



## United Nations Development Programme

Terms of Reference for procurement of an International Consultant in Coral Resilience and Genetic Connectivity for the UNDP supported Adaptation Fund financed 'Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future' project

TITLE:	International Consultant — Specialist in Coral Resilience and Genetic Connectivity
SECTOR:	Climate and Disaster Resilience
LOCATION:	Republic of Mauritius and Republic of Seychelles
DUTY STATION:	Mauritius Oceanography Institute in Mauritius and Ministry of Agriculture, Climate Change and Environment in Seychelles
DURATION:	98 person-days (both field missions and home-based) until January 2023 with the following breakdown: 54 field mission-days and 44 home based
STARTING DATE:	April 2021
END DATE	January 2023
CONTRACT PERIOD:	98 person-days over 20 months

### A. Project title:

PIMS 5736- UNDP supported/AF financed 'Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future'

### B. Project Description:

The 'Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future' project was approved by the Adaptation Fund in October 2018 following a regional call for proposals under the themes of Food Security and Disaster Risk Reduction. The project budget of USD 10 M will benefit Mauritius and Seychelles through coral restoration activities as well as capacity building programs and knowledge exchange for the region. The project is implemented under the Direct Implementation Modality (DIM). Executing partners involved are the Mauritius Oceanography Institute (MOI) and the Albion Fisheries Research Centre (AFRC) under the aegis of the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping in the Republic of Mauritius, the Marine Conservation Society (MCSS), Nature Seychelles, the Seychelles National Park Authority (SNPA) and the Ministry of Agriculture, Climate Change and Environment (MACCE) in the Republic of Seychelles. The project implementation started in 2020 and the duration is six years (72 months).

A handwritten signature in blue ink.

A handwritten signature in blue ink.

A handwritten signature in blue ink.

The overall objective of the project is to reduce the impact of climate change on local communities and coral reef-dependent economic sectors in the Republic of Mauritius and the Republic of Seychelles by implementing coral reef restoration with thermal tolerant corals as adaptation to climate change. The project objective will be achieved through the following outcomes in the Republic of Mauritius and Republic of Seychelles:

- (i) Development of a sustainable partnership and community-based approach to reef restoration;
- (ii) Establishment of coral farming and nursery facilities, and
- (iii) Active restoration of degraded reefs.

The outcomes under the regional component of the project are:

- (i) Improved understanding and knowledge management of using coral reef restoration as an adaptation to climate change;
- (ii) Sharing regionally and globally the experienced learned in sustainable coral reef restoration, and
- (iii) Training to build capacity for long-term sustainable coral reef restoration.

Climate change has intensified coral bleaching events and mortality in Mauritius and Seychelles over recent decades. To reduce the adverse impact of climate change on local communities and coral reef-dependent economic sectors in both countries, this project proposes the rehabilitation of coral reef using naturally thermal tolerant corals as an adaptation measure to increase climate resilience at regional and local levels. Under this project, the consultant is expected to

- Elaborate specifications of equipment required -;
- Conduct capacity building to the stakeholders in Mauritius, Rodrigues and Seychelles on the use of genetics for the determination of clade diversity and genetic connectivity (if any) in selected coral species;
- Provide technical assessment on clade analysis of resistant/ resilient coral species in Mauritius, Rodrigues and Seychelles, and
- Provide technical assistance and guidance on the assessment of genetic connectivity amongst selected coral species in Mauritius, Rodrigues and Seychelles.

From past research experience in the field of coral biology, the MOI has already selected a list of corals based on their growth rates and resilience following culture. While the MOI benefits from laboratory space and basic equipment to facilitate DNA extraction and amplification, its laboratories need to be further equipped to undertake genetics studies on coral species. In the absence of any tools for DNA sequencing, the MOI generally sends its amplicons (PCR products) to an external service provider. Sequenced data is then cleaned and edited at the MOI. However, in depth analysis of next generation sequencing dataset will have to be set up at MOI.

In Seychelles, the project partners have already selected specific coral genus from past projects, based on their phenotypic response to increase of sea surface water temperature during warmer months of the year. Moreover, a project led by the Seychelles Island foundation in collaboration with Ministry of

Agriculture, Climate Change and Environment and the University of Oxford (UK) and funded by the Seychelles Climate Change Adaptation Trust is working to determine the connectivity of coral populations across Seychelles using genetic techniques to identify the source and sink dynamics among coral populations.

As Seychelles lacks laboratory, equipment and trained staff in terms of genetics the consultant is required to gather existing data from various previous project with the aim of consolidating all available information and proposed a way forward for the Republic of Seychelles to develop capacity and equipment in this domain.

Under this project, a Chief Technical Adviser (CTA) will also be recruited and will be part of the team to assess the quality of the work delivered by the Consultant.

