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***Reversing Environmental Degradation Trends
in the
South China Sea and Gulf of Thailand***

REPORT

**Seventh Meeting of the Regional Working Group for
the Seagrass Sub-component**

Beihai, China, 24th – 27th July 2006



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Cover Photo: A holothurian, *Pentacta anceps* (Selenka) in a seagrass bed of *Halophila ovalis* at the Hepu Demonstration Site, Beihai, China. Dr. Xiaoping Huang.

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Report of the Meeting

1. OPENING OF THE MEETING

1.1 Welcome Address on Behalf of UNEP

1.1.1 Dr. John Pernetta, Project Director, officially opened the meeting on behalf of Dr. Achim Steiner, Executive Director of the United Nations Environment Programme (UNEP), and Mr. Olivier Deleuze, Officer-in-Charge, Division of Global Environment Facility Co-ordination (UNEP/DGEF). He welcomed participants to the Seventh Meeting of the Regional Working Group on Seagrass, and expressed his thanks to Dr. Xiaoping Huang, China's seagrass focal point and to Mr. Yao Haibo for their assistance in organising the meeting.

1.1.2 Dr. Pernetta noted that the main item of business before the group was a consideration of the seagrass elements to be included in the Strategic Action Programme and in particular, elaboration of the actions and their associated costs. He noted further that this would require a review of the current status of the National Action Plans since the SAP itself was dependent and builds upon, the national level actions.

1.1.3 Dr. Pernetta noted the extensive agenda before the meeting and expressed the hope that the working group would be able to complete the business of the meeting and that despite the volume of business it would still be an enjoyable experience.

1.1.4 Dr. Pernetta noted that China's Hepu seagrass demonstration site was the first site to become operational under the framework of the project, and noted further that this site had played an important role in publicising the implementation of demonstration site activities in China. In this connection, he warmly welcomed the Vice-Mayor of Beihai, Mr. Shuhua Li, and invited him to address the meeting on behalf of the Beihai local government.

1.2 Opening Statement by a Representative of the Local Government

1.2.1 On behalf of the Mayor and the Beihai City Government Mr. Li, expressed appreciation to the Regional Working Group on Seagrass for selecting Beihai as the location for its' seventh meeting. He noted that Beihai was an important coastal tourism destination in China with a diverse range of natural attractions. He noted further that the Hepu demonstration site activities were progressing smoothly, largely due to the support from UNEP, GEF, and the local Project Co-ordinating Unit, which had developed the first seagrass website in China. He expressed the belief that this meeting would enhance the work at the Hepu demonstration site and hoped that the meeting would be a success and that the participants would enjoy their stay in Beihai.

1.3 Introduction of Participants

1.3.1 Dr. Pernetta noted that there was full representation by all seagrass focal points; two of the three regional experts; and a number of observers and representatives from news agencies, the Beihai Environmental Protection Office and the National Dugong Reserve. He invited participants to introduce themselves to the meeting, and there followed a *tour de table* during which participants introduced themselves and indicated their respective roles in the project. The list of participants is attached as Annex 1 of this report.

2. ORGANISATION OF THE MEETING

2.1 Election of Officers

2.1.1 Dr. Pernetta reminded participants that the rules of procedure state that, the Regional Working Group shall elect, from amongst the members, a Chairperson, Vice-Chairperson and Rapporteur to serve for one year. The rules state further that, officers shall be eligible for re-election no more than once.

2.1.2 Members recalled that, during the sixth meeting in Bolinao, Philippines, 27th – 30th September 2005, Dr. Suvaluck Satumanatpan, Dr. Marco Nemesio E. Montaño, and Mr. Kamarruddin bin Ibrahim were elected as Chairperson, Vice-Chairperson, and Rapporteur respectively. Dr. Pernetta noted therefore that Dr. Suvaluck, Dr. Montaño, and Mr. Kamarruddin were all eligible for re-election, having served only one year to date.

2.1.3 Mr. Kamarruddin, the Malaysian focal point for seagrass nominated Dr. Montaña, focal point for seagrass in Philippines as Chairperson, and this nomination was seconded by Mr. Tri Edi Kuriandewa, focal point for seagrass in Indonesia. Mr. Tri Edi, nominated Mr. Ouk Vibol, focal point for seagrass in Cambodia as Vice-Chairperson. This nomination was seconded by Dr. Suvaluck, focal point for seagrass in Thailand. Mr. Tri Edi nominated Dr. Suvaluck as Rapporteur for the meeting, and this nomination was seconded by Mr. Vibol. There being no further nominations, Dr. Montaña, Mr. Vibol and Dr. Suvaluck were elected by acclamation.

2.2 Documents Available to the Meeting

2.2.1 The Chairperson invited Mr. Christopher Paterson, the Secretary to introduce the documentation available to the meeting and listed in document UNEP/GEF/SCS/RWG-SG.7/Inf.2. Mr. Paterson briefly introduced the documents and highlighted the main substantive items for consideration and decision by the working group, which included the administrative reports; the status of the demonstration sites; finalisation of the National Action Plans; the project website and associated databases; the training activities; finalisation of inputs to the Regional Strategic Action Programme; and revision of the work plan and activities of the working group. The list of documents is contained in Annex 2 of this report.

2.3 Organisation of Work

2.3.1 Mr. Paterson briefed participants on the administrative arrangements for the conduct of the meeting, and the proposed organisation of work (UNEP/GEF/SCS/RWG-SG.7/Inf.3). He noted that formal sessions of the meeting would be conducted in English and in plenary although sessional working groups might need to be formed, to further develop and elaborate elements related to the seagrass sub-component of the regional Strategic Action Programme (SAP).

3. ADOPTION OF THE MEETING AGENDA

3.1 The Chairperson introduced the amended provisional agenda prepared by the PCU as document UNEP/GEF/SCS/RWG-SG.7/1, and the annotated provisional agenda UNEP/GEF/SCS/RWG-SG.7/2 and invited members to propose any amendments or additional items for consideration prior to the adoption of the agenda. There being no proposals for amendment or addition the agenda was adopted as it appears in Annex 3 of this report.

4. STATUS OF ADMINISTRATIVE AND SUBSTANTIVE REPORTS; AND NATIONAL ACTION PLANS

4.1 Status of the Administrative Reports: Progress and Expenditure Reports, Audit Reports, and MoU Amendments

4.1.1 The Chairperson invited Mr. Kim Sour, the PCU member to introduce document UNEP/GEF/SCS/RWG-SG.7/4, which outlined the current status of the administrative reports, including progress reports, expenditure reports, audit reports, and MoU amendments.

4.1.2 Mr. Sour drew the attention of members to the current situation with respect to receipt of routine 6 monthly progress and expenditure reports and the audit reports for expenditures during 2005. He noted that the second amendments to the Memoranda of Understanding were all current and that all the seagrass demonstration sites were operational under addenda to the second MoU amendments for Cambodia, China, Philippines, and Viet Nam.

4.1.3 Mr. Sour noted with respect to the contents of Table 2 that there was a need to clarify the expenditure statement for Indonesia for the second half of 2005. Concerning the annual audit reports he highlighted the fact that only Thailand and Viet Nam, had submitted audit reports for 2005. Mr. Sour expressed some concern that the Cambodian and Malaysian Specialized Executing Agencies still held significant cash balances.

4.1.4 In relation to the contents of Table 6, Mr. Sour noted that the realised co-financing was slightly higher than the estimate over the period 2002 to 2005 and reminded members that the Project Steering Committee had agreed to increase co-financing from participating governments for national coordination activities and that such co-financing received by the SEAs should be reported by the Focal Points in their administrative reports.

4.1.5 The Chairperson invited members to brief the meeting on the situation with respect to outstanding reports.

4.1.6 Mr. Tri Edi indicated that the expenditure statement had been sent to the PCU but there were questions from the PCU regarding the co-financing. Mr. Tri Edi noted that he had no cash co-financing to report, and that he had already produced the required substantive reports. He noted that from July-December he had spent GEF funds for the convening of a public meeting and publications.

4.1.7 Dr. Pernetta suggested that Mr. Tri Edi and Mr. Sour resolve the outstanding problems over lunch. Dr. Pernetta reminded the meeting that all SEAs were obliged to produce an audit report of expenditures by the end of March for the preceding calendar year and that, in the absence of such reports no further funds could be transferred to the SEA's by UNEP. He further reminded the members that the 6 month progress reports and expenditure reports for the period January to June 2006 were due next week and urged members to finalise and submit their reports as soon as possible.

4.1.8 Mr. Vibol noted that a draft audit report had been produced for Cambodia and he anticipated that the final report would be available in August. He noted further that due to the high costs of the audit he would need to discuss with the PCU a revision to the budget. He noted that the large cash balance held by Cambodia was due to delays in the convening of community consultations on the National Action Plan.

4.1.9 Mr. Tri Edi noted that in Indonesia all project components were audited by the same company that was engaged by the Ministry of Environment, and that the responsibility for this task had been assigned to Indonesia's National Technical Focal Point. He explained that he felt there was little he could do to expedite this matter, and Dr. Pernetta suggested that Mr. Tri Edi should remind the NTFP weekly of the need to conduct the audit. Dr. Montañó agreed that there was a need to be persistent in this matter and Dr. Fortes suggested that all focal points for the project components should apply pressure to the Ministry of Environment as a group.

4.1.10 Dr. Huang explained that the audit report for China had been finished but that he had not yet received the final report which he hoped to be able to send to the PCU in the next week.

4.1.11 Mr. Kamarruddin noted that in relation to Table 2 he had sent a letter regarding the expenditures in Malaysia to the PCU but this must have gone missing and that he would hand deliver it to Mr. Sour during the meeting. He noted that the audit report would be available some time after August.

4.1.12 Dr. Montañó noted that the audit report for the Philippines would be available in mid August.

4.1.13 The Chairperson reminded the group of the need to be diligent in the contracting of the audits and in the submission of the administrative reports.

4.2 Status of the Publication of National Reports in English and National Languages

4.2.1 In introducing this agenda item Mr. Sour reminded the group of the agreed timetable for publication of national reports in national languages which had been extended to the last quarter of 2005, and that all national language reports, except Malaysia's, had been received by the PCU.

4.2.2 Mr. Sour noted that the PCU had edited and formatted the national reports for final publication and regional distribution by UNEP. He noted however that the Malaysian National Report needed some amendments to the citation of references in the text in order to conform with the agreements made during the fourth meeting of the Regional Working Group.

4.2.3 Mr. Tri Edi tabled the metadata base of Indonesia and the final national seagrass report, in Bahasa and English, which were distributed to participants during the meeting. He noted that a near final draft of the National Action Plan was available. Mr. Kamarruddin made available copies of the Malaysian national report.

4.2.4 Mr. Vibol noted that Cambodia had produced more than 200 copies of the national reports, which had been distributed to relevant ministries, the coastal provinces and community groups. Dr. Huang noted that he had distributed approximately 100 copies of the Chinese report to relevant ministries, local government and community organisations.

4.2.5 Mr. Tri Edi noted that in excess of 100 copies of the previous version of the Indonesian report had been sent to a number of Ministries, Libraries and academic institutions and noted further that the new version contained more comprehensive biophysical information. Dr. Montaña noted that the Philippines had produced 100 copies, which had been distributed to ministries, libraries, NGO's and some schools. He noted that he had received numerous requests for electronic copies of the report and WWF and Conservation International had requested more copies.

