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**UNDP/GEF PROJECT ENTITLED “REDUCING ENVIRONMENTAL STRESS IN THE  
YELLOW SEA LARGE MARINE ECOSYSTEM”**

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UNDP/GEF/YS/RWG-F.3/3  
Date: 28 October 2006  
English only

**Third Meeting of the Regional Working Group  
for the Fisheries Component**  
*Rongcheng, China, 25 -28 October 2006*

**Meeting Report**



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## **1 OPENING OF THE MEETING**

### **1.1 Welcome addresses**

- 1.1.1 On behalf of the UNDP/GEF Yellow Sea Project, Mr. Yihang Jiang, Project Manager, opened the meeting and welcomed the members of the Regional Working Group-Fisheries (RWG-F) to Rongcheng, China attending the Third Meeting of the RWG-F.
- 1.1.2 Mr. Jiang gave a summary of the stages of the project (TDA, SAP, pilot implementation of SAP), and stated that this meeting was in a critical time to finalise the relevant work for the preparation of the transboundary diagnostic analysis (TDA), and to consider relevant issues for the preparation of the strategic action programme (SAP). For the preparation of the TDA, the meeting will focus on data and information collection from the participating countries, the regional synthesis, the regional guidelines for stock assessment, and proposal for the sustainable mariculture. He informed the meeting that a consultant has been hired to prepare the TDA, and will aim to complete the TDA in early November 2006 and, in time for the RSTP and PSC to, respectively, review and approve the document. The meeting will also consider how to begin the development of the SAP, discuss the regional targets, and the possible links with the RWG-E on carrying capacity issues that should be discussed and agreed at the meeting.
- 1.1.3 Mr. Jiang also informed participants that during the meeting, members will discuss how to improve the national reports and prepare them for publication. The causal chain analysis will be re-visited and finalised, based on the collected data and information, and collective knowledge of the experts. Finally, on behalf of the PMO, Mr. Jiang thanked the local organisers for assisting with the meeting arrangements.
- 1.1.4 The Chairperson of the Regional Working Group for Fisheries (RWG-F), Mr. Jin Xianshi, welcomed all participants to the meeting, and expressed his thanks to the PMO for organising the meeting.

### **1.2 Introduction of members**

- 1.2.1 Members and other participants were invited to introduce themselves and give a brief introduction on their background and roles in the Project. The list of participants is attached to this report as **Annex I**.

## **2 ORGANISATION OF THE MEETING**

### **2.1 Documentation Available to the Meeting**

- 2.1.1 The Chairperson invited the Secretariat (Project Management Office, PMO) to introduce this agenda item.
- 2.1.2 Mr. Jiang introduced the meeting's working and information documents prepared by the PMO (Document UNDP/GEF/YS/RWG-F.3/inf.1). The list of documents is attached as Annex II. He informed the meeting that all the relevant documents were sent to the members of the RWG-F, and made available on the project website prior to the meeting.

### **2.2 Organisation of work**

- 2.2.1 The Chairperson invited the Secretariat to introduce this agenda item, referring to document UNDP/GEF/YS/RWG-F.3/inf.3.

- 2.2.2 The Secretariat introduced document UNDP/GEF/YS/RWG-E.3/inf.3 describing the “Provisional Working Programme” for the meeting and noted that the meeting would be conducted in plenary as best as possible, but suggested that some aspects may be addressed in sessional working groups where necessary.
- 2.2.3 The meeting was conducted in English.

### **3 ADOPTION OF THE MEETING AGENDA**

- 3.1 The Chairperson introduced the Provisional Agenda (Document UNDP/GEF/YS/RWG-F.3/1) and Provisional Annotated Agenda (Document UNDP/GEF/YS/RWG-F.3/2) prepared by the Secretariat.
- 3.2 Participants were then asked to consider the agenda prepared by the Secretariat, and to propose any amendments or additions that they might wish.
- 3.3 Mr. Yihang noted that on Agenda Item No. 7.1.2 it should be important to discuss if mariculture could be part of the carrying capacity approaches. He also mentioned that the RWG-B considered not considering “gene pool analysis” within their activities so that it was suggested to the RWG-F to include this topic within the discussion sessions.
- 3.4 Mr. Jang In Kwon proposed to include “introduced species” within the discussion. The meeting agreed to discuss this issue focusing on management actions within Agenda Item No. 7.2.3. “Suggestion for other activities”.
- 3.5 **The meeting adopted the agenda with no modification which is attached as Annex III to this report.**

### **4 EXPECTED OUTPUTS FROM THE 3<sup>RD</sup> RWG-F MEETING**

- 4.1 The Chairperson invited the Secretariat to introduce document UNDP/GEF/YS/RWG-F.3/4, and explain the expected outputs from this meeting.
- 4.2 Mr. Jiang presented the list of expected outputs to be achieved at the meeting, stating that the main objectives were: the review of the completed and on-going activities under the Fisheries Component from 2006-2007; discussion and suggestion on the preliminary draft of the TDA; and, the discussion and agreement on future activities. Participants were also encouraged to focus on considering the actions needed for the preparation of the SAP.
- 4.3 Mr. Jiang stated that the meeting should discuss how to publish the results of the national data and information collection and the regional synthesis. He also highlighted the importance of completing the causal chain analysis as one of major expected outputs of the meeting. He also noted that there was a preliminary causal chain analysis available from previous meetings but it should be reviewed with the new information provided in the recent versions of the national reports in order to produce a regional causal chain analysis. This regional causal chain analysis should be a major input for the TDA.
- 4.4 The members noted the expected outputs presented by the PMO, and will keep them in mind when discussing the agenda items.

