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

REPORT

Third Meeting of the Regional Scientific and Technical Committee

Phuket, Thailand, 16th – 18th June 2003

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Report of the Meeting

1. OPENING OF THE MEETING

1.1 Welcome address

1.1.1 The Project Director, Dr. John Pernetta opened the third meeting of the Regional Scientific and Technical Committee (RSTC) on behalf of Dr. Klaus Töpfer, the Executive Director of the United Nations Environment Programme (UNEP) and Dr. Ahmed Djoghlaf, the Director, Division of Global Environment Facility Co-ordination (UNEP/DGEF).

1.1.2 In welcoming the participants he noted that the meeting should have been convened in May, and should have been held in Guangzhou, China, but unfortunately, due to the outbreak of SARS, the meeting had to be postponed and the venue changed.

1.1.3 The Project Director apologised for the late production and distribution of some of the working documents for the meeting, which was due to late receipt of the necessary reports, data and information from the national focal points.

1.1.4 He indicated that the committee is a scientific and technical body and that it had before it a number of difficult issues for consideration, which he hoped would be dealt with from a purely scientific and technical perspective. Of particular importance were issues relating to the prioritisation and ranking of the potential demonstration sites and he noted that political issues surrounding the choice of sites should be handled by the Project Steering Committee (PSC) when making the final decisions regarding the funding of sites. He noted that the RSTC would need to consider the measures to be taken in handling those sites that were insufficiently characterised to allow them to be ranked.

1.2 Introduction of members

1.2.1 The Project Director noted that there were a number of new members following the election of officers for the regional working groups and invited members to introduce themselves to the meeting by providing a brief outline of their experience, expertise, and involvement in the execution of the project. The list of participants is attached as Annex 1 to this report.

2. ORGANISATION OF THE MEETING

2.1 Election of Officers for 2003

2.1.1 In introducing this item the Project Director reminded members that the Rules of Procedure state that, the Regional Scientific and Technical Committee 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. Dr. Vo Si Tuan, Mr. Koch Savath and Professor Huang who have served as Chairperson, Vice-Chairperson and Rapporteur respectively, during 2002, are therefore, all eligible for re-election in 2003.

2.1.2 Dr. Sonjai Havanond, Chairperson of the Regional Working Group on Mangroves (RWG-M) nominated Dr. Vo Si Tuan, the National Technical Focal Point from Vietnam, as Chairperson of the Committee, and the nomination was seconded by Professor Huang Zhengguang, the National Technical Focal Point from China. Dr. Tuan was elected as the Chairperson by acclamation.

2.1.3 Professor Huang nominated Mr. Koch Savath, the National Technical Focal Point from Cambodia as Vice-chairperson of the Committee. Dr. Gil Jacinto, the National Technical Focal Point from the Philippines, seconded the nomination and Mr. Savath was elected as Vice-chairperson by acclamation.

2.1.4 Dr. Sonjai Havanond nominated Professor Zhengguang as Rapporteur of the Committee and Professor Huang was elected as Rapporteur by acclamation.

2.1.5 Dr. Tuan thanked the committee for the trust they had shown him in electing him for a second term, and expressed his willingness to work hard, together with the members of the committee, to achieve the objectives of the project.

2.2 Documentation available to the meeting

2.2.1 The Project Director introduced the documentation available to the meeting by referring to document UNEP/GEF/SCS/RSTC.3/Inf.2. He informed the meeting that most of the documents had been circulated in advance of the meeting and had been lodged on the project web site.

2.2.2 He noted that some documents that will be discussed under Agenda item 7 dealing with cluster analysis and ranking of the habitat sites had not been sent by email, due to late receipt of necessary data and information from the focal points. He noted further that these documents had involved the PCU in a considerable amount of work and the analyses were still not final since many data were missing and the tabulations needed to be checked and some data verified by the national focal points. The list of documents available to the meeting is attached as Annex 2 to this report.

2.3 Programme of Work

2.3.1 The Project Director briefed participants on the administrative arrangements for the conduct of the meeting, and the proposed organisation of work contained in document UNEP/GEF/SCS/ RSTC.3/Inf.3. He informed the meeting that due to the heavy workload for this meeting it was proposed that the meeting would start at 08:00 every morning.

2.3.2 It was noted that formal sessions of the meeting would be conducted in plenary and in English.

3. ADOPTION OF THE MEETING AGENDA

3.1 The Chairperson invited members to consider the provisional agenda prepared by the Project Co-ordinating Unit as document UNEP/GEF/SCS/RSTC.3/1, to propose any amendments or additional items for consideration, and to adopt the agenda. The meeting agenda was adopted without modification and is attached as Annex 3 to this report.

4. REVIEW OF STATUS OF ADMINISTRATIVE REPORTS AND GOVERNMENT IN-KIND CO-FINANCING FOR THE YEAR 2002

4.1 Status of administrative reports for the year 2002

4.1.1 The Project Director introduced the document UNEP/GEF/SCS/RSTC.3/4 *"Current status of budgets and reports from the Specialised Executing Agencies in the participating countries"* which contained a summary of the present situation with respect to the administrative and financial reports that the SEAs are required to submit to the PCU twice yearly. He reminded members of the simplified financial rules and reporting procedure of the project.

4.1.2 Dr. Pernetta informed the meeting that some focal points had submitted their progress reports without the supporting documents. In some cases, meeting reports were not attached to the six monthly reports, and some of the submitted meeting reports did not include a list of participants. This resulted in delays in final acceptance of the reports by the PCU.

4.1.3 The Project Director highlighted the difficulties and problems faced by the PCU resulting from the late receipt of expenditure reports, progress reports and cash advance requests. He informed the meeting that when the six monthly reports were submitted one month late, their review has to be undertaken by the PCU in the same period of time that preparations were being made for the subsequent round of regional working group meetings. He noted that, with only 2.5 professional staff in the PCU this year, the consequence of late receipt of the reports had been delays in response by the PCU and subsequent delays in the disbursement of funds to the SEAs.

4.1.4 Dr. Gil Jacinto, National Technical Focal Point from the Philippines, informed the meeting that delays in submitting reports by the focal points from the Philippines had been caused, in part, by the change of Department Secretary, the National Focal Point, during the last twelve months.

4.1.5 Professor Zhengguang, the National Technical Focal Point from China, noted that the main reason for late submission of the six monthly reports was that the focal points from China were not familiar with the format of the required reports, and he expressed the hope that it would not be a big problem for this year. He requested clarification on the period covered by the report submitted by the National Focal Point of China.

4.1.6 The Project Director indicated that following his dispatch of a reminder by fax to the National Focal Point of China, the report had been received promptly, covering the whole of the year 2002. However, the report did not have attached the meeting reports of the IMC and NTWG meetings, nor did it indicate the numbers of participants in these meetings.

4.1.7 Regarding the audit reports, the Project Director reminded the National Technical Focal Points that there is a requirement for an audit report on the end year expenditures, which should have been received within 90 days of the end of the financial year (31st December 2002). So far only 16 audit reports had been received from a total due of 38, and there remain only ten working days to the end of the current reporting period. He indicated that it would not be possible to disburse the second cash advance in 2003, without the audit reports.

4.2 Estimates of Government in-kind co-financing for the year 2002

4.2.1 Dr. Pernetta informed participants that during the first meeting of the Project Steering Committee (PSC), the committee had considered and endorsed a cost coefficient, of US$ 70 per person, per day, for calculating the in-kind contribution from the participating countries. During that meeting estimates for the first two years of project implementation had been approved by the committee (Annex XII of document UNEP/GEF/SCS/PSC.1). He noted that following completion of the first year of work it was time to review the actual in-kind co-financing in order to assess whether the estimated co-financing had actually been provided.

4.2.2 He then presented the document UNEP/GEF/SCS/RSTC.2/5 *"Estimated co-financing based on information provided in the six monthly reports from the Specialised Executing Agencies"* that provides details regarding actual in-kind co-financing from participating governments based on the contents of the six monthly reports for 2002 received to date.

4.2.3 He indicated that the calculation of co-financing is important, to demonstrate the support of participating countries to the project activities. He noted that not all co-financing elements could be confirmed since estimates of time spent by individuals in preparing reports and inputs to the regional working groups could not be determined accurately. He noted that overall the co-financing derived from meeting participation at the national level had reached the estimated levels but that the proportion of co-financing varied between countries and between components, with for example, substantially more co-financing being provided to the mangrove component than to some of the others.

4.2.4 Mr. Tay informed the meeting that based on his experience working in the GEF Secretariat, most projects approved by GEF, failed to monitor the levels of in-kind co-financing raised during project execution and in some cases the actual co-financing failed to reach the original estimates. The calculations of actual co-financing undertaken in this project would provide very useful information to the GEF.

4.2.5 Mr. Sudariyono indicated that there had been meetings organised in Indonesia to co-ordinate the national activities within the framework of this project, and his government had provided in-kind contributions to the project. He suggested that the information contained in Table 3, under the contribution from Indonesia, should not be listed as "0", but should be indicated as "no information available".

4.2.6 Mr. Jiang noted that a change from "0" to "no information available" would not change the dollar total of the in-kind contribution from the participating countries, and suggested that rather than focussing on individual contributions the members of the Committee should focus on the regional outcome.

4.2.7 The Project Director agreed to amend the table and noted that the original estimates had been based on a full twelve months whilst the project had commenced at the national level only in March 2002 following transfer of the first tranche of funds, hence the estimates would need to be amended downwards which would result in substantially more co-financing than was originally estimated. The amended draft tables are presented in Annex 4 of this report.

5. A DRAFT OVERALL STRATEGY FOR THE MOBILIZATION OF ADDITIONAL FINANCIAL RESOURCES

5.1 Dr. Tuan, invited Mr. Boon Tiong Tay, Senior Advisor on Financial Sustainability to introduce the document UNEP/GEF/SCS/RSTC.2/6 *"A Draft Overall Strategy for the Mobilization of Additional Financial Resources"* which is attached as Annex 5 to this report.

5.2 Mr. Tay informed the meeting that the draft strategy aims to secure appropriate levels of funding in order to ensure the sustainability of the benefits of the project, through:

(i) co-financing to support the initiation and implementation of 15 demonstration sites in addition to the 9 sites currently covered by the project grant;

(ii) generation of revenue streams at the demonstration sites to support their continued operation and associated activities following completion of the GEF project and expenditure of the GEF funds; and,

(iii) to support the regional level co-ordination function beyond the life of the project.

5.3 In response to a question raised by Professor Jin-Eong Ong, regarding the dates of the partnership workshop, the Project Director informed the meeting that the current plan is to host the meeting together with the Regional Scientific Conference, which is scheduled in early December. However, he noted that considering the delay in execution of project activities there was a proposal before this meeting for a re-scheduling of these events to two months later than the current plan.

5.4 Mr. Sudariyono sought clarification regarding co-financing of the demonstration sites and the Project Director informed the meeting that, the Project Steering Committee had decided to set a target of twenty-four demonstration sites for the habitat component and consequently there was a need to raise co-financing for the additional fifteen sites. He confirmed that in addition to the in-kind contribution from the participating countries, to the demonstration sites, cash contributions to support demonstration sites should be provided in a ratio of 1:1.

5.5 Mr. Nawarat Krairapanond, Observer from Thailand, requested clarification on the contents of Annex 2 of the document on a funding strategy. Amplification was provided by Mr. Tay, who noted that, the mechanisms mentioned in this annex included issues regarding fund-raising, permanent endowment funds, direct contributions to financing recurrent costs, and revenue-steam/income generation, but that, at this time the actual mechanisms to be employed had not been decided since in part, these will reflect the nature of activities at the individual demonstration sites, which are not yet clearly defined.

5.6 The National Technical Focal Points were invited to provide the Committee with an up-date regarding their national level discussions on co-financing in their respective countries and there followed a briefing from all participating countries during which various approaches and developments were noted.

5.7 In the case of Thailand, Ms. Kluephan informed the meeting that the financial management system in Thailand will change in 2004 and that the Director General of each department will have

authority to decide the budget allocation for the department. The same authority will also be given to the governors of the provinces and this new system will make the co-financing contribution from Thailand to the project demonstration sites somewhat easier to obtain.

5.8 Similar information was also provided by Indonesia, Philippines, China, Malaysia, and Viet Nam on the possibilities and mechanism to generate co-finance for future project activities. Dr. Tuan noted that in Viet Nam discussions had been held regarding co-financing and suggestions had been raised regarding central and local government sources and from existing projects concerned with socio-eonomic development.

5.9 In response to a question raised by Professor Ong, the Project Director noted that, to initiate discussions with potential donors the process of site selection will be described but that, to secure firm co-financing commitments it would be vital to have well formulated proposals for demonstration sites well in advance of the partnership workshop.

5.10 Considering Mr. Tay's knowledge and experience in matters relating to financial sustainability, Ms. Kluephan invited Mr. Tay to attend the next meeting of the National Technical Working Group, in Thailand, and to brief members on various aspects of financial sustainability.

6. PRESENTATION OF THE REGIONAL GIS DATABASE BY SEA START RC

6.1 The Chairperson invited Dr. Anond Snidvongs, the Director, SEA START RC to present an overview of the development of the regional GIS database.

6.2 Dr. Anond provided the meeting with a status report and demonstration regarding the GIS data and information received to date, according to the format agreed during the Regional GIS workshop. He indicated that submissions of data and information had filled a lot of gaps at the regional level, in particular with respect to seagrass distribution around the South China Sea. He informed the meeting that following receipt of various sets of data and information from the focal points by the PCU and SEA START RC, (Annex 6) these have been compiled and entered into the Regional GIS database.

6.3 Dr. Anond noted that basic data regarding habitat distributions available regionally should have been checked and revised by the focal points in order to provide a regional picture of habitat distribution and that, the site characterisations should have been submitted in the agreed format. He also outlined some of the constraints and difficulties encountered to date. Some countries have not submitted data and information for some components, and some data received by the SEA START RC has no geographic co-ordinates.

6.4 Dr. Gil Jacinto asked, what would happen in the selection process for the demonstration sites if data were lacking for a site considered critical in a particular country. The Project Director responded that the procedure for prioritisation, cluster analysis and ranking has been agreed in the previous meetings of the RSTC, and PSC and noted that the regional GIS database is not directly linked to the selection of demonstration sites, but rather it was a useful tool to visually present data and information, as for example, in terms of the geographic distribution of potential demonstration sites in the various clusters. If a site was without the required data, it would be very hard to justify including it in the list of demonstration sites unless some form of justification can be provided, and was accepted by the committee.

6.5 Mr. Sudariyono noted the difficulties encountered in receiving data by the PCU and SEA START RC, even though there were a lot of data available. He promised that on his return to Indonesia, he would call a meeting of the National Technical Working Group to discuss the problems and identify solutions.

6.6 Dr. Anond then introduced ideas concerning the potential application of the GIS database to assist in the presentation of results from the statistical and cluster analyses, and further assist in presenting aspects of the selection process to the potential donors. The results from the duster

analysis could be input to the system and this would provide a visual overview to potential donors of the geographic distribution of the sites.

6.7 He also presented the status of the development of the regional meta-database, and noted that the development of the meta-base should not be the top priority of the project at the present time, since the regional GIS database was required for various activities in the immediate future. The Project Director concurred that the meta-database should not be the priority, however, he reminded the focal points from the participating countries that in the MOUs established between the SEAs and UNEP, there is a requirement to develop national meta-databases.

6.8 The meeting discussed the issue of linking the regional GIS database to the project web page, which would provide a useful mechanism for the receipt of new data, and would assist in updating the database. It was noted that, in presenting this on the web, a clear statement should be added to indicate that the database is still in "draft form" and subject to revision and up dating[1].

6.9 With regard to the work plan for establishment of the regional GIS database, it was noted that the initial establishment of the database should be completed by the end of June 2003. However, due to late receipt of the data and information, there would be some delays in completion of the work.

6.10 The meeting agreed that a list of immediate requirements, should be sent to the focal points of the project components and sub-components from participating countries, regarding corrections to data sets that had already been received, and a note regarding this is provided in Annex 6 to this report. It was noted that this information would be sent to the Focal Points together with the requests for checking and correcting the site characterisation data to be used in the cluster analysis.

7. REVIEW OF SITE CHARACTERISATIONS AND CLUSTER ANALYSES OF POTENTIAL DEMONSTRATION SITES FOR THE HABITAT COMPONENT OF THE PROJECT

7.1 The Project Director introduced this agenda item by referring to document UNEP/GEF/SCS/RSTC.2/7, *"Review of site characterisations and cluster analyses of potential demonstration sites"*. This document is based on a review of the outcome of the work of the third meetings of the Regional Working Groups for the habitat sub-components of the project together with subsequent submission of data and information to the Project Co-ordinating Unit. He noted that not all the focal points in the Specialised Executing Agencies have submitted revised and amended site characterisations but that the Project Co-ordinating Unit had undertaken a revised cluster analysis based on the updated data sets, and using the agreed parameters and procedures.

7.2 He briefed the meeting on the methods used in the analysis, and the software, Clustan Graphic6, used in the analysis. He informed the meeting that the analysis was carried out based on the data received from the focal points from the participating countries but that since data were lacking for some sites and some parameters, the analysis had not been completely comprehensive and some sites and parameters had been dropped from consideration. He then introduced the results of the analysis for each habitat and these are presented in Annex 7 of this report.

Mangroves

7.3 Dr. Pernetta introduced the analysis for the mangrove sub-component and noted that in preparing the data table for the cluster analysis, parameters and/or sites having less than 50% of values had been removed such that the proportion of cells missing values was reduced to less than 20%. Three agreed parameters, and 5 sites had been removed, and the remaining 9 parameters had been used in the analysis. He invited the Committee to consider whether the parameters used in the analysis were acceptable as adequately reflecting the key issues of biodiversity, regional, global and transboundary significance and to decide on what should be considered an acceptable level of missing data to permit inclusion of a site in the analysis.

[1] *During the following days discussion Dr Anond stated that the staff of the SEA START RC had uploaded the database on a map server to the project web site and this was now accessible via: www.unepscs.org\gis.*

7.4 In introducing the results of the analysis for the mangrove sub-component, the Project Director reminded the Committee that the principal aim of the clustering was to group similar sites and select sites as potential demonstration sites that reflected the full range of biodiversity found within the region. Therefore, demonstration sites would be selected from different clusters.

7.5 Professor Ong informed the meeting that the selection of the 12 parameters for the mangrove sub-component was the minimum data set considered necessary by the Regional Working Group on Mangroves. Whilst he felt that it would be acceptable to remove the number of bivalve species and number of gastropod species, he was of the opinion that to remove the change in area would present a problem as this is the only parameter outside the biodiversity data group.

7.6 The meeting agreed that sites that have less than 50% of data provided should be removed from the analysis and that if necessary the parameters could be reduced to ensure that the matrix achieved an acceptable level of missing data.

7.7 There followed an extensive discussion on the quality of the data used in the cluster analysis, not only for the mangrove sub-component and it was agreed that the focal points from the participating countries be given the opportunity to check and if necessary correct the data. It was agreed that the regional experts in each working group would be asked to assist the PCU in identifying anomalous data points that should be discarded from the analysis.

7.8 The meeting agreed that the final cut-off date for correction of existing data is 4th July 2003, for all sub-components of the habitat component. It was further agreed that in order to keep to a revised work plan, data received after the deadline, will not be included in the cluster analysis. It was further noted that some sites which had been discussed in the regional working group meetings but which had not been included in the preliminary cluster analysis could also be added at this time.

Seagrass

7.9 The Project Director introduced the data table for the seagrass sites and noted that there were a lot of missing data for certain parameters. Consequently the number of parameters had been reduced from 15 to 8, and the number of sites from 44 to 41. The resulting matrix had 19.2% of missing values.

7.10 Regarding the parameters that should be included in the cluster analysis, Dr. Chittima, Rapporteur of the Regional Working Group for Seagrass, provided information on the discussion and agreements reached during the third meeting of the Regional Working Group and suggested that the proposed removal of the parameters would be acceptable. The meeting agreed to use the eight parameters for which adequate data were provided in the final cluster analysis.

Coral Reefs

7.11 The Project Director introduced the cluster analysis for the coral reef sub-component and noted that in the data table, a number of the parameters that were highly correlated had been removed from the data table used in the cluster analysis. The parameters removed were *"numbers of genera"* for taxa, which were represented by both genera and species in the raw data table. Parameters and sites with less than 50% of the values had also been removed, resulting in a matrix with 39 sites, nine parameters and 17% of the values missing from the table.

7.12 Dr. Pernetta raised a question directed towards the Chairperson of the Regional Working Group on Coral Reefs regarding the inclusion of the number of mammal species as an indicator of biodiversity in coral reef habitats. He noted that most whales and dolphins were transitory visitors to the vicinity of coral reef ecosystems rather than resident members of the community. Mr. Khalil, Chairperson of the Regional Working Group noted that this indicator had been included on the basis of a discussion in the RWG-CR, which had noted that a number of marine mammal species were endangered or threatened.

7.13 Following extensive discussion the meeting agreed to remove the parameter of *"number of mammal species"* from the list and endorsed the recommendation of the PCU to remove one parameter from the highly correlated pairs and to use the remaining 8 parameters in the final cluster analysis. It was noted by the meeting that following removal of the parameter "number of mammal species", the coral reef focal points would need to check the number of endangered species, to ensure that such marine mammals were included in this parameter.

Wetlands

7.14 The Project Director introduced the wetlands data table and the results of the cluster analysis. He indicated that as data covering all parameters had been received from most focal points, no parameters had had to be deleted from the analysis, and all proposed sites were included. He noted that the indicators of biodiversity were all in respect of vertebrate taxa and that no indicators of invertebrate diversity were included.

7.15 Professor Ong raised a question regarding the types of wetland that had been included in the data table noting that in a number of cases the size of the wetland was enormous. Ms. Marlynn Mendoza, Chairperson of the Regional Working Group on Wetlands (RWG-W) provided background information regarding the types of wetlands under consideration by the RWG-W. Initially three types of wetlands were included in the review, but subsequently, additional types had been added. The sites had been characterised as large-scale management units, for example, the Inner Gulf of Thailand. More than one type of wetland were often included such as for example, inland lake, combined with estuary and the marine and coastal environment receiving discharge from the freshwater system. In the case of the Cao Mau tidal flats the area of more than a quarter of a million hectares included only 24,000 hectares of intertidal flats.

7.16 During discussion it was noted that one parameter in the table was "number of wetland types" and that entries in this column were as large as 10. In conjunction with the size of the "sites" it is clear that the approach adopted by the wetlands group differed from that of the other habitat working groups and Ms. Mendoza confirmed this.

7.17 An extensive discussion ensued during which it was noted that the wetlands that should have been reviewed by the RWG-W were five of the wetlands types listed in Appendix 8 of the RAMSAR Convention (Lagoons; estuaries; inter-tidal mud flats, peat swamps and non-peat swamps in coastal areas) as approved by the PSC during its second meeting. It was agreed that the focal points should have confined their characterisation to these wetland types. The meeting agreed to request the focal points to review their site characterisations and disaggregate the data such that each wetland type was clearly identifiable in the table.

7.18 It was agreed that the focal points would be requested to complete this exercise by 31st July 2003 and that following this the PCU would undertake a cluster analysis and ranking of the sites as re-submitted. The meeting agreed that the Project Director should work closely with the Chairperson of the wetland group in developing the necessary communication mechanisms to ensure that this task was completed on time.

7.19 The meeting noted that some of the revised data submitted subsequent to the third meeting of the RWG-W were in fact estimated data and the RSTC agreed that no estimates would be included in the data for cluster analysis or for ranking.