4.2.6 Dr. Suvaluck noted that 2,000 copies of the seagrass field guide had been produced; 1,000 GIS reports; 500 national reports; 500 copies of the legislation and 200 copies of the National Action Plan. More than 200 stakeholders including universities had received the National Report. She noted that the Legislation report had a more limited audience and that the legal situation had now changed following restructuring of the government Ministries and Departments.

4.2.7 Dr. Tien noted that the National Report in Vietnamese had been sent to all 30 coastal provinces and noted further that he had sent the distribution list to the PCU and Mr. Sour responded that this had been received as part of the progress report. Dr. Tien noted that he intended to publish the national action plan by the end of this year, provided that it was adopted. In this regard he noted that the National Action Plan was now under review by senior environmental experts in Viet Nam from the Ministry of Environment and Natural Resources. He noted that he had organised many meetings in Viet Nam to develop the National Action Plan and that he hoped there would be no problems with its' final adoption.

4.3 Finalisation, Adoption and Implementation of National Action Plans

4.3.1 The Chairperson introduced this agenda item by noting that the sixth meeting of the RWG-SG had reviewed the National Action Plans (NAPs) submitted to the PCU prior to the meeting. The meeting had discussed the purpose of the national action plans, their relationship to the regional Strategic Action Programme, and the reasons for delay in their adoption. During that meeting, it was pointed out that some of the NAPs still needed revision, specifically:

- Indicators of either performance or, outputs and outcomes, should be included in the NAPs as a mechanism for monitoring the effectiveness of the implementation;
- The NAP for Cambodia required a section that justified the NAP;
- The NAPs for China and Indonesia required prioritisation of actions;
- The NAP for Malaysia needs to be further expanded and completed.

4.3.2 Mr. Sour noted that according to the work plan and timetable for the RWG-SG, as agreed during the sixth meeting, the adopted/finally revised NAPs should have been submitted to the PCU during the first quarter of 2006. He noted further that final draft NAPs had been received from Cambodia, China, Indonesia, and Viet Nam and that these documents were available to the meeting as information documents.

4.3.3 Mr. Vibol noted that the latest version of the Cambodian NAP had been sent to the Director General of Fisheries in May who had forwarded it to the Ministry of Agriculture. He noted that if approved the Minister would sign both the English and Khmer versions. Dr. Pernetta noted that some of the performance indicators in the Cambodian NAP were not very specific and noted further that while the NAP states that performance indicators will be used to evaluate the implementation of the NAP, the text was not clear concerning what these indicators were nor, how they were to be used.

4.3.4 Dr. Huang noted that the Chinese NAP had been approved by SEPA at the end of 2005 and noted further that this had not been finally approved by the Inter-Ministry Committee as insufficient members were present during the last IMC meeting. He anticipated that final formal approval would be made prior to the end of this year.

4.3.5 Dr. Suvaluck queried whether indicators were required for all sub-activities or only an overall indicator for the main components. Dr. Huang noted that at the last meeting it had been agreed that indicators of either performance or, outputs and outcomes, should be included in the NAPs as a mechanism for monitoring the effectiveness of NAP implementation. Dr. Suvaluck noted that at the last meeting it had been agreed that all the sub-activities would be grouped into 5 main components and that perhaps it would be better to measure the success of these components rather than sub-activities.

4.3.6 Dr. Pernetta drew the attention of the meeting to the agreed minimum requirements for the content of the NAPs, which simply list milestones for NAP implementation. Dr. Pernetta noted that therefore in his view it would be more appropriate to look at the overall performance of each component, which should also be greater than the sum of the parts. He posed no objection should a NAP contain performance indicators for the sub-activities.

4.3.7 Mr. Tri Edi noted that following discussions with the Ministry of Marine Affairs and Fisheries progress had been made with the NAP, which was being supported by MMAF. He noted further that the Indonesian NAP had no indicators of performance and that the NAP would be amended by the end of this year.

4.3.8 Mr. Kamarruddin noted that the NAP for Malaysia (tabled during the meeting) did not contain indicators and that these would need to be added. He noted that he had recently convened a community consultation (July) and that the NAP should be completed by the end of the year.

4.3.9 Dr. Montaña noted that there had been a succession of four Secretaries and four Directors in the Department of Environment and Natural Resources (DENR) since the commencement of the project and that this had affected the ability of the DENR to convene a convergence meeting between the various focal points. He noted that at a national seagrass committee meeting the lawyers had noted that the legal framework was not well developed but that this should not preclude action at the local level. He agreed that the Philippines NAP needed to be amended to include performance indicators and noted that when the NAP is adopted would depend on the DENR.

4.3.10 Dr. Suvaluck noted that in relation to Thailand they had added 3 key immediate threats to the original 4: construction and boat anchoring; direct use of seagrass; tourism activities (inappropriate mooring etc). She noted that obtaining NAP approval was a key challenge due to the complex institutional arrangements in Thailand but noted further that although the NAP has not yet been adopted several activities have commenced: including the use of GIS to map seagrass in Thailand; and training of personnel in the use and maintenance of seagrass-related databases. Dr. Suvaluck noted that within the Department of Marine and Coastal Resources (DMCR) Office of Natural Resources, Environment, Policy and Planning (ONEP) there was a good understanding of the key priorities for seagrass management in Thailand and that they had assisted in involving school teachers in the community education aspects of the NAP.

4.3.11 Mr. Vibol noted that although the NAP in Cambodia had not been finalised they had also begun implementing activities.

4.3.12 Mr. Tri Edi noted that in Indonesia there had been a gradual increase in the understanding of the importance of seagrass, and that MMAF had included seagrass as part of a broader NAP for the management of Indonesia's coastal habitats, and had agreed to act as an umbrella organisation for the implementation of the seagrass NAP for the South China Sea coast of Indonesia.

4.3.13 Dr. Fortes noted that problems such as obtaining government approval of the NAP had prevented the achievement of some project outputs. Referring to the facts regarding the number of Directors and Secretaries raised by Dr. Montaña (para. 4.3.9) he questioned how such problems might affect future actions such as approval of the SAP and ensuring that commitments made under the SAP are met. He asked if there was anything that UNEP or GEF could do in this regard.

4.3.14 Dr. Montaña noted that the seagrass committee in the Philippines had discussed this issue and were proceeding to work more closely with local government units in order to ensure that action was undertaken, locally if not nationally.

4.3.15 Dr. Pernetta noted that the discussion had highlighted a number of issues that had been taken into consideration in the original project design. The need for wide stakeholder buy-in had been foreseen in the recommendation to create national seagrass committees with extensive stakeholder involvement. A national committee with NGO and civil society representatives could bring pressure to bear on government authorities to take action at the local level. Dr. Pernetta explained that the broader the involvement in the national committees the greater one's power base to leverage change. He noted further that the Strategic Action Programme would require central government approval and that the 1st draft of the revised SAP would be presented to the Project Steering Committee in November 2006. At that time the PSC members would be asked what they had done in terms of adopting the National Action Plans. Dr. Pernetta hoped that this would assist in giving the national committees support in terms of a top down as well as a bottom up pressure to adopt the NAPs.

5. CONSIDERATION OF PROGRESS IN IMPLEMENTING THE DEMONSTRATION SITE ACTIVITIES

5.1 Reports from Focal Points

5.1.1 The Chairperson invited the focal points for the seagrass demonstration sites to brief the meeting regarding the present status of implementation of agreed activities at the approved demonstration sites.

5.1.2 Dr. Huang presented an overview of activities at the Hepu Seagrass Demonstration Site. He reviewed the establishment of the Hepu Seagrass Site Management Board and noted that four management board meetings had been held to discuss and plan the Hepu Seagrass demonstration site activities. A stakeholder consultation had been held to facilitate community involvement in the preparation of the site management plan, and he noted further that the site had established a website <<http://seagrass.scsio.ac.cn/>> to publicise and share information with all stakeholders, regarding demonstration site activities.

5.1.3 Dr. Huang informed the meeting that the ongoing activities at Hepu include: a stakeholder analysis; the valuation of goods and services of the Hepu seagrass bed; expansion of the existing Dugong National Reserve to cover the wider ecosystem in the area; analysis of national legislation and preparation of draft recommendations on the integration of laws with local arrangements; collection of information for sound management; and development of training, education, and awareness programmes. He noted that the site has finalised plans for an education and interpretation centre and construction will start shortly.

5.1.4 Dr. Huang noted that some members of the local community had begun aquaculture activities in the dugong reserve and the local government had responded by removing aquaculture materials from the area. During discussion Dr. Hutomo asked if the local community was involved in the management board. Dr. Huang indicated that the local community was represented on the management board by the local government but that more direct involvement of the local community took place during the implementation of the activities on site, and that a socio-economic survey was being undertaken to assess community values/understanding.

5.1.5 In response to a question from Dr. Tien, Dr. Huang informed the meeting that standard parameters such as percentage cover, biomass, biodiversity, and water quality were being monitored as were dominant species in all major taxonomic groups of organisms.

5.1.6 Mr. Vibol presented an overview of the core management zone and activities at the Kampot seagrass demonstration site in Cambodia. He noted that the MoU was signed at the end of May 2006, and noted further that the Management Advisory Group and Management Board had been established and that the demonstration site manager had recently been recruited by the Department of Fisheries. He informed the meeting that the first joint meeting between the management teams of the Kampot and Phu Quoc demonstration sites had been convened in May 2006 and noted that they had agreed to stop the illegal trade in dugong, turtle, coral and seagrass, and to reduce or stop the use of illegal fishing activities within the demonstration sites. He noted further that the sites had agreed to develop a policy and cooperation framework for the transboundary area, guidelines for resource assessment and monitoring, a joint GIS database, and joint training activities on resources assessment monitoring, database management, community-based resource management, and alternative livelihoods.

5.1.7 Dr. Hutomo sought clarification from Mr. Vibol regarding the criteria used to identify the core management zone at the Kampot site. Mr. Vibol noted that the core zone had been identified using anecdotal information from the local community due to a lack of information regarding the distribution of seagrass species and associations within the boundaries of the Kampot seagrass site.

5.1.8 In this connection Dr. Pernetta reminded the working group that while the outer boundaries of the Kampot seagrass bed had been determined, little was known about the distribution and abundance of seagrass and associated species within the site boundaries. He expressed concern that joint guidelines for resource assessment and monitoring prepared by Viet Nam might not meet the needs of the Kampot site if inadequate attention was given to the fact that there was very limited baseline information, in Cambodia compared with Viet Nam.

5.1.9 Mr. Vibol indicated that they aimed to conduct surveys of the site prior to the implementation of any monitoring programme. Dr. Pernetta suggested that a large and extremely time-consuming sampling programme would be required to obtain a broad indication of the coverage and distribution of seagrass within the 23,000 ha site at Kampot. In this connection Dr. Fortes noted that a team of six researchers worked for 28 days to survey 70 locations within the Bolinao seagrass bed in respect of seagrass distribution and coverage. It was agreed by the meeting that a proper survey of such a large area would require considerable investment of time and human resources in order to obtain information of sufficient resolution to enable the stratification of a seagrass monitoring programme at Kampot.

