Medium priority species. Total = 7,200-14,400 fish.
- Muscle tissue should be extracted from reasonably fresh or frozen fish, otoliths extracted for microchemistry analysis and lengths taken to infer age (and likely proximity to natal spawning ground).
- The main sampling target for stock discrimination should be on juveniles, as they are less likely to have moved far from their natal spawning grounds.
- Samples of larger specimens from key fisheries should also be sought to understand the mixed-stock nature of the fisheries, i.e. for effective management you should know not only where the populations spawn, but also where they are captured. The two distributions could be very different if there is spawning ground site fidelity, but mixing on foraging grounds.

Timeframe: To be completed within two (2) years from commencement of the Project.

Phase 4: Genetic analyses. The most reliable and cost effective method identified in the methodological comparison (Phase 2) will be applied to the samples obtained in Phase 3. Samples should be analysed sequentially and adaptively.

Timeframe: to be completed within two and a half (2.5) years from commencement of the project.

Phase 5: Otolith and shark vertebrae microchemistry analysis. Laser ablation mass spectrometry and solution-based inductively coupled mass spectrometry could be used as an independent assessment of early juvenile residence locations as an independent corroboration of genetic population differentiation. Otolith ICP-MS analysis with laser ablation (primordium and edge) for elements and solution-based ICP-MS for oxygen and carbon stable isotopes are widely used techniques for this purpose.

To reduce the potential costs associated with ICP-MS analysis, a phased approach to the analysis based on the outcome of the genetics work is envisioned. Specifically if unclear it may not be necessary. However, if there is only weak or no evidence for genetic structure when it might be expected, then it could be proposed that ICP-MS analysis be undertaken.

Shark vertebrae microchemistry analysis shall also be investigated to determine if stock structure differentiation is also possible. This sub-phase will need to be kept adaptive as the methods to undertake this type of analysis are still in the developmental stage.

Performance Indicators:

- 1) Principle Investigator: To confirm that the first round of otolith and shark vertebrae analysis detailed above, has been completed within 18 months of the Projects commencement.
- 2) Principle Investigator: To confirm that the second round of otolith and shark vertebrae analysis detailed above, has been completed within 24 months of the Projects commencement.
- 3) Principle Investigator: To confirm that any final otolith and shark vertebrae analysis at a higher resolution and out-groups, detailed above, has been completed within 30 months of the Projects commencement.

Timeframe: to be completed within three (3) years from commencement of the project.

Phase 6: Statistical analyses and population structure synthesis. Appropriate analyses should be undertaken to identify discrete spawning populations. For key species, population structure results shall be synthesised in relation to other evidence of population structure and movement (e.g. from tagging data, fisheries catch, size composition and catch rates). Implications (for current) and recommendations (for future) IOTC stock assessments and management options will need to be described, and the need for mixed-stock fishery analyses, evaluated.

Timeframe: to be completed within two and a half (2.5) years from commencement of the project.

Phase 7: Tagging studies: Details of tagging studies may be considered once the first 6 phases are completed and will focus solely on neritic tunas as agreed by the IOTC Scientific Committee. Specifically, the IOTC Working Party on Neritic Tunas agreed that research on stock structure should include tagging research to better understand and estimate exploitation rates, movement dynamics, spawning locations, natural mortality, fishing mortality and post-release mortality of neritic tunas from various fisheries in the Indian Ocean. This phase will be developed in detail once the stock structure for neritic tunas has been determined

The funds will be used to support existing tagging programs for longtail tuna by Indonesia, Malaysia and Thailand, with options for India and Sri Lanka to be considered as seed funding.

Project Management

IOTC Secretariat (Project supervisor): The IOTC Secretariat will act as the overall project supervisor and will be responsible for ensuring the projects' implementation according to the Project proposal. The IOTC Secretariat will also be responsible for budget administration, as per FAO requirements.

Principle Investigator (Contractor): A Principle Investigator will be contracted to oversee the projects technical implementation. The selected person will be required to have the necessary capability and experience to assist the IOTC Secretariat in the coordination and technical implementation of the project. The Principle Investigator may be drawn from a lead provider and as per the criteria.