8. REVIEW OF THE RANKING INDICATORS AND PROPOSED SCORING SYSTEMS DEVELOPED BY THE REGIONAL WORKING GROUPS

8.1 The Project Director introduced this agenda item by reminding participants that during the third round of meetings of the regional working groups for the habitat sub-components, indicators, ranks and scores had been extensively discussed and agreed for use in the second and third steps of the process of selecting the demonstration sites.

8.2 Referring to the document UNEP/GEF/SCS/RSTC.2/8, *"Review of the ranking indicators and proposed scoring systems developed by the Regional Working Groups"*, the Project Director presented the indicators selected by each regional working group, together with the ranks and scores that will be applied in ranking sites within clusters.

8.3 Mr. Khalil, Chairperson of the Regional Working Group on Coral Reefs, proposed that since the parameter *"number of mammal species*" had been removed from the cluster analysis and is not strictly an indicator of coral reef biodiversity it be removed from the list of ranking indicators. The meeting agreed with this proposal, and decided to remove the parameter of "number of mammal species", and reallocated the relevant points score to other criteria. The meeting invited Mr. Khalil to work together with Mr. Jiang, Senior Expert, on a revised set of ranking indicators, which is attached as Annex 8 to this report.

8.4 Professor Ong, pointed out that as there is a limited project budget, it would be appropriate for the project to focus its effort and resources on sites with lower threats where there is a high probability of successful intervention. He suggested that if this is acceptable to the Committee, the scoring system should be treated in a similar manner across all components with low scores being assigned to sites with high threats.

8.5 Dr. Tuan informed the meeting that the Regional Working Group on Coral Reefs had discussed this issue during the third meeting, and had concluded that in order to reverse the environmental degradation trends, as stated in the project title, high threats should receive a high score.

8.6 Dr. Anond proposed that, in order to accommodate both points of view, very high and very low threats should receive low score, but that medium levels of threat would receive a high score. Whilst the committee felt that this proposal had some merit strong views were expressed in support of not changing the indicators weight in this manner, without referring back to the regional working groups.

8.7 Mr. Tay indicated that the issue that should be considered, is not the threat itself, but rather the reversibility of the threat. He suggested to change the term "threat" to "reversibility of threat", with high probability of reversing a threat receiving a higher score, and low probability of reversing the threat receiving a low score.

8.8 The meeting considered this issue very carefully, noting that the ranking scores had been discussed and agreed by the Regional Working Groups, nevertheless considering the need for transparency and clarity and hence a certain degree of uniformity between the working groups, the RSTC finally agreed to accept the proposal made by Mr. Tay.

8.9 The RSTC accepted the ranking criteria with the amendments discussed and these are presented in Annex 8 of this report.

9. PRELIMINARY RANKING OF POTENTIAL DEMONSTRATION SITES WITHIN CLUSTERS AND RECOMMENDATIONS TO FOCAL POINTS REGARDING PRELIMINARY PRIORITIES FOR HABITAT DEMONSTRATION SITES

9.1 The Project Director introduced the document UNEP/GEF/SCS/RSTC.2/9, *"Preliminary Ranking of Demonstration sites"* containing the outcome of the application of the agreed ranking indicators to the sites within clusters. He apologised that this was not complete and noted that following the discussions regarding the wetlands clustering the outcome for the wetlands sites should be disregarded. He noted further that, the ranking for coral reefs would be modified following the agreed modifications to the ranking scheme and noted further that, all the ranks would be slightly amended following verification and amendment of the data and re-processing of the cluster analyses following the July 4th deadline for submissions from the focal points. The interim results are presented in Annex 9 to this report.

9.2 Dr. Pernetta noted that despite the caveats outlined above, the ranking contained in the tables for coral reefs and seagrass provided a reasonable indication to the focal points of which sites should receive priority in terms of preparing demonstration site proposals. He noted that the table for mangroves would be provided to the meeting the following morning, following inputting of additional data provided by Mr. Sudariyono for the Indonesian sites.

9.3 During discussion the Project Director reminded participants that the preparation of demonstration site proposals will require a considerable amount of time and effort. Therefore, it is appropriate that the focal points from the participating countries select sites with higher scores, when selecting sites for preparation of proposals.

9.4 In responding to a question from Dr. Jacinto, the Project Director commented that if one focal point wanted to maximise the possibility of obtaining a demonstration site, then they should pick those sites with high priority from the perspective of regional global and transboundary, significance. He informed the meeting that, although there is no limit to the number of proposals that can be submitted by a focal point, it would be unrealistic to expert one focal point to prepare more than 3 to 5 proposals in the time available.

9.5 The Senior Expert indicated that the site proposals prepared will be used as the basis for selecting both the 9 demonstration sites that receive funding from GEF grant, and for the 15 sites to be supported through co-financing.

9.6 The Chairman requested clarification regarding why the socio-economic indicators had not been included in the ranking at this stage and the Project Director responded that at the present time it was difficult to quantity many of these parameters which were dependent upon the completion of the project proposal. It had therefore been agreed that, the socio-economic parameters would be used by, the regional working groups, during their next meetings when they considered their recommendations regarding priority to the RSTC and PSC.

9.7 Following the clarification provided by the PCU, the meeting agreed that the procedure used in prioritisation and ranking of the potential demonstration sites was useful, and agreed that after receipt of corrections to the data and information from the focal points by the agreed deadlines (4th July for coral reefs, seagrass and mangroves; 31st July for wetlands) the PCU will finalise the cluster analysis, and ranking. The final results of the cluster analysis and ranking will be sent to the focal points as soon as possible thereafter, at which time the focal points, in consultation with their National Technical Focal Points should identify the sites for which proposals would be prepared.

10. WORK PLAN AND TIMETABLE FOR THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE

10.1 The Chairperson invited the Project Director to introduce document UNEP/GEF/SCS/RSTC.3/10 containing proposed revisions to the work plan and timetable for the project. He informed the meeting that some delays have occurred in the convening of the third meetings of the RSTC, and the Regional Working Groups on Fisheries and on Land-based Pollution. These delays were in part a consequence of the SARS outbreak and in part a consequence of substantial delays in delivery of outputs by some Specialised Executing Agencies. The third meeting of the Regional Scientific and Technical Committee has been delayed by 5 weeks the RWG-F was delayed by 3 weeks and the RWG-LbP has been delayed by 19 weeks.

10.2 Dr. Pernetta noted that delays in submission of revised site characterisations have further delayed the schedule such that the originally envisaged timetable for the development of demonstrations proposals has been curtailed by around 5 weeks. This poses an almost insurmountable problem for the preparation of demonstration site proposals and their distribution in advance of the planned donor forum to be held in conjunction with the Regional Scientific Conference.

10.3 The Project Director presented the proposed revision of the work plan of the project for the remainder of 2003 and the first half of 2004. He indicated that, the most important task for the second half of 2003 is to prepare the demonstration site proposals, finalise their review and make

recommendation from the regional working groups, to the Regional Scientific and Technical Committee for their consideration and final recommendation to the Project Steering Committee.

10.4 Document UNEP/GEF/SCS/RSTC.3/10 contains a detailed review of the work plans for the various components and sub-components together with a revised meeting schedule consequent upon adjustments to the regional working groups individual work plans. Dr. Pernetta noted that following the revision of the work plan for the wetlands working group, which had been agreed under a previous agenda item it would be necessary to further revise this section of the document.

10.5 In respect of the revised work plan for the coral reef and seagrass sub-components, Ms. Kluephan asked if the ranking table could be used as initial guidance for the focal points to prepare the site proposals in order to start the necessary work earlier. Considering that the results of the cluster analysis would not be substantially changed following the receipt of corrected data, in the case of the seagrass and mangroves these tables could be used as preliminary guidance to the focal points in selecting sites of high priority for the development of proposals. The PCU promised to provide a new ranking table for coral reef sites using the newly approved set of indicators before the end of the meeting, or at the latest by the end of the week. The ranking table will be used as a guideline for the coral reef focal points from the participating countries to start preparation of site proposal.

10.6 The meeting agreed to the proposed work plan and timetables for the coral reef and seagrass sub-components.

10.7 Following a consideration of the proposed draft, the meeting agreed to adopt the proposed work plan and timetable for the mangrove sub-component as contained in the document and an amended work plan and timetable as proposed by the Chairperson of the RWG-W Ms. Mendoza. In this respect and considering that, the schedule for the wetlands group has been modified, the meeting agreed to reschedule the fourth meeting of the Regional Working Group on Wetland to 15-18 December 2003, and re-schedule the fourth meeting of Regional Working Group on Seagrass to 29 November – 2 December.

10.8 With these modifications, the meeting agreed to the proposed work plans and timetable for the mangrove and wetland sub-components.

10.9 The Chairperson invited the Senior Expert to introduce the proposed work plan for the land-based pollution component. Mr. Jiang informed the meeting that the third meeting of the Regional Working Group on Land-based Pollution had to be re-scheduled twice from February, to 7-10 July 2003, due to the delay in receiving the reports from the focal points of the participating countries. He noted that this delay had serious, negative impacts on the implementation of the project activities at the national level. With regard to the venue of the meeting, he noted that due to SARS, and the prevention measures adopted by different countries, the venue of the meeting had been changed from the Philippines, to Phuket, Thailand.

10.10 He informed the RSTC that the third meeting of the land-based pollution component will discuss and agree on a list of pilot activities that includes (i) the major hot spots in the South China Sea marine basin, (ii) the major problems in the region; and (iii) the potential measures to address the problems. The RSTC agreed to the proposed work plan for the land-based pollution component.

10.11 The Project Director informed the meeting that, the implementation of the fisheries component is almost on schedule. One problem in the implementation of this project component is that the Government of Malaysia has not signed the MOU, for fisheries nor that, for the mangrove component. The next meeting of the RSTC and PSC would need to take decisions regarding reallocation of the respective budget allocations. The work plan for the fishery component was agreed with the change of dates for the fourth meeting of the Regional Working Group.

10.12 The Project Director informed the meeting that the Regional Task Forces on economic valuation and on legislation were scheduled to hold their first meetings in August and September, respectively. However only 3 countries have nominated their members of the task forces. Recognising

the importance of these activities the RSTC agreed that the deadline for nomination of members to these two task forces should be 18 July 2002.

10.13 The meeting adopted the revised work plan and meeting schedule for the project with the modifications stated above, and this is presented in Annex 10 of this report.

10.14 The Project Director invited the RSTC to decide on the principles contained in the recommendations of the document regarding the failure to meet future deadlines. The committee accepted the suggested principles as follows:

To ensure the effective and efficient implementation of the project plans and schedule, the RSTC endorses the following principles for application in future:

- ***the overall work plan will only include countries that have submitted the required inputs, including demonstration site proposals, on time;***
- ***regional working group meetings will only be hosted by countries which have submitted the required inputs by the due date; and***
- ***all future meetings shall be held only in potential demonstration sites considered as high priority by the RSTC.***

11. ANY OTHER BUSINESS

11.1 Mr. Koch Savath, the National Technical Focal Point from Cambodia, stated that financial sustainability is a key concern of the Cambodian Government in respect of all on-going projects, in particular those related to the protection and restoration of the environment. Therefore the fund-raising and resource mobilisation for environmental protection and management is actually very crucial. The Government has proposed to discuss and consider these issues once the new Government is in place following the national election on 27 July 2003.

11.2 The Project Director expressed his willingness to visit Cambodia when the new government is in place to provide briefings on project implementation and financial sustainability. He also offered the services of Mr. Tay to assist Cambodia and indeed any other government in raising co-financing resources.

11.3 Dr. Jacinto expressed concern regarding the absence of data in the ranking process, which resulted in low rank score for, sites with missing data. He indicated that it is not appropriate in his view to assign zero score to parameters without actual data, as lack of data did not necessarily indicate that the site was of low significance.

11.4 The Senior Expert provided clarification and commented that the ranking of proposed sites is one step in three agreed by the Regional Working Groups, who had themselves developed the listing of necessary parameters to be used in the cluster analysis and ranking. He felt that it would not be appropriate to change the process without having a solution to hand.

11.5 Ms. Kluephan, National Technical Focal Point from Thailand indicated that, all the Thai focal points of the Specialised Executing Agencies had tried very hard, not only to collect existing data, but also to ensure the quality of the data provided. She further indicated that one of the important achievements of this project was not merely the selection of a certain number of demonstration sites, but also the project development process that had provided very useful experience for use in other projects.

11.6 Dr. Chittima stated that the process of selection of demonstration sites is a very useful case study for such kinds of exercise in the future and stated that, even if there is no demonstration site selected in Thailand, she had already learnt much from her involvement in the project.

11.7 Mr. Sudariyono, the National Technical Focal Point from Indonesia, reminded the Committee that the importance of this project was not just in selecting several demonstration sites, but even more importantly, the fostering of regional co-operation in the environmental management of the South

China Sea. Just on this consideration alone, the participating countries had waited a long time for completion of negotiations before the project started, simply to ensure full involvement and co-operation of all the countries surrounding the South China Sea.

11.8 Mr. Sudariyono requested information about the implementation of the intern programme as agreed by the Project Steering Committee and the Senior Expert informed the meeting that, an Indonesian and a Thai intern had been appointed during the first half of this year and that immediately following this meeting he would be seeking nominations from Malaysia, Cambodia and China. He noted that, following the last meeting of the PSC, the intern programme had got off to a successful start with the two interns working in the PCU not only obtaining new knowledge and experience inside the UN system, but also contributing successfully to the work of the PCU.

12. ADOPTION OF THE REPORT OF THE MEETING

12.1 Professor Zhengguang, the Rapporteur presented the draft report of the meeting for consideration and adoption by the members. The participants reviewed the draft and amended and approved the report as it appears in this document. The Rapporteur expressed thanks to the PCU for their hard and effective work in preparing the draft and in facilitating the work of the committee during the meeting.

13. CLOSURE OF THE MEETING

13.1 The Chairperson invited the Project Director to make a few closing remarks. Dr. Pernetta expressed his appreciation for the hard and constructive work that all members had put in during the meeting, which had several difficult matters before it. He was pleased to note that, these issues had been discussed and resolved in an atmosphere of mutual co-operation. He expressed his thanks to the officers of the committee and to the secretarial staff who had contributed much to the meetings success.

13.2 Dr. Tuan, Chairperson expressed thanks to the members of the Committee, the PCU and the hotel staff for their support to the smooth operations of the meeting. There being no further business the meeting was closed at 1600 on 18th June 2003.

ANNEX 1

List of Participants

National Technical Focal Points

Cambodia

Mr. Koch Savath, Deputy Director General
Ministry of Environment
#48 Samdech Preah Sihanouk
Tonle Bassac, Chamkarmon
Phnom Penh, Cambodia

Tel: (855) 12 787088
Fax: (855 23) 215925, 212540
E-mail: ksavath@ncdproject.com

Indonesia

Mr. Sudariyono
Assistant the Deputy Minister of Environment
on Marine and Coastal Ecosystem Affairs
Ministry of Environment
IL D.I. Panjaitan, Kebon Nanas
Jakarta 13410, Indonesia

Tel: (62 21) 8590 5638; 0812 8080585
Fax: (62 21) 8590 4929
E-mail: pkepl@menlh.go.id
http://www.lautkita.org

Philippines

Dr. Gil Jacinto, Director
Marine Science Institute
University of the Philippines
1101 Dilman, Quezon City
Philippines

Tel: (632) 922 3959; 922 3962; 0917 790 7554
Fax: (632) 924 7678
E-mail: gilj@upmsi.ph

Viet Nam

Dr. Vo Si Tuan, Vice Director
Institute of Oceanography
01 Cau Da Street
Nha Trang City, Viet Nam

Tel: (84 58) 590205; 871134; 84 91 4017058
Fax: (84 58) 590034
E-mail: thuysinh@dng.vnn.vn

People's Republic of China

Mr. Huang Zhengguang, Senior Engineer
South China Institute of Environmental Sciences, SEPA
7 West Street, Yuancun
Guangzhou, 510655, China

Tel: (86 20) 85528748; (86) 13 809771424
Fax: (86 20) 85524439; 8552 8748
E-mail: georgehuang@scies.com.cn

Malaysia

Mr. Mohamad bin Jaafar
(Designated Alternate for NTFP)
Principal Assistant Director
Department of Environment (DOE)
Level 3-7, Block C4, Parcel C
Federal Government Administrative Centre
62662 Putrajaya, Malaysia

Tel: (603) 8885 8214; 8885 8200
Fax: (603) 8889 1045
E-mail: mj@jas.sains.my

Thailand

Ms. Kluephan Baitrakul
Acting Senior Environmental Expert
Office of Natural Resources and Environmental Policy and Planning
Ministry of Science, Technology and Environment
60/1 Soi Phibun Wattana 7, Rama VI Road
Bangkok 10400, Thailand

Tel: (662) 279 5202; 279 8088
Fax: (662) 279 8088
E-mail: scs_oepp@yahoo.com

Chairpersons of the Regional Working Groups

Dr. Sonjai Havanond
Chairperson RWG-M
Director, Mangrove & Wetlands Management Div.
Royal Forest Department
61 Phaholyothin Road, Bangkhen
Bangkok 10900, Thailand

Tel: (662) 5614292-3 ext. 420; 298 2058
Fax: (662) 298 2591
E-mail: sonjai_h@hotmail.com

Ms. Marlynn M. Mendoza
Chairperson RWG-W
Protected Areas and Wildlife Bureau
NAPWNC Compound, North Avenue
Diliman, Quezon City
Philippines 1101

Tel: (632) 925 8950; 9246031; 919 3247846
Fax: (632) 924 0109
E-mail: pacman@pawb.gov.ph;
mendozapawb@netscape.net

Dr. Chittima Aryuthaka
Rapporteur RWG-SG
Department of Marine Science
Faculty of Fisheries
Kasetsart University
Bangkhen, Bangkok 10900, Thailand

Tel: (66 2) 579 7610; 561 3469
Fax: (66 2) 561 4287
E-mail: ffiscta@ku.ac.th

Mr. Abdul Khalil bin Abdul Karim
Chairperson RWG-CR
Head of Marine Parks of Malaysia
Department of Fisheries Malaysia
Jalan Sultan Salahuddin
50628 Kuala Lumpur, Malaysia

Tel: (603) 2698 2500; DL: 2698 2700
Fax: (603) 2691 3199
E-mail: abkhalil@hotmail.com

Dr. Pham Van Ninh
Vice-Chairperson RWG-LbP
Director, Center for Marine Environment Survey
Research and Consultation
Institute of Mechanics, NCST
264 Dai Can Street
Hanoi, Viet Nam

Tel: (844) 832 6136; 832 6195
Fax: (844) 832 7903
E-mail: pvninh@im01.ac.vn

Mr. Noel Barut
Rapporteur RWG-F
National Fisheries Research and Development
Institute, Department of Agriculture
940 Kayumonggi, Press Building
Quezon Avenue
Quezon City, Philippines

Tel: (63 2) 373 6336; 372 5063; 0917 8385701
Fax: (63 2) 372 5063
E-mail: noel_barut@hotmail.com

Regional Expert Members

Dr. Anond Snidvongs, Director
Southeast Asia START Regional Centre
SWU Pathumwan 5 Building, 5th Floor
Henry Dunant Road
Bangkok 10330
Thailand

Tel: (66 2) 218 9464-7
Fax: (66 2) 251 9416
E-mail: anond@start.or.th

Professor Ong Jin-Eong
Centre for Marine and Coastal Studies
Universiti Sains Malaysia
11800 Penang
Malaysia

Tel: (604) 653 3888 ext. 2371/2375
016 4836240
Fax: (604) 657 2960
E-mail: jeong@usm.my

Resource Persons

Ms. Thanika Pancharat
Research Associate (GIS)
Southeast Asia START Regional Centre
SWU Pathumwan 5 Building, 5th Floor
Henry Dunant Road
Bangkok 10330, Thailand

Tel: (66 2) 218 9466
Fax: (66 2) 251 9416
E-mail: thanika@start.or.th

Ms. Jantira Rattanarat
Research Assistant
Southeast Asia START Regional Centre
SWU Pathumwan 5 Building, 5th Floor
Henry Dunant Road
Bangkok 10330, Thailand

Tel: (66 2) 218 9463
Fax: (66 2) 251 9416
E-mail: jantira@start.or.th

Observers

Dr. Nawarat Krairapanond, Chief
Coastal and Marine Resources Group, Natural Resources and Environmental Management Coordination Division
Office of Natural Resources and Environmental Policy and Planning, 60/1 Soi Phibun Wattana 7
Rama VI Road Bangkok 10400, Thailand

Tel: (66 2) 279 5202, 271 4232-8 ext. 236
Fax: (66 2) 279 8088
E-mail: neric@oepp.go.th; scs_oepp@yahoo.com

Ms. Mingkwan Thornsirikul
Senior Environmental Specialist
Coastal and Marine Resources Group, Natural Resources and Environmental Management Coordination Division
Office of Natural Resources and Environmental Policy and Planning, 60/1 Soi Phibun Wattana 7
Rama VI Road Bangkok 10400, Thailand

Tel: (66 2) 279 5202, 271 4232-8 ext. 321
Fax: (66 2) 279 8088
E-mail: scs_oepp@yahoo.com

Project Co-ordinating Unit Member

Dr. John Pernetta, Project Director
UNEP/GEF Project Co-ordinating Unit
United Nations Environment Programme
9th Floor, Block A, United Nations Building,
Rajdamnern Avenue
Bangkok 10200, Thailand

Tel: (66 2) 288 1886
Fax: (66 2) 281 2428; 288 1094
E-mail: pernetta@un.org

UNEP/GEF Project Co-ordinating Unit

Mr. Yihang Jiang, Senior Expert
UNEP/GEF Project Co-ordinating Unit
United Nations Environment Programme
United Nations Building, 9th Floor, Block A
Rajdamnern Avenue
Bangkok 10200, Thailand

Tel: (662) 288 2084
Fax: (662) 281 2428; 288 1094
E-mail: jiang.unescap@un.org

Mr. Boon Tiong Tay
Senior Advisor on Financial Sustainability
UNEP/GEF Project Co-ordinating Unit
United Nations Environment Programme
United Nations Building, 9th Floor, Block A
Rajdamnern Avenue
Bangkok 10200, Thailand

Tel: (662) 288 2609
Fax: (662) 281 2428; 288 1094
E-mail: tayb@un.org

Ms. Unchalee Kattachan, Programme Assistant
UNEP/GEF Project Co-ordinating Unit
United Nations Environment Programme
United Nations Building, 9th Floor, Block A
Rajdamnern Avenue
Bangkok 10200, Thailand

Tel: (662) 288 1670
Fax: (662) 281 2428; 288 1094
E-mail: kattachan.unescap@un.org

Ms. Sriskun Watanasab, Secretary
UNEP/GEF Project Co-ordinating Unit
United Nations Environment Programme
United Nations Building, 9th Floor, Block A
Rajdamnern Avenue
Bangkok 10200, Thailand

Tel: (662) 288 2608
Fax: (662) 281 2428; 288 1094
E-mail: watanasab@un.org

ANNEX 2

List of Documents

Discussion documents

UNEP/GEF/SCS/RSTC.3/1	Provisional Agenda.
UNEP/GEF/SCS/RSTC.3/2	Annotated Provisional Agenda.
UNEP/GEF/SCS/RSTC.3/3	Report of the Meeting.
UNEP/GEF/SCS/RSTC.3/4	Current Status Of Budgets And Reports From The Specialised Executing Agencies In The Participating Countries.
UNEP/GEF/SCS/RSTC.3/5	Estimated Co-financing Based on Information Provided in the Six Monthly Reports from the Specialised Executing Agencies.
UNEP/GEF/SCS/RSTC.3/6	A Draft Overall Strategy for the Mobilization of Additional Financial Resources.
UNEP/GEF/SCS/RSTC.3/7	Review of Site Characterisations and Cluster Analyses of Potential Demonstration Sites.
UNEP/GEF/SCS/RSTC.3/8	Review of the Ranking Indicators and Proposed Scoring Systems Developed by the Regional Working Groups.
UNEP/GEF/SCS/RSTC.3/9	Preliminary Ranking of Demonstration Sites.
UNEP/GEF/SCS/RSTC.3/10	Proposed Revisions to the Project Work Plan and Timetable to Accommodate Delays to Date.