5.1.10 Dr. Hutomo asked whether the agreement made at the first joint meeting to stop illegal trade and to reduce or stop completely the use of illegal fishing activities within the demo-site was realistic. Dr. Pernetta noted that this would depend upon the level of community support and the extent of political will. If both were high then such a goal might not be unrealistic. Mr. Kamarruddin asked if the Kampot site was utilised by sea turtle and if turtle were still being harvested and Mr. Vibol noted that both adult and juvenile turtles were found at the site and that they continued to be exploited by the local population.

5.1.11 Dr. Tien reviewed activities at the Phu Quoc demonstration site in Viet Nam, noting that they had:

- Established the management board;
- Conducted a survey of economic values of seagrass goods and services at the site;
- Identified an area of 3,700 ha from a total of 10,000 ha that is characterised by high seagrass biomass and cover and will be used as core areas in the management zones; and
- Have conducted training courses on awareness building, survey and transplantation of seagrass, and the development of regulations for the management of seagrass.

5.1.12 Dr. Tien noted further that a community consultation from 27th – 28th July was planned to consider the zoning of use within the seagrass areas of Phu Quoc.

5.1.13 Mr. Tri Edi asked Mr. Vibol and Dr. Tien what mechanisms are in place to support the joint management of the Phu Quoc and Kampot demonstration sites. Dr. Pernetta noted that a key outcome of the recent joint meeting was the agreement by both sides of the need for dialogue at both the policy and operational levels. Both sides had already agreed upon the need to develop joint policies regarding transboundary issues, such as the trade in threatened species and seagrass and a joint GIS database as a tool for the joint management of the transboundary area. He noted the two management teams will meet annually to discuss the overall management of the sites and that more frequent meetings will be convened to deal with technical matters as required.

5.1.14 Dr. Pernetta sought clarification from Dr. Tien regarding the methodology used to identify the 3,700 ha area characterised by high seagrass cover and biomass from the 10,000 ha of seagrass at Phu Quoc. Dr. Tien noted that site identification was based on information derived from recent surveys, and noted further that at Phu Quoc there are 12 main seagrass beds making up the 10,000 ha of seagrass. He highlighted that 3 main areas made up the total 3,700 ha, one area in the north, one area at Bai Bon, and one area to the south of the island. The seagrass beds had been selected to maximise the coverage of seagrass biodiversity within the core areas.

5.1.15 Dr. Pernetta noted that the information available to the meeting regarding the methods used to identify areas of high seagrass cover and biomass at Phu Quoc was insufficient to enable the working group to evaluate the quality of this work, and requested that Dr. Tien provide the working group, within 2 weeks from the closure of the meeting, a report on how the 3,700 ha was selected from the total 10,000 ha. Dr. Tien agreed that he would prepare this report and send it to the PCU following the community consultation on the zoning of seagrass planned from 27th – 28th July 2006.

5.1.16 Dr. Montaña presented an overview of the Bolinao seagrass demonstration site and noted that since the signing of the MoU on 28th September 2005 the Bolinao site had:

- Participated in the 1st (13th November 2005) and 2nd (6th – 8th June 2006) Mayors' Roundtables;
- Attended the 2nd UNEP/GEF Regional Scientific Conference (14th – 16th November 2005);
- Established its' management board (7th December 2005);
- Delivered orientation seminars in all coastal Barangays (December 2005 to February 2006);
- Convened its' first management board meeting (2nd February 2006);
- Held a meeting with fishers and local government technicians for the identification of seagrass areas (23rd March 2006);
- Conducted a survey of seagrass areas;
- Mapped Santiago Island (10th April 2006);
- Gathered information regarding the locations of fish cages, fish-pens, mussel culture farms and other mariculture structures in the area of the site (26th April 2006); and had
- Conducted a consultation meeting on zoning, mapping and other associated activities (12th July 2006).

5.1.17 Dr. Montaña presented a draft report of the results of the resource assessment at the Bolinao site, highlighting the locations of all observed seagrass flowers and fruits during the survey period, the distribution of seagrass richness and diversity, and the density of the seagrass species *Thalassia hemprichii*, *Enhalus acoroides*, *Halodule uninervis*, *Halophila ovalis*, *Cymodocea rotundata*, *C. serrulata*, and *Syringodium isoetifolium*. He also introduced the group to the Bolinao seagrass website and a brochure that is given to international visitors to the site.

5.1.18 Mr. Tri Edi sought clarification regarding the criteria used to select the core zones and Dr. Montaña indicated that they had ranked importance of the sites in terms of biodiversity and cover and information from consultations with the local fisherfolk regarding current patterns of use.

5.1.19 Mr. Tri Edi noted that the proposal for the East Bintan seagrass demonstration site was under final review by GEF, and highlighted that he now had the letter of support for the project from the central government (LIPI) but was still awaiting a similar letter from the Riau Regency. He noted that he had previously mapped seagrass at the East Bintan site using remotely sensed data, and the publication of this work highlights seagrass distribution and density over the whole East Bintan area.

5.2 Consideration of the Preliminary Framework for Assessing the Effects of Fishing in the Habitat Demonstration Sites

5.2.1 The Chairperson invited Mr. Paterson to introduce document UNEP/GEF/SCS/RWG-SG.7/5 "*Framework for Assessing the Effects of Fishing in the Habitat Demonstration Sites*". Mr. Paterson reviewed the previous deliberations of the Regional Working Group on Fisheries and Habitat Sub-Components regarding this matter noting that nearly all habitat demonstration sites had highlighted fisheries as a threat. It was the view of the Regional Working Group on Fisheries and the Regional Scientific and Technical Committee that, a framework for assessing the threats from fisheries to the habitat demonstration sites might provide a useful platform for improving the integration of fisheries and habitat management.

5.2.2 Mr. Paterson outlined the framework for assessing the effects of fishing and aquaculture developed by the RWG-F during its' seventh meeting. He noted that the Regional Working Group on Seagrass had an important role to play in commenting on any elements of this framework that require further elaboration in relation to the interaction of fishing and aquaculture with seagrass, and noted

that any comments from the group would be used by the RWG-F in preparing guidance on the management of fishing and aquaculture in the habitat demonstration sites.

5.2.3 During the discussion of the effects of fishing and related activities on seagrass the following changes to Table 2 were suggested and agreed:

- “Fish Populations and Communities” be reworded as “Populations and Communities of Fished and Harvested Species”;
- “Change in the age structure of catches of important species” be changed to “Change in the age and sex structure of catches of important species”;
- The framework be amended to reflect impacts on seagrass caused by changes in current and sediment patterns as a result of fish fence construction; and
- Reference to the effect of fishing on water quality be amended to reflect impacts on sediment quality.

5.2.4 During discussion of the effects of aquaculture and related activities on seagrass the following changes to Table 2 were suggested and agreed:

- “Water Quality – solid waste pollution” be reworded as “Water and Sediment Quality – solid waste pollution”;
- The framework be amended to reflect the problems of pathogen outbreaks under eutrophic conditions, and the over-grazing of seagrass in areas re-stocked with sea urchins.

5.2.5 There being no further proposals for amendment or addition to the framework Table 2 was amended as it appears in Annex 4 of this report.

5.2.6 In terms of any possible initiatives to improve the integration of fisheries and habitat management in the context of the seagrass habitat demonstration sites, Dr. Fortes suggested that it may be useful to promote the role of seagrass in sustaining significant fisheries species. In this connection, Mr. Paterson reminded the group that a key activity of the Regional Working Group on Fisheries was the establishment of a regional system of fisheries *refugia* and that the fisheries component focal points are currently conducting a review of the importance of the habitat demonstration sites as inshore nursery areas for significant demersal species. He suggested that promotion of the role of the seagrass demonstration sites, as inshore nursery *refugia* could be a useful mechanism for improving community understanding and appreciation of the importance of seagrass.

5.2.7 There followed a lengthy discussion regarding the significant demersal species that utilise the seagrass demonstration sites as nursery areas. Dr. Fortes and Mr. Kamarruddin agreed to contact a Malaysian fisheries researcher regarding obtaining a copy of his PhD thesis which involved a review of fish-seagrass associations in Malaysia. This led to a discussion of the ASEAN-AUSTRALIA Living Coastal Resources project, database which Dr. Fortes suggested would be a valuable source of information to support this aspect of the project. Dr. Pernetta noted that he had been attempting to locate this database since 2002 without success.

5.2.8 Mr. Vibol informed the meeting that the landings of fish adjacent to the Kampot seagrass site were dominated by mackerels (*Rastrelliger* spp.), which led to a discussion of the difficulties in linking fish landing information to fish usage of coastal habitats such as seagrass. Dr. Suvaluck noted the use of seagrass areas by juvenile groupers on the East coast of the Gulf of Thailand.

5.2.9 Mr. Paterson highlighted the efforts of the Regional Working Group on Fisheries to collate information about areas critical to the life-cycle of significant fished species, and noted that this work would benefit from inputs from the Regional Working Group on Seagrass in relation to demersal fish use of seagrass sites as critical nursery areas in the South China Sea and Gulf of Thailand. It was agreed that Mr. Paterson would prepare a table for reporting information about demersal fish usage of seagrass sites as nursery areas overnight and that the members would complete this table and return it to the PCU by close of business 18th August 2006. This table is included as Annex 5 of this report.

6. FINALISATION OF THE INPUTS FROM THE SEAGRASS SUB-COMPONENT TO THE REGIONAL STRATEGIC ACTION PROGRAMME

6.1 Review of the Empirical Data regarding the Economic Values of Goods and Services derived from Seagrass Sites

6.1.1 The Chairperson invited the PCU member to introduce document UNEP/GEF/SCS/RWG-SG.7/6 "*Valuing Seagrass Goods and Services from Locations Bordering the South China Sea*". Mr. Sour noted that data and information had been received from the Hepu demonstration site in China, three sites in Viet Nam, the Bolinao seagrass site in the Philippines, and the Kampot seagrass site in Cambodia.

6.1.2 Dr. Pernetta reminded the working group that the Project Steering Committee had established the Regional Task Force on Economic Valuation in 2002 to provide technical advice on the economic valuation of environmental goods, and services. He reminded the group that the purpose of determining the economic value of coastal habitats was to provide an economic justification of the costs of action versus non-action in the context of the revised Regional Strategic Action Programme.

6.1.3 Dr. Pernetta noted that the draft Regional Strategic Action Programme had used economic values for coastal habitats derived from Costanza 1997 and noted further that many of these values were open to question from both the ecological and economic viewpoints. At the time of approving the draft SAP the governments had noted the need to review and update the SAP and the economic arguments for intervention using regionally applicable values.

6.1.4 Dr. Pernetta reminded the working group that the members of the RTF-E had been collecting data and information on the economic value of coastal habitats since the second half of 2005, and that during its' fourth meeting in April 2006 the RTF-E had reviewed the data and information and noted that:

- Some of the compiled data provide total economic values without providing information regarding what values have been included in determining the "total economic value";
- Some provide total value of certain products at the national level or in a local jurisdiction without specifying what percentage of these products are produced from the coastal habitats;
- Some of the values collected do not distinguish between the total price of valued goods and the net value of the goods. The cost of collecting or producing certain goods from the coastal habitats has not been provided in some cases;
- Some reports are unclear about the sources and references of the data used or collected.