Project Administrative Steering Committee

The role of the *Project Administrative Steering Committee* will be to ensure the effective administrative implementation of the Project. The *Project Administrative Steering Committee* shall meet electronically at all stages of the project, but may meet immediately prior to the first *Project Technical Committee* (detailed below). The *Project Administrative Steering Committee* will meet at least once during the project life and where possible back-to-back with the *Project Technical Committee*.

Project Technical Committee

The role of the *Project Technical Committee* will be to ensure that all collaborators and other technical participants in the project are aware of the specific technical requirements (i.e. methodologies, sampling and processing protocols) and to ensure the smooth technical implementation of the Project.

A face-to-face meeting of the *Project Technical Committee* will be held in the 2nd quarter of 2015 followed by a second face-to-face *Project Technical Committee* meeting in 2017 at a location to be decided. The first meeting will review and approve the sampling methodology and review the activities for technical implementation of the Project. The *Project Technical Committee* will meet prior to the Project Steering Committee as much as possible. They will have objective to review all the technical work and Program of Work for approval by the *Project Administrative Steering Committee*.

The IOTC Secretariat will also facilitate additional *Project Technical Committee* meetings via electronic means on an as needed basis. **Note:** these shall not be from one of the provider institutions to avoid potential conflicts of interest, although during the implementation they will participate in the technical discussions and may act as observers.

CAPACITY BUILDING

At all stages of the project, national scientists from developing coastal IOTC CPCs will need to be engaged by Institutions carrying out sampling and analysis. The aim is to provide training in sampling protocols and modern genetic and microchemistry techniques so that national scientists may be engaged throughout the Project.

Key scientists from developing coastal CPCs where sampling is being undertaken should be kept informed of the Projects implementation and significance. Capacity building activities will need to be closely coordinated with the IOTC Secretariat to ensure efforts are consistent with IOTC aims and objectives, as well as established programs.

EXPECTED OUTPUTS AND OUTCOMES

Outputs

The timeline of outputs is as per the [Table 1](#).

- 1) Genetic markers for population (stock) discrimination.
- 2) Evaluation of usefulness of combining data from genetic markers and otolith microchemistry across multiple sampling years (i.e. uncertainty, sensitivity, spatial and temporal stability).
- 3) Population structure atlas based on combined genetics and otolith microchemistry results.
- 4) Capacity building (training) on sampling protocols and stock structure determination (population genetics and otolith microchemistry analysis).
- 5) Working papers describing key results and implications for assessment and management, to be submitted to relevant IOTC Working Parties and the Scientific Committee.

Outcomes

- 1) The genetic tools developed will provide the basis for ongoing monitoring of population structure, and will support emerging population estimation methods (e.g. genetics-based mark-recapture techniques based on the identification and re-identification of individuals or the observed frequencies of closely-related pairs).
- 2) The revised insight into population structure will permit more effective assessment and management options and tools to be applied to the Indian Ocean populations (including the parameterisation of operating models for management strategy evaluation, and catch decomposition sampling requirements for mixed-stock fisheries).
- 3) Improved understanding of the population structure and connectivity will help developing coastal States to more effectively understand regional fisheries productivity to effectively manage IOTC species.

Reporting

A progress report shall be provided by the Principle Investigator every four (4) months ([Table 1](#)). In addition, a detailed annual report shall be provided by the Principle Investigator, no later than 30 days before the commencement of the IOTC Scientific Committee meeting in 2015, 2016 and 2017 and 2018 as may be the case.

In addition, regular updates will be provided by the IOTC Secretariat at each of the relevant IOTC working party meetings in 2015, 2016, 2017 and 2018, with a final report by species group (i.e. neritic tunas, billfish, tropical tunas, temperate tunas and sharks) to be submitted to each relevant working party meeting as the reports are finalised but no later than at the 2017 Sessions.