### **5 CONSIDERATION OF THE ON-GOING ACTIVITIES UNDER THE FISHERIES COMPONENT**

- 5.1 **Data and Information Status, Trends and New Findings**
- 5.1.1 National data and information collection

- 5.1.1.1 On behalf of the Yellow Sea Fisheries Research Institute (China), Mr. Jin presented the report on National Data and Information Collection Activity.
- 5.1.1.2 Mr. Jin presented the activity's progress-to-date for China fisheries national review, explaining the types of data and information that have been collected, the sources of data, the data and information gaps, assessment methods, socio-economic data, such as national laws and international agreements. He noted, among others, that: i) the stock of largehead hairtail has declined in the Yellow Sea; ii) anchovy stock has become an important fishery since 1990s; (iii) stock of the small yellow croaker has recovered during recent years in the Chinese side of the Yellow Sea and, iii) the usefulness of several models to estimate Maximum Sustainable Yield (MSY) and highlighted the availability of useful tools such as ECOPATH.
- 5.1.1.3 Mr. Jin described major fisheries management measures in China: i) control of fishing effort; ii) output control; and, iii) ban fishing in summer; and iv) management of mariculture.
- 5.1.1.4 Mr. Lee Jang-Uk mentioned that some of the figures presented in the national report (China) may not be reflected on the trends given in the preliminary version of the national report.
- 5.1.1.5 The meeting extensively discussed various technical issues that will assist in improving the report. The suggestions were duly noted, and will be incorporated into the final report
- 5.1.1.6 The Chairperson invited the experts of the National Fisheries Research and Development Institute (Korea) to present the national data and information collection report from Korea.
- 5.1.1.7 Mr. Sohn Myoung Ho presented the first part of the Korean national report related to fisheries data collection and highlighted the high biodiversity of the Yellow Sea region, major trends found and the results of trawl survey.
- 5.1.1.8 He noted that the total landings of major commercial important species have steadily decreased since 1987. He highlighted that largehead hairtail landings decreased dramatically for the same period of time. He also described that the size of fishing vessels became smaller but with stronger power since new equipment has been included in many fishing boats due to improvements in technology.
- 5.1.1.9 Mr. Sohn mentioned that dominant species has been changed from large demersal species to small pelagic species in the last decade. He also described the gaps in data and information such as the fishermen's reluctance to share his data and highlighted the importance to conduct a cooperative survey to gather the data required to improve any further analysis.
- 5.1.1.10 Mr. Jang presented the second part of the Korean national report related to mariculture data collection and highlighted that the mariculture production in the Yellow Sea (Korea) considered fish (18 species), shellfish (15 species), seaweeds (10 species), crustaceans (2 species) and others (3 species). He noted, among others, that while the production of finfish, shellfish and crustaceans increased the total production of seaweeds decreased by around 18% in the last 10 years.
- 5.1.1.11 He proposed a few suggestions for a further Joint Applied Research Programme for Sustainable Mariculture in the Yellow Sea Region and noted that this research programme may focus on: i) non-enclosed systems (polyculture) in China; and, ii) enclosed systems (shrimp culture with zero water exchange) in Korea. It was noted that with this joint research, it would be possible to minimize the environmental impacts from mariculture.