Information documents

UNEP/GEF/SCS/RSTC.3/Inf.1	Provisional List of Participants.
UNEP/GEF/SCS/RSTC.3/Inf.2	Provisional List of Documents (this document).
UNEP/GEF/SCS/RSTC.3/Inf.3	Draft Programme.
UNEP/GEF/SCS/RSTC.3/Inf.4	Guidelines for the Preparation of Demonstration Site Proposals and Format for Use in their Presentation.
UNEP/GEF/SCS/RSTC.2/3	Second Meeting of the Regional Scientific and Technical Committee for the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Nha Trang, Viet Nam*, 11-13 December 2002.* UNEP/GEF/SCS/RSTC.2/3.
UNEP/GEF/SCS/PSC.2/3	Second Meeting of the Project Steering Committee for the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Hanoi, Viet Nam, *16 - 18 December 2002.* UNEP/GEF/SCS/ PSC.2/3.

UNEP/GEF/SCS/RWG-M.3/3	Third Meeting of the Regional Working Group for the Mangrove Component of the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Bali, Indonesia, *3 - 6 March 2003.* UNEP/GEF/SCS/RWG-M.3/3.
UNEP/GEF/SCS/RWG-W.3/3	Third Meeting of the Regional Working Group for the Wetland Sub-component of the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Bali, Indonesia, *4 - 7 March 2003.* UNEP/GEF/SCS/RWG-W.3/3.
UNEP/GEF/SCS/RWG-CR.3/3	Third Meeting of the Regional Working Group for the Coral Reef Sub-component of the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Kota Kinabalu, Malaysia, *24 - 27 March 2003.* UNEP/GEF/SCS/RWG-CR.3/3.
UNEP/GEF/SCS/RWG-SG.3/3	Third Meeting of the Regional Working Group for the Seagrass Sub-component of the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*". Report of the meeting, Kota Kinabalu, Malaysia, *25 - 28 March 2003.* UNEP/GEF/SCS/RWG-SG.3/3.
UNEP/GEF/SCS/RWG-F.3/3	Third Meeting of the Regional Working Group for the Fisheries Component of the UNEP/GEF Project *"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand".* Report of the meeting, Siem Reap, Cambodia, *29 April - 2 May 2003.* UNEP/GEF/SCS/RWG-F.3/3.

ANNEX 3

Agenda

1. OPENING OF THE MEETING
   - 1.1 Welcome address
   - 1.2 Introduction of members

2. ORGANISATION OF THE MEETING
   - 2.1 Election of Officers for 2003
   - 2.2 Documentation available to the meeting
   - 2.3 Programme of Work

3. ADOPTION OF THE MEETING AGENDA

4. REVIEW OF STATUS OF ADMINISTRATIVE REPORTS AND GOVERNMENT IN-KIND CO-FINANCING FOR THE YEAR 2002
   - 4.1 Status of administrative reports for the year 2002
   - 4.2 Estimates of Government in-kind co-financing for the year 2002

5. A DRAFT OVERALL STRATEGY FOR THE MOBILIZATION OF ADDITIONAL FINANCIAL RESOURCES

6. PRESENTATION OF THE REGIONAL GIS DATABASE BY SEA START RC

7. REVIEW OF SITE CHARACTERISATIONS AND CLUSTER ANALYSES OF POTENTIAL DEMONSTRATION SITES FOR THE HABITAT COMPONENT OF THE PROJECT

8. REVIEW OF THE RANKING INDICATORS AND PROPOSED SCORING SYSTEMS DEVELOPED BY THE REGIONAL WORKING GROUPS

9. PRELIMINARY RANKING OF POTENTIAL DEMONSTRATION SITES WITHIN CLUSTERS AND RECOMMENDATIONS TO FOCAL POINTS REGARDING PRELIMINARY PRIORITIES FOR HABITAT DEMONSTRATION SITES

10. WORK PLAN AND TIMETABLE FOR THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE

11. ANY OTHER BUSINESS

12. ADOPTION OF THE REPORT OF THE MEETING

13. CLOSURE OF THE MEETING

ANNEX 4

Estimated Co-Financing Based on Information Provided in the Six Monthly Reports from the Specialised Executing Agencies

Background

The Project Steering Committee during its first meeting in Bangkok, Thailand, 22-23rd October 2001 considered the issue of calculating in-kind government co-financing and adopted a cost coefficient of 70 US$ per person per day. This coefficient is estimated on the basis of Annual all-inclusive costs of US$16,000 per professional, per year and a working year of 230 days. Costs include salary, benefits and office support costs, paid by the Government or other institution for which the individual works. This coefficient was used in calculating total in-kind co-financing that was *de facto* accepted by the GEF when the final project document was approved.

In calculating total costs per component, an estimate was made of the time needed to complete the envisaged tasks and hence a dollar value was computed for each project component, for each country, and overall. The total envisaged in-kind co-financing from governments during the first year of project operation was US$ 1.4 million (Table 1).

Table 1 Summary of estimated, annual in-kind contribution, of experts and officials time, for the first year of project implementation (The full tables are contained in Annex 12 of the report of the first PSC meeting.)

	Original Estimates		
	One country		All countries
	Time (days)	US$	US$
National Co-ordination Total	208	14,560	101,920
Mangrove Total	653	46,235	323,645
Coral Reef Total	518	36,785	220,710
Seagrass Total	428	30,485	213,395
Wetlands Total	483	33,775	236,425
Fisheries Total	250	17,465	104,790
Pollution Total	340	23,765	166,355
Regional Co-ordination Total	50	3,500	24,500
Totals	**2,927**	**206,570**	**1,391,740**

Calculating In-kind Co-financing Retrospectively

Many of the elements included in the summary totals presented in Table 1 are not amenable to verification without accurate records of time spent. For example, the estimates of expert time spent in assembling and reviewing national data and information. Since time spent is not recorded in the public sector or by non-governmental organisations, a potential indicator might be parameters such as the volume and quality of outputs.

Some elements of the total in-kind co-financing can be accurately verified and these include for example, the time spent in meetings. The following analysis is based on figures derived from the six monthly progress reports, which provide data on the number and length of meetings and the number of participants.

Calculating Government In-kind Co-financing for 2002

Table 2, presents the information available to the PCU regarding in-kind co-financing derived from national co-ordination activities during 2002. Table 3, presents a comparison between the estimated

contributions contained in Annex 12 of the first PSC meeting report and the actual contributions derived from Table 2. It can be seen from Table 2 that a full estimate of costs cannot be made since insufficient information has been provided by some Focal Point Ministries regarding the meetings convened and the number of participants.

Table 2 In-kind, government co-financing, associated with national co-ordination in 2002, derived from meeting participation at the national level using the agreed cost coefficient (US$70 per person-day). (n/a = contribution cannot be calculated due to missing information).

	NTWG Meetings		IMC Meetings		6-Month Totals		TOTAL
	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	
	US$	US$	US$	US$	US$	US$	US$
Cambodia	**n/a**	**n/a**	2,450	2,310	2,450	2,310	**4,760**
China2	3 mtgs	1mtg	0	0	**n/a**	**n/a**	**n/a**
Indonesia	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Malaysia	0	0	0	0	0	0	**0**
Philippines	6 mtgs	1mtg	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Thailand	1,470	3,010	0	3,640	1,470	6,650	**8,120**
Viet Nam	1,610	3,220	1,890	5,460	3,500	8,680	**12,180**
Totals	**3,080**	**6,230**	**4,340**	**11,410**	**7,420**	**17,640**	**25,060**

Table 3 Comparison of actual, in-kind government co-financing in 2002, associated with national co-ordination, derived from meeting participation at the national level in 2002 using the agreed cost coefficient (US$ 70 per person-day) compared with the original estimates based on 12 months of project implementation.

	IMC Meetings		NTWG Meetings		TOTAL		
	Estimated[3]	Actual	Estimated	Actual	Estimated		Actual
	US$	US$	US$	US$	1 year	10.5 mths	US$
Cambodia	*3,360*	4,760	*8,400*	0	*11,760*	*10,290*	4,760
China	*3,360*	**n/a**	*8,400*	**n/a**	*11,760*	*10,290*	0
Indonesia	*3,360*	0	*8,400*	0	*11,760*	*10,290*	0
Malaysia	*3,360*	0	*8,400*	0	*11,760*	*10,290*	0
Philippines	*3,360*	**n/a**	*8,400*	**n/a**	*11,760*	*10,290*	0
Thailand	*3,360*	3,640	*8,400*	4,480	*11,760*	*10,290*	8,120
Viet Nam	*3,360*	7,350	*8,400*	4,830	*11,760*	*10,290*	12,180
Total Yr. 1	***23,520***	**15,750**	***58,800***	**9,310**	**82,320**	**72,030**	**25,060**

Table 3, demonstrates that only one country (Viet Nam) exceeded the estimated in-kind contribution, for national co-ordination, although data are lacking from three countries and one, Malaysia did not commence project execution until 2003. Since the project can only be deemed to have commenced from the national perspective, following disbursement of the first tranche of funds, the actual time of implementation in 2002 was 10.5 months rather than the full 12 months. An estimate of in-kind contributions for a period of 10.5 months is included for comparison.

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[2] *China & Philippines did not report the number of participants in their meetings hence the co-financing cannot be calculated at this time.*

[3] *Estimates based on a full 12 months of project execution.*

Table 4 In-kind government co-financing of project components in 2002 derived from meeting participation at the national level in 2002 using the agreed cost coefficient (US$70 per person-day).

	Mangrove		Wetlands		Coral Reefs		Sea Grasses		Fisheries		Land-based Pollution		6-Month Totals		TOTAL
	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	1st 6mths	2nd 6mths	
	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$
Cambodia	3,570 [1]	5,950	3,570 [1]	5,950	1,120 [2]	2,310	1,120 [2]	2,310	840	700	2,870	9,380	13,090	26,600	**39,690**
China	3,080	4,690	3,850	3,010	note 3	note 3	1,400	2,030	note 3	note 3	2,100	3,850	10,430	13,580	**24,010**
Indonesia	12,810	9,240	0	4,620	2,870	2,870	10,570	4,340	5,600	0	4,270	4,480	36,120	25,550	**61,670**
Malaysia	note 4	note 4	0	0	0	0	0	0	note 4	note 4	0	0	0	0	**0**
Philippines	0	0	0	1,960	560	910	490	1,960	0	2,380	0	4,340	1,050	11,550	**12,600**
Thailand	24,080	101,360	980	1,890	4,130	4,900	1,330	3,080	1,120	0	3,010	2,380	34,650	113,610	**148,260**
Viet Nam	5,600	8,120	4,970	1,120	2,100	1,400	3,570	1,120	1,400	20,160	11,340	2,800	28,980	34,720	**63,700**
Totals	**49,140**	**129,360**	**9,800**	**13,370**	**10,780**	**12,390**	**18,480**	**14,840**	**8,960**	**23,240**	**23,590**	**27,230**	**124,320**	**225,610**	**349,930**

Footnotes:
1. Cambodia: Wetlands and Mangroves meetings were combined but the costs are assigned equally across both components.
2. Cambodia: Coral Reefs and Sea Grasses meetings were combined but the costs are assigned equally across both components.
3. China: Not involved in the Coral Reefs and Fisheries sub-components.
4. Malaysia: MOUs for Fisheries and Mangroves not signed and remaining MOU's only signed in the last quarter of 2002.

Table 5 Comparison of actual in-kind government co-financing in 2002, associated with individual project components and sub-components compared with estimates agreed during the first Project Steering Committee meeting.

	Mangrove		Wetlands		Coral Reefs		Sea grass		Fisheries		Pollution		Total Components		
	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated		Actual
	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$	US$ *12 Mths*	US$ *10.5 mths*	US$
Cambodia	*9,800*	9,520	*9,800*	9,520	*9,800*	3,430	*9,800*	3,430	*5,040*	1,540	*5,040*	12,250	*49,280*	*43,120*	39,690
China	*9,800*	7,770	*9,800*	6,860	*0*	0	*9,800*	3,430	*0*	0	*5,040*	5,950	*34,440*	*30,135*	24,010
Indonesia	*9,800*	22,050	*9,800*	4,620	*9,800*	5,740	*9,800*	14,910	*5,040*	5,600	*5,040*	8,750	*49,280*	*43,120*	61,670
Malaysia	*9,800*	0	*9,800*	0	*9,800*	0	*9,800*	0	*5,040*	0	*5,040*	0	*49,280*	*43,120*	0
Philippines	*9,800*	0	*9,800*	1,960	*9,800*	1,470	*9,800*	2,450	*5,040*	2,380	*5,040*	4,340	*49,280*	*43,120*	12,600
Thailand	*9,800*	125,440	*9,800*	2,870	*9,800*	9,030	*9,800*	4,410	*5,040*	1,120	*5,040*	5,390	*49,280*	*43,120*	148,260
Viet Nam	*9,800*	13,720	*9,800*	6,090	*9,800*	3,500	*9,800*	4,690	*5,040*	21,560	*5,040*	14,140	*49,280*	*43,120*	63,700
Total Yr. 1	***68,600***	**178,500**	***68,600***	**31,920**	***58,800***	**23,170**	***68,600***	**33,320**	***30,240***	**32,200**	***35,280***	**50,820**	***330,120***	***288,855***	**349,930**

Footnotes: *The same footnotes as those relating to Table 4 relate to the entries in this table.*

Table 4, shows a breakdown of in-kind co-financing by project component, by country, and by half year. It can be seen that, the totals for the second half are in all cases, with the exception of the seagrass component, greater than for the first half. This reflects the slow-start up of project activities following disbursement of the first tranche of funds in February and March.

Table 5, shows a comparison between the originally estimated in-kind co-financing based on 12 months of project execution, and the actual co-financing realised during 2002 in respect of the national level meetings, convened over 10.5 months. Again Malaysia did not commence activities until 2003, although it was originally anticipated that they would commence in phase with the other participating countries. This table shows that, three of the seven countries (Indonesia, Thailand and Viet Nam) exceeded the estimated in-kind contributions, in one case by a factor of three.

Of some interest is the considerable difference between the total co-financing invested in 2002 in the mangrove component, compared with the original estimate. The figure for Thailand is perhaps too high since it includes a total value for 396 persons participating in a 3 day national meeting (US $83,160). Even with that figure removed however, the balance of US $95,340 for the mangrove component exceeds the estimate for the year by 28%. Similarly the actual co-financing in the Land-based Pollution component exceeds the estimate by 31% while that for fisheries exceeds the estimate by 6%. It should be noted that the original estimates included participation of Malaysia, if the original estimates are reduced to exclude Malaysia then the co-financing in these components in 2002 was proportionately even greater. In contrast co-financing of the wetlands, coral reef, and seagrass components was 46%, 39% and 48% of the original estimates for one full year of operation. Again even with the participation of Malaysia removed from the estimate the actual value of the in-kind co-financing realised was less than the estimate.

Conclusions

The elements of the total co-financing that can be objectively verified, outlined above, total US$ 412,440 or 39.6% of the total estimated co-financing in Year one. In addition, the contractual requirements for 25% of the time of each component co-ordinator, may be assumed, to have been delivered since the substantive outputs have themselves been delivered. This component of the in-kind co-financing totals 161,000 or 11.6% of the total.

While the total value of the co-financing for the national meetings, related to the individual components, of US$349,930 exceeds the original estimate of US$330,120 it has not been contributed in the manner originally envisaged. Since Malaysia did not participate in national level activities during 2002 it's co-financing over this period was zero. This means that, the co-financing was in fact, contributed by only six of the seven participating countries.

Consideration of the content of these tables suggests that the interest and commitment to project activities vary considerably between countries, and between components.

ANNEX 5

A Draft Overall Strategy for the Mobilization of Additional Financial Resources

Introduction

This paper outlines a draft overall strategy for the mobilization of additional resources for the UNEP-GEF "*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*" project (SCS Project). This resource mobilization strategy is aimed at securing appropriate funding so as to ensure the sustainability of the benefits of the project through:

- Co-financing to support the initiation and implementation of an additional 15 demonstration sites[4] to the 9 sites currently covered by the project grant; and
- Generation of revenue streams by the demonstration sites to support (i) continued operation of the demonstration sites and associated activities and (ii) regional level coordination functions; after the completion of the project and depletion of the project grant.

Background

The 1st Project Steering Committee (PSC) Meeting in Bangkok in October 2001 recognized the importance of mechanisms that could be used to ensure sustainability of the benefits following completion of the project, beyond the life of the GEF grant funds[5]. At the 2nd PSC Meeting in December 2002 in Hanoi, the Committee took note of the discussions that were presented with regards to the development of mechanisms to secure financial sustainability and endorsed the outline of a strategy that had been proposed[6]. Under this strategy, the SCS Project's Project Coordinating Unit (PCU) would (i) prepare, for review by the Regional Scientific and Technical Committee (RSTC) at its Third Meeting, a Draft Overall Strategy for raising the co-financing required under the project; (ii) actively initiate actions within the framework of that strategy; and (iii) finalize the Draft Overall Strategy for adoption by the PSC at its Third Meeting.

Objectives of Draft Overall Strategy

The draft overall strategy being presented in this paper is aimed at achieving the following objectives by the 3rd PSC Meeting:

a) A Plan of Action for the mobilization of resources to be presented for consideration by the Project Steering Committee, that can be applied to the shortlist of identified demonstration sites; and

b) A Partnership Workshop to be convened, within the framework of the Regional Scientific Conference, with the aim of providing a resource mobilization forum for interested stakeholders and potential funding sources.

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[4] *In brief, a "demonstration site" is an area of natural habitat used to "demonstrate" actions that either (i) "reverse" environmental degradation or (ii) will make obvious, methods of reducing degradation trends, if these actions are adopted and applied at a wider scale - UNEP/GEF/SCS/RSTC.2/10 "Guidance to the PSSC on the Nature and Types of Potential Demonstration Sites to be established within the Framework of the UNEP/GEF Project".*

[5] *UNEP/GEF/SCS/PSC.1/3 "Report of the First Project Steering Committee Meeting" – paragraph 10.1.1.*

[6] *UNEP/GEF/SCS/PSC.2/3 "Report of the Second Project Steering Committee Meeting" – paragraphs 8.4.1/2.*

Draft Overall Strategic Approach

The following proposed approach, subject to the consideration and comments of the RSTC at its Third Meeting, establishes the framework for the PCU's work program that will achieve the objectives of the draft overall strategy outlined above:

I. Identify and define the Strategic Resource Mobilization Components:

a) Generic parameters, characteristics and profiles of *Regional-Level Activities and Demonstration Site Activities* as a basis for determining propensity/potentiality for financial sustainability (i.e., attracting funds or generating revenue); also, identifying relationship/issues between funding sources and demonstration sites;

b) A *Funding Framework* to provide a structural basis for identifying and determining the nature and magnitude of one-time start-up and recurring annual requirements;

c) *Stakeholders/Potential Funding Sources/Interested Parties* with probability of involvement in the demonstration site and activities – for example, national agencies; local government agencies; civil society organizations; donor countries; multi-lateral and bi-lateral agencies; regional banks; foundations; private sector organization; academia; etc. (preliminary discussion detailed in Annex 1);

d) Identify and define possible *Funding Strategies/Financing Mechanisms* - fund-raising; permanent/sinking endowment funds; direct contributions; cost-sharing; revenue stream generation; etc. (preliminary discussion detailed in Annex 2).

II. Design and Implement Partnership Workshop:

a) Establish workshop objectives/desired outcome.

b) Design agenda to facilitate delivery of objectives/desired outcome.

c) Prepare relevant discussion notes/data to provide basis for workshop discussions.

d) Identify relevant participants (e.g., stakeholders, representatives from potential donor countries, multi/bi-lateral funding agencies, foundations; and other interested parties) and conduct exploratory enquiries to better assure success and effectiveness of workshop.

e) Organize workshop, invite participants, hold workshop.

f) Report on outcome of workshop to Project Steering Committee at its Third Meeting.

Actions to be Taken by the Regional Scientific and Technical Committee

In considering and commenting on this paper, the RSTC can strengthen and reinforce their respective government's commitment and participation, and contribute substantially to the progress of the SCS Project's resource mobilization effort, by providing the previously agreed input necessary to effectively and successfully implement the proposed Draft Overall Strategy. Accordingly, the RSTC members are requested to:

a) Report on the progress of the financial sustainability analysis and risk assessment for the various potential demonstration sites that are being considered, as required by the established format for the preparation of demonstration site proposals[7];

b) Report on the progress with regards to initiating the inclusion of a "demonstration training" budget line-item in their respective ministries in-country budget planning for 2004[8];

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[7] *UNEP/GEF/SCS/PSC.2/3 "Proposals for the Development of Mechanisms to secure Financial Sustainability".*

[8] *UNEP/GEF/SCS/RSTC.2/10 "Guidance to the PSC on the Nature and Types of Potential Demonstration Sites to be established within the Framework of the UNEP/GEF Project".*

c) Report on the extent of ongoing co-financing discussions/negotiations with the relevant ministries of their respective home governments to mobilize additional resources in the form of country co-financing[9]; and, based on the experience and events to date:

   i. Define and clarify RSTC's role and responsibilities, in particular, the National Technical Focal Points, in mobilizing additional resources in the form of country co-financing from their respective home governments; and

   ii. Identify appropriate funding deliverables milestones and schedule.

d) Provide comments and guidance on the objective/agenda of the Partnership Workshop, taking into account the objective/agenda of the Regional Scientific Conference so as to determine any possible synergistic objectives and activities.

Appendix 1

Stakeholders/Potential Funding Sources/Interested Parties

Definitions

Stakeholders are individuals, agencies and organizations (public and private) with an existing or potential vested interest in or association with the demonstration site or the activities of those sites. A vested interest/association typically involves a beneficial/favorable outcome/impact, which may be financial and/or non-financial, for the stakeholder (e.g., national agencies; local government agencies; civil society organizations, etc.). In some instances, stakeholders would include individuals, agencies or organizations (public and private) that may be affected adversely, financially and/or non-financially, by any environmental legislation or initiatives.

Potential Funding Sources: Individuals, agencies and organizations able and willing to provide funding for the project (e.g., donor governments; multi-lateral and bi-lateral agencies; regional banks; foundations; private sector organization; etc.) or participate in developing and implementing financing mechanisms.

Interested Parties are individuals, agencies or organizations that may not have a vested interest in a demonstration site/activities or are not in a position to provide funds but are able or willing to support the concept and practice of the demonstration sites and their activities.