Timeframe:

- 1) Progress report every 4 months to the IOTC Secretariat.
- 2) Annual progress reports to relevant IOTC Working Parties via the IOTC Secretariat, in 2015, 2016, 2017 and 2018 (as needed).
- 3) Annual reporting to the IOTC Scientific Committee in 2015, 2016, 2017 and 2018 (as needed).

BUDGET AVAILABLE & CO-FINANCING REQUIREMENT

The total estimated budget of the project is 1,719,117 €. The European Union is financing 1,300,000 € (One million and three hundred thousand euros) of the total budget and represents approximately 80% of the budget of the project. A portion of the funds has been allocated for the administration of the project.

The interested parties are expected to include a fixed amount of co-financing in kind equal to or more than 20% of the total costs of all the activities described in their proposal. The co-financing will be on budget lines for which the counter-part will undertake the full cost. IOTC (FAO) cannot share the cost of the same budget item.

Interested parties are required to submit a bid according to the format in [Annex I](#). The first budget line (financing requested from FAO) is equal to what is required from IOTC/FAO funding; and the second budget line (financed by SP own funds) is a clear indication of what will be financed by the interested party.

The financial offer is to be made in United States Dollars.

[Annex I](#) provides a template for EOI's financial offer.

ELIGIBILITY

Eligible entities of the grant are restricted to governmental, intergovernmental, non-governmental and other non-profit organisations that are not suspended, debarred or otherwise identified as ineligible by any Intergovernmental or UN Organization, including any organization within the World Bank Group or any multi-lateral development bank, or by the institutions and bodies of transnational economic unions (e.g., of the EU). Organizations that meet these criteria are invited to submit an expression of interest in accordance with the rules set out in this notice.

In order to establish a non-profit affiliation, organisations will be requested to provide a registration certificate and articles of association, by-laws that prove registration as non-profit entities.

[Annex II](#) details the FAO General Conditions for Letters of Agreement using European Union funding.

MANDATORY MINIMUM REQUIREMENTS

Only the proposals that meet all the below requirements will be considered:

1. A minimum of 20% of the total costs of the proposal will be financed by the interested party in cash or in kind and broken down in the financial offer budget of the proposal
2. The party that expresses interest demonstrates its eligibility to sign Letters of Agreement with FAO in accordance with the provisions and instructions in this document

EVALUATION CRITERIA

CRITERIA	Min. Points	Max. Points
Part A: Project technical implementation		
<i>i) Bidder's general experience in the field of the required contract services and examples of such services related to running and implementing genetics and related projects</i>	0	7
<i>Sub-total [i]</i>	0	7
<i>ii) Adequacy of the proposed work plan and approach.</i>		
a. Technical methodology for developing a genetic research program and capable of completing the sampling of a minimum 7200 to a maximum of 14,400 fish within the project sampling period of 2.5 years.	0	6
b. Organisation's/Selected Labs Quality Management Program	0	5
c. Quality of the Proposed data validation and quality control procedures for achieving delivery of timely, accurate and quality data to the IOTC	0	5
d. Quality of the proposed <i>Program of Work</i> for developing protocols for data fish sampling, genetic lab analysis other aspects of quality assurance and quality control, such as chain of custody matters	0	7

e. Organisation's recruiting and retention strategy and proposed plan for Principal investigator and selections of genetic fish samplers.	0	4
Sub-total [ii (a., b., c., d. and e)]	0	27
<i>iii) Personnel proposed to be assigned to contract:</i>		
a. Key Personnel: Qualifications and experience of the technical personnel that will be working with the IOTC coastal states to undertake the project	0	9
b. Qualifications and experience of the principal investigator that will be assigned for the work	0	7
c. Experience in the region, or in regions similar to the one in which the contract is to be performed	0	10
Sub-total [iii (a., b., and c)]	0	26
Part A sub-total [i, ii and iii]	0	60
Part B: Project Financial management		
i) Has an adequate financial management system in place to manage the project.	0	10
ii) Efficiency in how the samples will be collected and analysis in relation to cost savings and use of laboratories.	0	10
	0	
Sub-total [i and ii]	0	20
i) Financial Offer - 20%	0	20
Sub-total [i]	0	20
Part B sub-total [i and ii]	0	40
Grand Total	0	100