- 5.1.1.12 Mr. Kim Dohoon presented the third part of the Korean national report related to socio-economic data collection and highlighted that the number of fishing vessels in Korean Yellow Sea has remained stable since year 2000 and that the number of fishermen has shown a decrease in all provinces except Gyeonggi province.
- 5.1.1.13 He mentioned that the consumption per capita of seafood increased from 36.8 kg (year 2000) up to 44.7 kg in year 2003. He also noted that the Gross Domestic Production (GDP) of Korea increased by 20% from year 2000 to 2004 but highlighted that the GDP for fisheries has been decreasing for the same period of time in a rate of 8.8%.
- 5.1.1.14 The meeting discussed the information provided on the two national reports received from the participating countries, and the major agreements included the following:**
- (i) There is a need to follow the common format of the report agreed during previous meetings of the RWG-F. It was considered important for both contracted institutes the need to add more information and analysis to the final report;**
  - (ii) It was suggested an agreed by the meeting the deletion of column entitled "TOTAL" on winter and spring data tables since it has no contribution for any analysis;**
  - (iii) It was noted by the meeting that there were several inconsistencies in the national reports. The RWG-F should find appropriate means to solve the problems found.**
  - (iv) It was suggested and agreed that the data and analysis of habitats of mariculture should be added in the national report of China, to meet the agreement of the RWG-F.**
  - (v) The national reports should be revised according to the comments of the regional working group, and submitted to PMO for publication.**
- 5.1.2 Regional data and information synthesis
- 5.1.2.1 The Chairperson invited the regional synthesis consultant to present the "Regional Synthesis of National Fisheries and Mariculture Data and Information" (Document UNDP/GEF/YS/REG-F.3/6).
- 5.1.2.2 Dr. LEE Jang-Uk, presented his findings highlighting major issues in fisheries status and trends, biological and economical data, mariculture and the socio economic condition in the Yellow Sea areas of the participating countries.
- 5.1.2.3 Dr. Lee highlighted major issues on Fisheries: i) Heavy exploitation of capture fisheries in the Yellow Sea; ii) Stable fishing effort and increasingly level of fisheries; and, iii) Increase of catch per unit of effort (CPUE) and the importance to conduct a fisheries stock assessment. He also noted that for the biological and economic data the issues considered were: i) Differences in growth parameters per analysed species and the importance to improve age estimation techniques; ii) Differences in reproduction and spawning characteristics for some species and the importance to develop an "index of recruitment for commercially important species"; iii) Scarcity of enough information on migration and distribution of commercial species; and, iv) Limited information on bottom trawls surveys and the importance of joint-cruises.
- 5.1.2.4 Dr. Lee also emphasized major issues for mariculture: i) Steadily increase of aquaculture production; ii) Increasing demand for aquaculture areas; and, iii) A predominantly mariculture of shellfish and seaweed in the Yellow Sea. He also noted that in regards to the analysis of socio-economic issues the major findings

- were: i) Only general descriptions have been provided by the national reports without the detailed analyses required for long-term data interpretation; and, ii) The need to collect long-term data on fisheries economics as well as to include expertise on economic data analysis in future studies. He finally recommended the establishment of a regional fisheries database.
- 5.1.2.5 Mr. Lee noted that although the total mariculture area has increased, the production per unit area has continuously decreased since year 2000 for the major commodities and that information on production per aquaculture method used (habitat) only was provided only by Korea.
- 5.1.2.6 The Chairperson requested the meeting to consider these issues when incorporating the suggestions to the revised versions of the national reports prior to publishing the final reports.
- 5.1.2.7 Mr. Jin clarified that for data on “growth parameters”, for example small yellow croaker China use the body length while Korea use total length of fishes so that the trends, when comparing data sets from the countries, should be adjusted accordingly. He also noted that sampling time and areas should be considered.
- 5.1.2.8 Mr. Jin also clarified that before 1995 China had different standards for presenting statistics data sheets. For instance, for the production of shellfish, China used net weight of shellfish excluding the shells. He also noted that from 1996 onwards China used a new standard in reporting aquaculture production so that it can be compared properly with Korean data. He added that if there would be a need to compare Chinese data before 1995 with other countries, the figures provided should be multiplied by 1.75 to get standard data for further comparison, if any.
- 5.1.2.9 Mr. Jin considered that it would not be appropriate to compare CPUE figures since this considers only total number of fishing boats, but does not consider their size, power capacity and the operation days. He noted that for the use of CPUE index there is a need to standardize all data (China and Korea) before doing any comparison between fishing fleets with different efficiency.
- 5.1.2.10 Following the discussion of the national and regional synthesis reports, Mr. Jiang informed the meeting that these results were very important outcomes of the project, and suggested to publish the national reports and the regional synthesis, after the revisions according to the comments provided. **The meeting agreed to publish the reports after final versions of the national reports and regional synthesis are submitted.**
- 5.1.2.11 Mr. Jiang suggested that PMO would compare the analysis of the data and information provided in the national reports, and identify the gaps. PMO will provide with advice to the members on information that should be provided to fill any identified gaps. **The meeting agreed on PMO’s suggestion.**
- 5.1.2.12 Mr. Jiang asked the regional synthesis consultant to consider a time frame in order to produce a revised version of his report with all the data provided, since there is a need to advise the PSC on regional fisheries status and trends. Mr. Lee agreed to submit a revised version of the regional synthesis by November 15<sup>th</sup>.
- 5.1.2.13 **The meeting agreed that:**
- **The final versions of the national and regional reports should be concise and should use the supporting tables placed as Annexes; and**
  - **The reports should include the data and information provided during the presentations of this agenda item and should follow the structure of data tables agreed during the 2<sup>nd</sup> RWG-F.**