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[9] *UNEP/GEF/SCS/PSC.2/3 "Proposals for the Development of Mechanisms to secure Financial Sustainability".*

Appendix 2

Funding Strategy/Financing Mechanism

1. A successful funding strategy must establish a participatory process to bring together, engage and involve a wide range of stakeholders and representatives from the public and private sectors in providing input and participation through the process of planning, design and implementation; and through focused events such as workshops and meetings. Key elements in funding strategy will include: (i) identification of appropriate financing mechanisms to diversify existing funding sources; (ii) evaluation of existing available funding levels among sites; (iii) site specific review of management and operational need and associated costs; (iv) pilot testing of selected financing mechanisms in the field; and (v) implementation of the strategy. A funding strategy should ideally work cooperatively with government agencies and support a national strategy, if this exists, as this brings the possible advantages of increased legitimacy, complementary funding from government budgets, and support in fundraising.

2. Funding can come from international, national and local sources, both public and private sector, with appropriate policies and incentives. A funding strategy should count on continued, focused external support from developed nations, multilateral agencies and international NGOs because of their respective special mandates and interests. A funding strategy must realistically recognize that implementation will have significant start-up/operating costs and might sometimes take a number of years to achieve stated goals.

Fund-raising

3. A fund-raising infrastructure can be established by identifying and building a base of donors and partners (e.g., private foundations, bilateral and multilateral agencies, private sectors and individuals) which ensures (i) a broad diversity of donors and partners; (ii) recognition of their vested interests; and (iii) their full involvement and participation. A successful fundraising strategy should consider:

- Preparation of well-substantiated “business plans” or proposals justifying the need for and utilization of the funding sought;
- Partnerships with expert/experienced international fundraising international institutions (e.g., WWF, TNC);
- Use of fundraising experts/consultants/agents (e.g., The Nature Conservancy) especially in the private sector to research what funds are available and to solicit and encourage their participation; and
- Capitalizing on the experience of other organizations/projects in identifying available mechanisms for attracting additional funding, including performing a market study of potential donors.

Permanent or Sinking Endowment Fund

4. A contemporary funding strategy has been the establishment of a conservation trust fund, whereby donor governments and organizations contribute agreed amounts to a pool of money (a fund), which is placed under the responsibility of professional investment and asset management to be invested in order to generate a desired rate of return annually in the form of investment income or interest. In the case of a permanent fund, such annual returns typically should be sufficient to at least cover the annual recurring expenditures; thus leaving the capital amount intact. In the case of a sinking fund, both the capital amount and investment returns can be and are applied to the target expenditures until the fund is depleted. Contributions to the fund can be based on a one-time up-front contribution or annual contributions or ad-hoc contributions or a combination thereof; keeping in consideration the level of capital investment required. Excess investment income can also be re-invested as capital.

5. Experience has demonstrated that, to assure the successful implementation of an endowment fund financing mechanism, such a fund should be:

- Country-driven with country ownership being reinforced with appropriate governance structures;
- Strategically focused and participate in developing national conservation strategies, to work constructively with other public and private agencies to develop flexible, efficient and effective management approaches and to nurture other organization and communities in becoming involved;
- Established by a driving force initiated and sustained by national governments, local conservation leaders, international conservation NGOs; and
- Designed and operated with greater participation of stakeholders from different sectors (NGOs, donors, government agencies, etc.), thus demonstrating stronger ownership, with the aim of establishing an efficient fund management model - for managing endowment funds and ensuring their long term sustainability.

6. The design and establishment of a trust fund and its subsequent continuing efficient and effective operation require:

- A governance structure and organizational support that enable the fund to proactively influence and function in its operational circumstances; monitor and report on its results and learn from its experiences; maintain credible and transparent policies and procedures; and support participatory/partnership approaches to sustainable development;
- Operational/technical/financial/administrative capacity (i.e., staffing, facilities, resources, etc.) to establish program strategy, activity selection, monitoring and evaluation, fund-raising and communications; and effective, efficient and transparent mechanisms for management, administrative, legal, financial and disbursement activities; and
- Established competent responsibility for management of the fund, investment of the capital, accounting and control of its finances; performance of its asset management; and disbursement of monies to eligible activities.

7. The financial viability of a permanent endowment trust fund is dependent upon and driven by a substantially adequate capital amount that could assure an annual investment return sufficient to provide economically for recurrent annual expenditures so as to prevent depletion of the capital fund; this would not be required of a sinking endowment fund which has a defined life span. Thus, the successful implementation and operation of a permanent endowment trust fund demands an asset management strategy that is geared towards maximization of income and preservation of capital over the long term; necessitating:

- Capitalization of the fund at a level sufficient to provide the required annual investment income that would cover the annual recurrent costs; thus, in order to do so, the amount of the annual recurrent costs (i.e., how much is needed per site) has to be correctly estimated and an expected rate of return determined; and
- An investment strategy, asset allocation, management polices and rules, selection and performance criteria for investment/asset managers (to define investment objectives and strategy; make day-to-day investment decisions, provide custodial services), portfolio performance measures[10] and monitoring.

8. The costs of operating an endowment trust fund has to be borne by the investment income generated by the fund. Funds typically experience the following primary categories of costs:

[10] *IBRD has developed a asset management and asset manager selection model which includes the development of investment guidelines that reflect a conservative risk strategy and portfolio diversification; competitive international selection of experienced professional asset managers; and regular active oversight of investment performance compared to standard benchmarks, by the fund's Board of Directors.*

- Start-up costs, which are incurred primarily in the first two years, include establishment expenses (e.g., consultations, board orientation, legal costs), training of personnel, and development of governing policies, systems and processes. As much as possible, the fund's start-up and the first year recurrent costs should be from non-endowment funds to avoid pre-mature consumption of endowment funds.

- Annual recurrent operating costs, which generally range from 20% to 25% of annual investment income, are the day-to-day costs of doing business; e.g., board meeting, fund management and administration, investment and asset management, endowment management, program management, corporate and program activities (e.g., development of operational strategies and policies, coordination with other agencies or funds, communications, outreach, fundraising, etc.).

9. In some cases, funds also incur program support costs where they become involved in such activities as capacity building of recipient organizations, dissemination of technical expertise, knowledge and experience.

10. A study[11] carried out by the GEF's Monitoring and Evaluation team recommended that four conditions are essential for the creation and/or capitalization of conservation trust funds:

- The environmental issue to be addressed requires a long-term commitment – at least 10-15 years;

- There is active government support - not just agreement – for creating a mixed public-private mechanism that will function beyond direct government control;

- There is a critical mass of people from diverse sectors of society who can work together despite their different approaches to conservation and sustainable development; and

- There is a basic fabric of legal and financial practices and supporting institutions (including banking, auditing and contracting) in which people have confidence.

Direct (Non-endowment) Contributions to Finance Recurrent Costs

11. Donors who are unable or unwilling to contribute or commit funds to establish an endowment trust fund, for their own reasons, may still be able or willing to provide supplementary funding or finance recurrent costs through direct contributions. These donors can therefore still participate in the funding process through cash contributions and/or non-cash contributions/services; or agreed cost sharing of project costs or annual recurrent expenditures.

Revenue-Steam/Income Generation

12. Certain factors (social, economic, geographical, financial) governing a site or a site's activities may support the generation of a revenue stream or income. This revenue stream or income provides a source of funds that can be used to cover the annual recurrent costs of maintaining that site and its activities. In cases where an endowment fund also exists, such revenue can complement the fund's investment income in sustaining these sites. As revenue-stream generation matures, such sites can "graduate" to relying fully on such revenue thus freeing up the endowment fund resources. Where possible, ideally, revenue stream generation at the sites should also enhance local economic, social and financial sustainability.

13. Depending on the site-specific parameters and activities, such revenue-stream generation or cost–recovery financing mechanism can include:

- Event-based, cause-related fundraising campaign;

- Nature-oriented tourism;

- Environmental services and licenses fees;

[11] *"Evaluation of Experience with Conservation Trust Funds" November 1998.*

- Individual and corporate memberships of environment or community-based organizations;
- User-fees, service-fees, surcharges for identified benefits and desired services to community and its people (e.g., mining, timber, water, etc.);
- Fees for eco-labeling;
- Park entrance fees, tourist taxes, concession arrangements;
- Incentives for local charitable contributions to conservation activities;
- Credit and investment finance for environmentally friendly small and medium private enterprises;
- Economically viable opportunities for private sector activities;
- Income tax deduction for donations;
- Incentives for personal or corporate contributions to non-profit conservation organizations; and
- Donations from private sector located close to or connected to demonstration sites or activities in return for endorsements.

ANNEX 6

Data and Information Inputs to the Regional GIS Database Maintained by SEA START RC on Behalf of the Project

Background

During 2002/2003 the work plans of each Specialised executing Agency and National Committee, sub-committee or working group include the provision of data and information to the Regional System managed by START on behalf of the project.

Present situation

The following tables provide an overview of the information provided to SEA START RC as of the middle of June 2003. Table 1 provides a checklist of the GIS related data that have been provided by country and by component, whilst Table 2 provides information on the submission of meta-database entries.

Figures 1 to 4 provide location maps for the potential demonstration sites in each habitat sub-component entered into the regional GIS database.

Table 1 GIS Data Received. (Site Data)

Component	Country						
	Cambodia	China	Indonesia	Malaysia	Philippines	Thailand	Vietnam
DISTRIBUTION/LOCATION							
Coral reefs							
Fishery							
Mangrove							
Pollution							
Seagrass							
Wetland			( )				( )
AUXILIARY DATA/GIS							
Admin.							
Shoreline							

( ) Without geographic coordinates

Table 2 Metadata Received.

Component	Country						
	Cambodia	China	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Coral reefs						(14)	
Fishery							
Mangrove							
Pollution						(19)	
Seagrass						(6)	
Wetland						(11)	

Figure 1 Location of Potential Mangrove demonstration sites bordering the South China Sea.

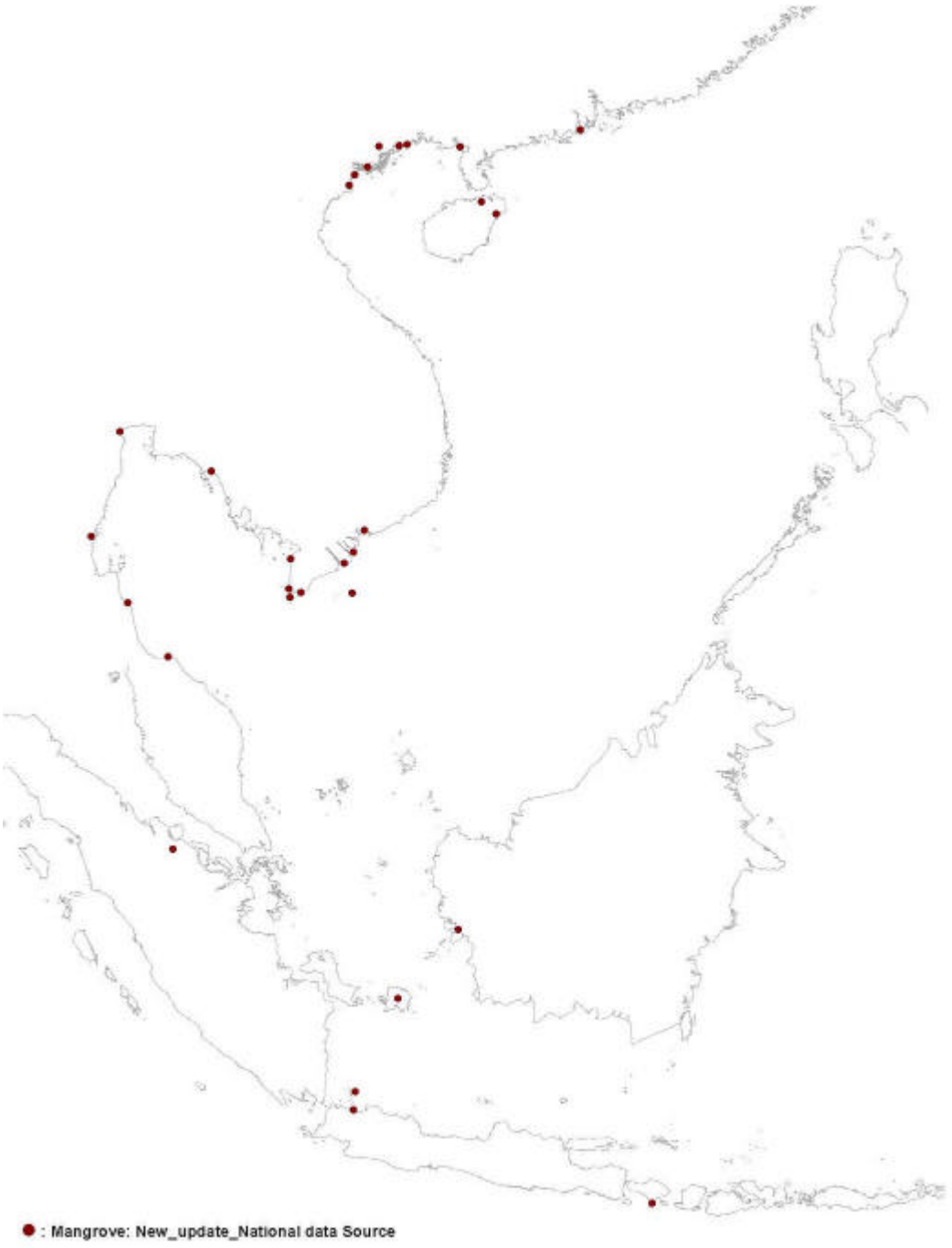


Figure 2 Location of Potential Coral Reef demonstration sites bordering the South China Sea.

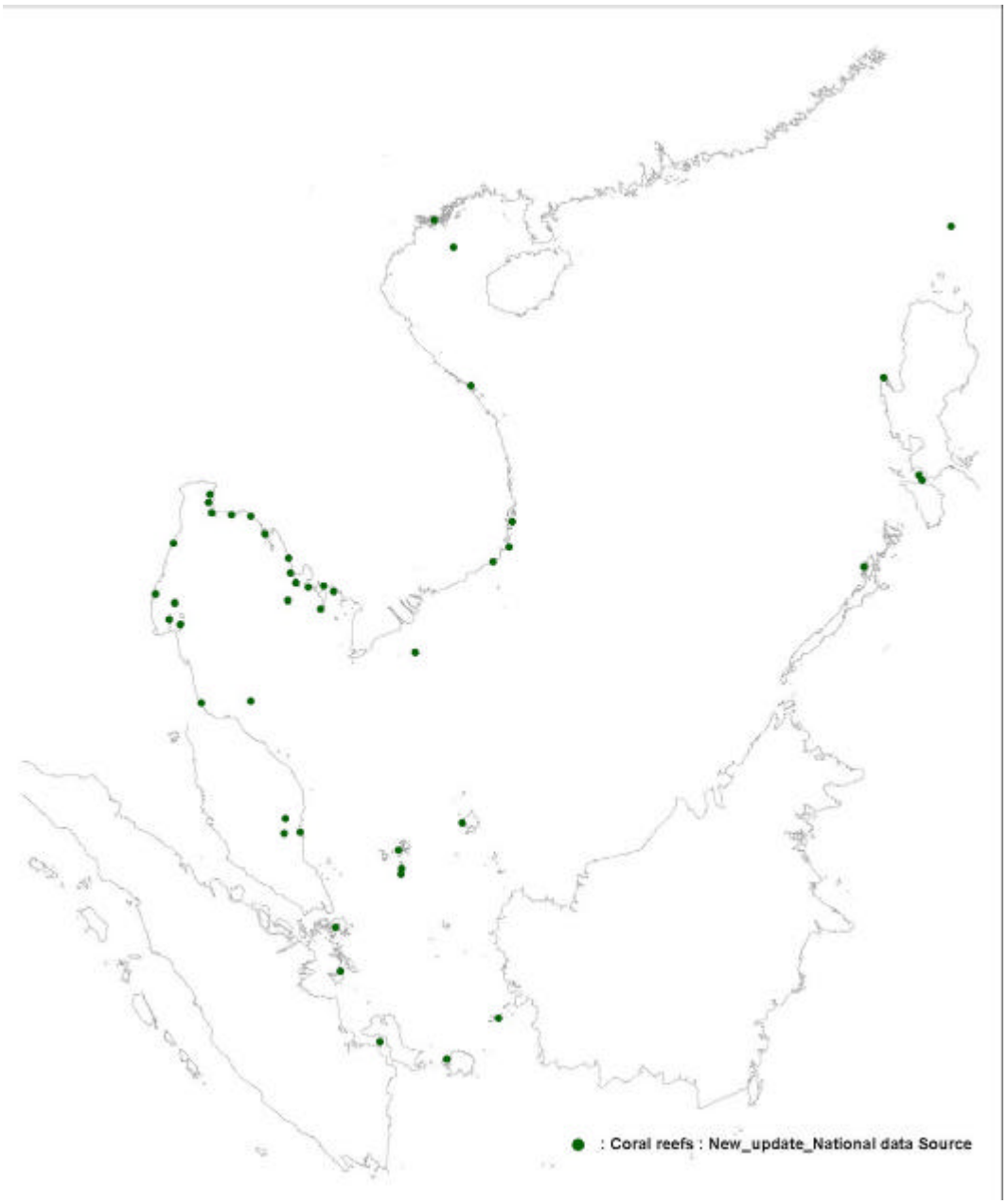


Figure 3 Location of Potential Seagrass demonstration sites bordering the South China Sea.

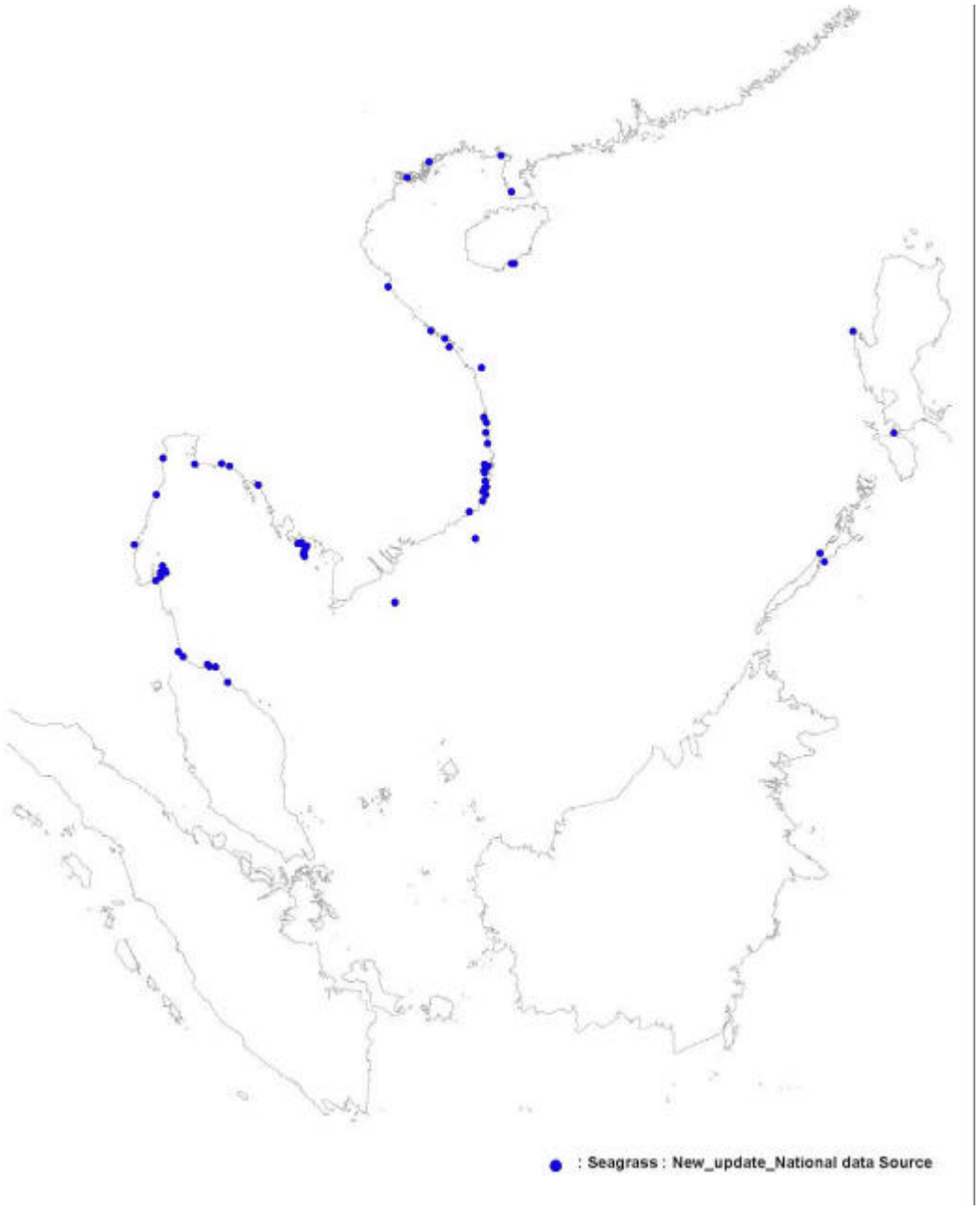
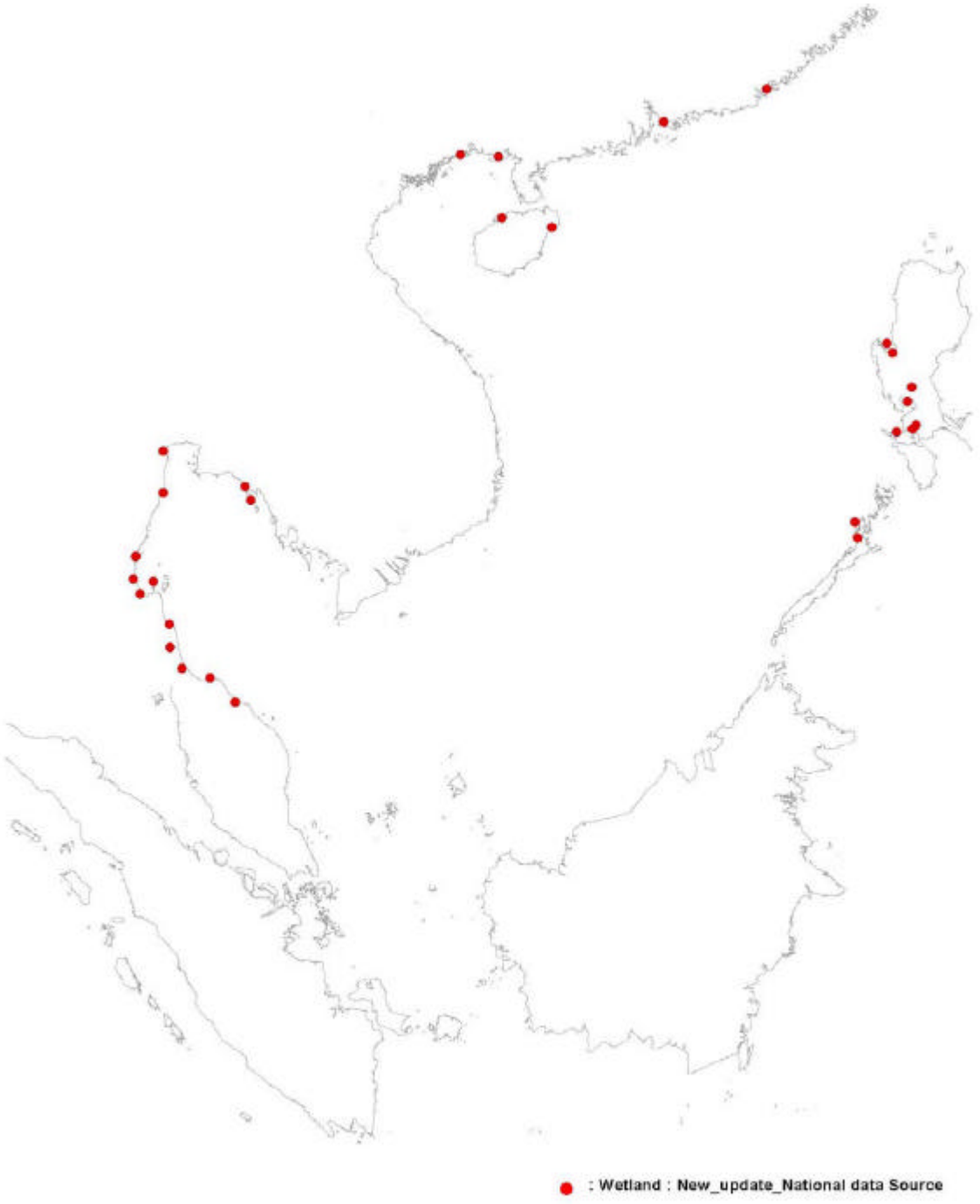


Figure 4 Location of Potential Wetland demonstration sites bordering the South China Sea.