* Points for the financial offers will be calculated according to the following formula: Points = (A/B)*20

Example: Bidder A's price is the lowest at \$10.00. Bidder A receives 20 points
 Bidder B's price is \$20.00. Offer B receives $(\$10.00/\$20.00) * 20 = 10$ points
 Bidder C's price is \$25.00. Offer C receives $(\$10.00/\$25.00) * 20 = 8$ points

Additional Information and documents to be provided

The technical evaluation of this EOI will account for 80%, and Financial Offer 20%. Interested parties should provide their full contact details and list the specific fields indicated (including any CV) above that interest them in their expression of interest. The supporting evidence to be provided for the evaluation of the selection criteria are also indicated in the above table.

Collaborating Institutions should be incorporated in the Expression of Interest and should cover:

- 1) At least one local fisheries representative (i.e. fisheries officer/scientist/observer/student) shall be involved/present during all sampling events. Where possible, this person shall be trained in sampling methodology.
- 2) If necessary, the Provider will undertake initial training sessions for the local fisheries representative and others who may be interested in the Project.
- 3) Any Provider shall provide 'briefing' and 'debriefing' sessions for local fisheries representatives to ensure all local stakeholders are well informed of the Projects goals and objectives, outcomes and significance.
- 4) If possible, Providers should consider the engagement of 'Student placements' for developing coastal states, within their Institutions.

INSTRUCTIONS FOR SUBMISSION OF EXPRESSION OF INTEREST

The invitation is subject to the following procedures and conditions which you are deemed to have accepted by participating in this EOI.

- A certain number of interested parties are being invited to submit proposals and FAO intends, without having committed itself in any way to any of the organisations invited, to award the contract to the organisation which is considered as having submitted the best proposal;
- In submitting your proposal you are supposed to have considered all aspects relevant to the performance of the proposed contract and to have obtained all necessary information and data as to risks, contingencies and other circumstances which may influence or affect your proposal;
- It is understood that all documents, calculations, etc., which may form part of your proposal will become the property of FAO, who will not be required to return them to your organisation;
- All costs incurred to prepare your bid have to be borne by you; this Organization will not be liable to reimburse any or all of such costs;
- The Organization reserves the right to publish the awarded supplier name and country, total Contract value and a brief description of the works or services. In all cases, unsuccessful interested parties will be notified;
- The Organization may decide to make a partial award or no award at all should it consider that the results of this EOI so require;
- At no point prior to this award of the agreement shall interested parties contact or request any information pertaining to the EOI from FAO, its staff or technical unit responsible for this EOI, outside the specific channel indicated below;
- Please note that interested parties who use an independent consultant to assist in the preparation of Offers may risk engaging in unacceptable practices if the same consultant assists another Bidder to prepare an Offer for the same EOI. Interested parties are reminded that they are fully responsible for the

conduct of any consultant who may be used to prepare offers for FAO EOIs and they should take all measures to ensure that any independent consultant engaged to assist in the preparation of an Offer for an FAO EOI has not and will not be involved in the preparation of an offer for another Bidder for the same EOI process;

- By participating in this EOI, interested parties certify that their organisation (including all members of a consortium) and/or subcontractors are not associated, directly or indirectly, with the consultant or any other entity who prepared the terms of reference or other bidding documents for the project;

ANNEX I FINANCIAL OFFER

Please note that an amount equal to 20% of the total costs is expected to be co-financed by the Interested Party.

FAO and the Interested Party may NOT cofinance portions of the same budget item.

Each budget line shall be fully financed either by FAO or the Interested Party.

Budget of the Financial Offer All amounts in USD only

Cat. No.	Items Description	Unit of measurement	Qty (no. of units)	Unit Cost USD	Financing requested from FAO	Financed by SP own funds
1	HUMAN RESOURCE INPUTS (Staff time and consultants...)					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
...						