### C. Scope of Work

The 1<sup>st</sup> phase of the assignment will be conducted remotely. The consultant shall be able to carry out all necessary work remotely, using all available means, e.g., phone and IT technology.

The 2<sup>nd</sup> phase of the assignment will be mainly mission-based to Mauritius, Rodrigues and Seychelles. It will consist mainly of capacity building, a technical assessment of clade analysis, and genetic connectivity amongst selected coral species in Mauritius, Rodrigues, and Seychelles. The in-house training of MOI and AFRC staff will be conducted after the procurement of equipment.

Between the 2<sup>nd</sup> and 3<sup>rd</sup> phase the Mauritius Oceanography Institute will work in collaboration with Seychelles. As agreed between the Mauritian and Seychelles counterparts with regard to the genetic connectivity assessment, selected coral species from the Seychelles will be sampled and shipped to Mauritius for DNA processing and analysis. The Seychelles scientists will be trained on coral sampling, storage and preservation. In the absence of a functional genetics laboratory in the Republic of Seychelles, the coral fragments from selected species will be sent to Mauritius for analysis.

The 3<sup>rd</sup> phase of the assignment will be both home-based and mission-based. In this phase the genetic connectivity among selected coral species in Mauritius, Rodrigues and Seychelles will be assessed. Following the assessment, the consultant will conduct a regional training workshop in Mauritius and will assist in the write up of at least two scientific publications.

All mission travel costs will be borne by the project as per UNDP rates.

#### **Duties and Responsibilities of the consultants**

##### **Phase 1: Baseline Assessment and Drawing of Specifications (Home -based)**

- (i) The consultant will liaise with MOI, AFRC and Seychellois staff to identify and assess their training needs in relation to the investigation of genetic clade diversity and connectivity of corals. The consultant will also develop a work plan for a regional training workshop for clade

analysis and genetic connectivity of corals for stakeholders in Mauritius, Rodrigues and Seychelles.

- (ii) Baseline assessment on clade analysis of resistant/ resilient coral species in Mauritius, Seychelles and Rodrigues and genetic connectivity of selected coral species among Mauritius, Rodrigues and Seychelles. In this regard, the consultant will liaise with staff of the Mauritius Oceanography Institute (MOI).
- (iii) Elaborate the specifications for the equipment and laboratory supplies to be purchased to conduct the coral clade and genetic connectivity analyses at the MOI.
- (iv) Conduct a needs assessment/feasibility analysis for equipment required to carry out the coral clade and genetic connectivity analyses in Seychelles.

**Phase 2: Capacity Building and Technical Assessment (mission-based)** – After two or three months to allow for the purchase of equipment.

- (v) Conduct in-house capacity building and training workshop for Mauritian and Seychellois counterparts, on the use of genetics for the determination of clade diversity and genetic connectivity.
- (vi) Conduct a technical assessment on clade analysis of resistant/ resilient coral species in Mauritius, Seychelles and Rodrigues. The consultant will design and implement the pipeline for DNA analysis and also oversee the data processing aspects as well as analysis of the results obtained.

**Phase 3: -Technical Assistance and Regional Workshop (Home-base and mission-based)**

- (vii) Assist in the selection of coral species for culture. The consultant will support the formulation of appropriate sampling strategy required to meet the requirements of the project relating to the genetic analysis.
- (viii) Assist in the study to establish the genetic connectivity of selected coral species.
- (ix) Establish an M&E Framework and oversee regular monitoring to demonstrate with clear evidence the impact of the project.
- (x) Conduct a regional capacity building and training workshop on the use of genetics for the determination of clade diversity and genetic connectivity. The capacity building exercise will be held in Mauritius and will include stakeholders from Mauritius, Rodrigues, and Seychelles.
- (xi) The consultant will contribute in authoring scientific publications as well as technical reports, especially for parts or sections relating to coral genetics.

## D. Expected Outputs and Deliverables

The Consultant shall be remunerated in accordance with the time schedule and deliverables approved by UNDP. The UNDP will be represented as appropriate by the Head of Environment Unit, the Chief Technical Adviser and the Regional Project Manager. The Project Steering Committee, the Project National Steering Committees in Mauritius and Seychelles and Technical Committees set up will also review and comment on the deliverables as appropriate. The list of Deliverables is shown in Table 1.

