

## STATEMENT OF WORKS

<b>Description:</b>	<i>Development of a joint applied research programme for sustainable Mariculture in the Yellow Sea Large Marine Ecosystem.</i>
<b>RAS/00/G31</b>	Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem
<b>Objective:</b>	I - Fisheries Component
<b>Sub-Objective:</b>	C – Mariculture Production
<b>TOR Code:</b>	TORO1C1203marcult
<b>Contract Code:</b>	CONO1C1203marcult

### 1. Background

As populations of adjacent countries and the world increase, the demand for marine products also increases and more reliance is placed on the aquaculture industry to provide for the nutritional needs of the growing population. As a direct result, Mariculture is an important activity in virtually all coastal areas around the Yellow Sea.

As more mariculture facilities spring up along the respective coastlines, the potential for impact to the environment has increased, and some believe, has reached a point where the carrying capacity of the ecosystem has been impacted beyond the abilities of the ecosystem to cope - a point where mariculture is considered 'unsustainable'. Amongst some of the problems associated with unsustainable mariculture is a reduction in environmental quality, loss or modification of coastal habitats, pollution from mariculture activities, and the spread of pathogens and disease.

In the approved Implementation Plan of the UNDP/GEF Yellow Sea Project, "Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem (YSLME)," one of the activities of the Fisheries Component is to develop action programmes to encourage sustainable mariculture to mitigate the mariculture-related problems of the Yellow Sea.

Mariculture is defined here as 'The cultivation of marine organisms under controlled conditions, either in their natural environment or in ponds, pens, tanks, or other containers, and/or when feed is used (A hatchery is also considered as mariculture even if fish are released before harvest size is reached; A synonym for marine aquaculture; Mariculture is a marine (ocean) subset of aquaculture'.

The development objective of this task is for the development of regionally agreed methods for observing, monitoring and managing mariculture activities in the Yellow Sea, enhancing co-operative mechanisms for regional monitoring and observation; upgrading of skills; and an increased mutual understanding and trust amongst the participating institutions.

The immediate objectives of this task are to develop guidelines for a joint research programme on sustainable mariculture and, as part of that programme, develop the guidelines for specific training courses on sustainable Mariculture techniques. These guidelines will be used in the development of the YSLME Strategic Action Programme (SAP) and National Yellow Sea Action Plans (NYSAPs) and will lead to the development and implementation of pilot activities and demonstration projects around the Yellow Sea.

The details of this task are described hereunder:

## **2. Description of Required Services**

A competent incumbent, selected through the required United Nations bidding procedure (and based on the Breakdown of Costs given by the incumbent in Annex I), will be contracted to develop a joint applied research programme for mariculture in their region, and prepare technical guidelines for training courses on sustainable mariculture techniques and Diseases, diagnosis and control techniques as per the list of activities of the Implementation Plan. The incumbent shall carry out the following activities:

- 1) Prepare a report summarizing the existing issues affecting the sustainability of the Yellow Sea Mariculture industry;
- 2) Prepare a draft plan for a joint applied research programme for sustainable mariculture including;
  - a. A list of prioritised scientific research studies/activities to facilitate the development of a sustainable mariculture industry;
  - b. A list of prioritised mariculture training programmes about new technologies and methodologies;
  - c. A list of critical pilot demonstration projects describing:
    - i. The nature of project; and
    - ii. Potential sites for the demonstration activity.
  - d. A list of proposed mechanisms to facilitate regional communication about new diseases occurrences, diagnosis and control techniques.
- 3) Present the draft plan at the meeting of the Regional Working Group (RWG) - Fisheries. The preliminary document will be reviewed with all members of the RWG and the Project Management Office.
- 4) Based on the comments of the Regional Working Group, revise the guidelines for presentation to the next meeting of the Regional Working Group, for finalisation and implementation.
- 5) From here, prepare technical guidelines and detailed work-plan for a training course on each of the following topics and present results to the PMO for implementation.
  - a. 'Mariculture techniques': Towards Sustainability.
  - b. 'Diseases, diagnosis and control techniques'

## **3. Expected Outputs/Results**

The final product (report) should be a set of reports as listed below:

- (i) A description of the existing issues affecting the sustainability of the Yellow Sea Mariculture industry;
- (ii) A detailed plan for a joint-regional applied research programme for sustainable mariculture including:
  - a. Agreed scientific research activities
  - b. Mariculture training programmes
  - c. Pilot demonstration projects



Draft Joint Research Plan for applied research program for sustainable Mariculture for review at 3 <sup>rd</sup> Regional Working Group Meeting;	May, 2006
Progress report and interim financial statement submitted to PMO/UNOPS	May, 2006
Based on the comments from the 3 <sup>rd</sup> Regional Working Group Meeting, revise Joint research plan and present for review at 4 <sup>th</sup> Regional Working Group Meeting in May 2007, for finalisation.  Prepare technical guidelines for training course on Mariculture techniques to be submitted to the PMO; and present for review at 4 <sup>th</sup> Regional Working Group Meeting for comments.  Prepare technical guidelines for training course on disease diagnosis, prevention and control to be submitted to the PMO; and present for review at 4 <sup>th</sup> Regional Working Group Meeting for comments.	May, 2007
Final Report and Final financial statement submitted to PMO/(UNOPS)	July, 2007

## 6. Monitoring/Progress Control

The PMO will assume overall supervision and co-ordination of this task. Programmatic guidance should be sought from the Project Manager, Mr. Yihang Jiang ([yihang@yslme.org](mailto:yihang@yslme.org)), copied to Mr. Jeff Archer ([jeff@yslme.org](mailto:jeff@yslme.org)) at the Yellow Sea PMO. All deliverables should be submitted to Mr. Jeff Archer. The format of the progress, final and financial reports should follow the templates included in Annex II & III and the schedule as above.

