

STATEMENT OF WORKS

00037433 (RAS/00/G31)	Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem
Objective:	I: Fisheries Component
Sub-Objective:	A: Regional Stock Assessment
Activity:	Joint regional stock assessment of selected species
TOR Code:	TOROIA-jointregionalstockassess
Description:	<i>Joint Regional Stock Assessment of Selected Species in the Yellow Sea Large Marine Ecosystem</i>

1. Background

One of the future interventions denoted “high priority” in the Preliminary Transboundary Analysis of the Yellow Sea Large Marine Ecosystem (Feb, 2000) was to conduct regional stock assessment. The national fisheries data and information reports and regional fisheries synthesis commissioned by the UNDP/GEF Yellow Sea Project, “Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem (YSLME),” emphasised the need for a common methodology for joint-regional stock assessment for the Yellow Sea’ that will enable researchers to determine the condition of stocks and manage fisheries into the future. A recent YSLME stock assessment report (UNDP/GEF 2007) found the major assessment problems to be;

1. The lack of agreed methods such as those used by International Council for the Exploration of the Sea (ICES) who employs Virtual Population Analysis (VPA) tuned by survey data;
2. The limited availability of regional fisheries data, including insufficient, and/or fully shared, fisheries data and survey data;
3. The different coverage of surveys resulting in insufficient knowledge of basin-wide distribution and stock status of major species;
4. The different methods and gear used in scientific surveys without calibration leading to different results;
5. The different objectives of surveys leading to focus on different target species;
6. The different target species in catch statistics;
7. The different standards in catch statistics.

The development objective of the task is to conduct spring and autumn fisheries surveys using a common methodology that is agreed by fisheries stock assessment experts from both countries during regional consultations. It is hoped that this process of joint-regional stock assessment will contribute to; better understanding of the state of the selected fisheries stocks; the development of regionally agreed methods for observation, monitoring and sampling of the marine environment in the Yellow Sea; enhanced co-operative mechanism for regional monitoring and observation; upgrading of skills in basin-wide observation and monitoring; a better scientific understanding of the basin-wide marine environment/ecosystem status; and an increased mutual understanding and trust amongst the participating institutions.

The immediate objectives of this task are to organise three expert consultations, the first of which will agree a standardised survey methodology and equipment, and set the exact

survey dates. The second consultation, following the first round of cruises, will involve analysis of the data collected, calibration of results, identification of problems and a review of fisheries fleet data. The final consultation will be used to conduct regional stock assessment of the selected species. The stock assessment surveys will be conducted by each country in the spring and autumn at the same time using standardised methodology and equipment.

The details of this task are described hereunder:

Geographic Scope: The Yellow Sea Large Marine Ecosystem is defined in this Project Document as the body of water delineated at the south, by a line connecting the north bank of the mouth of the Chang Jiang (Yangtze River) to the south side of Jeju; at the east, by a line connecting Jeju Island to Jindo Island along the coast of the Republic of Korea (ROK); and to the north, a line connecting Dalian to Penglai (on the Shandong Peninsula).

2. Description of Required Services

Two competent incumbents, selected through the required United Nations bidding procedure, will be contracted to work closely together to jointly organise a regional stock assessment of selected species.

The incumbents shall carry out the following activities:

- 1) Jointly organise an expert consultation at the First Stock Assessment Workshop for fisheries stocks in the Yellow Sea. The 4-6 experts from R. of Korea and China will meet in China on the 25-27 March 2008 to:
 - a. Agree the number and identity of the species that will be targeted for stock assessment;
 - b. Compare the current methods used for collecting fisheries data and the biological data collected using these different methods;
 - c. Discuss how to calibrate the results from each country;
 - d. Discuss and agree on how to standardise the data collection;
 - e. Discuss and agree on the data and data format required for the second workshop in order to enable a meaningful stock assessment exercise;
 - f. Discuss and agree on the methodology (timing, survey area and equipment – boat size and power, and bottom trawl nets – size and mesh size) to be used in the Stock Assessment surveys;
 - g. Agree dates for the 2nd Stock Assessment Consultation.

- 2) Organise, in each country, a spring national stock assessment survey at the time agreed, preferably in May 2008:
 - a. Using the standardised methodology agreed during the 1st Stock Assessment Consultation;
 - b. Gather the data on the selected species in the format agreed during the 1st Stock Assessment Consultation;
 - c. The survey should last 5-7 days (excluding days lost due to rough weather); the exact length should be agreed during the 1st Stock Assessment Consultation (proposed budgets should allow for 2 days lost due to bad weather, in the event of good weather this amount will be deducted from the final payment).