	Sub-total Category Human resource costs					
2	EXPENDABLE EQUIPMENT ANCILARY TO SERVICES					
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
...						
	Sub-total Category Expendable equipment anciliary to services					
3	TRAVEL (Flights, inland travel...)					
3.1						
3.2						
3.3						
3.4						
3.5						
3.6						
3.7						
...						
	Sub-total Category Travel					
4	ACCOMMODATION (board and lodging costs...)					
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						



	Sub-total Category Accommodation					
5	GENERAL OPERATING AND MAINTENANCE EXPENSES					
5.1						
5.2						
5.3						
5.4						
5.5						
	Sub-total Category O&M expenses					
6	-----					
6.1						
6.2						
6.3						
...						
	Sub-total Category -----					
7	-----					
7.1						
7.2						
7.3						
...						
	Sub-total Category -----					
	TOTAL COSTS					

ANNEX II

FAO General Conditions for Letters of Agreement

1. Funds provided by FAO under the Agreement are to be used by the Service Provider exclusively for the provision of the Services in accordance with the budget set out in the Annex with the terms of reference of the Agreement. Neither the Service Provider nor its personnel nor any other persons providing the Services on its behalf, will incur any additional commitment or expense on behalf of FAO.
2. The Service Provider will be responsible for all activities related to the provision of the Services and the acts or omissions of all employees, agents or other representatives, and authorized subcontractors providing the Services on its behalf. Neither FAO nor the European Commission will be held responsible for any accident, illness, loss or damage which may occur during the provision of the Services or any claims, demands, suits, judgements, arising there from, including for any injury to the Service Provider's employees, or to third parties, or any loss of, damage to, or destruction of property of third parties, arising out of or connected to the Service Provider's work or performance under the Agreement. Consequently, FAO and the European Commission, collectively or separately, will not entertain any request for indemnities resulting from such occurrence.
3. The Service Provider shall not utilize funds received under the Agreement to subcontract services or procure items except as specifically provided for in the Annex or as specifically approved in writing by FAO. Any subcontracting arrangement shall in no way relieve the Service Provider of the responsibility for the provision/delivery of the Services required under this Agreement. Subcontracts or procurement of the items set forth in the Annex shall be procured in conformity with the Service Provider's own procurement rules and procedures. The Service Provider confirms that its procurement rules and procedures, and their implementation, ensure that the procurement process is transparent and consistent with generally-accepted principles governing public sector procurement to obtain best value for money. The Service Provider will ensure that its agreements with any subcontractor include the obligation to maintain appropriate records for a period of five years and FAO's or the European Commission's right to review, audit and have access to all documentation and sites related to the activities carried out in connection with this Agreement.
4. The Service Provider shall make and thereafter maintain, in compliance with national legislation, provision for adequate insurance to cover such risks as damage to property and injuries to persons, as well as third party liability claims.
5. The personnel assigned by the Service Provider to provide the Services are not considered in any respect as being employees or agents of FAO. Nothing in the Agreement or in any document or arrangement relating thereto shall be construed as conferring any privileges or immunities of FAO on the Service Provider, its personnel or any other persons providing the Services on its behalf.
6. Nothing in the Agreement or in any document relating thereto, shall be construed as constituting a waiver of privileges or immunities of FAO, or as its acceptance of the jurisdiction of the courts of any country over disputes arising out of the Agreement.
7. The present Agreement shall be governed by general principles of law, to the exclusion of any single national system of law. General principles of law shall be deemed to include the UNIDROIT Principles of International Commercial Contracts of 2010.
8. In providing the Services, the Service Provider shall conform to all national laws applicable to its activities and its relations to third parties, including employees. The Service Provider shall promptly correct any violations thereof and shall keep FAO informed of any conflict or problem arising in relation to national authorities.
9. The Service Provider shall observe the highest standard of ethics in providing the Services and agrees to adhere to the UN Supplier Code of Conduct, which can be viewed at http://www.un.org/depts/ptd/pdf/conduct_english.pdf.