**Table 1: List of Deliverables**

	<b>Activity</b>	<b>Tentative date</b>	<b>% Fee</b>	<b>Means of verification</b>
1	Develop a work plan for the assignment, including the regional training workshop for clade analysis and genetic connectivity of corals for stakeholders in Mauritius, Rodrigues, and Seychelles.	April 2021	3%	Work Plan approved
2	Baseline assessment and stocktaking on clade analysis of resistant/resilient coral species in Mauritius, Rodrigues, and Seychelles	June 2021	2%	Baseline report endorsed
3	Elaborate the specifications for the equipment and laboratory supplies to be purchased to conduct the clade diversity and genetic connectivity analyses at MOI and conduct a needs assessment/feasibility analysis for equipment required to carry out the coral clade and genetic connectivity analyses in Seychelles.	June 2021	5%	<ul style="list-style-type: none"> <li>• Specifications finalised</li> <li>• Needs Assessment/Feasibility report finalised</li> </ul>
4	Conduct in-house capacity building and training workshop to Mauritian and Seychellois counterparts on the use of genetics for the determination of clade diversity and genetic connectivity.	Sept -Oct 2021 as follows:-	15%	Report on Capacity building and training, attaching training materials used, and attendance records
5	Conduct a technical assessment on clade analysis of resistant/ resilient coral species and genetic connectivity in Mauritius, Rodrigues, and Seychelles	– 25 person days on mission to Mauritius; - 4 in Rodrigues; and - 10 in Seychelles	25%	Technical Report approved, including optimized methodology/ies (SOPs) for the sampling and analysis of resilient coral species from Mauritius (and Rodrigues) and Seychelles
6	Assist in the selection of coral species for culture.	January 2022 - home based	10%	Technical Report on resilient species for culture approved





7	Assist in the study to establish the genetic connectivity of selected coral species.	March 2022 – home-based	5%	Technical Report on study of genetic connectivity approved
8	Establish a M&E Framework and oversee regular monitoring to demonstrate with clear evidence the impact of the project.	March 2022 – December 2022 both home-based and mission	5%	Report on M&E framework approved
9	Conduct a regional capacity building and training workshop on the use of genetics for the determination of clade diversity and genetic connectivity to identify resilient coral species.	May 2022 – 15 person days on mission to Mauritius	10%	Report on the proceedings of the Regional Workshop, including presentations, and attendance records approved
10	Publication of scientific reports/articles. The consultant will contribute in authoring scientific publications as well as technical reports, especially for parts or sections relating to coral genetics.	–July 2022 Jan 2023 – home-based	20%	At least two scientific publications in recognised journals, giving due credit to the project scientific team and ensuring visibility guidelines of UNDP and Adaptation Fund.

#### Important Note

All deliverables shall be submitted in appropriate format, in editable MS Word and PDF as per requirement of the Client to the address of the Regional Project Manager Mrs Rachna Ramsurn [rachna.ramsurn@undp.org](mailto:rachna.ramsurn@undp.org) and with copy to the Head of Environment Unit, Mr Satyajeet Ramchurn [satyajeet.ramchurn@undp.org](mailto:satyajeet.ramchurn@undp.org). The Regional Project Manager will be responsible for further distribution. The deliverables should be of high quality in form and substance and with appropriate professional presentation. The Consultant should fully comply with the requirements of UNDP in terms of content and presentation and respect UNDP and Adaptation Fund visibility guidelines, since unsatisfactory performance may result in termination of contract. Tables of content should be cleared with the PMU before reports are produced.





## E. Institutional Arrangement

This is a Directly Implemented Project by UNDP with Responsible Parties in Mauritius and Seychelles. In Mauritius, the MOI, Albion will be the key host institution and in Rodrigues, it will be the Commission for Environment, Forestry, Fisheries and Marine Parks under the Rodrigues Regional Assembly. In Seychelles, the Ministry of Agriculture, Climate Change and Environment will be the Responsible Party.

The consultant will provide high quality services to the project management team and report to the UNDP Regional Project Manager

## F. Duration of the Work

The duration of the assignment will be 98 person days over 20 months

## G. Duty Station

During field visits, the Consultant will be based at the Mauritius Oceanography Institute, Albion in Mauritius, the Ministry of Agriculture, Climate Change and Environment in Seychelles, and at the Commission for Environment, Forestry, Fisheries and Marine Parks under the Rodrigues Regional Assembly.

Bidders should also take into consideration quarantine cost for 14 days while in Mauritius, including cost for 2 x Covid-19 tests under the quarantine facility. It is a pre-requisite for Passengers travelling to Mauritius to show the Carriers and Mauritius Port Authority 'proof of purchase of a travel package including accommodation, on a full board basis, at a designated hotel for a mandatory 14-day in-room quarantine'. Visit this link for more details: <https://www.mymauritius.travel/articles/notice-alltravellers-mauritius>.

## H. Qualifications and Experience of the Successful Individual Contractor

### General Qualification:

The candidate should possess:

- Doctoral degree (PhD) in Biology/Marine Biology or any other field relevant acceptable to the recruiting body.