6.1.5 Dr. Pernetta invited members to review the data provided in Table 1 of the document UNEP/GEF/SCS/RWG-SG.7/6 and the additional empirical data provided by the members for this meeting. He noted that in relation to Table 1 the RTF-E had produced a summary of empirical data relating to seagrass and members needed to provide any further empirical data of which they were aware.

6.1.6 Dr. Pernetta noted that the data recently contributed by the Bolinao site for the values of fermented and fresh rabbit fish fingerlings were not related to total volumes harvested or the area from which the harvest was derived. In relation to the Vietnamese data for the Bai Bon, Tam Giang – Cau Hai Lagoon, and Tam Giang – Cau Hai Lagoon seagrass sites, Dr. Pernetta noted that there was no information regarding how the values were derived and that since fish, crustaceans, molluscs, and seaweeds had been valued by group it was not possible to identify the actual species that had been valued and hence it was difficult to verify whether the species concerned were in fact derived from seagrass habitats.

6.1.7 Mr. Kamarruddin noted that he could source information relating to the value and trade of turtle eggs in the region, and noted further that he was unsure of how to relate the value of the eggs harvested in Malaysia to the use by turtles of seagrass in areas outside Malaysia. It was agreed that whilst linking turtle egg production with specific seagrass areas would be a difficult task, the information regarding the trade of turtle eggs would be useful in preparing a regional value for eggs of turtles that rely on seagrass areas. Dr. Fortes noted that there is strong trade in turtle eggs between

the southern Philippines and Malaysia and Mr. Kamarruddin agreed that he would provide information regarding the value of turtle eggs and the trade in southern areas of the South China Sea prior to the upcoming meeting of the economic task force.

6.1.8 Mr. Tri Edi noted that pages 47-48 of the Indonesian National Report on Seagrass contain information relating to the economic valuation of seagrass goods and services, particularly with regard to the use of *Syringodium isoetifolium* as feed for dugong held in aquaria, *Enhalus acoroides* and *Thalassia hemprichii* as feed for cattle and other stock, *Enhalus acoroides* fruit as food for fishers, and seagrass raw material and snails as materials for handicrafts. He also noted that he might be able to source information regarding the value of sea cucumber in the area of the East Bintan site. Dr. Pernetta suggested, and the meeting agreed that these examples are of high regional relevance and that efforts should be made to ensure that as much of this information as possible be made available to the RTF-E.

6.1.9 Dr. Fortes noted that good information exists regarding the economic value of different size classes of rabbitfishes at the Bolinao demonstration site. Dr. Pernetta suggested that it should be possible to relate the harvest to the total area of seagrass at the site in order to derive a value per ha for rabbitfish and that where necessary a clear statement regarding the assumptions and uncertainties would be adequate to ensure that the reader understood the uncertainties associated with the data. Dr. Fortes noted that they are currently working with fishers at the site to identify where rabbitfish are being caught and it is hoped that this will provide better information regarding the values of fish production from seagrass.

6.1.10 In this connection Mr. Kamarruddin noted the example provided by Dr. Suvaluck regarding the use of seagrass by juvenile grouper in Thailand, and sought clarification regarding whether the volume and value of grouper traded in markets could be used to value seagrass areas. Dr. Pernetta noted that it would only be possible to assign a proportion of the value of an end product such as a grouper to the nursery function of seagrass areas and that to the best of his knowledge there are no examples of where this had been done.

6.1.11 In relation to Table 2, Dr. Fortes suggested and the meeting agreed that: sea urchins should be added to the table as a seagrass good; specific reference should be made to the use of seagrass beds as spawning areas; and that sediment and nutrient export should be added as a seagrass service.

6.1.12 Dr. Pernetta sought clarification from Dr. Tien regarding the economic values of seagrass goods and services provided in relation to the Bai Bon, Tam Giang – Cau Hai Lagoon, and Tam Giang – Cau Hai Lagoon seagrass sites in Viet Nam. Dr. Tien explained that Dr. Nguyen Huu Ninh of the Centre for Environmental Research, Education and Development (CERED) had conducted this work and indicated that he would send the report of this work to the PCU upon his return to Viet Nam. Dr. Pernetta indicated that he would also write to Dr. Ninh requesting that the tables be revised to provide more complete and accurate information regarding the actual species that were valued and the methods used to conduct the evaluation.

6.1.13 The meeting agreed to amend the data on economic values from the demonstration sites in order that values per unit of area could be derived and to submit this to Mr. Sour by 11th August 2006. It was noted that economic values from other seagrass sites bordering the South China Sea and Gulf of Thailand could also be provided at the same time should they be available.

6.2 Elaboration of the Inputs from the Seagrass Sub-component to the Draft Regional Strategic Action Programme

6.2.1 The Chairperson invited Mr. Sour to introduce document UNEP/GEF/SCS/RWG-SG.7/7 “*Inputs from the Seagrass Sub-component to the Revision of the Regional Strategic Action Programme (SAP)*”. Mr. Sour reviewed the document and summarised the major elements related to the seagrass sub-component that need to be included in the revised SAP.

6.2.2 The Chairperson noted that the task of the working group in relation to this agenda item was to review and expand the existing materials, and that the group needed to:

- Review the document and consider any additional inputs (including further elaboration of the activities identified during the sixth meeting of the RWG-SG), and the costings needed to finalise the document;
- Consider and agree on the manner in which management status is to be defined;
- Determine further work needed to elaborate the other elements, including costing for inclusion in the document;
- Identify the key threats from a regional perspective; and
- Agree upon a timetable and individual responsibilities to finalise the document.

6.2.3 The group commenced with a consideration of Table 1 of Annex 1 of document UNEP/GEF/SCS/RWG-SG.7/7. Dr. Pernetta noted that the working group needed to clarify what was intended by the term “management areas” and/or “management status” in the inputs to the SAP regarding the status of seagrass management at country and site levels. In this connection, he drew the attention of the meeting to the approaches adopted by the Regional Working Group on Wetlands and Coral Reefs regarding their definition of management status. The RWG-W had amended the column headings in their table to reflect the areas under legal protection, and those, which were being sustainably or unsustainably used. The Regional Working Group on Coral Reefs had taken a different approach by agreeing that the areas should be defined as either being under management or not and had added an additional column headed, “management effectiveness”.

6.2.4 Dr. Fortes suggested that the approach taken by the Regional Working Group on Coral Reefs might also be suitable for the seagrass sub-component. Dr. Pernetta noted that the problem with this was that the RWG-SG would need to define what was meant by low, medium and high management effectiveness. Dr. Montañó noted that the RWG-CR definition of management effectiveness might also be suitable for use by the seagrass sub-component.

6.2.5 There was a lengthy discussion regarding the content of the tables developed by the working groups on wetland and coral reefs, and in response to several questions regarding the meaning of the term “area under management” in the coral reefs table, Dr. Pernetta explained to the group that this referred to the sub-area of a coral reef site that was in fact being managed. For example in the case of Koh Samui the total area of coral reef was 3,249 ha of which only 600 ha was included within the boundaries of the National Park, and hence was under management.

6.2.6 Dr. Suvaluck sought clarification in relation to the Koh Kong coral reef site in Cambodia. She noted that the area of 72.5 ha was all under management but the management effectiveness was classified as low. Dr. Pernetta noted that in this case the entire Koh Kong coral reef site was under management, but the actual effectiveness of this management had been considered low in relation to the categories of management effectiveness defined by the RWG-CR. Mr. Vibol noted that the Koh Kong site was being proposed as a marine protected area.

6.2.7 It was suggested and the meeting agreed that the table developed by the coral reef group should be used by the seagrass group and that the column in the coral reef table titled “management type” should be changed to “legal status”. There followed a lengthy discussion regarding the use of “Legal Status” for situations where areas were being managed without the support of law, such as community-based management areas. It was agreed that in cases where legal instruments did not exist the legal status should be defined as “None”. It was further agreed that if the management effectiveness of a site being managed outside a formal legal framework was high, then a footnote should be added to the table providing information regarding how the site is managed.

6.2.8 Mr. Vibol sought clarification regarding how the legal status would be defined in situations where the management area had been declared only at the provincial level. Dr. Pernetta noted that a provincial level administrative order or instruction could be interpreted as a legal instrument.

6.2.9 The members then added information on area (ha), legal status, area under management, management effectiveness, and target area to be added for management, to the table. Dr. Fortes suggested that Mr. Sour should complete the summaries of the total areas under management and

the total areas to be added for management in the table. It was agreed that Mr. Sour would finalise the table overnight. The table is included as Table 1 in Annex 6.

6.2.10 The Chairperson recommended that an important task for the Regional Working was to review the regional priority threats to seagrass as outlined in Table 2 of document UNEP/GEF/SCS/RWG-SG.7/7. It was suggested that the two sets of threats should be combined in a single list, together with the list of regionally important threats. During the ensuing discussion, issues regarding natural hazards; the impacts of seaweed farming; land reclamation and dredging; coastal construction; over fishing and destructive fishing were discussed.

6.2.11 Having agreed on the listing of regional threats, each member ranked the threats independently and the scores were summed to provide a regional ranking of the threats. The outcome is presented in Table 2 of Annex 6.

6.2.12 The RWG-SG decided to discuss the substance of the activities through four working groups with responsibility for reviewing sections of the components, sub-components, and activities for inclusion in the revised Regional Strategic Action Programme. The outcomes of the work of these groups were subsequently presented to the full working group, considered, amended and agreed as presented in Table 4 of Annex 6.

7. UPDATE OF THE REGIONAL GIS DATABASE AND META-DATABASE AND EFFICIENT USE OF THE PROJECT WEBSITE

7.1 Status of the Regional South China Sea, Meta- and GIS- databases and use of the Project Website for updating entries

7.1.1 The Chairperson invited Mr. Paterson to introduce document UNEP/GEF/SCS/RWG-SG.7/8, "*Status of the UNEP/GEF South China Sea Project Website, Online Tools, and Activities to Promote the Seagrass Sub-component of the Project*". Mr. Paterson noted that there are currently in excess of one hundred institutions directly involved in the project, and more than four hundred institutions indirectly involved through individual participation in National Committees and Sub-committees and Regional Working Groups. It is anticipated that this network will continue to grow as the demonstration sites and pilot activities become fully operational. He noted further that the project had developed a wide range of outputs, including:

- Knowledge documents;
- An online Geographical Information System and Meta-database;
- English and national-language reviews of the science and management of marine habitats and fisheries in the South China Sea;
- A nutrient carrying capacity model for the South China Sea;
- National Action Plans for key marine habitats;
- Regional Guidelines on the Use of Fisheries *Refugia* for Capture Fisheries Management; and
- In excess of sixty meeting reports and numerous discussion documents for the meetings convened since March 2002.

7.1.2 Mr. Paterson informed participants that it was envisaged that the implementation of the demonstration sites and pilot activities would result in the number of project outputs growing considerably over the next 2 years. The independent evaluations in 2004 suggested that there were a number of key lessons learned in the project: including *inter alia* the procedures used for the selection of demonstration sites, and the management framework adopted for project implementation. The intention was that the project will continue to promote and support the sharing of lessons learned associated with the demonstration sites and pilot activities during the operational phase of the project.