10. The Service Provider confirms that it has not engaged in, nor will engage in, any corrupt, fraudulent, collusive, coercive, unethical or obstructive practices in entering into or implementing the Agreement. If FAO determines that the Service Provider has engaged in such practices, it may impose sanctions, including termination of the Agreement, as provided by FAO's Sanctions Procedures (http://www.fao.org/fileadmin/user_upload/procurement/docs/FAO_Vendors_Sanctions_Policy_-_Procedures.pdf). In addition, information on sanctioned Service Providers and other third parties may be shared with other Intergovernmental or UN Organizations. This provision must be included in all subcontracts or sub-agreements entered into under the Agreement.
11. For the purpose of the Agreement, the following terms shall have the following meanings:
 - (i) "Fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain, financial and/or other benefit and/or to avoid an obligation.
 - (ii) "Coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
 - (iii) "Collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party.
 - (iv) "Corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value whether tangible or intangible to improperly influence the actions of another party.
 - (v) "Unethical practice" is the conflict of interest, gifts and hospitality or post-employment FAO policy (<http://www.fao.org/unfao/procurement/codeconduitethique/en/>), as well as any provisions or other published requirements of doing business with FAO, including the UN Supplier Code of Conduct; and
 - (vi) "Obstructive practice" is an act or omission by the Service Provider or any affiliated third party that may prevent or hinder the work of the FAO Investigation Unit of the Office of the Inspector General.
12. The Service Provider shall take all reasonable precautions to avoid any conflict of interest in the implementation of the Services and shall inform FAO without delay of any situation constituting or likely to entail a conflict of interest including any FAO personnel having an interest of any kind in the Service Provider's activities.
13. In order to enter into an agreement with FAO, the Service Provider, and any of its agents or authorized subcontractors, should not be suspended, debarred or otherwise identified as ineligible by any Intergovernmental or UN Organization. The Service Provider is required to disclose to FAO whether it, or any of its agents or authorized subcontractors, is subject to any sanction or temporary suspension imposed by any Intergovernmental or UN Organization at the time of the execution of the Agreement and throughout its duration. The Service Provider recognizes that a breach of this provision will entitle FAO to terminate its Agreement with the Service Provider.
14. The Service Provider shall take all appropriate measures to publicise the fact that the Services have received funding from the European Union, including the display of the European Logo (twelve yellow stars on a blue background). Information given to the press, the beneficiaries of the Services, all related publicity materials, official notices and reports shall acknowledge that the Services were carried out "with funding from the European Union". Such measures shall be carried out in accordance with the Communication and Visibility Manual for EU External Actions laid down and published by the European Commission. This provision shall not apply in the event that publicity under this provision could put the staff of the Service Provider at risk.
15. All publications by the Service Provider pertaining to the Services, in whatever form and whatever medium, including the internet, shall carry the following or a similar disclaimer: "This document has been produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union."