ANNEX 7

Review of Site Characterisations and Cluster Analyses of Potential Demonstration Sites

Background

During the third meeting of the regional working groups a preliminary cluster exercise was conducted using the available data assembled in the site characterisations and GIS questionnaires available to those meetings. The cluster programme used was that contained in the SPSS[12] package, which does not permit the inclusion, of binary or nominal data, neither does it allow missing data, cases with missing data are automatically dropped from the analysis. Various transformations were applied to the data sets individually and the resultant clusters reviewed by the groups. These analyses can be seen in the annexes to the meeting reports.

The RWGs discussed and agreed upon those parameters that should be included in the final analysis and subsequent to those meetings further data and amendments were supplied by the focal points, which have been incorporated into the data sets presented in this document.

The procedures used in the present cluster analysis involve the application of the Clustan Graphic6 software programme, which offers a number of advantages over the SPSS programme as follows:

- Missing data are accommodated in the programme;
- Gower's Index of Similarity can be used when non-metric, non continuous, variables are included in the data set; and,
- Various additional procedures are included which are not available in SPSS (outlier analysis etc).

The present data sets consist solely of continuous data. It was decided to ensure equal weighting of all the parameters in each analysis. Hence rather than transformation of individual parameters using specific transformations which results in a *de facto* weighting of non transformed variables, all data were transformed to z scores. The z score converts each variable to zero mean and unit variance. The cluster programme selected, used Euclidean distance and median proximity.[13]

MANGROVES

Present data set

The present analysis is based on the data set contained in Table 1 which includes data for a total of 36 sites and 12 parameters. In all except a few instances these data are substantiated by detailed listings of the species known to occur at the sites provided as part of the site characterisations. Cells with missing data are dark shaded. It can be seen that, the entire matrix lacks values in 25% of the cells.

Table 2 presents the available data if only the sites lacking 50% of the entries are dropped from the analysis. This results in a matrix of 31 sites and 12 parameters with 17.6% of the data missing. Although 17.6% missing data is rather high - the greater the proportion of missing data the weaker the cluster - it was decided to accept this level for the purposes of the present analysis. The data summary table for the analysis is presented in Table 3.

Results

The outcome of the cluster analysis is presented in Figure 1 which suggests the presence of three clusters of sites (light shading) with two outliers. The two outliers are, Con Dao and Fangchenggang.

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[12] *Statistical Package for Social Scientists.*

[13] *Average linkage between two clusters is computed as the average of the proximities between all pairs of cases, one case from each cluster. Mean proximity is computed as the average of the proximities between all pairs of cases in the two clusters whilst the denominator is the number of within cluster proximities.*

Examination of the data in Table 1 shows that, Con Dao has the highest number of formations or, species associations (6) of any of the sites listed, whilst Fangchenggang has an extremely high density of species, which probably represents seedlings as well as saplings and mature trees. These data points need to be verified and confirmed by the respective focal points.

The lower cluster in the figure contains all three Cambodian sites and reflects almost certainly the comparatively enormous area encompassed by each site together with the more limited data set (7 or 8 parameters only) that can be used to compare these with the remaining sites. These figures for area are unlikely to be correct and require independent verification.

It seems likely therefore that, data verification and correction will result in the outliers and the Cambodian sites becoming integrated into the remaining two clusters. Closer examination of the upper cluster shows that it is in reality two separate clusters linked almost at the same level as they are to the middle cluster. It is suggested that ranking of sites should be based on these three clusters.

Figure 1 Euclidean Distance for potential mangrove demonstration sites based on Mean Proximity, using Z score transformation of all 12 parameters.

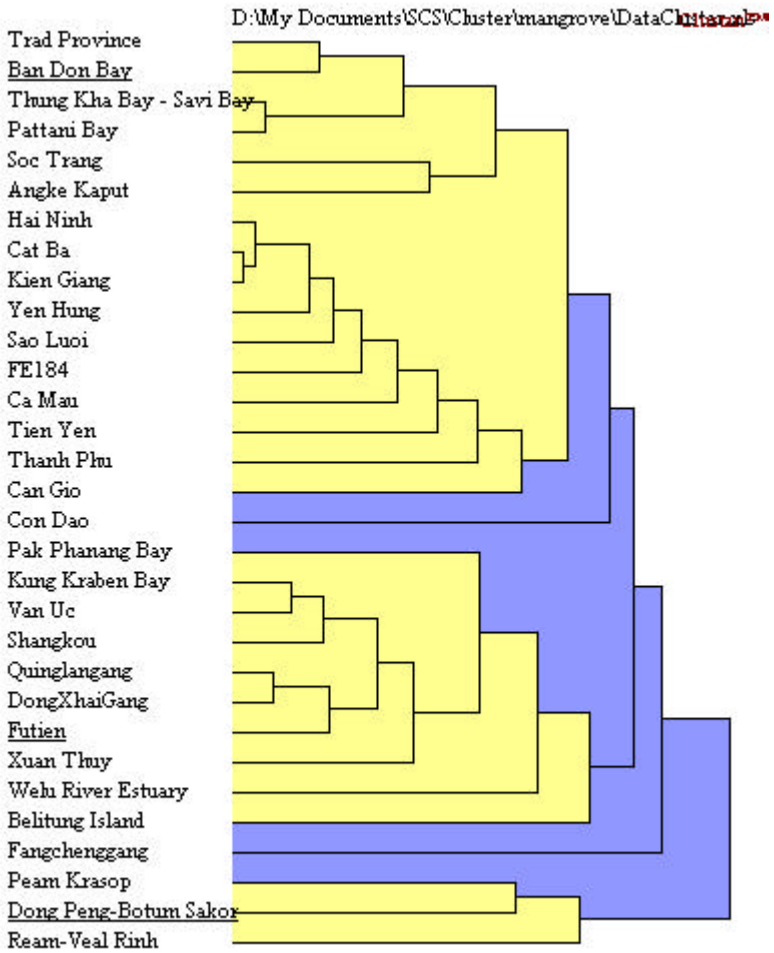

Table 1 Agreed parameters for cluster analysis of Mangrove, potential demonstration sites. Dark Shading indicates missing values.

Site	Present Area	Zones - Spp Associations	Change in area	Trees			No. Crustacean. Spp.	No. Bivalve Spp.	No. Gastropod Spp.	No Resident Fish Spp.	No. Resident Bird Spp.	No. Migratory Bird Spp.	Missing data
				True mangrove Spp.	Density >1.5m high /Ha	Percent Cover							
Trad Province	9,232	3	8.2	35	1,100	90				50	61	13	**3**
Thung Kha Bay - Savi Bay	4,816	3	27.3	18	4,500	90				9	13	2	**3**
Pak Phanang Bay	6,987	3	2.51	15	4,400	56.1				50	19		**4**
Samut Songkram	1,145		16.3										**10**
Kung Kraben Bay	640	2		10	6,100	80				50	35		**5**
Pattani Bay	3,700	3	2	20	2,800	95				32	13	25	**3**
Ban Don Bay	3,700	3		19	655	90				75	57	18	**4**
Welu River Estuary	25,000	2		32	4,200	60				59	22		**5**
Hai Ninh	1,260	2	-20	13	12,000	85	27	22	25	131	30	26	**0**
Tien Yen	2,537	2	-25	13	10,000	70	58	113	107	82	27	30	**0**
Yen Hung	5,736	2	-35	14	8,000	70	80	55	61	102	29	25	**0**
Cat Ba	396	2	-8	12	12,000	75	37	28	43	126	35	38	**0**
Van Uc	0	2	20	11	10,000	85	53	14	21	87	28	90	**0**
Xuan Thuy	1,775	3	98	11	16,000	85	53	24	29	130	30	117	**0**
Can Gio	8,958	3	100	32	10,000	80	52	17	15	127	108	22	**0**
Thanh Phu	28	3	8	24	10,000	80	135	56	60	155	93	20	**0**
Soc Trang	598	2	-10	21	7,000	80				33	90	21	**3**
Ca Mau	5,239	3	60	30	7,500	90	64	47	58	145	47	27	**0**
Sao Luoi	305	3	-11	26	15,000	85	64	47	58	114	14	21	**0**
FE184	211	3	-5	25	15,000	85	7		15	92	15	23	**1**
Kien Giang	2,775	2	-10	18	15,000	75				135	16	24	**3**
Con Dao	52	6		23	15,000	90	5	2		100	65		**3**
Shangkou	776	2		15	11,980	90	68	40	33	24	28	76	**1**
Quinglangang	2,722	3		24	10,183	80	60			13	30		**4**

Table 1 *continued.* Agreed parameters for cluster analysis of Mangrove, potential demonstration sites. Dark Shading indicates missing values.

Site	Present Area	Zones - Spp Associations	Change in area	Trees			No. Crustacean. Spp.	No. Bivalve Spp.	No. Gastropod Spp.	No Resident Fish Spp.	No. Resident Bird Spp.	No. Migratory Bird Spp.	Missing data (Max 12)
				True mangrove Spp.	Density >1.5m high /Ha	Percent Cover							
DongXhaiGang	1,760	3		24	8,433	80	32	51		15	43	35	**2**
Futien	111	3		10	10,233	80	29	16	21	24	28	76	**1**
Fangchenggang	1,337	3		15	67,448	95	64	59	38	20	42	145	**1**
Peam Krasop	33,445	4		50	1,000	80		21	62	20	34		**3**
Dong Peng-Botum Sakor	53,320	3		50	1,000	70				29	30		**5**
Ream-Veal Rinh	34,090	3		74	1,000	60	30			20	30		**4**
Pasuquin	118			19						109			**9**
Busuanga	1,299	3		19						527	3		**7**
Ulugan				5						3,000	6		**9**
Dumaran	1,421	3		19						11,439			**8**
Belitung Island	22,457	5		10	467		5	26	44	71	6		**3**
Angke Kaput	328	3		12			29		4	22	77	4	**4**
Missing data (Max possible 36)	1	3	18	1	7	7	16	19	19	1	3	14	108

Percentage of missing data = 25%

Table 2 Potential Mangrove demonstration sites with less than 50% of the values removed, all parameters included in the cluster analysis.
Missing values = 17.4%

Site	Present Area	Zones - Spp Associations	Change in area	Trees			No. Crustacean Spp.	No. Bivalve Spp.	No. Gastropod Spp.	No Resident Fish Spp.	No. Resident Bird Spp.	No. Migratory Bird Spp.	Missing data Max. 12
				True mangrove Spp.	Density >1.5m high /Ha	Percent Cover							
Trad Province	9,232	3	8.2	35	1,100	90				50	61	13	**3**
Thung Kha Bay - Savi Bay	4,816	3	27.3	18	4,500	90				9	13	2	**3**
Pak Phanang Bay	6,987	3	2.51	15	4,400	56.1				50	19		**4**
Kung Kraben Bay	640	2		10	6,100	80				50	35		**5**
Pattani Bay	3,700	3	2	20	2,800	95				32	13	25	**3**
Ban Don Bay	3,700	3		19	655	90				75	57	18	**4**
Welu River Estuary	25,000	2		32	4,200	60				59	22		**5**
Hai Ninh	1,260	2	-20	13	12,000	85	27	22	25	131	30	26	**0**
Tien Yen	2,537	2	-25	13	10,000	70	58	113	107	82	27	30	**0**
Yen Hung	5,736	2	-35	14	8,000	70	80	55	61	102	29	25	**0**
Cat Ba	396	2	-8	12	12,000	75	37	28	43	126	35	38	**0**
Van Uc	0	2	20	11	10,000	85	53	14	21	87	28	90	**0**
Xuan Thuy	1,775	3	98	11	16,000	85	53	24	29	130	30	117	**0**
Can Gio	8,958	3	100	32	10,000	80	52	17	15	127	108	22	**0**
Thanh Phu	28	3	8	24	10,000	80	135	56	60	155	93	20	**0**
Soc Trang	598	2	-10	21	7,000	80				33	90	21	**3**
Ca Mau	5,239	3	60	30	7,500	90	64	47	58	145	47	27	**0**
Sao Luoi	305	3	-11	26	15,000	85	64	47	58	114	14	21	**0**
FE184	211	3	-5	25	15,000	85	7		15	92	15	23	**1**
Kien Giang	2,775	2	-10	18	15,000	75				135	16	24	**3**
Con Dao	52	6		23	15,000	90	5	2		100	65		**3**
Shangkou	776	2		15	11,980	90	68	40	33	24	28	76	**1**
Quinglangang	2,722	3		24	10,183	80	60			13	30		**4**
DongXhaiGang	1,760	3		24	8,433	80	32	51		15	43	35	**2**
Futien	111	3		10	10,233	80	29	16	21	24	28	76	**1**
Fangchenggang	1,337	3		15	67,448	95	64	59	38	20	42	145	**1**
Peam Krasop	33,445	4		50	1,000	80		21	62	20	34		**3**
Dong Peng-Botum Sakor	53,320	3		50	1,000	70				29	30		**5**
Ream-Veal Rinh	34,090	3		74	1,000	60	30			20	30		**4**
Belitung Island	22,457	5		10	467		5	26	44	71	6		**3**
Angke Kaput	328	3		12			29		4	22	77	4	**4**
No cells Missing data	**0**	**0**	**14**	**0**	**1**	**2**	**11**	**14**	**14**	**0**	**0**	**9**	**65**

Table 3 Mangrove Data Types, summary table of data used in the cluster analysis.

Variable Name	Data Type	No. of Cases	Transformation	Variable Weight	Minimum Value	Maximum Value	Range of Values	Data Mean	Standard Deviation
Present Area	Continuous	31	z-scores	1	0.00	53,320.00	53,320.00	7,557.76	12,702.35
Zones - Spp Associations	Continuous	31	z-scores	1	2.00	6.00	4.00	2.87	0.88
Change in area	Continuous	17	z-scores	1	-35.00	100.00	135.00	11.88	39.33
True mangrove Spp.	Continuous	31	z-scores	1	10.00	74.00	64.00	22.77	14.16
Density >1.5m high /Ha	Continuous	30	z-scores	1	467.00	67,448.00	66,981.00	9,933.30	11,937.44
Percent Cover	Continuous	29	z-scores	1	56.10	95.00	38.90	80.38	10.16
No. Crustacean. Spp.	Continuous	20	z-scores	1	5.00	135.00	130.00	47.60	30.18
No. Bivalve Spp.	Continuous	17	z-scores	1	2.00	113.00	111.00	37.53	25.97
No. Gastropod Spp.	Continuous	17	z-scores	1	4.00	107.00	103.00	40.82	25.18
No Resident Fish Spp.	Continuous	31	z-scores	1	9.00	155.00	146.00	69.10	46.69
No.Resident Bird Spp.	Continuous	31	z-scores	1	6.00	108.00	102.00	38.55	25.31
No. Migratory Bird Spp.	Continuous	22	z-scores	1	2.00	145.00	143.00	39.91	37.12

SEAGRASS

Present data set

The present analysis is based on the data set contained in Table 4, which presents data for a total of 44 sites and 15 parameters. In very few instances are these data substantiated by detailed listings of the species known to occur at the sites. Cells with missing data are shaded, and it can be seen that, the entire matrix lacks values in 39% of the cells.

Table 5 presents the outcome if all parameters and sites, for which fifty percent of the cells lack values, are eliminated from the analysis. This results in a matrix of 41 sites and 8 parameters with 19.2% of the values missing. Although 19.2% of missing values is high - the greater the proportion of missing data the weaker the cluster - it was decided to accept this level for the purposes of the present analysis. Since any further reduction in the number of parameters would render the proximity analysis meaningless. The data summary table for the analysis is presented in Table 6.

Results

The outcome of the analysis is presented in Figure 2, which suggests the presence of three large clusters of sites (light shading) with one smaller cluster, and three outliers. The three outliers are, KapSG1, Con Dao and Temiang. Examination of the data in Table 1 shows that, KapSG1 has an anomalously large area which requires verification; Con Dao Island has high numbers of both seagrass species and penaeid shrimp species compared with other sites, while Temiang is characterised by small area and low percentage cover.

If the outlier KapSG1 is included in the lower cluster then this group contains all the Cambodian sites and reflects almost certainly the fact that values are national values or estimates for a limited data set

(5 of 8 parameters only) that can be used to compare these with the remaining sites. These figures require independent verification.

It seems likely therefore that, data verification and correction will result in the outliers and the Cambodian sites becoming integrated into the remaining three clusters. It is suggested that preliminary ranking of sites should be based on the remaining three clusters.

Figure 2 Euclidean Distance of seagrass sites in the South China Sea, based on Mean Proximity, using Z score transformation of all 12 parameters.

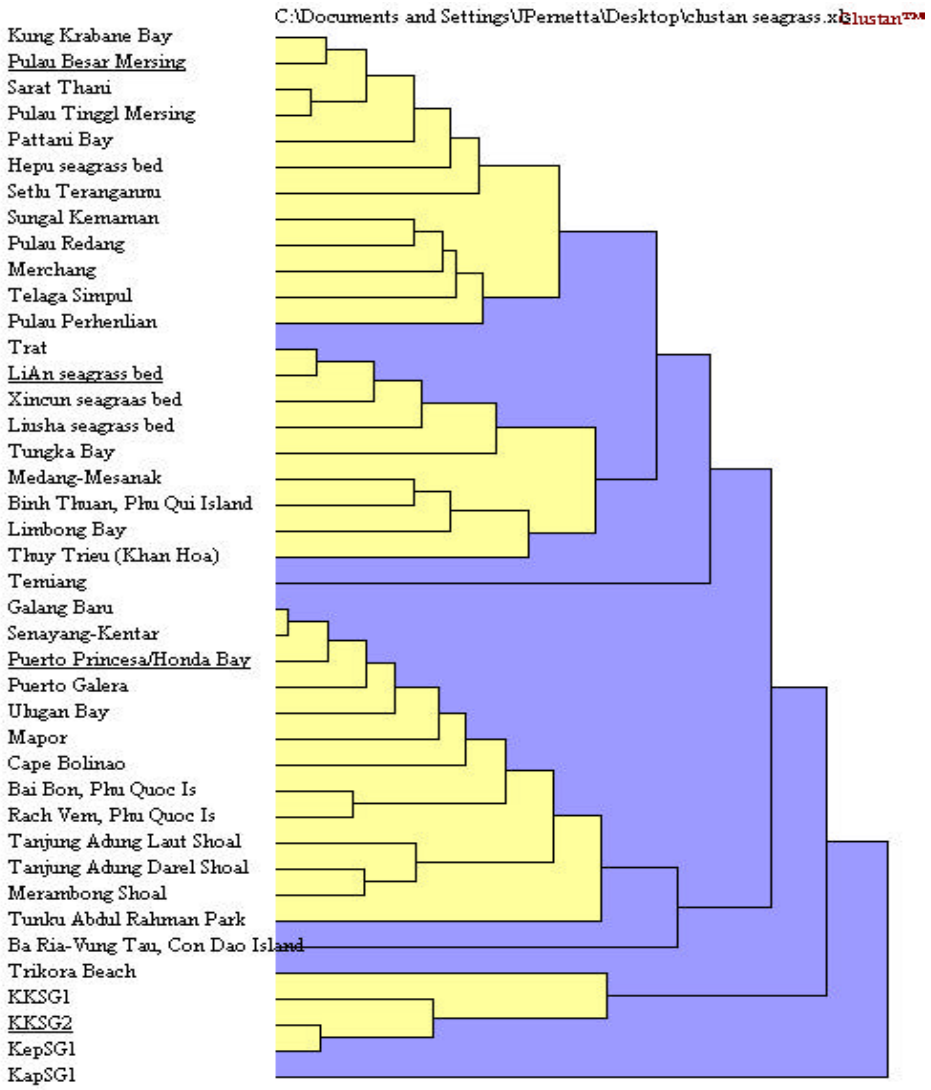

Table 4 Agreed parameters for cluster analysis of Seagrass, potential demonstration sites. Dark shading indicates missing values = 38.9%.

Site Name	Area (ha)	% cover	Depth range	No. of Seagrass spp.	Seahorses present or absent	No. of Penaeid spp.	No. crustacean spp.	No gastropod spp	Siganid spp.	holothurian spp.	Urchin spp	starfish genera	No. endangered and threatened spp.	No. of other ecosystems	No migratory species	Missing values, out of 15
Makhoam Pom Bay	250		0.0	2										0		**11**
Kung Krabane Bay	700		4.0	5		4		5					1	1		**8**
Trat	13		3.0	5									1	2		**10**
Tungka Bay	1,080		1.0	1									1	2		**10**
Sarat Thani	500		3.0	6		2		73	2	1	1	10	1	1		**4**
Pattani Bay	273		3.0	4		8		35	5			2	1	1		**6**
Galang Baru	15		4.0	8	+	3								2		**9**
Medang-Mesanak	5	35	2.0	7	+	3								2		**8**
Temiang	5	10	14.0	2	+	3								2		**8**
Senayang-Kentar	10		4.0	8	+	3								2		**9**
Limbong Bay	10	32	4.0	5	+	3								2		**8**
Trikora Beach	50	99	2.0	9	+	3		16	23	3	4	3	1	2	3	**1**
Mapor	40	50	3.0	9	+	3		11	2		4	2	1	2	3	**2**
Tanjung Adung Laut Shoal	40	80	1.2	9					1		1		1	2	1	**6**
Tanjung Adung Darel Shoa	42	80	0.7	9					1		1		1	1	1	**6**
Merambong Shoal	30	80	0.7	10		2		2	2				1			**7**
Pemgkalan Nanka Lagoon	40		0.4	2												**12**
Sungal Kemaman	17	10	4	1					1					1	1	**8**
Telaga Simpul	28		2	1					1					1	1	**9**
Sungal Paka Shoal	43		4	2				2			2			1	1	**8**
Pulau Tinggl Mersing	3	70	3	6					2	5	2	3	1	1	3	**4**
Pulau Perhenlian	3	30	6	2					3	4	3	2	1	1		**5**
Pulau Redang	2	20	4	2					3	4				1		**8**
Setlu Terangannu	3	70	6	3				3	2					1	1	**7**
Pulau Besar Mersing	3	70	4	5				1	2	1		1	1	1	1	**4**
Merchang	2	30	3	3					1					1		**9**

Table 4 *continued.* Agreed parameters for cluster analysis of Seagrass, potential demonstration sites. Dark shading indicates missing values = 38.9%.