**ANNEX I**

**BREAKDOWN OF COSTS  
(USD)**

Please provide details of the various costs associated with this task in the budget table below:

<u>Item</u>	<u>Unit Cost (USD)</u>	<u># of Units</u>	<u>Total Cost (USD)</u>
<b>TOTAL AMOUNT REQUESTED</b>			

**Annex II**  
**Report Formats**

**PROGRESS REPORT**

**SECTION 1: BACKGROUND INFORMATION**

- 1.1 PROJECT TITLE:** \_\_\_\_\_ *REDUCING ENVIRONMENTAL STRESS IN THE YELLOW SEA LARGE MARINE ECOSYSTEM* \_\_\_\_\_
- 1.2 CONTRACT NUMBER:** \_\_\_ CONOIC21203carrcap\_[country acronym]\_\_\_\_\_
- 1.3 RESPONSIBLE OFFICE:** \_\_\_ Yellow Sea Project Management Office, Ansan, Korea \_\_\_\_\_
- 1.4 CONTRACTOR (SUPPORTING ORGANIZATION):** \_\_\_\_\_
- 1.5 REPORTING PERIOD:** (The number of months covered by this report) \_\_\_\_\_
- 1.6 FOCAL POINT NAME:** \_\_\_\_\_

**SECTION 2: PROJECT STATUS**

- 2.1 Status of the Implementation of the Activities and Outputs Listed Under the Workplan**  
(check appropriate box)
- Project activities and outputs listed in the Project Workplan for the reporting period has been completed and the Consultant is satisfied that the project will be fully completed on time (give reasons for minor variations as Section 3 below).
- Project activities and outputs listed in the Project Workplan for the reporting period have been altered (give reasons for alterations: lack of finance; project reformulated; project revisions; other at Section 3 below).
- Project activities and outputs listed in the Project Workplan for the reporting period have not been fully completed and delays in project delivery are expected (give reasons for variations as Section 3.1 and new completion date in Section 3.2 below).
- Insufficient detail provided in the Project Workplan.
- 2.2 List Actual Activities/Outputs Achieved in the Reporting Period:** (check appropriate box)

<b>(a) Meetings (duplicate this box for each meeting individually)</b>
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<input type="checkbox"/> Inter-ministry Mtg	<input type="checkbox"/> Expert Group Mtg	<input type="checkbox"/> Training Seminar/Workshop	<input type="checkbox"/> Others
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Title: \_\_\_\_\_  
 Venue and Dates: \_\_\_\_\_  
 Covered By: \_\_\_\_\_  
 Organized by: \_\_\_\_\_  
 Report issued as doc. No./Symbol \_\_\_\_\_  
 Languages \_\_\_\_\_ Dated: \_\_\_\_\_  
 For training seminar/workshop, please indicate: No. participants \_\_\_\_\_ and attach **annex**  
 Giving names and nationalities of participants.

(b) **PRINTED MATERIALS** (Duplicate this box for each printed item)

Report to IG Mtg.       Technical Publication    Technical Report    Others

Title: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Author(s)/Editor(s)  
 \_\_\_\_\_

Publisher  
 \_\_\_\_\_

Symbol (UN/UNEP/ISBN/ISSN)  
 \_\_\_\_\_

Date of Publication  
 \_\_\_\_\_

(when technical reports/publications have been distributed, **attach distribution list**)

(c)  **TECHNICAL INFORMATION**       **PUBLIC INFORMATION** (Posters, leaflets, broadcasts, etc)

Description:  
 \_\_\_\_\_

Dates: \_\_\_\_\_

(d) **SERVICES**

Description:  
 \_\_\_\_\_

Dates \_\_\_\_\_

(e) **OTHER OUTPUTS**

**SECTION 3: PROJECT STATUS**

**3.1 Summary of the Problems Encountered in Project Delivery (if any)**

**3.2 Actions Taken or Required to Solve the Problems (identified in Section 3.1 above)**

**Signed:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Designation:** \_\_\_\_\_

**Annex III**

**PROJECT EXPENDITURE REPORT**

Project statement of allocation (budget), expenditure and balance (Expressed in USD) covering the period:

**From**.....**To**.....

**Supporting Organization**...UNDP/GEF.....

**Project Title**...*Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem*...

**Project Commencing**..... (Date)

**Project Ending**..... (Date)

<b>Object of Expenditure</b>	<b>Project Budget Allocation Amount (1)</b>	<b>Expenditure incurred from ... to .... Amount (2)</b>	<b>Unspent balance of budget Amount (3)</b>
<p>..... ..... ..... .....</p> <p>(USE ITEMS ACCORDING TO THE BUDGET CATEGORIES IN ACCORDANCE WITH THE SIGNED MEMORANDUM OF UNDERSTANDING OR CONTRACT)</p>			
<b>GRAND TOTAL</b>			

**Signed**\_\_\_\_\_

**Designation**\_\_\_\_\_

**Duly authorized official**\_\_\_\_\_