## 5.2 Other Activities

### 5.2.1 Stock Assessment

- 5.2.1.1 Mr. Jin, as the stock assessment consultant, presented his report entitled: "Comprehensive Regional Report on Stock Assessment Methods and Suggestions for a Comprehensive Strategy for a Joint-Regional Stock Assessment" (Document UNDP/GEF/YS/RWG-F3/7).
- 5.2.1.2 Mr. Jin presented major methods to estimate fisheries stock that commonly used globally or regionally with explanation on the applications and requirements of these methods. He also listed major problems to identify the appropriate method to be used in this project.
- 5.2.1.3 Mr. Jin also suggested a list of activities within three major steps: (i) "Establishment of Scientific Working Groups (WGs)"; (ii) Establishment of an Exchanging Mechanism of Survey and Fisheries Data"; and (iii) Establishment of a Joint-Survey Mechanism".
- 5.2.1.4 Mr. Jin recommended a methodology for the "Joint-regional Fisheries Stock Assessment Programme" considering the following: i) Implementation of a collection system of accurate catch and effort and biological data; ii) Selection of a suitable model from the existing classical mathematical models for reiterative use in fisheries stock assessment in the YS region; iii) Expert consultation towards the development of new models based on the classical/new models used in other regions; iv) Implementation of a collaborative research programme towards a joint-prediction system of stock size of commercially important species in the region; and, v) Implementation of a joint-scientific survey programme considering variables such as scope, frequency, sampling strategies and survey design.
- 5.2.1.5 The Chairperson invited the meeting to provide comments and suggestions to improve the preliminary report on the Strategy for a Regional Stock Assessment.
- 5.2.1.6 Mr. Jiang informed the meeting that PMO is under negotiations with the government of China for possible inclusion of the fisheries component into the co-operative cruise in the Yellow Sea region.
- 5.2.1.7 Mr. Jiang noted that a regional stock assessment is considered an important issue as it will provide basic information for the fisheries management and co-operation in the Yellow Sea region. Its details for implementation need to be discussed and agreed by the RWG-F.
- 5.2.1.8 Ms. Yeon mentioned the need to get some advice from the regional stock assessment consultant on what kind of data is required to conduct the modeling approaches suggested in his report. She also requested that the consultant's report should also include a proposal for its implementation.
- 5.2.1.9 The stock assessment consultant agreed to add more information in his revised report regarding the data and information required by each method of stock assessment.
- 5.2.1.10 **The meeting agreed to submit to the PSC a request to organize a workshop on stock assessment and carrying capacity.**

## 5.2.2 Guidelines for Carrying Capacity Analysis

5.2.2.1 The Chairperson invited the PMO mariculture advisor, Mr. G. Ivan Soto, to present document UNDP/GEF/YS/RWG-F.3/8 related to Carrying Capacity issues.

5.2.2.2 Mr. Soto noted that the consultancy to conduct a carrying capacity study was advertised early in 2006 for bidding but the bids were withdrawn. Therefore, the PMO considered necessary to present at this meeting an overview of the current methodologies being used worldwide to determine carrying capacity. The report included a summary of approaches towards carrying capacity of coastal waters for specific aquaculture practices. The following steps for the implementation of Carrying Capacity and Assimilative Capacity were suggested: i) Scoping Study; ii) Review of Regulation and Monitoring of Aquaculture; and, iii) Implementation of a Demonstration site.

5.2.2.3 He also proposed that the Scoping Study should consider a review of the current major approaches to determine Carrying Capacity; the identification of carrying capacity approaches suitable to be implemented in the YSLME region; and, outlines for a prioritize field research in the YSLME region. Finally, the "Implementation of a Demonstration Site" considered major issues suggested to be addressed towards the identification and implementation of a demo site(s) in the YSLME region in order to undertake a Carrying Capacity approach. The set up for this activity will demand all the theoretical considerations from previous steps.

### 5.2.2.4 **Following extensively discussions on carrying capacity issues, the meeting agreed on the following:**

- **The RWG-F will tackle carrying capacity issues from the fisheries and mariculture perspectives separately.**
- **It will be more appropriate that the initial effort should focus on carrying capacity for mariculture first since these experiences could be used for fisheries in the future.**
- **There is a need of an "expert consultation" that could provide a proposal to approach other major carrying capacity issues in future.**

## 5.2.3 Asia Pacific Fishery Commission, APFIC

5.2.3.1 The Chairperson invited the RWG-F members who attended the APFIC Regional Consultative Forum Meeting (Malaysia) on behalf of the Project, to report on their participation and how the experiences gained can be incorporated in the Fisheries Component activities for year 2007 onwards (Document UNDP/GEF/YS/RWG-F.3/9).

5.2.3.2 Mr. Jang mentioned that the Asia-Pacific Fishery Commission (APFIC) is a FAO Regional Fishery Body that acts as consultative forum working in partnership with other regional organisations. He mentioned that the UNDP/GEF Yellow Sea Project was represented at the 29th APFIC Regional Consultative Forum meeting through the participation of RWG-F members, Dr. In Kwon JANG and Dr. Xianshi JIN.

5.2.3.3 Mr. Jang noted that during the meeting, 14 Asian countries agreed to cut trawling and push net fishing as a first step for reversing the production of low value trash fish and 'fishing down the food chain'. It was also noted that concluding the APFIC meeting, the members also agreed to reduce capacity for harvesting trash fish by trimming down on trawling boats and push nets.