7.1.3 Mr. Paterson reminded participants that during the second half of 2005 the Project Co-ordinating Unit had identified that the project website could be used more effectively to: consolidate and strengthen the partner network, disseminate project outputs, and share experiences and lessons learned. Consequently the PCU had invested a considerable amount of time and effort in re-organising and redesigning the project website in an interactive format.

7.1.4 Mr. Paterson demonstrated the key features of the new website, noting that the Joomla Content Management System used as the platform for the site contains a facility that can be used for

controlling publishing processes and assigning specific authoring, editing and/or publishing rights to various individuals via a secure login procedure.

7.1.5 Mr. Paterson noted that all members of the Regional Working Group on Seagrass had been registered as users of the website and that users were required to log into the website using a username and password in order to contribute information to the website. He noted further that each members' login details had been provided to them earlier this year and that they were presented on a card attached to the CD distributed during the meeting that contained user manuals for the website, online meta-database and associated templates, and online nutrient carrying capacity model for the South China Sea.

7.1.6 It was noted that the South China Sea Meta-Database contained more than 1,000 meta-data entries and that the PCU had conducted a rapid evaluation of all current meta-data entries with the aim of improving the quality of these entries. In this respect Mr. Paterson noted that Table 2 of Annex 2 provides specific questions relating to existing meta-data entries, and recommended that the responsible focal points consider revising the elements of each meta-data entry for which an "N" score was given in the evaluation.

7.1.7 The meeting considered the evaluation of meta-data quality and agreed to revise and add new meta-data to the online meta-database by the end of September 2006.

7.2 Use of the Project Website to enhance communication between and among members of the regional Working Group on Seagrass

7.2.1 Mr. Paterson drew the attention of the meeting to the fact that document UNEP/GEF/SCS/RWG-SG.7/8 contained suggestions for various initiatives that could support the substantive work of the RWG-SG in using the project website more effectively for the exchange of information and experiences through, for example, e-fora. He suggested two items for consideration: the first was the use of the demonstration site and regional working group web-pages to promote the work of the RWG-SG; and the second was the development of an e-forum, involving all members of the RWG-SG in activities in the inter-sessional periods between the regular meetings.

7.2.2 There followed a discussion regarding the effectiveness of e-mail versus e-fora for the sharing of information between members of the group. It was noted by Dr. Fortes that member's change their e-mail addresses and that, communication occasionally breaks down during inter-sessional periods. It was suggested by Dr. Pernetta that the e-forum facility provides an easily accessible and central location for communication amongst and between members of the group. It was suggested that use of the e-forum facility by the RWG-SG be discussed under agenda item 9 in terms of identifying concrete issues regarding the preparation of text for the SAP that would need to be finalised and agreed by members prior to the next meeting of the group.

8. PROPOSED TRAINING ACTIVITIES INVOLVING THE SEAGRASS SUB-COMPONENT

8.1 The Chairperson invited Mr. Sour to introduce documents UNEP/GEF/SCS/RWG-SG.7/9 "*Regional Training Programme of the UNEP/GEF South China Sea Project*" and UNEP/GEF/SCS/RWG-SG.7/10 "*Outcomes of the Discussion by the Regional Working Group on Coral Reefs on the Regional Training Programme of Relevance to the Seagrass Regional Working Group*", containing details of the regional training programme to be implemented under the framework of the UNEP/GEF South China Sea Project.

8.2 Mr. Vibol sought clarification regarding the number of participants in each regional training course. Mr. Paterson noted that the sub-committee of the RSTC had proposed that 3-4 participants from each country would participate in each regional training course.

8.3 The group considered the content of the training course on coral reef and seagrass ecosystems as proposed by the sub-committee of the RSTC and amended by the seventh meeting of the RWG-CR. It was proposed, and the meeting agreed that, ethnobotanical issues be added to the topics listed under the component relating to supplemental income generation.

8.4 Mr. Tri Edi sought clarification regarding the requirement for English as a pre-requisite for participation in the regional training courses and Dr Pernetta noted that this issue had been extensively discussed by various committees over the last two years and that the consensus view was that participants in the regional training courses must have sufficient understanding of English not only to actively participate in the regional courses but also to be able to translate the course materials into local languages for use in national echo seminars.

8.5 Mr. Vibol sought clarification regarding how many regional courses and echo seminars an individual could attend. Dr. Pernetta noted that the sub-committee of the RSTC had proposed that no individual could attend more than one regional training course, but that in terms of attendance at the national echo seminars this should perhaps be left to the discretion of the National Technical Focal Point.

8.6 The group then considered the content of the training course as revised by the RWG-CR and agreed that, ethnobotany should be added as a training topic, as should seagrass taxonomy and identification.

8.7 In identifying possible implementing entities Mr. Paterson provided some background regarding the need to identify possible organisations that may be interested and/or capable of organising and supporting such a training course. During discussion the Marine Science Institute of the University of the Philippines, LIPI, the University of Malaysia, Sabah (UMS), Agricultural University of Malaysia (UPM), the University of Malaya (UM) and Ramkhamhaeng University were all identified as potential implementing agencies.

8.8 During the discussion the issue of whether or not an Australian or Singaporean Institution could be used as the implementing agency Dr. Pernetta indicated that whilst experts from these countries could be involved in the delivery of such courses it would be difficult for UNEP to engage, for example CSIRO, as the entity to manage a regional training course for the South China Sea Countries.

9. REVISION OF THE WORK PLAN AND ACTIVITIES FOR THE REGIONAL WORKING GROUP ON SEAGRASS 2006 - 2008

9.1 Based on the discussion and agreements reached under previous agenda items, and the draft work plan presented in document UNEP/GEF/SCS/RWG-SG.7/11 "*Proposed Work Plan and Timetable for the Regional Working Group on Seagrass from 2006 to December 2008*", the Chairperson invited members to consider, and agree, on the activities and work plan for the seagrass sub-component for the next twelve months.

9.2 Dr. Pernetta noted that the working group would need to elaborate elements of the Revised draft Strategic Action Programme during the inter-sessional period. The meeting agreed to consider the contents of the draft annexes prior to finalising the work plan for the group. Dr. Pernetta noted that Annex 5, the fisheries table as currently presented would provide the information required by the Regional Working Group on Fisheries but would not meet the requirements of the seagrass working group. He proposed, and the meeting agreed, to amend the table to enable inclusion of information regarding any species of fish using seagrass habitats as a spawning, nursery or feeding area.

9.3 There followed a discussion of the mechanisms by which the text of the SAP would be amplified in the immediate future. Dr. Montañó suggested, and the RWG-SG agreed, to assign to individual member, responsibility for drafting the initial draft text relating to the activities and posting these on the e-forum of the regional working group for comment and amendment by other members. There agreed responsibilities are indicated in Table 4 of Annex 6 of this report.

9.4 Following discussion of responsibilities for the drafting of the initial text relating to the activities to be included in the Regional Strategic Action Programme the deadlines for completion of the tasks were discussed and agreed and the final work plan for the RWG-SG was approved as contained in Annex 7 of this report.

10. DATE AND PLACE OF THE EIGHTH MEETING OF THE REGIONAL WORKING GROUP ON SEAGRASS

10.1 Members were reminded of the decision of the PSC that all RWG meetings should be convened at demonstration sites.

10.2 Mr. Vibol proposed that the eighth meeting be convened in Sihanoukville in conjunction with the Kampot demonstration site. The members of the group accepted this kind invitation and agreed that the eighth meeting of the RWG-SG would be convened from 21st - 24th May 2007 inclusive.

11. ANY OTHER BUSINESS

11.1 Dr. Montaña invited members to raise any additional items of business requiring discussion by the working group at this time.

11.2 Dr. Fortes asked whether it was possible for NGOs to sponsor individuals to participate in the Regional Training Course. Dr. Pernetta indicated that the costs of an individual's participation in the training courses would be met from the project budget for those participants being officially nominated by the National Technical Focal Points. If an institution running a course could accommodate more trainees than could be financially supported by the project then he saw no reason why NGOs should not be able to support participants in the regional training courses.

12. ADOPTION OF THE REPORT OF THE MEETING

12.1 The Rapporteur, Dr. Suvaluck presented the draft report of the meeting, which was considered amended and adopted as it appears in this document. Dr. Fortes formally moved to accept the report.

13. CLOSURE OF THE MEETING

13.1 The Chairperson thanked the participants for the hard work and contributions and called for a motion to close the meeting. The meeting was formally closed at 1610 on 27th July 2006.

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ANNEX 2

List of Documents

Discussion documents

UNEP/GEF/SCS/RWG-SG.7/1	Agenda.
UNEP/GEF/SCS/RWG-SG.7/2	Annotated Agenda.
UNEP/GEF/SCS/RWG-SG.7/3	Report of the Meeting.
UNEP/GEF/SCS/RWG-SG.7/4	Current status of administration reports: Progress, Expenditure and Audit Reports; and MoU Amendments.
UNEP/GEF/SCS/RWG-SG.7/5	Framework for Assessing the Effects of Fishing in the Habitat Demonstration Sites.
UNEP/GEF/SCS/RWG-SG.7/6	Valuing Seagrass Goods and Services from Locations Bordering the South China Sea.
UNEP/GEF/SCS/RWG-SG.7/7	Inputs from the Seagrass Sub-component to the Revision of the Regional Strategic Action Programme (SAP).
UNEP/GEF/SCS/RWG-SG.7/8	Status of the UNEP/GEF South China Sea Project Website, Online Tools, and Activities to Promote the Seagrass Sub-component of the Project
UNEP/GEF/SCS/RWG-SG.7/9	Regional Training Programme of the UNEP/GEF South China Sea Project
UNEP/GEF/SCS/RWG-SG.7/10	Outcomes of the Discussion by the Regional Working Group on Coral Reefs on the Regional Training Programme of Relevance to the Seagrass Regional Working Group
UNEP/GEF/SCS/RWG-SG.7/11	Proposed Work Plan and Timetable for the Regional Working Group on Seagrass to December 2008.

Information documents

UNEP/GEF/SCS/RWG-SG.7/Inf.1	List of Participants.
UNEP/GEF/SCS/RWG-SG.7/Inf.2	List of Documents.
UNEP/GEF/SCS/RWG-SG.7/Inf.3	Programme.
UNEP/GEF/SCS/RWG-SG.7/Inf.4.Cam	Revised National Action Plan for Cambodia.
UNEP/GEF/SCS/RWG-SG.7/Inf.4.Chi	Revised National Action Plan for China.
UNEP/GEF/SCS/RWG-SG.7/Inf.4.Viet	Revised National Action Plan for Viet Nam.
UNEP/GEF/SCS/RSTC.6/Sub-Comm	First Meeting of the Sub-committee of the Sixth Meeting of the Regional Scientific and Technical Committee for the UNEP/GEF Project " <i>Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand</i> ". Report of the Meeting. Bangkok, Thailand, 6 th – 10 th February 2006 UNEP/GEF/SCS/RSTC.6/Sub-Comm.

Published Reports supplied in hard copy (available on the Project Website www.unepscs.org)

UNEP/GEF/SCS/PSC.5/3	Fifth Meeting of the Project Steering Committee for the UNEP/GEF Project " <i>Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand</i> ". Report of the Meeting. Batam, Indonesia, 12 th – 14 th December 2005 UNEP/GEF/SCS/PSC.5/3.
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UNEP/GEF/SCS/RSTC.6/3

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UNEP/GEF/SCS/RWG-SG.6/3

Sixth Meeting of the Regional Working Group on the Seagrass Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Bolinao, Philippines, 27th – 30th September 2005 UNEP/GEF/SCS/RWG-SG.6/3.