16. All intellectual property rights, including copyright, in the outputs produced under the Agreement are vested in FAO, including, without any limitations, the right to use, publish, translate, sell or distribute, privately or publicly, any item or part thereof. Neither the Service Provider nor its personnel will communicate to any other person or entity any confidential information made known to it by FAO nor will they use this information for private or corporate advantage. This provision will survive the expiration or termination of the Agreement.
17. To comply with disclosure requirements and enhance transparency, FAO may release and/or publish the following information about the Agreement: (i) the name and nationality of the Service Provider; (ii) a brief description and location of the Services provided; and (iii) the amount of the Agreement. The Service Provider specifically consents to the release and/or publication of such information. FAO will not release or publish information that could reasonably be considered confidential or proprietary.
18. The Service Provider shall return to FAO any unexpended funds budgeted and paid by FAO under the Agreement.
19. The Agreement is not subject to payment by FAO of any levies, taxes, registration duties or any other duties or charges whatsoever. The Service Provider shall duly pay taxes, duties and other charges in accordance with prevailing laws and regulations applicable to the Service Provider.
20. The Service Provider agrees to undertake all reasonable efforts to ensure that none of the funds received from FAO under the Agreement are used to provide support to individuals or entities associated with terrorism, as included in the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999) located at <http://www.un.org/sc/committees/1267/consolist.shtml>. This provision must be included in all subcontracts or sub-agreements entered into under the Agreement.
21. The Service Provider shall take all appropriate measures to prevent sexual exploitation or abuse of any beneficiary of the services provided under the Agreement, or to any persons related to such beneficiaries, by its employees or any other persons engaged and controlled by the Service Provider to perform any services under the Agreement. For these purposes, sexual activity with any person less than eighteen years of age shall constitute the sexual exploitation and abuse of such person. In addition, the Service Provider shall refrain from, and shall take all reasonable and appropriate measures to prohibit its employees or other persons engaged and controlled by it from exchanging any money, goods, services, or other things of value, for sexual favours or activities, or from engaging in any sexual activities that are exploitive or degrading to any beneficiary of the services provided under the Agreement or to any persons related to such beneficiaries. The Service Provider acknowledges and agrees that the provisions hereof constitute an essential term of the Agreement and that any breach of these provisions shall entitle the Organization to terminate the Agreement immediately upon notice to the Service Provider, without any liability for termination charges or any other liability of any kind.

Reporting and Record Maintenance Requirements

22. The Service Provider shall submit to the Responsible Officer named in the Agreement the Reports listed in the Annex on the dates set forth therein, including a final report consisting of a narrative report and financial report ("Final Report") within 30 days following the completion of the Services. The Final Report must be sufficiently detailed to allow certification of deliverables and of expenditures. The financial report shall be signed and certified as to its correctness by a duly designated representative of the Service Provider (e.g. executive officer, chief financial officer, chief accountant or similar).
23. The Service Provider shall keep accurate financial records and maintain supporting documentation showing the utilization of inputs and funds under this Agreement and any other documentation related to the Services for a period of five years following termination or expiry of the Agreement, during which period FAO or the European Commission, or a person designated by FAO or the European Commission, or the relevant auditing authority (e.g. national audit office) shall have the right, at any time, to conduct reviews and/or audits relating to any aspect of this Agreement. The Service Provider shall provide its full and timely cooperation with any such review or audit. Full and timely cooperation shall include, but not be limited to, making available

employees or agents with knowledge of the Project to respond to questions and granting to FAO or the European Commission, or a person designated by FAO or the European Commission or relevant authority, access at reasonable times and conditions to the Service Provider's premises or other sites where documentation related to this Agreement is kept or activities related to this Agreement are carried out.

24. The funds provided by FAO will cover costs that are eligible as direct costs for the implementation of the Services. To be considered eligible, costs must:
- be necessary for carrying out the Services, be provided for specifically in this Agreement and comply with the principles of sound financial management, in particular value for money and cost-effectiveness;
 - have actually been incurred during the implementation period of this agreement;
 - be recorded in the accounts of the Service Provider accounts, be identifiable, backed by originals of supporting evidence, and verifiable;
- The following costs shall not be considered eligible:
- debts and provisions for possible future losses or debts;
 - interest owed by the Service Provider to any third party;
 - items already financed from other sources
 - purchases of land or buildings;
 - currency exchanges losses;