- 3) Jointly organise a second Stock Assessment Workshop in R. of Korea with the same

4-6 experts from R. of Korea and China the purpose of the meeting is to:

- a. Discuss the survey methodology and identify any differences;
 - b. Calibrate the results from the 1st Stock Assessment survey with country data;
 - c. Review the fisheries fleet data from both countries;
 - d. Agree on the dates for the 2nd Stock Assessment Survey and Final Regional Stock Assessment Consultation.
- 4) Organise a Second National Stock Assessment Survey during the autumn 2008:
- a. Using the same standardised methodology (equipment, survey area, etc) agreed during the 1st Stock Assessment Consultation and used during the 1st Stock Assessment Survey;
 - b. Gather the data on the selected species in the format agreed during the 1st Stock Assessment Consultation;
 - c. The survey should also last 5-7 days (excluding days lost due to rough weather) the exact length should be agreed during the 1st Stock Assessment Consultation and be the same as the 1st Stock Assessment Survey
- 5) Jointly organise a Final Workshop in China during spring 2009 with the same 4-6 experts from R. of Korea and China the purpose of the meeting is to:
- a. Conduct a Regional Stock Assessment of the selected species.
 - b. Calibrate the results from the 1st Stock Assessment survey
 - c. Review the fisheries fleet data from both countries.
 - d. Agree on the dates for the 2nd Stock Assessment Survey and 3rd Stock Assessment.
- 6) Based on the comments of the RWG-F, revise the guidelines and provide a comprehensive proposal or list of recommendations for joint-regional stock assessment (highlighting the major barriers to stock assessment, and indicating the species to be assessed) to the next Regional Working Group – Fisheries meeting, for finalisation.

3. Expected Outputs/Results

The final product should be a report detailing:

- a. The agreed methodology used for the Stock Assessment surveys;
- b. An regional assessment of the Yellow Sea stocks of a number of selected species;
- c. Recommendations for how this exercise may be expanded to cover an increased number of species;

The report should be produced co-operatively between the stock assessment partners and the YSLME Project Management Office, responsibility for each section will be assigned during final Regional Stock Assessment Consultation.

The incumbents will also produce the standard project progress and final reports as requested by the PMO (see below).

4. Submission

Interested parties should submit a proposal detailing the activities to be carried out and providing a detailed breakdown of costs. **Proposals are to be submitted by 28 February 2008.**

5. Suggested table of contents for the Final Report

- a. Introduction.
- b. Methods of the two Stock Assessment Surveys.
- c. Results of the Regional Stock Assessment
- d. Discussion of the results in the context of the current literature and the importance of the findings. Suggested methods for reiterative series of joint-regional stock assessment.
- e. Summary.

Annex containing:

Persons / institutions / websites visited or interviewed
List of References

Progress reports, final reports and survey data should be submitted to the PMO in electronic format.

6. Qualifications:

The incumbent selected to carry out this task should have the following qualifications:

- Extensive knowledge of contemporary regional and international fisheries stock assessment methodology and the analysis of relevant data and information.
- Extensive prior experience in organising and conducting boat-based fisheries stock assessment surveys.
- Able to work closely and co-ordinate with foreign partners
- Able to access the necessary fishery stock assessment information through databases, information centres, and other relevant institutions in the country and bring that data on the selected species to the consultations.
- Appropriate academic qualifications and available time.
- Understanding of financial accountability, management and scientific report writing.

7. Deliverables and Deadlines

The commissioned assignment will be carried out from March 2008 through May 2009, according to the following schedule:

<u>Task</u>	<u>Deadline</u>
Proposal submission	28 February 2008
Contract signature	10 March, 2008
1 st Stock Assessment Workshop in China	25-27 March 2008
Progress report of the 1 st Consultation meeting submitted to PMO by Chinese incumbent on agreed methodology	18 April 2008

Spring regional stock assessment surveys in China and ROK	1 June 2008
2 nd Stock Assessment Workshop in ROK	15 August 2008
Progress report on 2 nd Consultation meeting submitted to PMO by ROK incumbent	18 July 2008
Autumn regional stock assessment surveys in China and ROK	31 October 2008
Final Stock Assessment Workshop in China	30 March 2009
Final Report submitted to PMO	30 May 2009

8. 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), copied to Mr Mark Walton (mark@yslme.org) at the Yellow Sea PMO. All deliverables should be submitted to Mr Mark Walton. The submission of the progress and final reports should follow the schedule as above.

9. Payment Schedule (USD)

Travel costs associated with this task are included in the fees below. The incumbent will make his own travel arrangements unless otherwise agreed in advance with the PMO.

<u>Milestone</u>	<u>Date</u>
1 st payment following contract signature	10 March, 2008
2 nd payment following submission of progress report of the 1 st Consultation meeting submitted to PMO by Chinese incumbent on agreed methodology	18 April 2008
3 rd payment following submission of progress report on 2 nd Consultation meeting submitted to PMO by ROK incumbent	18 July 2008
Final payment following submission of final report submitted to PMO	8 May 2009