Site Name	Area (ha)	% cover	Depth range	No. of Seagrass spp.	Seahorses present or absent	No. of Penaeid spp.	No. crustacean spp.	No gastropod spp	Siganid spp.	holothurian spp.	Urchin spp	starfish genera	No. endangered and threatened spp.	No. of other ecosystems	No migratory species	Missing values, out of 15
Tunku Abdul Rahman Park	6		8	11					2	4	2	2		1	2	**6**
Cape Bolinao	2,500	75	1.7	9	+	7			3	4		3		2		**5**
Puerto Galera	114	95	4.5	9	+				2	3		3	2	2		**5**
Ulugan Bay	11	100	2.5	8	+				2					2		**8**
Puerto Princesa/Honda Bay	670	90		8					4	3		4		2		**8**
Hepu seagrass bed	540	85	4.0	3		5	41	4	1	1	1	1	2	1	1	**1**
Liusha seagrass bed	900	90	3.0	2		5	50	11	1	1	1	1	1	2	1	**1**
LiAn seagrass bed	300	82	3.2	5		4		17	1	2	1	1		2		**4**
Xincun seagraas bed	200	87	2.0	4		4	3	6	1	1	1	1		2		**3**
Bai Bon, Phu Quoc Is	2,000	70	6.0	7	+	3	1	46	1	3	3	3	3	2	2	**0**
Rach Vem, Phu Quoc Is	900	65	6.0	6	+	3		30	1	3	3	3	3	2	2	**1**
Ba Ria-Vung Tau, Con Dao Island	200	25	9.6	10	+	23	2	108	1	8	3	2	5	3	4	**0**
Binh Thuan, Phu Qui Island	300	50	2.5	6	+	2		35	3	10	3	5	3	2	2	**1**
Thuy Trieu (Khan Hoa)	800	60	1.0	6	+	3	13	15	2	8	2	4	2	3	0	**0**
KKSG1	448			8		10		100			7		1	3	1	**7**
KKSG2	3,910			8		10		100			7		1	3	1	**7**
KapSG1	25,240			6		10		100		3	7		1	3	1	**6**
KepSG1	4,500			8		10		100			7		1	3	1	**7**
Missing values (out of 44)	0	16	5	0	29	19	38	22	15	24	22	24	19	2	22	**257**

44 cases and 15 parameters.

Table 5 Parameters reduced from 15 to 8 and seagrass potential demonstration sites from 44 to 41. 19.2% missing values.

Site Name	Area (ha)	% cover	Depth range	No. of Seagrass spp.	No. of Penaeid spp.	Siganid spp.	No. endangered and threatened spp.	No. of other ecosystems	Missing data possible max 8
Kung Krabane Bay	700		4.0	5	4		1	1	**2**
Trat	13		3.0	5			1	2	**3**
Tungka Bay	1080		1.0	1			1	2	**3**
Sarat Thani	500		3.0	6	2	2	1	1	**1**
Pattani Bay	273		3.0	4	8	5	1	1	**1**
Galang Baru	15		4.0	8	3			2	**3**
Medang-Mesanak	5	35	2.0	7	3			2	**2**
Temiang	5	10	14.0	2	3			2	**2**
Senayang-Kentar	10		4.0	8	3			2	**3**
Limbong Bay	10	32	4.0	5	3			2	**2**
Trikora Beach	50	99	2.0	9	3	23	1	2	**0**
Mapor	40	50	3.0	9	3	2	1	2	**0**
Tanjung Adung Laut Shoal	40	80	1.2	9		1	1	2	**1**
Tanjung Adung Darel Shoal	42	80	0.7	9		1	1	1	**1**
Merambong Shoal	30	80	0.7	10	2	2	1		**1**
Sungal Kemaman	17	10	4	1		1		1	**2**
Telaga Simpul	28		2	1		1		1	**3**
Pulau Tinggl Mersing	3	70	3	6		2	1	1	**1**
Pulau Perhenlian	3	30	6	2		3	1	1	**1**
Pulau Redang	2	20	4	2		3		1	**2**
Setlu Terangannu	3	70	6	3		2		1	**2**
Pulau Besar Mersing	3	70	4	5		2	1	1	**1**
Merchang	2	30	3	3		1		1	**2**
Tunku Abdul Rahman Park	6		8	11		2		1	**3**
Cape Bolinao	2,500	75	1.7	9	7	3		2	**1**
Puerto Galera	114	95	4.5	9		2	2	2	**1**
Ulugan Bay	11	100	2.5	8		2		2	**2**
Puerto Princesa/Honda Bay	670	90		8		4		2	**3**
Hepu seagrass bed	540	85	4.0	3	5	1	2	1	**0**
Liusha seagrass bed	900	90	3.0	2	5	1	1	2	**0**
LiAn seagrass bed	300	82	3.2	5	4	1		2	**1**
Xincun seagraas bed	200	87	2.0	4	4	1		2	**1**
Bai Bon, Phu Quoc Is	2,000	70	6.0	7	3	1	3	2	**0**
Rach Vem, Phu Quoc Is	900	65	6.0	6	3	1	3	2	**0**
Ba Ria-Vung Tau, Con Dao Is	200	25	9.6	10	23	1	5	3	**0**
Binh Thuan, Phu Qui Island	300	50	2.5	6	2	3	3	2	**0**
Thuy Trieu (Khan Hoa)	800	60	1.0	6	3	2	2	3	**0**
KKSG1	448			8	10		1	3	**3**
KKSG2	3,910			8	10		1	3	**3**
KapSG1	25,1240			6	10		1	3	**3**
KepSG1	4,500			8	10		1	3	**3**
Missing values (possible 41)	**0**	**13**	**5.0**	**0**	**16**	**12**	**16**	**1**	**63**

Table 6 Seagrass Data Types, Summary table used in the cluster analysis.

Variable Name	Data Type	No. of Cases	Transformation	Wt.	Min. Value	Max. Value	Range of Values	Data Mean	Standard Deviation
Area (ha)	Cont.	41	z-scores	1.0	1.999970675	25,240	25,238	1132.024414	3986.760742
% cover	Cont.	28	z-scores	1.0	9.999999046	100	90	62.1428566	27.84841919
Depth range	Cont.	36	z-scores	1.0	0.6999999881	14	13.30000019	3.766666889	2.633302927
No. of Seagrass spp.	Cont.	41	z-scores	1.0	0.9999999404	11	10	5.951219559	2.827995777
No. of Penaeid spp.	Cont.	25	z-scores	1.0	2	23	21	5.440000057	4.574203014
Siganid spp.	Cont.	29	z-scores	1.0	0.9999999404	23	22	2.620689631	4.048048973
No. endangered and threatened spp.	Cont.	25	z-scores	1.0	1	5	4	1.519999981	1.004987597
No. of other ecosystems	Cont.	40	z-scores	1.0	1	3	2	1.799999952	0.6868733764

CORAL REEFS

Present data set

The present analysis is based on the data set contained in Table 7, which includes data for a total of 50 sites and 26 parameters. In a number of instances these data are not substantiated by detailed listings of the species enumerated in the table and such lists are a pre-requisite for inclusion of the data in the final analysis. Dark shaded columns (parameters) contain less than 50% of the total possible entries.

Light shaded columns represent parameters, which are highly correlated with another parameter in the matrix. Inclusion of two highly correlated parameters in the same cluster analysis results in a *de facto* weighting of the group that they represent. Since all the taxa of organisms, with the exception of mammals, are in fact represented by, both numbers of genera and numbers of species, removal of one of the parameters from each pair will not alter the *de facto* weighting between 8 of the major taxa represented. The RSTC decided therefore to eliminate the columns containing the numbers of genera of corals, soft corals, algae, molluscs, crustacea, echinoderms, polychaetes and fishes. This reduces the potential matrix to 19 parameters, the percentage of missing values is however high at 49%.

When those sites lacking 66 percent or more of the values and parameters lacking 50% or more of the values are removed from the matrix, the resultant data set (Table 8) contains a matrix of data from 39 sites and encompassing 9 parameters. 17% of the values are missing from this matrix. The data summary table for the analysis is presented in Table 9. The RSTC further decided that in the final analysis the number of mammal species should be removed from the analysis, and where appropriate data included in the endangered and threatened species column.

Results

The outcome of the analysis is presented in Figure 3, which suggests the presence of three clusters of sites (light shading) with no outliers. The lower cluster in the figure contains all seven Cambodian and one Vietnamese site and reflects almost certainly the comparatively large number of endangered species recorded from these sites. These data are unsubstantiated by species lists and need to be verified using the IUCN classification in order to conform with, the remaining data sets. It is likely that these numbers will need to be reduced, and the sites in this cluster, may well be dispersed amongst the remaining two clusters.

It seems likely therefore that, data verification and correction will result in the lower cluster becoming integrated into the remaining two clusters. It is suggested that ranking of sites should be based on these three clusters initially, in order to provide guidance regarding the comparative priority for developing full demonstration site proposals.

Figure 3 Euclidean Distance for coral reef sites based on Mean Proximity, using Z score transformation of all 9 parameters.

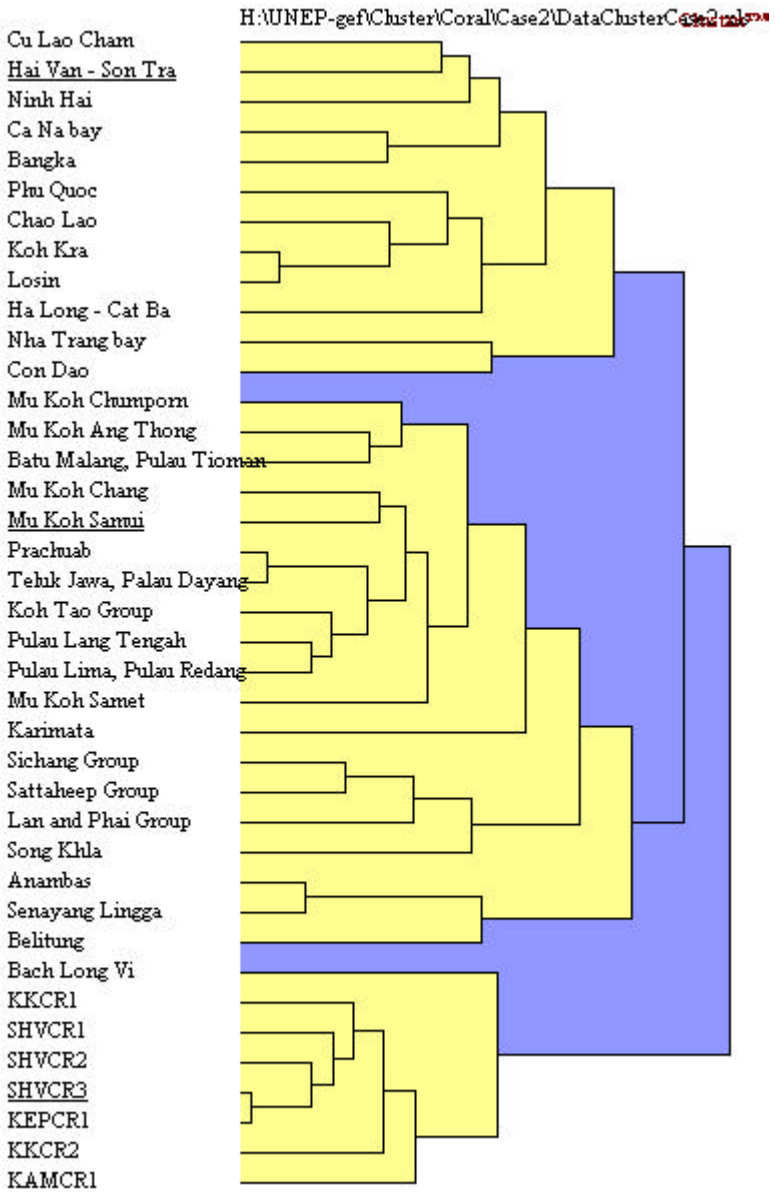

Table 7 Agreed parameters to be used in the cluster analysis of potential coral reef demonstration sites. Light shading indicates parameters (No. Genera) that, are highly correlated with a second parameter in the matrix, (No. Species). Dark shading, indicates parameters for which less than 50% of the values are available. 48% of values are missing from this matrix.

Site Name		Hard Coral		Soft Coral		Coral Cover		Algae		Molluscs		Crustacea			Echinoderms			Polychaetes		Fishes			No. of mammal species	other ecosystem	No. of indigenous spp.	Number of endangered and threatened species
	Area (ha)	Genera	spp.	genera	spp	(%)	change in cover	No. genera	No spp.	No. genera	No. spp.	No. genera	No. spp.	density	No genera	No. spp	density	No. genera	No. spp	No. genera	No. Spp.	density				
Cu Lao Cham	200	39	131	1	2	33.9	-1.9	61	122	44	83	52	84	3.5	1	4	0			76	178	485		1	1	4
Nha Trang bay	570	64	351	5	24	26.4	-21.2	35	55	52	106	34	69	1.7	20	27	91.3	164	339	102	222	575.6	3	2	1	7
Con Dao	1,000	55	250	1	4	23.3	-32.3	44	84	67	148	69	110		37	44	20.6	84	125	80	202	502	2	2	4	10
Phu Quoc	600	37	89	1	19	42.2	-3.3	51	98	65	100	4	9		23	32	396			60	135	1,495	2	2	2	8
Ninh Hai	1,070	49	197			36.9		86	190	63	108	19	24		8	13	7.3	19	22	81	147	740		1		6
Ca Na bay	2,270	48	134	6	28	40.5		57	163	41	72	23	46		24	26		25	44	87	211	346		1		3
Ha Long - Cat Ba		48	170	21	33	43	-7.1	51	94	108	196	20	25		4	7		34	45	27	34	330/ha	2	2		4
Hai Van - Son Tra		49	129	5	5	50.5	1	41	103	36	53	50	60		12	12	0.3/m2	24	33	62	132			1		4
Bach Long Vi		31	99			21.7	-35	28	46	53	95	14	16		6	8		6	6	31	46					2
Batanes, Basco						37.00			47											50	86	5930				1
Bolinao/Lingayen Gulf			250			15-40	-20.00								tbd					126	328	420-9000				
Masinloc, Zambales						29-33	0.00													97	249	1560-13680				2
Batangas bay/Maricaban			300			32-48	0.10													85	155	2680-68450				3
Puerto Galera, Mindoro		32	300			14-33	0.00													122	333	2981-65906				
El Nido, Palawan			250			16-40	-20.00													169	480	480-171012				4
Mu Koh Chumporn	649	31	120			55						71	304		21	21				62	106		5	4		5
Mu Koh Chang	1,556	42	130			40	2	36	43			125	250		17	20				64	113		5	4		8
Mu Koh Ang Thong		38	110			55		7	7			74	136		19	21				62	106		6	4		6
Mu Koh Samui		45	140			40		7	7			74	136		19	21				62	106		6	4		11
Mu Koh Samet	350	20	41			35		33	38			70	134		10	11				51	74		6	4		11
Sichang Group	63	38	90			20		33	40			145	304		12	11		14	26	41	86		3	4		4
Sattaheep Group	139	38	90			33		33	40			145	304		12	15				44	75		3	4		4
Lan and Phai Group	326	20	72			18		33	40			145	304		12	15				44	75		3	2		5
Chao Lao	72	41	80			30		28	33			66	123		11	12				40	105		3	2		4
Prachuab		35	74			40		15	18			57	106		15	16	0.55	27	27	78	162		5	2		7
Koh Tao Group	192	41	79			45		7	7			74	136		19	21				62	106		7	2		7
Song Khla		8	12			20		2	2											17	30		2	2		2
Koh Kra		35	80			40														50	80		2	1		2
Losin	79	40	90			40														55	90		1	1		2
Anambas		62	206					17	26	53	85	14	24		15	25				54	128		5	3		2
Bangka		37	126							43	60	19	25		19	23				67	169		2			2
Barelagn-Bintan		62	169																		81					2
Belitung		55	164			38.46				18	36	9	10		19	35				41	170		10	3		

Table 7 *continued.* Agreed parameters to be used in the cluster analysis of potential coral reef demonstration sites. Light shading indicates parameters (No. Genera) that, are highly correlated with a second parameter in the matrix, (No. Species). Dark shading, indicates parameters for which less than 50% of the values are available. 48% of values are missing from this matrix.

Site Name		Hard Coral		Soft Coral		Coral Cover		Algae		Molluscs		Crustacea			Echinoderms			Polychaetes		Fishes			No. of mammal species	other ecosystem	No. of indigenous spp.	Number of endangered and threatened species
	Area (ha)	Genera	spp.	genera	spp	(%)	change in cover	No. genera	No spp.	No. genera	No. spp.	No. genera	No. spp.	density	No genera	No. spp	density	No. genera	No. spp	No. genera	No. Spp.	density				
Karimata		42	192							42	60	11	15		12	15				75	200		10	3		
Natuna		63	182					23	43											54	190					
Senayang Lingga		64	217																	57	117			3		
Batu Malang, Pulau Tioman		41	96			62.6		1.9	3.8								99.8			76	123		5			
Batu Tikus, Pulau Tinggi		41	79			36.3											320.8			79	133		5			
Pulau Lang Tengah		39	86			41.3		1.3	3.1											69	117		5			
Pulau Lima, Pulau Redang		50	96			46.3		3.8	10											78	113		5			
Teluk Jawa, Palau Dayang		35	80			38.4		3.1	11.9											86	156		5			
Silam,Pulau Baik, Sabah		67			86																71					
Pulau Linggisan, Pulau Banggi, Sabah		50	96						13.8						27					78			5			
KKCR1	180		67		17						150		50			14					51		12	2		19
KKCR2	529		67		17						150		50			1					51		12	2		19
SHVCR1			34		7						8		50			14					6	21	12	3		19
SHVCR2			23		4				3		150		50				2				51		12	3		19
SHVCR3		33	70		2						150		50			14				33	42		12	3		19
KAMCR1	946		67		17	53.79					150		150			14					51		12	3		
KEPCR1	9,527		67		17	13					150		50			14					51		12	3		
Missing data	31	11	3	43	35	13	37	24	21	37	30	26	19	48	25	20	41	41	41	8	1	36	11	17	46	15

Table 8 Data for 39 coral reef sites, and 9 parameters used in the cluster analysis. Parameters with less than 50% of values and sites with less than 50% of values have been removed resulting in 60 missing values (17%).

Site Name	Hard coral species	live coral cover (%)	no of algal spp.	Number of crustacean species	Number of echinoderm species	Number of coral reef fish species	Number of mammal species	other ecosystem	Number of endangered and threatened species
Cu Lao Cham	131	33.9	122	84	4	178	M	1	4
Nha Trang bay	351	26.4	55	69	27	222	3	2	7
Con Dao	250	23.3	84	110	44	202	2	2	10
Phu Quoc	89	42.2	98	9	32	135	2	2	8
Ninh Hai	197	36.9	190	24	13	147	M	1	6
Ca Na bay	134	40.5	163	46	26	211	M	1	3
Ha Long - Cat Ba	170	43	94	25	7	34	2	2	4
Hai Van - Son Tra	129	50.5	103	60	12	132	M	1	4
Bach Long Vi	99	21.7	46	16	8	46	M	M	2
Mu Koh Chumporn	120	55	M	304	21	106	5	4	5
Mu Koh Chang	130	40	43	250	20	113	5	4	8
Mu Koh Ang Thong	110	55	7	136	21	106	6	4	6
Mu Koh Samui	140	40	7	136	21	106	6	4	11
Mu Koh Samet	41	35	38	134	11	74	6	4	11
Sichang Group	90	20	40	304	11	86	3	4	4
Sattaheep Group	90	33	40	304	15	75	3	4	4
Lan and Phai Group	72	18	40	304	15	75	3	2	5
Chao Lao	80	30	33	123	12	105	3	2	4
Prachuab	74	40	18	106	16	162	5	2	7
Koh Tao Group	79	45	7	136	21	106	7	2	7
Song Khla	12	20	2	M	M	30	2	2	2
Koh Kra	80	40	M	M	M	80	2	1	2
Losin	90	40	M	M	M	90	1	1	2
Anambas	206	M	26	24	25	128	5	3	2
Bangka	126	M	M	25	23	169	2	M	2
Belitung	164	38.46	M	10	35	170	10	3	M
Karimata	192	M	M	15	15	200	10	3	M
Senayang Lingga	217	M	M	M	M	117	M	3	M
Batu Malang, Pulau Tioman	96	62.6	3.8	M	M	123	5	M	M
Pulau Lang Tengah	86	41.3	3.1	M	M	117	5	M	M
Pulau Lima, Pulau Redang	96	46.3	10	M	M	113	5	M	M
Teluk Jawa, Palau Dayang	80	38.4	11.9	M	M	156	5	M	M
KKCR1	67	M	M	50	14	51	12	2	19
KKCR2	67	M	M	50	1	51	12	2	19
SHVCR1	34	M	M	50	14	6	12	3	19
SHVCR2	23	M	3	50	M	51	12	3	19
SHVCR3	70	M	M	50	14	42	12	3	19
KAMCR1	67	53.79	M	150	14	51	12	3	M
KEPCR1	67	13	M	50	14	51	12	3	M
Missing values	0	9	13	8	9	0	6	6	9

39 sites, 9 parameters 17% missing values.

Table 9 Coral reef Data Types, summary table of data used in the cluster analysis.

Variable Name	Data Type	No. of Cases	Transformation	Variable Weight	Minimum Value	Maximum Value	Range of Values	Data Mean	Standard Deviation
Hard coral species	Continuous	39	z-scores	1	12.00	351.00	339.00	113.23	66.42
live coral cover (%)	Continuous	30	z-scores	1	13.00	62.60	49.60	37.44	12.01
no of algae spe.	Continuous	26	z-scores	1	2.00	190.00	188.00	49.53	51.23
Number of crustacean species	Continuous	31	z-scores	1	9.00	304.00	295.00	103.35	95.05
Number of echinoderm species	Continuous	30	z-scores	1	1.00	44.00	43.00	17.53	9.15
Number of coral reef fish species	Continuous	39	z-scores	1	6.00	222.00	216.00	108.13	54.68
Number of mammal species	Continuous	33	z-scores	1	1.00	12.00	11.00	5.97	3.79
other ecosystem	Continuous	33	z-scores	1	1.00	4.00	3.00	2.52	1.03
Number of endangered and threatened species	Continuous	30	z-scores	1	2.00	19.00	17.00	7.50	5.83

WETLANDS

Present data set

The RWG-W agreed upon those parameters that should be included in the final analysis and these are presented in Table 10, which contains data for a total of 39 sites and 9 parameters. For many of these sites the data are substantiated by detailed listings of the species known to occur at the sites concerned.

Cells with missing data are shaded, it should be noted that a number of these values are in fact estimates rather than empirical data, and the RSTC decided that no estimates should be included in the final analysis. From Table 10 it can be seen that, the entire matrix lacks values in 13.3% of the cells, a figure that is reduced to 9.6% if estimates are accepted. Since no parameter and no site lacks more than 50% of the entries, the entire data set has been used in the following cluster analysis. The data summary table for the analysis is presented in Table 11.

Results

The outcome of the analysis is presented in Figure 4, which suggests the presence of two clusters of sites (light shading) with no outliers. The lower cluster in the figure contains most of the estuarine and lagoon sites, whilst the more marine sites dominate the upper cluster. Further data verification and correction may result in some modification of the placement of individual sites in this matrix however the RSTC on reviewing the data table was of the opinion that the size of the “sites” selected by the wetlands group was excessive.