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Sixth Meeting of the Regional Working Group on the Wetlands Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Sihanoukville, Cambodia, 12th – 15th September 2005 UNEP/GEF/SCS/RWG-W.6/3.

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UNEP/GEF/SCS/RWG-CR.6/3

Sixth Meeting of the Regional Working Group on the Coral Reefs Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Masinloc, Philippines, 22nd – 25th August 2005 UNEP/GEF/SCS/RWG-CR.6/3.

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Sixth Meeting of the Regional Working Group on the Mangroves Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Busuanga Island, Palawan, Philippines, 1st – 5th August 2005 UNEP/GEF/SCS/RWG-M.6/3.

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Sixth Meeting of the Regional Working Group on the Land-based Pollution Component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Ninh Hai, Ninh Thuan, Viet Nam, 18th – 21st July 2005 UNEP/GEF/SCS/RWG-LbP.6/3.

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Fourth Meeting of the Regional Task Force on Economic Valuation for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Xuan Thuy, Nam Dinh Province, Viet Nam, 27th – 30th March 2006 UNEP/GEF/SCS/RTF-E.4/3.

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Fourth Meeting of the Regional Task Force on Legal Matters for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Report of the Meeting. Shantou, China, 24th – 27th April 2006 UNEP/GEF/SCS/RTF-L.4/3.

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- Indonesia:** Metadata Base of Indonesia Seagrass, Jakarta, Indonesia 2005, English language, 147 pps, 10 hard copies. (Report.No.04/Seagrass/K/1005)
- Indonesia Seagrass Report, Jakarta, Indonesia 2005, English language, 102 pps, 10 hard copies. (Report.No.01/Seagrass/K/0505)
- Laporan Tentang Lamun (seagrass) di Indonesia – Oleh, Jakarta, Indonesia 2005, Indonesian Language, 67 pps ++, 10 hard copies. (Report.No.02/Seagrass/K/0905)
- Malaysia:** National Seagrass Metadata of Malaysia, 49 pps, 12 hard copies. (DOFM-MNSC, 2006. National Seagrass Metadata of Malaysia. Publication No. 1)
- National Seagrass Report of Malaysia, 2006. 73 pps, 12 hard copies. (DOFM-MNSC, 2006. National Seagrass Report of Malaysia. Publication No. 2)
- Philippines:** **1 CD-ROM contents:**
- BSDS Webpage
 - Earth Observation Satellite Data
 - Files for Presentation
 - Seagrass Remote Sensing Progress Report
 - Seagrass Valuation
 - Demo Figures
 - Report (for Presentation)
 - Status of Seagrass Management
 - Table 2 Revised Format for the Collection of Data
- 1 CD-ROM contents:** Earth Observation Satellite Data of Pangasinan and Sambales – Seagrass Remote Sensing Progress Report.
- 1 CD-ROM contents:** Seagrass Remote Sensing LandSat Thematic Mapping Data-Consultant's Report.
- Viet Nam:** Six Monthly Expenditure July – December 2006.
- Cash Advance request 31 December 2006.
- Six Monthly Progress Report Jan – June 2006.

ANNEX 3

Agenda

- 1. OPENING OF THE MEETING**
 - 1.1 Welcome Address on behalf of UNEP
 - 1.2 Opening Statement by a Representative of the Local Government
 - 1.3 Introduction of Participants
- 2. ORGANISATION OF THE MEETING**
 - 2.1 Election of Officers
 - 2.2 Documents Available to the Meeting
 - 2.3 Organisation of Work
- 3. ADOPTION OF THE MEETING AGENDA**
- 4. STATUS OF ADMINISTRATIVE AND SUBSTANTIVE REPORTS; AND NATIONAL ACTION PLANS**
 - 4.1 Status of the Administrative Reports: Progress and Expenditure Reports, Audit Reports, and MoU Amendments
 - 4.2 Status of the Publication of National Reports in English and National Languages
 - 4.3 Finalisation, Adoption and Implementation of National Action Plans
- 5. CONSIDERATION OF PROGRESS IN IMPLEMENTING THE DEMONSTRATION SITE ACTIVITIES**
 - 5.1 Reports from Focal Points
 - 5.2 Consideration of the Preliminary Framework for Assessing the Effects of Fishing in the Habitat Demonstration Sites
- 6. FINALISATION OF THE INPUTS FROM THE SEAGRASS SUB-COMPONENT TO THE REGIONAL STRATEGIC ACTION PROGRAMME**
 - 6.1 Review of the Empirical Data regarding the Economic Values of Goods and Services Derived from Seagrass Sites
 - 6.2 Elaboration of the Inputs from the Seagrass Sub-component to the Draft Regional Strategic Action Programme
- 7. UPDATE OF THE REGIONAL GIS DATABASE AND META-DATABASE AND EFFICIENT USE OF THE PROJECT WEBSITE**
 - 7.1 Status of the Regional South China Sea, Meta- and GIS- Databases and Use of the Project Website for Updating Entries.
 - 7.2 Use of the Project Website to Enhance Communication between and Among Members of the Regional Working Group on Seagrass
- 8. PROPOSED TRAINING ACTIVITIES INVOLVING THE SEAGRASS SUB-COMPONENT**
- 9. REVISION OF THE WORK PLAN AND ACTIVITIES FOR THE REGIONAL WORKING GROUP ON SEAGRASS 2006-2008**
- 10. DATE AND PLACE OF THE EIGHTH MEETING OF THE REGIONAL WORKING GROUP ON SEAGRASS**
- 11. ANY OTHER BUSINESS**
- 12. ADOPTION OF THE REPORT OF THE MEETING**
- 13. CLOSURE OF THE MEETING**

ANNEX 4

Framework for Assessing the Effects of Fishing and Aquaculture in the Context of the Habitat Demonstration Sites amended by the Regional Working Group on Seagrass

A key activity of the fisheries component of the UNEP/GEF South China Sea Project is the promotion of the guidance provided by the Code of Conduct for Responsible Fisheries (CCRF) and the related SEAFDEC Regional Guidelines for Responsible Fisheries in Southeast Asia (RGRFSA) in the context of the habitat demonstration sites for the management of identified fisheries issues in the SCS Project's suite of coral reef, seagrass, mangrove, wetland, and multiple habitat demonstration sites. This work is also intended to foster collaboration between fisheries and environment agencies; various levels of government; and other stakeholders in the implementation of actions focused on developing best practice in integrated fisheries and habitat management in the region.

Identification of Fisheries Management Actions in the Context of the Demonstration Sites

Threats from fisheries to the habitat demonstration sites were discussed during three sessions of the 2nd UNEP/GEF Regional Scientific Conference (RSC-2) convened in Bangkok, Thailand 14th – 16th November 2005. The first session "Think Globally, Act Locally" included reviews of demonstration site activities by project component, followed by plenary discussion. Fisheries, especially "illegal" fishing and the use of destructive fishing gear and practices, were highlighted as key threats by each of the project components and the importance of improved fisheries management in the context of the demonstration sites formed a central part of discussions during that session.

During the session on "Addressing Fisheries Issues in the South China Sea and Gulf of Thailand", the then Chairperson of the Regional Working Group on Fisheries (RWG-F), Mr. Pirochana Saikiang, presented a paper prepared by the RWG-F entitled "Applying the Code of Conduct for Responsible Fisheries to Improve the Integration of Fisheries and Habitat Management in the South China Sea and Gulf of Thailand" (UNEP/GEF/SCS/RSC.2/Inf.3). This paper provided a review of the threats from fisheries as identified in the habitat demonstration sites, and highlighted the guidance provided by the CCRF and the RGRFSA for the management of fisheries issues. Numerous examples of how the CCRF and RGRFSA could be applied in the context of the habitat demonstration sites were provided.

Finally, during the parallel meetings of the Regional Working Groups on 16th November 2005, members of the RWG-F participated in each of the working group meetings for the habitat sub-components for one hour in order to discuss and reinforce the contents of the CCRF presentation and to try to secure agreement on fisheries management actions to be undertaken at the demonstration sites. Discussions during these brief meetings focused on general threats from fisheries. The proposed actions were very generic, including public awareness, control of trawling and push netting, reduction of fishing effort, and co-management, and provided little insight into local contexts and needs. Each Working Group was introduced to the CCRF and Regional Guidelines and the general guidance they provide for the management of fisheries, however there was no substantive analysis of how the relevant components of these instruments could be applied to resolving fisheries issues at the individual site level.

Need for a Clearer Definition of Fisheries "Threats"

The ensuing meeting of the RWG-F focused on the outcomes of the meetings with the habitat components. Generally, the group considered that the outcomes achieved were modest and that discussions were constrained by a number of factors. These included confusion of the "threats from fisheries" and "threats to fisheries", lack of a systematic framework for assessing the threats from fisheries in the context of the sites (e.g., some threats from fisheries being considered in relation to the effects on fish resources, others in relation to habitat integrity, biodiversity, site sustainability), and the mixing of fisheries and aquaculture management issues.

Development of a Framework for Assessing the Effects of Fishing and Aquaculture

The RWG-F considered that, in terms of providing fisheries management advice to the demonstration sites, a need exists for a simple framework within which fisheries threats can be more clearly defined

and analysed. In this connection, the RWG-F agreed on a preliminary framework for assessing the effects of fishing and aquaculture in the context of the habitat demonstration sites. During its' Seventh Meeting the Regional Working Group on Seagrass was requested to comment on any elements of the preliminary RWG-F framework that required consideration in the context of the seagrass demonstration sites. The suggestions of the RWG-SG were used to amend the preliminary framework as it appears in Table 1 of this Annex.

Table 1 Framework for assessing the effects of fishing and aquaculture as amended by the Regional Working Group on Seagrass.

Effects of fishing and Related Activities on:	Reported problem in relation to the habitat demonstration sites
Populations and communities of fished and harvested species	Declining availability and biomass of important species
	Size at first capture of important species low relative to historic average
	Change in the age and sex structure of catches of important species
	Changes in the species composition of catches
	Number of species in the catch low relative to historic average
	Changes in community structure due to direct reduction of populations representing specific trophic levels of the community (e.g., predator or prey)
	Indirect changes in community structure caused by habitat changes or provision of additional food or nutrients as a result of fishing
Nursery functions of coastal habitats	Capture/mortality of large vertebrates/rare and endangered species
	Fishing in nursery areas and the targeting of juveniles
Habitat	Large incidental captures of juveniles
	Removal and alteration of habitats as a result of fishing
Water and sediment quality	Change in current and sediment patterns as a result of fish fence construction
	Pollution of coastal waters by fishing vessels
	Release of wastewater and organic pollutants into coastal waters from fish processing facilities
Human Environment	Localised and short-term changes in turbidity, oxygen levels, and changes in water and sediment chemistry due to fishing
	User group conflicts (e.g., commercial v. small-scale fishers)
	Fishing gear conflicts (e.g., push netters v. gill netters)

Effects of Aquaculture and Related Activities on:	Reported problem in relation to the habitat demonstration sites
Water and Sediment Quality – solid waste pollution	Smothering of coastal habitats (e.g., seagrass) and shellfish
	Increased turbidity of the water quality
Water Quality – Increased dissolved nutrient inputs	Algal blooms and pathogens as a result of increased nutrient inputs to coastal waters
	Fish kills due to low dissolved oxygen concentrations caused by eutrophic conditions
	Removal of oxygen from deep water and sediments as a consequence of the biological oxygen demand created by the sinking and decay of blooming algae
Habitat	Conversion of coastal habitats for construction of farms and onshore facilities
Populations and communities	Over-grazing of seagrass from re-stocking with sea urchins
Human Environment	Littering of coastal waters and inter-tidal area with aquaculture materials
	User group conflicts (e.g., aquaculturists v. fishers)
	Reduced aesthetics as a result of the development of aquaculture infrastructure

ANNEX 5

Utilisation of Seagrass Sites by Significant Demersal Fish Species

The key themes that are emerging from the fisheries component of the SCS Project relate to (a) the critical role that coastal and marine habitats of the South China Sea and Gulf of Thailand play in sustaining regional fisheries, many of which are transboundary in nature, and (b) the generally low-level coordination between fisheries and habitat management in the region. It is now well recognised that coral reef, seagrass, mangrove and wetland habitats contribute significantly to the productivity of regional fisheries, and act as refuges to the majority of fished species during critical phases of their lifecycle.