- 5.2.3.4 Mr. Jang also noted that this session of APFIC agreed to promote the transformation of low value trash fish – species with little or no commercial value – into food for human consumption through better processing and post harvest handling, and to reduce fish meal content in aquaculture feed.
- 5.2.3.5 Mr. Jiang noted that the PMO will approach regional organisations such as FAO and NACA seeking further strengthening for regional co-operation for the benefit of the Yellow Sea region.
- 5.2.4 Sustainable mariculture
- 5.2.4.1 The Chairperson invited the consultant on sustainable mariculture, Mr. Ik-Kyo Chung, to present his findings on the “Regional Guidelines for a Joint Programme on Sustainable Mariculture” (Document UNDP/GEF/YS/RWG-F.3/10).
- 5.2.4.2 Mr. Chung presented his findings and highlighted the regional mariculture status and trends of importance, and suggested a Joint Programme on Sustainable Mariculture. He noted that the target is the development and implementation of a “Joint-regional applied research programme for sustainable mariculture” and described the activity within three major components: i) Application of the Ecosystem Based Aquaculture Management; and, ii) Application of the Integrated Coastal Zone Management with specific aquaculture practice.
- 5.2.4.3 Mr. Chung described the logical framework for the development of a Joint-Regional Applied Programme for Sustainable Mariculture. He also noted that his approach considered: i) major issues affecting sustainability of Yellow Sea mariculture; and, ii) suggested actions to be taken.
- 5.2.4.4 Mr. Jin suggested that the report should focus on sustainable issues and not only focus on environmental issues. Therefore, there was a need to include in the report environmental, social and economic issues to support the proposed guidelines.
- 5.2.4.5 Mr. Chung agreed to produce a revised report addressing the comments and suggestions duly provided by the meeting. He also noted that bio-security issues also will be considered.
- 5.2.5 Law, regulations and Fisheries Management Plans
- 5.2.5.1 The Chairperson invited the representative of MRAG, the consulting firm hired to develop the Regional Review on Laws, Regulations and Fisheries Management Plans, to present the report with the review of existing national laws, regulations, regional and international conventions applied to the YSLME and the draft “Plan for a Regional Agreement on Sustainable Use of YSLME Fisheries Resources” (Document UNDP/GEF/YS/RWG-F.3/11).
- 5.2.5.2 Mr. Kim Dohoon, on behalf of MRAG, explained that the plan included measures for addressing the legislative issues, measures for strengthening laws and regulations, suggestions of ways to improve and strengthen enforcement and the feasibility and mechanism of implementing the “FAO Code of Conduct for Responsible Fisheries” in a regional management plan for fisheries resources in the Yellow Sea.
- 5.2.5.3 Mr. Kim mentioned that the report summarized the existing national laws, regulations, regional and international conventions as it applies to the Yellow Sea. He highlighted that the draft plan for a regional agreement emphasized that international instruments encourage states to establish Regional Fisheries Organizations (RFOs) where appropriate, and to strengthen existing RFOs in order to improve their effectiveness in establishing and implementing conservation and management measures.

- 5.2.5.4 Mr. Kim went on to describe the outlines of the GENERAL MANAGEMENT PLAN addressing, among others, the FAO principles cited in the Code of Conduct. The outlines of the draft agreement included the scope, objectives and proposed activities.
- 5.2.5.5 The Chinese experts proposed to postpone the consideration of the report after evaluation of the document by the PMO. They indicated that some information cited in the report and the proposed management measures were not appropriately prepared to correctly reflect the current situation of the Yellow Sea region on related issues. They also considered that most of the proposed measures suggested by the MRAG were based on an international perspective and there was no enough considerations and analysis on the Yellow Sea's current situation.
- 5.2.5.6 The meeting noted that some major tasks contracted to MRAG were not fully covered by the report, e.g. the feasibility analysis to develop a regional agreement. It was also noted that the delay in the submission report to PMO seriously affected the review of the document.
- 5.2.5.7 The meeting realised that the draft report was not focused on the regional marine environmental problems in the Yellow Sea but on some issues beyond the scope of the project such as illegal fishing activities and territorial issue.
- 5.2.5.8 The meeting agreed that:**
- (i) PMO should provide the MRAG with the comments of the meeting clearly indicating to the consulting firm that the report should follow the TORs listed in the contract, and should address the identified regional problems listed in the approved Project Document; and**
  - (ii) MRAG should re-write the report addressing the suggestions made during this meeting.**

## **6 PREPARATION OF THE TDA**

- 6.1 The Chairperson invited the Secretariat to introduce this agenda item (Document UNDP/GEF/YS/TDA Draft 1).
- 6.2 Mr. Jiang explained briefly the TDA procedure and requirements from the GEF point of view. He introduced the relationship of TDA and preparation of SAP, in particular to provide technical options for potential management. Mr. Jiang presented the documents prepared by the TDA Consultant, relevant to the region's environmental problems and an example of a causal chain analysis (Document UNDP/GEF/YS/TDA Draft1). He indicated that the causal chain analysis should be carried out by a group of experts collectively. He further mentioned that the causal chain analysis should be completed based on supporting data and information and/or a reasonable level of expert's knowledge.
- 6.3 A careful analysis and extensive discussions were carried out by the meeting to revise the causal chain analysis for transboundary fisheries problems. The identified regional problems were considered and revised, and the revised causal chain analysis is attached as Annex IV.