In particular the RSTC noted with concern the large numbers of “ecosystem” types included in a single site and recommended that the RWG-W disaggregate these data and that the analysis be conducted a second time on smaller, less diverse entities.

Figure 4 Euclidean Distance based on Mean Proximity, using Z score transformation of all 9 parameters.

Table 10 Agreed parameters for cluster analysis of wetland, potential demonstration sites. Estimates provided following the third RWG-W meeting are dark shaded, cells with missing values are light shaded. For the total of 39 sites and 9 parameters, 9.6 % of the values are missing if the estimates are accepted, 13.3% if the estimates are not accepted.

Site	Area (ha)	No Fish	No birds	No plants	No mammals	No wetland types	No Migratory spp	No endemic spp.	No endangered spp.	Missing data
Waru River Estuary	25,000	59	22	32	8	3	n/a	n/a	7	2
Mu Koh Chang National Park	65,000	n/a	74	78	29	6	13	n/a	11	2
Don Hoi Lord	2,409	n/a	18	n/a	n/a	3	n/a	1	4	4
The Inner Gulf of Thailand	195,849	14	52	27	2	6	36	n/a	24	1
Khao Sam Roi Yot National Park	13,000	25	316	150	14	6	23	n/a	54	1
Thale Noi Wildlife Non-hunting Area	45,700	35	218	260	6	3	51	n/a	25	1
Thale Sap Song Khla Non- hunting Area	36,466	88	216	12	n/a	1	6	131	28	1
Phru To Daeng Wildlife Sanctuary	34,636	62	217	n/a	59	2	19	169	26	0
Mu Koh Ang Thong Marine National Park	10,200	36	53	n/a	16	3	9	32	6	0
Thung Kha Bay-Savi Bay	4,816	50	99	n/a	n/a	2	n/a	53	5	2
Pattani Bay	5,000	32	31	25	n/a	4	3	n/a	5	2
Pak Phanang Bay	15,000	50	13	11	3	3	n/a	n/a	5	2
Phru Kan Tulee	140	29	50	36	19	1	n/a	9	n/a	2
Sambilang	205,700	155	318		46	5	28	2	8	0
Berbak NP	162,700	116	335	282	57	4	28	3	2	0
Muara Kendawangan	150,000	87	96	29	11	4	n/a	n/a	n/a	3
Balayan Bay	n/a	262	70	50	10	7	40	15	10	1
Malampaya Sound	n/a	156	40	50	11	10	10	22	1	1
Balat Estuary	26,397	130	181	122	17	8	136	6	17	0
Tam Giang-Cau Lagoon	21,600	171	73	427	20	4	35	5	25	0
Tien River Estuary	151,500	155	41	343	20	4	20	2	15	0
Ca Mau Southwest Tidal Flat	286,040	147	74	454	28	4	27	3	17	0
Dong Nai River Estuary	160,000	155	130	133	19	3	22	5	22	0
Kim Son Tidal Flat	12,620	132	96	50	15	10	54	5	13	0
Van Uc Estuary	6,990	79	118	167	8	4	90	2	11	0
Bach Dang Estuary	80,358	117	153	302	5	8	25	5	12	0
Tien Yen Estuary	24,738	82	57	187	20	4	31	5	5	0
Tra O Lagoon	2,000	68	55	104	10	4	25	3	11	0
Degi Lagoon (Bin Dinh Province	1,600	105	40	321	15	4	25	2	20	0
Thi Nai lagoon (Binh Dinh Province)	5,000	119	37	211	15	4	25	2	22	0
Dan zhou lingao	364	105	70	n/a	10	4	50	2	10	1
Beilun	1,083	105	80	277	20	4	50	2	15	0
Hepu	3,951	125	83	229	20	4	50	2	16	0
Pearl River	22,200	214	189	420	30	7	50	37	22	0
Shantou	1,435	183	139	233	20	4	50	30	13	0
Wenchang	184	160	120	300	16	3	50	2	22	0
Koh Kapik	13,482	n/a	30	n/a	3	2	6	4	5	1
Beung Kachhang	4,503	17	n/a	13	n/a	2	n/a	n/a	3	4
Russey Srok-Tourl Sragnam	4,890	10	9	19	n/a	3	n/a	n/a	2	3
Missing data estimates not accepted	2	4	3	2	6	0	9	16	5	34
Missing data estimates accepted	2	3	1	2	6	0	8	10	2	

Table 11 Wetland Data Types, summary table of data used in the cluster analysis.

Variable Name	Data Type	No. of Cases	Transformation	Variable Weight	Minimum Value	Maximum Value	Range of Values	Data Mean	Standard Deviation
Area (ha)	Continuous	37	z-scores	1	140.00	286,040.00	285,900.00	48,717.59	72,920.43
No. Fish	Continuous	35	z-scores	1	10.00	262.00	252.00	100.86	61.57
No. birds	Continuous	36	z-scores	1	9.00	335.00	326.00	108.83	87.98
No plants	Continuous	32	z-scores	1	11.00	454.00	443.00	167.31	138.39
No mammals	Continuous	33	z-scores	1	2.00	59.00	57.00	18.24	13.62
No wetland types	Continuous	39	z-scores	1	1.00	10.00	9.00	4.28	2.14
No Migratory spp	Continuous	30	z-scores	1	3.00	136.00	133.00	35.40	26.90
No endemic spp.	Continuous	23	z-scores	1	1.00	169.00	168.00	23.17	42.84
No endangered spp.	Continuous	34	z-scores	1	1.00	54.00	53.00	13.50	10.63

ANNEX 8

Review of the Ranking Indicators and Proposed Scoring Systems Developed by the Regional Working Groups

Background

Following an initial clustering exercise using the available data each regional working group, during their third meeting, discussed and agreed upon two sets of indicators to be used in the ranking process of potential demonstration sites. The agreed sets of environmental and socio-economic indicators are attached in appendix 1 of this Annex.

Environmental Indicators

Table 1 presents a summary of the major classes of indicator, the number of individual indicators and the weight assigned to them by each working group. It can be seen that all four groups adopted the same four basic classes of indicator, but that the number of indicators within each class varies somewhat between the groups.

Table 1 Comparison of the number of indicators in each class of environmental indicator and the weight assigned to different classes by the Regional Working Groups on habitats.

Class	Mangrove		Coral Reef		Seagrass		Wetland	
	No Indicators	Weight	No Indicators	Weight	No Indicators	Weight	No Indicators	Weight
Area	1	35	1	10	2	25	1	10
Biological Diversity[14]	7	50	8	60	8	60	5	60
Sub-set 1 - Species	5	30	-	-	7	52	-	-
Sub-set 2 - Community	2	20	-	-	1	8	-	-
Transboundary significance	1	10	3	20	1	5	1	15
Regional/Global Signif.	2	5	1	10	1	10	2	15

Within each class of indicator a series of one or more specific indicators were identified on the basis of the outcome of the initial site characterisations, hence indicators were not included by most groups when it was apparent that the information and/or data were difficult to assemble as evidenced by the frequency of missing data in the preliminary set.

Following a careful analysis of the range of values demonstrated by the site data available to the meetings the regional working groups then considered the number of divisions and weighting that would be appropriate to assign to any individual site value. Hence for example the number of migratory bird species recorded from each mangrove site ranged from 13 at Trad Province in Thailand to 145 species at Fangchenggang in China. For this indicator it was decided to distinguish five categories based on an increment of 30 species and weights were assigned accordingly.

Socio-Economic Indicators

Table 2 lists the indicators selected by the regional working groups as being indicative of socio-economic conditions including indicators of national priority, stakeholder involvement and threats. As in the case of the environmental indicators each regional working group discussed and agreed the comparative weight that should be assigned to each class of indicator, then to individual indicators within each class, finally deciding on the divisions and weights that should be assigned to the observed values at any one site.

[14] *Biological diversity was sub-divided into two levels species and community diversity by two groups.*

Table 2 Comparison of the number of indicators in each class of socio-economic indicator and the weight assigned to different classes by the Regional Working Groups on habitats.

Class	Mangrove		Coral Reef		Seagrass		Wetland	
	No Indicators	Weight	No Indicators	Weight	No Indicators	Weight	No Indicators	Weight
Threats [15]	2	-30	5	+15	2	-10	2	+20
National Singificance	1	20	3	25	1	16	3	40
Financial	2	20	1	20	2	22	1	20
Stakeholder involvement	4	30	1	20	4	22	1	20
Transboundary Management	-	-	1	20	-	-	-	-
Management Potential	-	-	-	-	3	30	-	-

It was noted by all groups that a number of the indicators listed in Table 2 were highly subjective. It is clear that the proposals for demonstrations sites will need to present quite detailed reasoning as to why particular scores have been assigned. It was further noted that equal (and high) weighting on national priority for example not only influences the total score and hence rank, when calculated regionally but also fails to distinguish between the comparative importance of sites ranked equally, on the basis of other indicators.

A major area issue for discussion at the RSTC concerned the way in which the "threats" category should be scored. Two regional working groups scored it positively with high threats getting high scores, whilst two groups scored in the reverse manner, with low threats getting high scores. The rationale for the latter being that, if the threat is large or strong enough then there is no possibility of mitigating it with the resources available. The RSTC discussed this matter and agreed that the issue that should be considered, is not the threat itself, but rather the reversibility of the threat. Hence the "reversibility of threat", should be scored with high probability of reversing a threat receiving a higher score, and low probability of reversing the threat receiving a low score.

Conclusion

Having applied their own weighting and indicators to the initial data sets the regional working groups agreed on the use of this selection in a two step process with the indicators in Table 1 being used as the primary means of ranking regional importance of sites within the clusters and the indicators in Table 2 being applied at a later stage when final decisions are being made. It is suggested therefore that on the basis of decisions made by the RSTC regarding the final classes and indicators for the environmental criteria a ranking process is undertaken and agreed during the meeting.

The preliminary ranking prepared by the PCU in accordance with the indicators and weights agreed by RSTC is presented in Annex 10 of this document.

[15] *"Reversibility of threat", should be scored; with high probability of reversing a threat receiving a higher score, and low probability of reversing the threat receiving a low score.*

Appendix 1

Table 1 Indicators and weight for mangrove systems of biological diversity, transboundary, regional and global significance.

Class of Indicator	Indicator scale Score				
1. Area maximum 35 points					
1.1 Total existing natural mangrove area (ha)	< 500	500-1,000	1,001-5,000	5,001-15,000	>15,000
Score	7	14	21	28	35
2. Biological diversity 50 points					
2.1 Species diversity Score maximum 30 points					
2.1.1 True mangrove species	< 10	10-20	21-30	30-40	>40
Score Maximum 14 points	1	3	6	10	14
2.1.2 Associate mangrove species	<10	11-20	>20		
Score Maximum 4 points	1	2	4		
2.1.3 Total fish species4	<50	51-150	>150		
Score Maximum 4 points	1	2	4		
2.1.4 Crustacean	40	41-90	>90		
Score Maximum 4 points	1	2	4		
2.1.5 Resident bird species	< 15	16-50	>50		
Score Maximum 4 points	1	2	4		
2.2 Community diversity 20 points					
2.2.1 Number of zones or associations	1-2	3-4	>4		
Score Maximum 11 points	3	6	11		
2.2.2 Number of trophic levels below the top carnivore in the terrestrial food chain 9 points	1-2	3-4	>4		
Score Maximum 9 points	3	6	9		
3. Transboundary significance 10 points					
3.2 No migratory bird species include seasonal migratory spp. and long distance migrators	<30	30-59	60-89	90-120	>120
Score Maximum 10 points	2	4	6	8	10
4. Regional/Global significance 5 points					
4.1 Number of associate and true mangrove species found only in the South China Sea	0.5 points for each endemic to a maximum of 2.5				
Score Maximum 2.5 points					
4.2 Number of endangered & threatened species	0.5 points for each endangered species to a maximum of 2.5				
Score Maximum 2.5 points					

Table 2 Indicators for socio-economic considerations to be used in the ranking of mangrove sides bordering the South China Sea.

Class of Indicator	Indicator scale Score			
1. Reversibility of Threats				
1. Change of area (% Lost over ten years)	<5	6-10	11-25	>25
Score – max 20	20	15	10	5
2. Human population stress (population density, people/Km^2) in the site 10	<40	40-199	200-400	>400
Score – max 10	10	6	4	2
2. National significance/priority-Government support				
1. National priority	Low	Medium	High	
Score – max 20	2	10	20	
3. Financial considerations /co-financing				
1. Project cost ($US)	<150,000	150,000	>150,000	
Score – max 10	10	5	0	
2. Co-financing commitment 10	<1/1	1/1	>1/1	
Score – max 10	0	5	10	
4. Stakeholders involvement 30				
Local government (in cash/in-kind)	Low	Medium	High	
Score – max 8	2	5	8	
Central government (in cash/in-kind)	Low	Medium	High	
Score – max 8	2	5	8	
NGOs/Civil Society (in cash/in-kind)	Low	Medium	High	
Score – max 8	2	5	8	
Private Sector (in cash/in-kind)	Low	Medium	High	
Score – max 6	1	3	6	

Table 3 Indicators and weight for environmental characteristics of coral reefs.

Indicators	Scale of Indicators				
	1	**2**	**3**	**4**	**5**
Biological diversity, 60 points					
No. Hard coral Genera	< 30	31-40	41-50	51-60	> 60
Maximum score, 10	1	4	6	8	10
No. Hard coral species	< 100	101-150	151-200	201-300	> 300
Maximum score, 10	2	4	6	8	10
Percentage live coral cover	0-10	11-25	26-50	51-75	>75
Maximum score, 8	1	2	4	6	8
Percentage algal cover	>40	10-40	<10		
Maximum score, 3	1	2	3		
Number of coral reef fish genera	< 20	21-30	31-50	51-60	>60
Maximu m score, 9	1	3	5	7	9
Number of coral reef fish species	<100	101-250	251-400	401-600	>600
Maximum score, 10	2	4	6	8	10
Number of other ecosystems	<1	1-2	> 3		
Maximum score, 10	0	6	10		
Transboundary Significance, 20 points					
No. of Migratory Species	<5	5-10	> 10		
Maximum score, 8	3	6	10		
Tourism (yes or no)	no	yes			
Maximum score, 5	0	5			
Cross-boundary Fishing (yes or no)	no	yes			
Maximum score, 5	0	5			
Regional/Global Significance, 10 points					
Number of endangered and threatened species	<5	5-10	>10		
Maximum score, 10	3	6	10		
Area, 10 points					
Area of coral reefs (ha)	< 100	101- 500	> 500		
Maximum score, 10	3	6	10		

Table 4 Indicators for socio-economic considerations of coral reef systems to be used in the ranking of coral reef sites bordering the South China Sea.

Indicators	Scale of Indicators			
	1	**2**	**3**	
Threats, 15 points				
Reversibility of fishing impact	Low	Medium	High	
Maximum score, 3	1	2	3	
Reversibility of development impact	Low	Medium	High	
Maximum score, 3	1	2	3	
Reversibility of coral mining	Low	Medium	High	
Maximum score, 3	1	2	3	
Reversibility of land-based pollution	Low	Medium	High	
Maximum score, 3	1	2	3	
Natural impact(typoon, bleaching and COT star fish)	Low	Medium	High	
Maximum score, 3	1	2	3	
National significance, 25 points				
Identified as a national priority	Rest	3	2	1
Maximum score, 10	0	3	6	10
Level of direct stakeholder involvement in management	Low	Medium	High	
Maximum score, 5	1	3	5	
socio-economic value	Low	Medium	High	
Maximum score, 10	3	6	10	
Finance consideration - cofinancing, 20 points				
Potential for cofinancing	< 1:1	1:1	> 1:1	
Maximum score, 20	10	15	20	
Local stakeholder/ community involvement, 20 points				
Local stakeholder/ community involvement	Low	Medium	High	
Maximum score, 20	10	15	20	
Transboundary management, 20 points				
Potential transboundary management	no	yes		
Maximum score, 20	0	20		

Table 5 Indicators and weight for seagrass systems of biological diversity, transboundary, regional and global significance.

Class of Indicator	Indicator scale				
	Score				
1. Area maximum 25 points					
1.1 Total area (ha) maximum 15 points	<20	21-100	101-300	301-500	>500
Score	3	6	9	12	15
1.2 Percent coverage maximum 10 points	<20	21-40	41-60	61-80	>80
Score	2	4	6	8	10
2. Biological diversity 60 points					
2.1 Species diversity Score maximum 52 points					
2.1.1 Seagrass species	<2	3-4	5-6	7-8	>8
Score Maximum 15 points	3	6	9	12	15
2.1.2 Gastropods	<20	21-40	41-70	71-100	>100
Score Maximum 5 points	1	2	3	4	5
2.1.3 Penaeid shrimps	0	1-3	4-5	6-7	>7
Score Maximum 8 points	0	2	4	6	8
2.1.4 Sea Urchins	0	1-2	>2		
Score Maximum 4 points	0	2	4		
2.1.5 Siganids	0	1-2	3-4	>4	
Score Maximum 8 points	0	2	5	8	
2.1.6 Holothurians	0	1-5	>5		
Score Maximum 8 points	0	4	8		
2.1.7 Starfish	0	1-3	>3		
Score Maximum 4 points	0	2	4		
2.2 Community diversity Score maximum 8 points					
2.2.1 Number of other aquatic ecosystems	1	2	>2		
Score Maximum 8 points	3	5	8		
3. Transboundary significance 5 points					
3.1 Number of migratory aquatic species					
Score Maximum 5 points	score 1 point per species				
4. Regional/Global significance 10 points					
4.1 Number of endangered & critically endangered aquatic species					
Score Maximum 10 points	score 1 point per species				

Table 6 Indicators for socio-economic considerations of seagrass systems, to be used in the ranking of seagrass sides bordering the South China Sea.

Class of Indicator	Indicator scale			
	Score			
1. Reversibility of Threats maximum 10 points				
	Low	Medium	High	
1.1 From destructive fishing				
Score – max 5	1	3	5	
1.2 From pollution				
Score – max 5	1	3	5	
2. National significance/priority-Government support maximum 16 points				
2.1 National priority	Low	Medium	High	
Score – max 16	5	10	16	
3. Financial considerations /co-financing maximum 22 points				
3.1 Project cost ($US)	>150,000	150,000	<150,000	
Score – max 10	3	6	10	
3.2 Co-financing commitment	<1/1	1/1	>1/1	
Score – max 12	4	8	12	
4. Stakeholders involvement maximum 22 points				
4.1 Local government (in cash/in-kind)	Low	Medium	High	
Score – max 6	2	4	6	
4.2 Central government (in cash/in-kind)	Low	Medium	High	
Score – max 4	1	2	4	
4.3 NGOs/Civil Society (in cash/in-kind)	Low	Medium	High	
Score – max 6	2	4	6	
4.4 Private Sector (in cash/in-kind)	Low	Medium	High	
Score – max 6	2	4	6	
5. Management potential maximum 30 points				
5.1 Accessibility	Low	Medium	High	
Score – max 10	3	6	10	
5.2 Existing institutional framework	Low	Medium	High	
Score – max 10	3	6	10	
5.3 Existing information	Low	Medium	High	
Score – max 10	3	6	10	

Table 7 Environmental Indicators and Scores for wetlands bordering the South China Sea that will be used in the Ranking of Wetlands Sites within each cluster.

Environmental Indicators					
1. Area (ha) 10%					
Area 10%	100 - 10,000	10,000-50,000	50,000-100,000	100,000-150,000	> 150,000
	2%	4%	6%	8%	10%
2. Biological diversity 60%					
2.1 No. of Fish species 18%	1 - 50	51 - 100	101 - 150	151-200	> 200
	4%	7%	11%	15%	18%
2.2 No. of bird species 18%	1 - 50	51 - 100	101 - 150	151-200	> 200
	4%	7%	11%	15%	18%
2.3 No. of plant species 6%	1- 100	101-200	201-250	251-300	> 300
	1%	2%	3%	5%	6%
2.4 No. of mammal species 6%	1-10	11- 20	21 - 30	31-50	> 50
	1%	2%	3%	5%	6%
2.5 Wetland types 12%	1	2	3	4	> 5
	2%	4%	6%	10%	12%
3. Transboundary Significance 15%					
No. of migratory. Species 15%	1 - 10	11- 20	21 - 30	31-40	> 40
	3%	6%	9%	12%	15%
4. Regional/Global Significance 15%					
4.1 No. of endemic species 7%	1	2	> 3		
	2%	4%	7%		
4.2 No. of endangered. species 8%	1 - 6	7 -10	> 10		
	3%	5%	8%		

Table 8 Socio-economic Indicators and Scores for wetlands bordering the South China Sea.

Socio-Economic indicators			
1. Threats 20%			
1.1 Reversibility of External sources of change, 10%	Low	Medium	High
	2%	6%	10%
1.2 1 Reversibility of Internal source of change, 10%	Low	Medium	High
	2%	6%	10%
2. National significance 40%			
2.1 Identified as a national priority, 25%	1	2	3
	25%	15%	10%
2.2 Level of direct stakeholder involvement in management, 10%	Low	Medium	High
	2%	6%	10%
2.3 Commitments to RAMSAR, 5%	no	planned	yes
	0	~~3%~~	5%
3. Financial considerations 20%			
3.1 Potential for cofinancing (% of potential project budget), 20%	25	50	100
	5%	10%	20%
4. Local stakeholder involvement 20%			
4.1 Local stakeholder/community involvement	Low	Medium	High
	2%	12%	20%

ANNEX 9

Preliminary Ranking of Potential Demonstration Sites

Background

The agreed procedures for selecting demonstration sites involve a three-step process:

1. Initial clustering of sites within each habitat sub-component on the basis of similarity according to an agreed set of parameters;
2. Ranking of sites within clusters according to the agreed environmental criteria and indicators
3. Final selection based on a combined rank, determined on the basis of both the environmental and socio-economic criteria and indicators.

Following review by the Regional Scientific & Technical Committee, of the recommendations of the Regional Working Groups regarding the criteria, indicators and rank scores to be applied to determining priority within clusters, the potential demonstration sites were ranked on the basis of the environmental criteria.

Results

The preliminary ranking of mangrove, seagrass, and coral reef sites, prepared in accordance with the indicators and weights agreed by the RSTC are presented in Tables 1, 2 and 3 respectively, according to the clusters discussed in Annex 7 of this report.

Table 1 presents the outcome for the mangrove potential demonstration sites and it can be seen that a number of the highest ranking sites overall, fall as outliers of the main clusters. It is imperative therefore that the data relating to these outlying sites be checked and verified.

Table 2 presents the outcome of the ranking according to environmental criteria and indicators for the seagrass sites based on the two main clusters identified in the cluster analysis and reported on in Annex 7 of this report. As in the case of the mangrove sites several of the outliers (here listed as “cluster 3”) represent the highest ranked sites overall. Table 3 presents the outcome with respect to the ranking of the coral reef sites with the indicator of mammal species removed.

A ranking for the wetlands sites is not provided following the decision of the RSTC that the sites reported be disaggregated into smaller more uniform habitat entities.

Table 1 Preliminary ranking within clusters, based on environmental indicators, of potential mangrove demonstration sites bordering the South China Sea.