During its' Seventh Meeting in Beihai, China, the Regional Working Group on Seagrass identified possible initiatives for improving the integration of fisheries and habitat management in the context of the project's seagrass demonstration sites. It was suggested and the meeting agreed that promoting the role of seagrass in sustaining significant fisheries species, particularly in areas of the habitat demonstration sites, might be a useful approach in building awareness of the need for integrated fisheries and habitat management. It was subsequently agreed that Table 1 of this Annex would be used by members of the RWG-SG to collate information about demersal fish usage of seagrass sites as nursery areas, spawning areas, and feeding areas.

Table 1 Significant Demersal Fish Species known to utilise Seagrass beds as Nursery, Spawning and Feeding Areas.

Common Name	Species Name	Seagrass Site	Importance of the seagrass site to the life-cycle of the species			Reference(s)
			Nursery area	Spawning area	Feeding	
Demersal Species of Transboundary Significance as Identified by the RWG-F						
Greasy grouper	<i>Epinephelus tauvina</i>					
Mangrove red snapper	<i>Lutjanus argentimaculatus</i>					
Malabar grouper	<i>Epinephelus malabaricus</i>					
Threadfin breams	<i>Nemipterus spp</i>					
Leopard coral grouper	<i>Plectropomus leopardus</i>					
Lizardfish	<i>Saurida spp</i>					
Brownstripe red snapper	<i>Lutjanus vitta</i>					
Sixbar grouper	<i>Epinephelus sexfasciatus</i>					
Other Species						

ANNEX 6

Inputs to the SAP from the Seagrass Sub-component

THE MANAGEMENT STATUS OF SEAGRASS BEDS BORDERING THE SOUTH CHINA SEA

In the South China Sea region there has been a rapid rate of seagrass loss and decline in recent years. Indonesia has lost about 30-40% of its seagrass beds, with as much as 60% being destroyed around Java. In Singapore, the patchy seagrass habitats have suffered severe damage largely through burial under landfill operations. In Thailand, losses of the beds amount to about 20-30% and in the Philippines, it is about 30-50%. Very little information on seagrass loss is available from Cambodia, China, Malaysia, and Viet Nam (UNEP, 2004).

During the sixth meeting of the RWG-SG, 39 seagrass sites in seven countries bordering the South China Sea with an estimated total areas of 23,458 ha were identified: Cambodia (10,653 ha), Indonesia (575 ha), Malaysia (222 ha), Philippines (3,295 ha), Thailand (2,553 ha), and Viet Nam (4,200 ha).

During and after the seventh meeting of the RWG-SG, 44 seagrass sites were re-identified from seven countries bordering the SCS. The total estimation of seagrass sites accounted for 73,769 ha; in which 26,116 ha (35.4%) were added for management by 2012. Among 44 total seagrass sites; Cambodia identified 33,814 ha from 4 sites, China identified 1,960 ha from 4 sites, Indonesia identified 3,035 ha from 7 sites, Malaysia identified 222 ha from 13 sites, Philippines identified 23,245 ha from 5 sites, Thailand identified 2,553 ha from 4 sites and Viet Nam identified 8,940 ha from 7 sites. Table 1 lists 44 seagrass sites and provides information regarding current management status.

Table 1 Status of Seagrass Management at the Country and Site Levels in the South China Sea and Gulf of Thailand.

Country and Site Name	Area (ha)	Legal Status	Area under Management	Management Effectiveness ¹	Target Area to be Added for Management by 2012
Cambodia	33,814		2,000		11,446
Kampong Sam Bay	164	No	No	N/A	0
Chroy Pros	3,910	MPA	2,000	Medium	0
Kampot	25,240	Proposed fish Sanctuary	No	N/A	10,096
Kep Beach & Koh Tonsay	4,500	No	No	N/A	1,350
China	1,960		150		700
Hepu seagrass bed	540	National Dugong Reserve	150	Medium	150
Liusha seagrass bed	900	No ²	No	N/A	200
LiAn seagrass bed	320	Proposed Marine Park	No	N/A	200
Xincun seagrass bed	200	Proposed Marine Park	No	N/A	150
Indonesia	3,035		0		2,420
Medang-Mesanak	5	No	No	N/A	5
Temiang	5	No	No	N/A	5
East Bintan	2,000	No	No	N/A	1,500
Mapor	275	No	No	N/A	275
Anambas	150	No	No	N/A	35
Bangka-Belitung	350	No	No	N/A	350
Fenayang	250	Proposed MPA	No	N/A	250

¹ **Categories of Management Effectiveness: Low:** Area declared or proposed to be declared for management; Management Plan developed and approved. **Medium:** Existing Management Framework is implemented with inadequacy of manpower, finance and/or equipment: **High:** Existing Management Framework is implemented with enough trained manpower, equipment, facilities and sustainable finance.

² Local Reserve.

Table 1 cont. Status of Seagrass Management at the Country and Site Levels in the South China Sea and Gulf of Thailand.

Country and Site Name	Area (ha)	Legal Status	Area under Management	Management Effectiveness ³	Target Area to be Added for Management by 2012
Malaysia	222		17		40
Tanjung Adung Laut Shoal	40	No	No	N/A	40
Tanjung Adung Darel Shoal	42	No	No	N/A	0
Merambong Shoal	30	No	No	N/A	0
Sungai Kemaman	17	No	No	N/A	0
Telaga Simpul	28	No	No	N/A	0
Sungai Paka Shoal	43	No	No	N/A	0
Pulau Tinggl Mersing	3	Marine Park	3	Medium	0
Pulau Perhenlian	3	Marine Park	3	Medium	0
Pulau Redang	2	Marine Park	2	Medium	0
Setlu Terangannu	3	No	No	N/A	0
Pulau Besar Mersing	3	Marine Park	3	Medium	0
Merchang	2	No	No	N/A	0
Tunku Abdul Rahman Park	6	State Park	6	Medium	0
Philippines	23,245		6,641		6,920
Cape Bolinao	22,400	Environmentally Critical Area	6,000	Medium	6,720
Puerto Galera	114	Man and Biosphere reserve/fish sanctuary	60	Low/Medium	50
Ulugan Bay	11	Man and Biosphere reserve/fish sanctuary	11	Medium	0
Honda Bay	470	Fish Sanctuary	320	Medium	150
Puerto Princesa	250	Protected Areas	250	Medium	0
Thailand	2,553		1,780		0
Kung Krabane Bay	700	No ⁴	700	High	0
Tungka Bay	1,080	National Park	1,080	Low	0
Sarat Thani	500	No	No	N/A	0
Pattani Bay	273	No	No	N/A	0
Viet Nam	8,940		2,340		4,590
Bai Bon, Phu Quoc Island, Kien Giang Province	4,600	Phu Qoc National Park	2,000	Low	2,000 + 920
Rach Vem, Phu Quoc Is, Kien Giang Province	900	Phu Quoc National Park	50	Low	50 + 270
Con Dao Island, Ba Ria-Vung Tau Province	200	National Park	200	Medium	0
Phu Qui Island, Binh Thuan Province	400	Proposed MPA	No	N/A	0
Thuy Trieu, Khanh Hoa Province	800	Proposed MPA	50	N/A	50+300
Tam Giang, Cau Hai, Hue Province	2,000	Proposed Ramsar	No	N/A	1,000
Cu Lao Cham, Quang Nam Province	40	MPA	40	Medium	0

³ **Categories of Management Effectiveness: Low:** Area declared or proposed to be declared for management; Management Plan developed and approved. **Medium:** Existing Management Framework is implemented with inadequacy of manpower, finance and/or equipment; **High:** Existing Management Framework is implemented with enough trained manpower, equipment, facilities and sustainable finance.

⁴ Under King's project.

THREATS

Major threats to the seagrass beds bordering the South China Sea were reviewed from the national perspective during the 6th meeting of the RWG-SG. During the seventh meeting of the RWG-SG, the relative importance of these threats from a regional perspective was considered and the threats ranked from 1, the most important to 6, the least threat important threats to seagrass ecosystems in the South China Sea.

Table 2 Regional ranking of threats to seagrass, by the members of RWG-SG.

Threats	Ranking by each of Members										Total Score	Ranking
	1	2	3	4	5	6	7	8	9	10		
Destructive fishing such as push net, trawler	1	1	2	6	1	3	1	1	2	1	19	1
Sedimentation from coastal development	2	2	3	1	3	1	3	5	3	2	25	2
Waste water effluent	4	3	4	2	5	4	2	3	6	6	39	3
Nutrients	6	4	1	3	4	5	5	6	4	3	41	4
Coastal construction	3	5	5	5	2	2	6	4	5	4	41	5
Over-fishing	5	6	6	4	6	6	4	2	1	5	45	6

Table 3 provides detail of the threats of significance in each participating country.

GOAL

During the 6th meeting of the RWG-SG, there was agreement regarding the goal of the SAP with respect to seagrass which was defined as:

“To conserve, manage and sustainably utilise seagrass habitats and resources.”

TARGETS

The specific targets for management and conservation of seagrass ecosystems in the SCS to be included in the revised SAP were agreed as follows:

- *Twenty-one managed areas totalling 13,755 hectares (approximately 50% of the 23,458 hectares identified as potential demonstration sites and subjected to cluster analysis) in the SCS, with a minimum of 2 managed sites in each of the 7 participating countries, by 2012.*
- *“Adoption at a high level and implementation of the provisions of the National Action Plans for Seagrass by all countries by 2012”.*
- *Government recognition of the ecological importance of seagrass through amendment of the management plans for seven existing MPAs with significant areas of seagrass habitat, to include specific seagrass-related management actions by the year 2012.*
- *Adoption of 7 new Marine Protected Areas specifically focussing on seagrass habitats by the year 2012.*

OBJECTIVES AND ACTIONS

The proposed regional activities to promote sustainable management and use of the Seagrass ecosystems are categorised into five main components in Table 4; namely:

Component 1 – Research and Monitoring:

Component 2 – National Policy, Legal and Institutional Arrangement and Co-ordination:

Component 3 – Public awareness, Communication and Education:

Component 4 – Capacity Building and Sustainability:

Component 5 – Resource and Habitat Management.