## **7 ACTIVITIES TO BE IMPLEMENTED FROM 2007 ONWARDS**

- 7.1 Guidelines for Sustainable Fisheries and Mariculture and Strategic Action Programme**

- 7.1.1 The Chairperson invited the Secretariat to present the project's focus on developing the SAP over the next two years (Document UNDP/GEF/YS/RWG-F.3/12).
- 7.1.2 Mr. Soto presented the overall workplan and noted that the Project has approached the beginning of its second major phase that is the development of the Strategic Action Programme (SAP). He mentioned that a three-step approach was proposed by the PMO: a) identification of relevant management issues; b) agreement on the regional targets of the management activities; and, c) plan of necessary management actions.
- 7.1.3 Mr. Soto also mentioned that the updating of a causal chain analysis was an integral part of the "technical and management issues" while regional agreements on fisheries management and sustainable mariculture were part of the expected "regional guidelines".
- 7.1.4 Mr. Soto went on to describe the regional targets that the Fisheries Component should consider for the SAP. He suggested that "fisheries management" should focus in the development of: i) Joint-regional fisheries stock assessment programme; ii) Regional fisheries management for the sustainable use of fisheries resources; and, iii) Preliminary agreements towards the identification, analysis and modifications of applicable management measures available at regional international organisations, which can be suitable for the YSLME. He also suggested that "sustainable mariculture" should focus on the development of: i) Joint-regional Research Programme for Sustainable Mariculture; and, ii) Regional Agreement on the scheme for the implementation of a carrying capacity research programme in the Yellow Sea. He then suggested that "capacity building" should consider: i) Regional Training in Mariculture Techniques; ii) Regional Training in Disease Diagnosis, Prevention and Control; and, iii) Regional training in carrying capacity and major guidelines for the set up of a demo site.
- 7.1.5 **The meeting reached the following agreements:**
- **To keep the actions proposed on document UNDP/GEF/YS/RWG-F.3/12;**
  - **To conduct an "expert consultation" on carrying capacity issues;**
  - **To include carrying capacity for mariculture within the scope of "sustainable mariculture" approach;**
  - **To further investigate the feasibility to prepare a regional agreement on fisheries. With the existence of the fishery agreement between China and Korea, it would be more beneficial if RSTP and PSC may consider the possibility to develop a regional agreement on the protection of the Yellow Sea marine environment.**

## **7.2 Other activities**

- 7.2.1 The Chairperson invited the Secretariat to report on the activities that have been agreed for implementation but not yet initiated (Document UNDP/GEF/YS/RWG-F.3/13).
- 7.2.2 Mr. Jiang informed the meeting that as the relevant agenda items were considered in previous agenda items, and agreements have been reached, it would be more appropriate that the meeting consider other necessary activities the Regional Working Group wishes to propose.
- 7.2.3 Mr. Jiang noted that the guidelines for the Regional Workshop on Sustainable Mariculture and Diseases, Diagnosis and Control Techniques were provided by the consultant for sustainable mariculture. He suggested that this issue could be complemented by the inputs of the members that may include: i) Major issues to

be considered within the proposed guidelines; ii) Target participants e.g. local/international scientists/institutions; iii) Collaboration with other institutes/regional programmes; and, iv) Duration, approximate dates and venue for the workshop.

**7.2.4 The meeting agreed on the approaches suggested by the Project Manager.**

7.2.5 Mr. Jiang briefly informed the meeting on the upcoming East Asian Seas Congress 2006 in Haikou, China, (December, 2006), and the plan to organise one session to further develop the Yellow Sea Partnership to extend its public awareness activities to a wider range of stakeholders, and enhance co-operation and co-ordination among the relevant activities in the Yellow Sea.

7.2.6 Mr. Jiang explained that the YSLME project will also participate with an exhibition booth at the EAS Congress so that some outcomes and new findings from the TDA phase, including those from the RWG-F, could be an important input for the display.

**7.2.7 The meeting agreed to provide necessary inputs to the exhibition booth. The PMO could present photos, polyculture activities and social economic trends found in the national reports and regional synthesis.**

**8 WORKPLAN FOR 2007**

8.1 The Chairperson invited the Secretariat to introduce the workplan of the Regional Working Group Fisheries (Document UNDP/GEF/YS/RWG-F.3/14) and invited the meeting to review and revise the Workplan for the approval of the forthcoming PSC meeting.

8.2 Mr. Soto presented the workplan for the Regional Working Group Fisheries, and stated that a few new activities discussed and agreed by RWG-F during this meeting should be incorporated into the Workplan, in order to reflect the current situation.