### Experience:

1. At least three years of post-doctoral experience in the field of coral genetics, with particular focus on genetic connectivity and zooxanthellae clade analysis;
2. Supervisory skills, with proof of having supervised both undergraduates and post-graduates;
3. Evidence of recent publications (e.g. 2017-2020) in the field of coral genetics using advanced techniques;

4. Knowledge of the latest technologies in the field of coral genetics and should have good technical skills on the manipulation of genetics tools and equipment;
5. Possess *in silico* skills in analysis coral genetic dataset;
6. Excellent analytical, writing, advocacy, presentation, and communications skills are required;
7. Ability and willingness to carry out work remotely;
8. Experience in working in SIDS or tropical islands would be an advantage; and
9. Fluency in English is required and a working knowledge of French is desirable.

## I. Scope of Price Proposal and Schedule of Payments

### Payment Conditions

This is a lump sum contract that should include costs of consultancy, travel and other costs required to produce the above deliverables.

In full consideration for the complete and satisfactory performance of the Services under this Contract, UNDP shall pay the Contractor based on the Certificate of Payment (CoP) and supporting documents/respective against the deliverables stipulated in Section D.

Travel costs will be paid as per actual travel costs claimed by the consultant after each mission and after written confirmation from the Regional Project Manager and verification by UNDP that the services have been satisfactorily performed.

In general, UNDP should not accept travel costs exceeding those of an economy class ticket. Should the consultant wish to travel on a higher class he/she should do so using their own resources.

## J. Recommended Presentation of Offer

The following documents are requested:

- a) Duly completed Letter of Confirmation of Interest and Availability using the template provided by UNDP;
- b) Curriculum Vitae (CV) or P11, indicating all experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- c) Technical offer: Brief description of why the individual considers him/herself as the most suitable for the assignment (including his/her experience and Tracking Tools), and a methodology on how they will approach and complete the assignment. **The technical offer should be submitted along with the P11 in a single pdf file; and**
- d) Financial Proposal that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs, as per template provided by UNDP. **The financial proposal should be submitted as a separate file (marked "Financial Proposal \_Coral Resilience") to [procurement.mu@undp.org](mailto:procurement.mu@undp.org) and should be locked with a password that would be provided upon request and subject to the candidate being shortlisted after the interview.**

## K. Criteria for Selection of the Best Offer



Individual consultants will be evaluated based on the following methodology:

- Cumulative analysis. When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:
- Responsive/compliant/acceptable, and Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

Table 2 below provides the Evaluation Criteria for the Shortlisting of applicants.

**Table 2: Technical Evaluation Criteria**

<b>Technical Evaluation</b>	
<b>A. Shortlisting Criteria</b>	<b>Max. Point</b>
Education - Doctoral degree (PhD) in Biology/Marine Biology or any other field relevant acceptable to the recruiting body.	5
At least three years of post-doctoral experience in the field of coral genetics, with particular focus on genetic connectivity and zooxanthellae clade analysis;	10
Supervisory skills, with proof of having supervised both undergraduates and post-graduates	5
Proof of recent publications (e.g. 2017-2020) in the field of coral genetics using advanced techniques;	5
Knowledge on the latest technologies in the field of coral genetics and should have good technical skills on the manipulation of genetics tools and equipment.	5
Possess <i>in silico</i> skills in analysis of coral genetic dataset.	5
Excellent analytical, writing, advocacy, presentation, and communications skills are required	5
Ability and willingness to carry out work remotely;	5
Experience in working in SIDS or tropical islands would be an advantage; and	5
Fluency in English and Knowledge of French language	5
<b>Proposal and Methodology</b> <ul style="list-style-type: none"> <li>- Methodology and approaching for carrying out the activities and obtaining expected outputs</li> <li>- Understanding of the expected challenges and problems in implementation of this work and explain your approach to address and resolve them.</li> <li>- Action plan and timeline</li> </ul>	15
<b>B. Interview</b>	30
<b>TOTAL max.</b>	<b>100</b>

Candidates scoring a minimum of 70% of the technical evaluation, excluding the interview, on the above shortlisting criteria (49 out of 70 Points) would be considered for the interview.

Candidates scoring above 70% on the technical evaluation (including interview) would be considered for the Financial Evaluation.

The financial offers will be evaluated giving the lowest price proposal 30 marks and marking the other more expensive proposals reverse proportionally to the cheapest offer.

The method of calculation of the final score is shown in Table 3 below.

**Table 3: Calculation of Scores for Final Selection**

Criteriaa	Weight	Max. Point
Technical Evaluation (inclusive of Interview)	70%	70
Financial score	30%	30

The candidate ranking highest shall be selected.

## L. Approval

This TOR is approved by :

Signature



Name and Designation : Satyajeet Ramchurn,  
Head of Environment Unit,  
UNDP Mauritius and Seychelles Country Office

Date of Signing 26-Feb-2021