Table 3 Threats to Seagrass.

Cambodia	China	Indonesia	Malaysia	Philippines	Thailand	Viet Nam	Region
<ul style="list-style-type: none"> - Unsustainable and destructive fishing practices; - Pollution/ Sedimentation and waste dumping; - Unsustainable Development in coastal areas; - Seaweed farming; - Collection of seagrass roots. 	<ol style="list-style-type: none"> 1. Building shrimp ponds; 2. Excessive Aquaculture with seawater; 3. Fishing by netting; 4. Poisoning and electroforming shrimps and exploding fish; 5. Digging shellfish; 6. Human Induced Pollution; 7. Port & sea-route digging; 8. Digging worms and shellfish; 9. Reclamation. 	<ul style="list-style-type: none"> - Destructive fishing methods such as trawling & push net; - Uncontrolled soil/sand mining on land and seabed; - Solid waste water from domestic and emerging tourism activities; - Over reliance of local communities on fish harvesting; - Reclamation; - Marine pollution by land based human activities such as agriculture, human settlement, industrial and urban development, logging and land clearing. 	<ul style="list-style-type: none"> - Nutrient enrichment; - Runoff of sediment; - Coastal reclamation; - Sand mining; - Traditional harvesting of fishery resources; - Illegal encroachment of trawlers; - Destructive fishing (fish blasting & cyanide); - Marine pollution. 	<ol style="list-style-type: none"> 1. Habitat & community modifications; 2. Unsustainable fishing practices e.g., use of fine mesh nets, over harvesting of associated species, e.g., crabs, fish; 3. Siltation/ Sedimentation; 4. Eutrophication or nutrient loading, Domestic discharges; 5. Boat scour; 6. Infestations (fungal, viral, insect). 	<ol style="list-style-type: none"> 1. Over-fishing beyond the natural carrying capacity; 2. Fishery activities, which are detrimental to the ecosystem, i.e., push netting; 3. Wastewater from aquaculture, industry, fishing boats, piers; 4. Increase sedimentation from topsoil erosion and channel dredging. 	<ul style="list-style-type: none"> - Destructive fishing methods; - Pollution: discharge of heavy metals; suspended sediments, nutrient loading and oils; - Turbidity and sedimentation; - Increase in freshwater; - Over fishing on Seagrass beds (seahorses, Holothurians, etc.); - Reclamation of tidal flats for fish pond and agricultural purposes; - Coastal construction: dredging canals. 	<ol style="list-style-type: none"> 1. Destructive fishing such as push net, trawler; 2. Sedimentation from coastal development; 3. Waste water effluent; 4. Nutrients; 5. Coastal construction; 6. Over-fishing.

Table 4 Proposed Regional Actions for Seagrass Management and Conservation.

Components Objective	Sub-components	Regional Activities (For 2007 – 2012)
1. Research and Monitoring (Dr. Miguel Fortes, Mr. Tri Edi, Dr. Tien, and Dr. Xiaoping Huang)		
To enhance, improve and upgrade the knowledge and understanding of the ecological and socio-economic importance of seagrass eco-system. To establish a viable regional seagrass management plan.	1.1 <i>Resource Assessment</i>	1.1.1 Enhance assessment of baseline information on seagrass from deeper waters and other unstudied areas (US\$ 55,000) MF 1.1.2 Adopt and implement a regional seagrass resource assessment and monitoring protocol (e.g., SeagrassNet and SeagrassWatch) (US\$ 35,000) MF
	1.2 <i>Mapping</i>	1.2.1 Enhance the regional seagrass map (e.g. finer resolutions, using standardized methods, technology) (US\$ 80,000) TE
	1.3 <i>Socio-economic and Cultural Assessment</i>	1.3.1 Analysis of regional socio-economic and cultural aspects of seagrass (e.g., for input into Eco valuation) (US\$ 82,000) XH 1.3.2 Develop regional guidelines on socio-economic and cultural assessment related to seagrass (US\$ 70,000) XH
	1.4 <i>Database Management</i>	1.4.1 Assemble information and data relating to seagrass habitats into a regional seagrass database (US\$ 42,000) MF 1.4.2 Expand and update the regional seagrass meta-database MF
	1.5 <i>Decision Support System</i>	1.5.1 Regional synthesis of experiences at demonstration sites for policy support (US\$ 25,000) TE
2. National Policy, Legal and Institutional Arrangement and Co-ordination (Dr. Hutomo and Mr. Kim Sour)		
To codify and harmonise existing policies and legislations. To ensure cross-sectoral and participatory approaches to address threats of the root causes. To assist countries in meeting their obligations under multilateral environmental agreements.	2.1 <i>Integration of Research Programme with Management and Policy Making</i>	2.1.1 Organise and develop the process of the integration of research programmes with policy (US\$ 300 x 3 days x 2 pers. x 7 countries = US\$ 12,600) Dr. H 2.1.2 Develop guidelines or procedures to integrate research into management and policy making (1 per. x 7 countries x 15 days x US\$ 300 = US\$ 31,500) Dr. H 2.1.3 Integration of assessment results into local management plans. Dr. H
	2.2 <i>Monitoring the Implementation of NAPs</i>	2.2.1 Maintain and enhance the existing network of regional working group for seagrass KS
	2.3 <i>Strengthening Traditional Value into Management System</i>	2.3.1 Compile ethnobotanical and traditional practices and management of seagrass considering their application in the modern context. KS
	2.4 <i>Establish an Incentive System</i>	2.4.1 Development of criteria and award system for exemplary seagrass related projects (1 WS. x 2 pers. x 7 countries x 3 days x US\$ 300 = US\$ 12,600) KS
	2.5 <i>Linkage to Regional and International Obligations</i>	2.5.1 Analysis of outcomes of project to enhance compliance to treaties, conventions, agreements Dr. H
	2.6 <i>International and Regional Co-operation</i>	2.6.1 Participation in the international associations and network related to seagrass (2 Mtgs. x 5 years x 10 members x US\$ 1,000 = US\$ 100,000) KS
3. Public Awareness, Communication and Education (Mr. Vibol and Dr. Montaña)		
To enhance the acquisition of knowledge and skills useful in seagrass conservation and management.	3.1 <i>Improve Government Services/Education Vibol</i>	3.1.1 Building partnerships through personnel exchange, specially among demonstration sites through meeting and site visit Meeting: 3/6 years* 30,000 USD = 90,000 USD 3.1.2 Formulate the regional seagrass awareness syllabuses for formal and informal education Meeting: 1/6 years* 20,000 = 20,000 USD
	3.2 <i>Development, Improvement, and Dissemination of Awareness Materials Dr. M</i>	3.2.1 Compilation, selection, production and dissemination of awareness materials of seagrass through media/website Consultancy: 3,000 USD* 3 = 9,000 USD Production: 20,000 USD* 3 = 60,000 USD 3.2.2 Develop the Seagrass Information Network for East Asia (SINEA) through national seagrass websites linked to existing regional and global ones (US\$ 25,000)

Table 4 cont. Proposed Regional Actions for Seagrass Management and Conservation.

Components Objective	Sub-components	Regional Activities (For 2007 – 2012)
4. Capacity Building and Sustainability (Dr. Suvaluck and Mr. Kamarruddin bin Ibrahim)		
To strengthen the capacity for sustainable seagrass management.	4.1 <i>Human Resource Development</i> Dr. S + Kbl	4.1.1 Short and longer term training activities. Short term to include exchange programmes and regular training in fields such as paralegal issues, stakeholder analysis, community empowerment, participatory approaches; enhancing use of scientific data in EIA; Seagrass monitoring and management; GIS & remote sensing; Community based management & monitoring, Control & Surveillance. Long term: Provide scholarships for young scientists and etc.
	4.2 <i>Financial Sustainability and Institutional Strengthening</i> Dr. S + Kbl	4.2.1 Establish seagrass trust fund 4.2.2 Strengthening and expanding regional collaboration
	4.3 <i>Network Establishment and Strengthening</i> Dr. S + Kbl	4.3.1 Annual conference 4.3.2 Upgrade UNEP/GEF SCS Website 4.3.3 Periodical publications 4.3.4 Organising regional symposium for, stakeholders, scientists and managers (2 Symposia x 150 pers. x US\$ 300 = US\$ 90,000)
5. Resource and Habitat Management (Dr. Miguel Fortes, Mr. Tri Edi, Dr. Tien, and Dr. Xiaoping Huang)		
To establish integrated management of 13,755 (?) ha of SG in the SCS; To develop and implement the coastal resources management plan for sustainable use of SG ecosystem.	5.1 <i>Guidelines for Sustainable Use</i>	5.1.1 Develop regional guidelines for sustainable use of seagrass and associated species (in both degraded and less degraded areas) (US\$ 20,000) TE
	5.2 <i>Strengthening Management Component</i>	5.2.1 Develop a regional training programme on seagrass management (US\$ 30,000) TE
	5.3 <i>Seagrass Rehabilitation</i>	5.3.1 Undertake a regional synthesis of and pilot appropriate techniques for rehabilitating seagrass (US\$ 65,000) MF
	5.4 <i>Community-based Seagrass Management</i>	5.4.1 Develop guidelines based on regional synthesis of experiences in community-based seagrass management (US\$ 25,000) Dr. T
	5.5 <i>Environmentally Friendly Technologies</i>	5.5.1 Compile, publish and disseminate environmentally friendly seagrass technologies in the region (US\$ 45,000) XH
	5.6 <i>Types of Management Regimes, Development of Models</i>	5.6.1 Replicate successful models for conservation and management of seagrass for use in the region (US\$ 15,000) Dr. T
	5.7 <i>Alternative/ Complementary Livelihood</i>	5.7.1 Synthesis of successes in alternative or complementary livelihood programmes using seagrass resources (US\$ 22,000) MF
	5.8 <i>Establishment of Management Zones</i>	5.8.1 Promote transboundary management and zoning of seagrass for conservation of marine endangered species (e.g., sea turtles and dugongs) (US\$ 55,000) MF + TE 5.8.2 Establish a regional body for joint management of seagrass resources (US\$ 20,000) XH 5.8.3 Establish seagrass habitat corridors (US\$ 15,000) XH

Table 2 Schedule of Meetings for 2007. (RWG = Regional Working Group; -M = Mangroves; -CR = Coral reefs; -SG = Seagrass; -W = Wetlands; -F= Fisheries; LbP = Land-based Pollution; RTF-E = Regional Task Force on Economic Valuation; RTF-L = Regional Task Force on Legal Matters; RSTC = Regional Scientific and Technical Committee; RSTC-SC = RSTC Sub-Committee; PSC = Project Steering Committee; (H = United Nations Holidays).

	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M															
January		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31													
		H																					RTF-E-6																						
February					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28													
																							Chinese NY																						
March					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31										
April	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30															
						H							H									RWG-M-8			Joint Mtg. PKWS-Trat																				
May			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31												
									RWG-W-8										RTF-L-6				RWG-SG-8																						
June					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
								RWG-CR-8																																					
July	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31														
August				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31											
								RWG-LbP-8							H																														
September						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
																							Ramadan																						
October		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31													
								Ramadan																																					
November				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
December						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31									
										H																					H														