8.3 The Chairperson invited members to review and provide suggestions to revise the Workplan for the RWG-F, for submission and approval at the 3<sup>rd</sup> PSC in November 2006.

**8.4 Following careful consideration, the meeting agreed on a revised Workplan, including the following new activities:**

- **“Experts Exchange Programme” among relevant national institutions towards the implementation of regional stock assessment related issues.**
- **To conduct a consultancy for the development of guidelines to develop: i) Joint Regional Applied Research Programme on Carrying Capacity for Mariculture; and, ii) Technical Guidelines and a Detailed Workplan to conduct a Training Course on Carrying Capacity.**

**8.5 The meeting amended the Workplan proposed by the Secretariat and agreed on its final version which is attached as Annex V to this report.**

## **9 OTHER BUSINESS**

- 9.1 The Chairperson invited members to raise any other issues that need to be considered by this meeting.
- 9.2 No additional issues were raised by the meeting.

## **10 DATE AND PLACE FOR 4<sup>TH</sup> RWG-FISHERIES MEETING**

- 10.1 The Chairperson invited members to consider the date and place for the 4<sup>th</sup> RWG-F Meeting.
- 10.2 **Members agreed to have the Fourth RWG-F Meeting in Sokcho, Korea from 29 October to 1 November 2007.**

## **11 ADOPTION OF THE MEETING REPORT**

- 11.1 The Chairperson led the discussion of the draft meeting report. The report was reviewed, amended, and adopted by the Meeting.

## **12 CLOSURE OF THE MEETING**

- 12.1 The Chairperson, Mr. Jin Xianshi gave his thanks to the host, to the participants, and to the PMO for the efficient management of the meeting.
- 12.2 Mr. Zhao Xianyong thanked the consultants for their contribution to the outputs of the meeting.
- 12.3 Ms. Yeon, on behalf of the Korean delegation, thanked the Chairperson for his efficient work and the PMO for their efforts.
- 12.4 On behalf of the PMO, Mr. Yihang thanked the Chairperson for his efficient moderation of the meeting, the participants for their hard work and contribution, and the observers for their important input.
- 12.5 Following the closing statements, the Chairperson declared the meeting closed on 28 October 2006.

## Annex I

### List of Participants

#### PARTICIPANTS OF THE MEETING

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## Annex II

### List of Documents

#### Working Documents

UNDP/GEF/YS/RWG-F.3/1	Provisional Agenda
UNDP/GEF/YS/RWG-F.3/2	Provisional Annotated Agenda
UNDP/GEF/YS/RWG-F.3/3	Report of the Meeting ( <i>to be prepared at the meeting</i> )
UNDP/GEF/YS/RWG-F.3/4	Expected Outputs From the 3 <sup>rd</sup> RWG-F Meeting
UNDP/GEF/YS/RWG-F.3/5	National Data and Information Collection Activity – Final Reports
UNDP/GEF/YS/RWG-F.3/6	Report of Fisheries Regional Data Synthesis
UNDP/GEF/YS/RWG-F.3/7	Report of the “Regional Stock Assessment Methods and Suggestions for a Comprehensive Strategy”
UNDP/GEF/YS/RWG-F.3/8	Preliminary Report on “Carrying Capacity”
UNDP/GEF/YS/RWG-F.3/9	Report of the Project representatives on their participation in the “APFIC Regional Consultative Forum Meeting”
UNDP/GEF/YS/RWG-F.3/10	Progress Report of the Regional Review and Proposed Guidelines towards a Joint Programme on Sustainable Mariculture
UNDP/GEF/YS/TDA Draft1	First Draft of the Transboundary Diagnostic Analysis (TDA)
UNDP/GEF/YS/RWG-F.3/11	Progress Report of the Regional Review on Laws, Regulations and Fisheries Management Plans
UNDP/GEF/YS/RWG-F.3/12	Checklist of proposed topics to be addressed towards the development of Regional Guidelines for Sustainable Fisheries and Mariculture as part of the Strategic Action Programme (SAP)
UNDP/GEF/YS/RWG-F.3/13	Fisheries Component Activities for 2007 and Onwards
UNDP/GEF/YS/RWG-F.3/14	Fisheries Component’s Workplan for 2007

### **Information Documents**

UNDP/GEF/YS/RWG-F.3/inf.1	Provisional List of Documents
UNDP/GEF/YS/RWG-F.3/inf.2	Provisional List of Participants
UNDP/GEF/YS/RWG-F.3/inf.3	Provisional Working Programme for the Meeting
UNDP/GEF/YS/RWG-F.2/3	Report of “Second Meeting of the Regional Working Group for the Fisheries Component”
UNDP/GEF/YS/RSP.2/3	Report of the “Second Meeting of the Regional Scientific and Technical Panel”
UNDP/GEF/YS/PSC.2/3	Report of the “Second Meeting of the Project Steering Committee”
UNDP/GEF/YS/JC.2/3	Report of “Second Technical Meeting for the Co-operative Study Cruises In the Yellow Sea Marine Basin for the UNDP/GEF Yellow Sea Project”
UNDP/GEF/YS/JC.3/3	Report of “Third Technical Meeting for the Co-operative Study Cruises In the Yellow Sea Marine Basin for the UNDP/GEF Yellow Sea Project”