Delays and Termination

25. The Agreement shall enter into force upon signature by both Parties and shall remain in force until the Services have been satisfactorily provided or until otherwise terminated in accordance with the provisions herein.
26. The Service Provider will carry out the Services in accordance with the work plan and within the timeframe set forth in the Annex and shall notify FAO of any delays that will prevent delivery of the Services in accordance with the work plan and within the timeframe set forth in the Annex.
27. FAO may suspend or cancel all or part of the Agreement, obtain the Services elsewhere and make corresponding adjustments to any payments that may be due to the Service Provider, if the Service Provider fails to make delivery, or perform to a standard considered acceptable to FAO. Subject to consultation with the Service Provider, the determination of FAO, relating to this provision, shall be binding.
28. If at any time during the course of the Agreement it becomes impossible for the parties to perform any of their obligations for reasons of Force Majeure, that party shall promptly notify the other in writing of the existence of such Force Majeure. The party giving notice is thereby relieved from such obligations as long as Force Majeure persists. For the purpose of the Agreement, the term "Force Majeure" shall mean any unforeseeable exceptional situation or event beyond the Parties' control which prevents either of them from fulfilling any of their obligations under the Agreement, was not attributable to error or negligence on their part (or of their personnel, agents, or other representatives, or authorized subcontractors), and proves insurmountable in spite of all due diligence.
29. FAO shall have the right to terminate the Agreement, by written notice to this effect, if it considers that continued implementation of the Agreement is impossible or impractical:
- (i) for unforeseen causes beyond the control of FAO;
 - (ii) in the event of a default or delay on the part of the Service Provider after written notice by FAO which provides a reasonable period to remedy the default or delay.
30. In the event of termination as per above, the following shall apply:

- (i) termination for unforeseen causes beyond its control, FAO shall complete all payments for expenses which have been incurred by the Service Provider up to the effective date of termination.
 - (ii) termination due to the Service Provider's default or delay, the Service Provider shall refund to FAO any payment already received in respect of Services that have not been performed to a standard considered acceptable to FAO.
31. FAO shall have the right to terminate the Agreement, by written notice to this effect, if FAO establishes in accordance with its administrative procedures:
- (i) irregularities, including any corrupt, fraudulent, collusive, coercive, unethical or obstructive practices on the part of the Service Provider in relation to the Agreement;
 - (ii) a breach of the reporting requirements.
32. In the event of termination as per g) above, the Service Provider shall refund to FAO all payments that were made on the basis of the irregularity or corrupt, fraudulent, collusive, coercive, unethical or obstructive practices, or as otherwise determined by FAO to be equitable and take other action as deemed appropriate by FAO.

Terms of Payment

33. FAO will pay and/or reimburse the Service Provider in full consideration of the services provided by the Service Provider, the actual historical costs incurred by the Service Provider for the provision of the services described in the Agreement up to an amount not exceeding maximum financial liability of FAO that is established in the Agreement.
34. FAO enjoys certain privileges and immunities which include exemption from payment of Value Added Tax ("VAT" or "IVA"), customs duties and importation restrictions.
35. If the Service Provider fails to submit the Final Report mentioned in 21 above no later than 30 days following completion, expiry or termination of the Agreement, FAO may, after provision of due notice of the default, terminate the Agreement without making the final payment.

Settlement of Disputes

36. Any dispute between the parties arising out of the interpretation or execution of the Agreement, if not settled by negotiation between the parties or by another agreed mode of settlement, shall be submitted at the request of either party, to one conciliator. Should the parties fail to reach agreement on the name of a sole conciliator, each party shall appoint one conciliator. The conciliation shall be carried out in accordance with the Conciliation Rules of the United Nations Commission on International Trade Law, as at present in force.
37. Any dispute not resolved by conciliation shall, at the request of either party, be settled by arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law, as at present in force. The arbitral tribunal shall have no authority to award punitive damages. FAO and the Service Provider agree to be bound by any arbitration award rendered in accordance with this article, as the final adjudication of any such dispute.
38. The parties may request conciliation during the execution of the Agreement and in the period not to exceed twelve months after the completion, expiry or termination of the Agreement. The parties may request arbitration not later than ninety days after the termination of the conciliation proceedings. All dispute resolution proceedings shall be conducted in the language in which the agreement is drafted provided that it is

one of the six official languages of FAO (Arabic, Chinese, English, French, Russian and Spanish). In cases where the language of the agreement is not an official language of FAO, the conciliation or the arbitration proceedings shall be conducted in English.

Amendments.

39. Any changes or amendments to the Agreement shall be made in writing and on the basis of mutual consent of the signatories to the Agreement.