## **Annex III**

### **PROVISIONAL AGENDA**

#### **1 OPENING OF THE MEETING**

**1.1 Welcome addresses**

**1.2 Introduction of members**

#### **2 ORGANISATION OF THE MEETING**

**2.1 Documentation available to the Meeting**

**2.2 Organisation of work**

#### **3 ADOPTION OF THE MEETING AGENDA**

#### **4 EXPECTED OUTPUTS FROM THE 3RD RWG-F MEETING**

#### **5 CONSIDERATION OF THE ON-GOING ACTIVITIES UNDER THE FISHERIES COMPONENT**

**5.1 Data and information status, trends and new findings**

**5.1.1 National data and information collection**

**5.1.2 Regional data and information synthesis**

**5.2 Other activities**

**5.2.1 Stock assessment**

**5.2.2 Guidelines for carrying capacity analysis**

**5.2.3 Asia Pacific Fishery Commission, APFIC**

**5.2.4 Sustainable mariculture**

**5.2.5 Law, regulations and fisheries management plans**

#### **6 PREPARATION OF THE TDA**

#### **7 ACTIVITIES TO BE IMPLEMENTED FROM 2007 ONWARDS**

**7.1 Guidelines for sustainable fisheries and mariculture and strategic action programme**

**7.1.1 Fisheries management scheme, criteria and guidelines**

**7.1.1.1 Regional stock assessment**

**7.1.1.2 Laws, regulations and fisheries management plans**

**7.1.2 Mariculture management scheme, criteria and guidelines**

**7.1.2.1 Carrying capacity**

**7.1.2.2 Sustainable mariculture**

**7.2 Other activities**

**7.2.1 Regional workshop on sustainable mariculture**

**7.2.2 Regional workshop on carrying capacity**

**7.2.3 Suggestion for other activities**

**8 WORKPLAN FOR 2007**

**9 OTHER BUSINESS**

**10 DATES AND VENUE FOR THE 4TH RWG-FISHERIES MEETING**

**11 ADOPTION OF THE MEETING REPORT**

**12 CLOSURE OF THE MEETING**

### FISHERIES COMPONENT CAUSAL CHAIN ANALYSIS

Problem	Impacts	1st Cause	2nd Cause	3rd cause	Root cause
<b>Decline in Landings of Many Traditional Commercially Important Species and Increased Landing of Low Value Species</b>	Reduction in trophic level	<b>Over-exploitation of target species and climate change</b>	Over-Capacity of fishing fleets	Insufficient monitoring and enforcement	Lack of alternative livelihood
	Reduction in overall size of some commercially valuable species		Insufficient management and control of fisheries activities		Unguided/unchecked increased in demand for captured fish as the result of changing lifestyle
	Variation of Recruitment				Insufficient guidance from government on market incentives
	Change in composition of species		Weak scientific-based knowledge on ecosystem	Insufficient support and guidance for education and research	
<b>Unsustainable Mariculture Practices</b>	Deterioration of ecosystem services (natural habitats)	<b>Over-intensive aquaculture activities</b>	Lack of scientific and technical guidelines in mariculture practices	Unguided/unchecked increased in demand for seafood as the result of changing lifestyle	Development undertaken with limited comprehension and coherence of legislation based on environmental protection
		<b>Over-exploitation of natural habitats</b>	Inappropriate management plan based on function zoning for mariculture areas		Insufficient strategies for preparing and approving development plans based on ecosystem
	Unpredictable aquaculture production	<b>Introduction of pathogens</b>	Introduction of foreign species	Unguided/unchecked increased in demand for seafood as the result of changing lifestyle	Development undertaken with limited comprehension and coherence of legislation based on environmental protection
		<b>Increase of disease outbreaks</b>	Overintensive aquaculture activities		Insufficient management of aquaculture practices
		<b>Insufficient natural food supply</b>	Variation of environmental conditions (primary productivity) and overintensive aquaculture activities	Insufficient knowledge on carrying capacity issues	Insufficient support and guidance for education and research
	Environmental Impact of Mariculture	<b>Nutrient release, feed residues and solid faeces</b>	Over feeding, inadequate effluent treatment and low quality of feed	Insufficient application of environmental friendly techniques and over carrying capacity	Insufficient knowledge on feeding management practices
		<b>Bacterial and viral contamination</b>	Inadequate water discharge	Inadequate disease control	Insufficient application of environmental friendly techniques
	Potential impacts to human health	<b>Chemical residues and biotoxins in farmed organisms</b>	Inappropriate use of chemicals and harmful algal blooms (HABs)	Insufficient application of environmental friendly techniques and environmental changes	Lack of co-ordinated efforts between public health sector, government related organizations and private sector