Site	Present Area	True mangrove Spp.	No Associate Mangrove species	No Resident Fish Spp.	No. Crustacean. Spp.	No. Resident Bird Spp.	Zones - Spp. Associations	Trophic levels	No. Migratory Bird Spp.	South China Sea Endemic Spp. Mangrove	Endangered & Threatened Species	Rank score
Cluster 1												
Trad Province	28	10		2	0	4	6		2			52
DongXhaiGang	21	6	1	1	1	2	6	6	4	0	2.5	50.5
Peam Krasop	26	10	2	1	1	2	6	n/a	2	n/a	n/a	50
Angke Kaput	7	3	4	1	1	4	11	9	4	n/a	2	46
Quinglangang	21	6	1	1	2	n/a	6	6	n/a	0.5	0	43.5
Pak Phanang Bay	28	3		2	0	2	6		0		0.5	41
Tien Yen	21	3		2	2	2	3		4			37
Ban Don Bay	21	3		2	0	2	6		2			36
Pattani Bay	21	3		1	0	1	6		2			34
Thung Kha Bay - Savi Bay	21	3		1	0	1	6		2			33
Dong Peng-Botum Sakor	14	3	2	1	1	2	6	n/a	2	n/a	n/a	31
Ream-Veal Rinh	14	1	1	1	1	1	6	n/a	2	n/a	n/a	27
FE184	7	6		2	1	1	6		2			25
Cluster 2												
Xuan Thuy	21	3		2	2	2	6		8			44
Shangkou	14	3	1	1	2	2	3	6	6	0	2.5	40.5
Futien	7	3	1	1	1	2	6	6	6	0	2.5	35.5
Soc Trang	14	6		1	0	4	3		2			30
Kung Kraben Bay	14	3		2	0	2	3		0			24
Van Uc	7	3		2	2	2	3		4			23
Cluster 3												
Can Gio	28	10		2	2	4	6		2			54
Ca Mau	28	10		2	2	2	6		2			52
Yen Hung	28	3		2	2	2	3		2			42
Hai Ninh	21	3		2	1	2	3		2			34
Kien Giang	21	3		2	0	2	3		2			33
Thanh Phu	7	6		4	4	4	6		2			31
Sao Luoi	7	6		2	2	1	6		2			26
Cat Ba	7	3		2	2	2	3		4			23
Outliers												
Batu Ampur	35	6	4	4	1	2	11	9	8	1	5	86
Bangkalis	35	3	2	1	1	2	11	9	4	n/a	1	68
Ngurah Rai	21	10	2	2	2	2	11	6	6	1	n/a	63
Belitung Island	35	1	1	2	1	1	6	6	2	n/a	2	57
Fangchenggang	21	3	1	1	2	2	6	6	10	0	2.5	54.5
Welu River Estuary	35	10		2	0	2	3		0			52
Con Dao	7	6		2	1	4	11		0			31

Table 2 Preliminary ranking within clusters, based on environmental indicators, of potential seagrass demonstration sites bordering the South China Sea.

Site Name	Area (ha)	% cover	No Seagrass Spp.	No Gastropod Spp.	No Penaeid Spp.	No Urchin Spp.	No Siganid Spp.	No holothurian Spp.	No starfish genera	No. of other ecosystems	No. of migratory Spp.	endangered threatened Spp.	Total
Cluster 1													
Hepu seagrass bed	15	10	6	1	4	2	2	4	2	3	3	2	54
Pattani Bay	9	8	6	2	8	n/a	8	n/a	2	3	n/a	1	47
Sarat Thani	12	4	9	4	2	2	2	4	4	3	n/a	1	47
Kung Krabane Bay	15	8	9	1	4	n/a	2	n/a	n/a	5	n/a	1	45
Pulau Tinggl Mersing	3	8	9	n/a	n/a	n/a	2	4	2	3	3	1	35
Pulau Besar Mersing	3	8	9	1	n/a	n/a	2	4	2	3	1	1	34
Pulau Perhenlian	3	4	3	n/a	n/a	n/a	5	4	2	3	n/a	1	25
Setlu Terangannu	3	8	6	1	n/a	n/a	2	n/a	n/a	3	1	n/a	24
Pulau Redang	3	2	3	n/a	n/a	n/a	5	4	n/a	3	n/a	n/a	20
Merchang	3	4	6	n/a	n/a	n/a	n/a	n/a	n/a	3	n/a	n/a	16
Telaga Simpul	6	n/a	3	n/a	n/a	n/a	2	n/a	n/a	3	1	n/a	15
Sungal Kemaman	3	2	3	n/a	n/a	n/a	2	n/a	n/a	3	1	n/a	14
Cluster 2													
Cape Bolinao	15	8	15	n/a	6	n/a	5	4	2	5	n/a	n/a	60
Phu Quy Island	9	6	9	2	3	4	5	8	4	5	2	3	60
Bai Bon, Phu Quoc Is	15	8	12	3	4	n/a	2	4	2	5	n/a	3	58
Thuy Trieu (Khan Hoa)	15	6	9	1	2	n/a	2	8	4	8	n/a	2	57
Puerto Princesa/ Honda Bay	15	10	12	n/a	n/a	n/a	5	4	4	5	n/a	n/a	55
Rach Vem, Phu Quoc Is	15	8	9	2	4	n/a	2	4	2	5		3	54
Puerto Galera	9	10	15	n/a	n/a	n/a	2	4	2	5	n/a	2	49
LiAn seagrass bed	9	10	9	1	4	2	2	4	2	5	n/a	n/a	48
Liusha seagrass bed	15	10	3	1	4	0	2	4	2	5	n/a	1	47
Xincun seagrass bed	9	10	6	1	4	2	2	4	2	5	n/a	n/a	45
Mapor	6	6	15	1	2	n/a	2	n/a	2	5	3	1	43
Tanjung Adung Laut Shoal	6	8	15	n/a	n/a	n/a	2	n/a	n/a	5	1	1	38
Tanjung Adung Darel Shoal	6	8	15	n/a	n/a	n/a	2	n/a	n/a	3	1	1	36
Merambong Shoal	6	8	15	1	2	n/a	2	n/a	n/a	n/a	n/a	1	35
Tungka Bay	15	8	3	n/a	n/a	n/a	n/a	n/a	n/a	5	n/a	1	32
Ulugan Bay	3	10	12	n/a	n/a	n/a	2	n/a	n/a	5	n/a	n/a	32
Medang-Mesanak	3	4	12	n/a	2	n/a	n/a	n/a	n/a	5	n/a	n/a	26
Galang Baru	3	4	12	n/a	2	n/a	n/a	n/a	n/a	5	n/a	n/a	26
Senayang-Kentar	3	4	12	n/a	2	n/a	n/a	n/a	n/a	5	n/a	n/a	26
Limbong Bay	3	4	9	n/a	2	n/a	n/a	n/a	n/a	5	n/a	n/a	23
Trat	3	4	9	n/a	n/a	n/a	n/a	n/a	n/a	5	n/a	1	22

Table 2 *continued.* Preliminary ranking within clusters, based on environmental indicators, of potential seagrass demonstration sites bordering the South China Sea.

Outliers (Cluster 3)													
Con Dao Island	9	4	15	5	8	n/a	2	8	2	8	n/a	5	66
Trikora Beach	6	15	15	1	2	n/a	8	4	2	5	3	1	62
KKSG1	12	n/a	12	n/a	n/a	n/a	n/a	n/a	n/a	8	n/a	1	33
KKSG2	15	n/a	12	n/a	n/a	n/a	n/a	n/a	n/a	8	n/a	1	36
KepSG1	15	n/a	12	n/a	n/a	n/a	n/a	n/a	n/a	8	1	1	37
Tunku Abdul Rahman Park	3	n/a	15	n/a	n/a	n/a	n/a	4	2	3	2	n/a	29
KapSG1	15	n/a	9	n/a	n/a	n/a	n/a	4	n/a	8	n/a	1	27
Temiang	3	2	3	n/a	2	n/a	n/a	n/a	n/a	5	n/a	n/a	15

Table 3 Preliminary ranking within clusters, of potential coral reef demonstration sites bordering the South China Sea. Ranking is based on the revised criteria and indicators listed in Annex 8 of this report.

Site Name	Hard coral Genera	Hard coral species	live coral cover (%)	Number of coral reef fish genera	Number of coral reef fish species	other ecosystem	Number of endangered and threatened species	Area (ha)	Ranking score
First Cluster									
Nha Trang bay	10	10	4	9	4	6	6	10	**59**
Con Dao	8	8	2	9	4	6	10	10	**57**
Ca Na bay	6	4	4	9	4	6	3	10	**46**
Ninh Hai	6	6	4	9	4	0	6	10	**45**
Phu Quoc	4	2	4	7	4	6	6	10	**43**
Hai Van - Son Tra	6	4	6	9	4	6	3		**38**
Cu Lao Cham	4	4	4	9	4	0	3	6	**34**
Losin	4	2	4	7	2	6	3	3	**31**
Ha Long - Cat Ba	6	6	4	3	2	6	3		**30**
Chao Lao	6	2	4	2	4	6	3	3	**30**
Koh Kra	4	2	4	5	2	6	3		**26**
Bangka	4	4		9	4		3		**24**
Second Cluster									
Mu Koh Chumporn	4	4	6	9	4	10	6	10	**53**
Mu Koh Chang	6	4	4	9	4	10	6	10	**53**
Mu Koh Samui	6	4	4	9	4	10	10		**47**
Mu Koh Ang Thong	4	4	6	**9**	4	10	6		**43**
Koh Tao Group	6	2	4	9	4	6	6	6	**43**
Mu Koh Samet	1	2	4	7	2	10	10	6	**42**
Anambas	10	8		6	4	10	3		**41**
Senayang Lingga	10	8		7	4	10			**39**
Belitung	8	6	4	5	4	10			**37**
Sattaheep Group	4	2	4	5	2	10	3	6	**36**
Karimata	6	6		9	4	10			**35**
Prachuab	4	2	4	9	4	6	6		**35**
Sichang Group	4	2	2	5	2	10	3	3	**31**
Lan and Phai Group	1	2	2	5	2	6	6	6	**30**
Batu Malang, Pulau Tioman	6	2	6	9	4				**27**
Pulau Lima, Pulau Redang	6	2	4	9	4				**25**
Teluk Jawa, Palau Dayang	4	2	4	9	4				**23**
Pulau Lang Tengah	4	2	4	9	4				**23**
Song Khla	1	2	2	1	2	6	3		**17**
Third Cluster									
SHVCR3	4	2		5	2	10	10		**33**
KKCR2		2			2	6	10	10	**30**
KAMCR1		2	6		2	10		10	**30**
KEPCR1		2	2		2	10		10	**26**
KKCR1		2			2	6	10	6	**26**
SHVCR1		2			2	10	10		**24**
SHVCR2		2			2	10	10		**24**
Bach Long Vi	4	2	2	5	2		3		**18**

ANNEX 10

Revised Project Work Plan and Timetable

Background

The original Project document envisaged commencement of project activities in January 2002 leading to final selection of demonstration sites in December 2003 and execution of these activities over the period 2004 to 2006. Integral to this overall schedule was the original programme of Regional Working Group meetings, two of which were scheduled to take place in both 2002 and 2003 and one in each following year.

Nature and Cause of the Delays

The Project became operational with the signature of the project document on 21st January 2002. Activities were initiated in February 2002 with the appointment of the Project Director and Senior Expert but the two other experts were not recruited until the middle of April. Despite this the first RSTC meeting was convened within the timeframe of three months envisaged by the Project Steering Committee and funds were transferred to the Specialised Executing Agencies during February and March 2002.

From the perspective of the GEF therefore the project commenced on 21st January 2002; from the perspective of UNEP on 28th January, but from the perspective of the SEAs on varying dates from February through to the 21st March when funds were received. During 2002 all regional meetings were held as scheduled, however the transfer of the second tranche of funds was delayed in a number of cases as a result of various factors, both on the part of the SEAs and of the PCU. Similar delays have also occurred in the transfer of the third tranche of funds, which should have occurred in February 2003. It seems likely that additional delays will occur in the transfer of the 4th tranche since audit reports have been received in respect of only 16 of the 38 Memoranda of Understanding.

In the case of Malaysia, MoUs were signed for the coral reef, seagrass, wetland and land-based pollution components only in September and although funds were transferred at the end of 2002 activities only really commenced in the first quarter of 2003. The Memoranda of Understanding for the fisheries and mangrove components of the project remain unsigned as of June 18th 2003.

During the first half of 2003 the PCU has functioned with only 2.5 professional staff members and individuals selected to fill the vacant posts have still to be formally recruited by UNEP. It seems likely that they will not take up their appointments before July and/or August 2003. This has placed an unacceptably heavy burden on the PCU, which in combination with delays in the submission of reports, by the Specialised Executing Agencies both administrative and substantive, has resulted in unacceptable overall delays to execution of some project elements.

The situation has not been helped by the SARS outbreak, which severely restricted travel in the region and necessitated the re-scheduling[16] of the Regional Scientific & Technical Committee meeting from May to July. In addition it has proved necessary to relocate this meeting in Phuket, Thailand. The Regional Working Group on Land-based Pollution has also had to be re-scheduled due in part to SARS related problems and in part to the failure of some focal points to submit the required inputs for the meeting on time[17]. A number of the Regional Working Group meetings have been convened without a full complement of the anticipated reports and despite assurances that such data and reports would be provided according to an agreed schedule a number of them remain outstanding[18].

Realistically therefore the delays in individual activities range from a few weeks to several months and overall the impact on the project work plan can be estimated at between two and three months. To continue operating as though these delays had not occurred is both unrealistic and counter-

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16 *The third meeting of the RSTC was originally scheduled to be held in Guangzhou, China 8 - 11th May, 2003.*

17 *Despite a delay of 19 weeks the Philippines had not submitted the national report as of June 8th. This is particularly embarrassing since the Philippines was supposed to host the third meeting.*

18 *Philippines, mangrove, coral reefs and fisheries.*

productive, hence the Regional Scientific and Technical Committee considered the matter and following extensive discussion adopted the following work plans and timetables for the project components.

Revised Workplan for the Habitat Sub-Components

The fourth meetings of the Regional Working Groups for the habitat sub-components were conceived as completing four primary tasks. The following breakdown indicates the individual steps required to ensure that the required inputs for these regional meetings are produced.

Task 1. Reviewing the final country reports prior to their publication:

Steps

1.1	Receipt by PCU of final drafts	*Due date 31st March*
1.2	Dispatch to independent reviewers	*Due date 31st March*
1.3	Receipt by PCU of independent reviews and dispatch to Focal Points	*1 month*
1.4	Revision of the reports by Focal Points and return to PCU	*1 month*
1.5	English editing & formatting of reports in PCU	*minimum 1.5 month*
1.6	Finalisation & publication	*minimum 1.5 months*

Notes

A ***Step 1.1*** *Not all reports have been received and hence the PCU has delayed dispatch to reviewers, since the intention was that reviewers would handle several reports simultaneously.*

B ***Step 1.4*** *These documents must be received at least 2.5 weeks in advance of the fourth meeting in order to ensure duplication and distribution to the RWG members.*

C ***Step 1.5*** *In reality step five may involve more time since reports will need to be sent back and returned at least once prior to finalisation and the amount of English editing is likely to be extensive.*

Task 2. Review of the first draft of the regional overviews of the reports:

Steps

2.1 Receipt of the final drafts of the national reports by the PCU.

2.2 Preparation of the first draft by the PCU member in consultation with the Chairperson, Vice-Chairperson and Regional expert members of the RWG 1.5 months.

2.3 Finalisation and approval by the RWG (via e-mail) of the draft prior to publication.

Notes

A ***Step 2.3*** *Final Regional Overviews need to be available in advance of the Regional Scientific Conference.*

Task 3. Review all demonstration site proposals both GEF and non-GEF funded, for inclusion in the regional network of demonstration sites:

Steps

3.1 Agreement by the RWG and the RSTC on the priority sites for which proposals should be developed.

3.2 Drafting of the proposals by the Focal Points in the agreed format.

3.3 Submission to the PCU no later than September 1st.

3.4 Editing, checking by the PCU and return for finalisation.

3.5 Finalisation and submission by the Focal Points.

3.6 Printing and distribution to potential donors by October 1st.

Notes

A **Step 3.1** Originally the RSTC was to have met and decided upon the priorities during May (8th - 11th) The meeting was delayed due to the SARS outbreak but even if it had not been delayed it would not have been possible to finalise the priorities at that time since not all of the required data and information had been supplied by the Specialised Executing Agencies.

Task 4. **Review the demonstration site proposals and prepare recommendations to the RSTC and PSC regarding priorities for receipt of GEF funds, which involves the following steps:**

Steps

4.1 Receipt by the PCU and distribution to all members of the proposals in final form one month in advance of the RSTC meeting.

4.2 Preparation by the PCU of revised ranking based on the complete causal chain analysis and details of co-financing contained in the demonstration proposals.

4.3 Distribution to potential donors of finalised proposals a minimum of 8 weeks in advance of the Regional Scientific Conference.

The consequence of these steps and the necessity to phase the regional working group meetings for the habitat sub-component results in the following proposed schedules for the coral reef and seagrass (Table 1), mangrove (Table 2) and wetlands (Table 3) subcomponents.

Table 1 Timetable for Coral reefs and Seagrass.

	2003							2004									
Month	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**			
Task # 1																	
1.3 Independent Review		**1.3**															
1.4 Revision by Focal Points			**1.4**														
1.5 Editing & Formatting					**1.5**												
1.6 Publication								**1.6**									
Task # 2																	
2.1 Preparation of First Draft					**2.1**												
2.2 Finalisation							**2.2**										
2.3 Publication									**2.3**								
Task # 3																	
3.1 Agree priorities	**3.1**																
3.2 Draft Proposals send to PCU					**3.2**												
3.3 Editing checking & return						**3.3**											
3.4 Finalisation & submission to PCU						**3.4**											
3.5 Printing &Distribution to donors							**3.5**										
Task # 4																	
4.1 Distribution to RSTC							**4.1**										
4.2 Preparation of revised ranking							**4.2**										
4.3 Distribution to donors									**4.3**								
4.4 Final decisions																	
4.5 Appraisal finalisation new MoUs																	
4.6 Implementation														**X**			
REGIONAL ACTIVITIES																	
RWG meetings							**X**										
R. Scientific Conf.									**X**								
RSTC 4th meeting									**X**								
PSC 3rd meeting									**X**								

Table 2 Timetable for Mangroves.

	2003							2004									
Month	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**			
Action # 1																	
1.3 Independent Review		**1.3**															
1.4 Revision by Focal Points			**1.4**														
1.5 Editing & Formatting					**1.5**												
1.6 Publication							**1.6**										
Action # 2																	
2.1 Preparation of First Draft					**2.1**												
2.2 Finalisation						**2.2**											
2.3 Publication							**2.3**										
Action # 3																	
3.1 Agree priorities	**3.1**																
3.2 Draft Proposals send to PCU				**3.2**													
3.3 Editing checking & return					**3.3**												
3.4 Finalisation & submission to PCU					**3.4**												
3.5 Printing & distribution to donors						**3.5**											
Action # 4																	
4.1 Distribution to RSTC						**4.1**											
4.2 Preparation of revised ranking						**4.2**											
4.3 Distribution to donors							**4.3**										
4.4 Final decisions									**X**								
4.5 Appraisal finalisation new MoUs																	
4.6 Implementation														**X**			
REGIONAL ACTIVITIES																	
RWG meetings					**X**												
R. Scientific Conf.									**X**								
RSTC 4th meeting									**X**								
PSC 3rd meeting									**X**								

Table 3 Timetable for Wetlands.

	2003							2004									
Month	6	7	8	9	10	11	12	1	2	3	4	5	6	7			
Action # 1																	
1.3 Independent Review		**1.3**															
1.4 Revision by Focal Points			**1.4**														
1.5 Editing & Formatting					**1.5**												
1.6 Publication							**1.6**										
Action # 2																	
2.1 Preparation of First Draft					**2.1**												
2.2 Finalisation						**2.2**											
2.3 Publication							**2.3**										
Action # 3																	
3.1 Agree priorities		**3.1**															
3.2 Draft Proposals send to PCU				**3.2**													
3.3 Editing checking & return					**3.3**												
3.4 Finalisation & submission to PCU						**3.4**											
3.5 Printing & distribution to donors							**3.5**										
Action # 4																	
4.1 Distribution to RSTC							**4.1**										
4.2 Preparation of revised ranking							**4.2**										
4.3 Distribution to donors							**4.3**										
4.4 Final decisions									**X**								
4.5 Appraisal finalisation new MoUs																	
4.6 Implementation														**X**			
REGIONAL ACTIVITIES																	
RWG meetings							**X**										
R. Scientific Conf.									**X**								
RSTC 4th meeting									**X**								
PSC 3rd meeting									**X**								

Revised Workplan for Land-Based Pollution Component
(Draft for discussion at 3rd RWG-LbP meeting)

The third meeting of the Regional Working Group on Land-based Pollution has been delayed from February to July and has, four primary tasks of which Tasks 1 and 2 are identical to those of the habitat sub-components although the proposed timing is different.

Task 1. Reviewing the final country reports prior to their publication:

Steps

1.1 Receipt by PCU of final drafts *Due date 31 Dec. 02*
1.2 Dispatch to independent reviewers *to be decided*
1.3 Receipt by PCU of independent reviews and dispatch to Focal Points *to be decided*
1.4 Revision of the reports by Focal Points and return to PCU *to be decided*
1.5 English editing & formatting of reports in PCU *minimum 1.5 month*
1.6 Finalisation & publication *minimum 1.5 months*

Notes

A ***Step 1.1*** *Not all reports have been received and hence the PCU has delayed step 1.2. The Regional Working Group meeting has been postponed twice.*

B ***Step 1.2- 1.4*** *need to be discussed and agreed by the 3rd meeting of RWG-LbP.*

C ***Step 1.5*** *In reality step five will involve more time since reports will need to be sent back and returned at least once prior to finalisation and the amount of English editing is likely to be extensive.*

Task 2. Review of the first draft of the Regional Overview of the reports which involves the following steps:

Steps

2.1 Receipt of the final drafts of the national reports by the PCU.

2.2 Preparation of the first draft by the PCU member in consultation with the Chairperson, Vice-Chairperson and Regional expert members of the RWG 1.5 months.

2.3 Finalisation and approval by the RWG (via e-mail) of the draft prior to publication.

Notes

A ***Step 2.3*** *Final Regional Reviews need to be available in advance of the Regional Scientific Conference.*

Task 3. Reviewing all pilot activity proposals both GEF and non-GEF funded for inclusion in the regional network of pilot activities:

Steps

3.1 At the 3rd meeting, the RWG-LbP should collate the national data, agree on the regional criteria and format for the ranking and prioritisation of pilot activities, and identify potential pilot activities.

3.2 Drafting of the proposals for pilot activities by the Focal Points in the agreed format.

3.3 Submission to the PCU no later than 1st November 2003.

3.4 Editing, checking by the PCU and return for finalisation.

3.5 Finalisation and submission by the Focal Points.

3.6 Printing and distribution to potential donors by 1st December 2003.

Task 4. Reviewing the proposals of the pilot activities and preparing recommendations to the RSTC and PSC regarding priorities for receipt of GEF funds:

Steps

4.1 Receipt by the PCU and distribution to all members of the proposals in final form one month in advance of the RSTC meeting.

4.2 Preparation by the PCU of revised ranking based on the complete causal chain analysis and details of co-financing contained in the demonstration proposals.

4.3 Distribution to potential donors of finalised proposals a minimum of 8 weeks in advance of the Regional Scientific Conference.

Revised Workplan for the Fisheries Component

At the fourth meeting of the Regional Working Group on fisheries, it is expected that the following tasks will be finalised:

Task 1. Reviewing the final country reports prior to their publication:

Steps

1.1 Receipt of final drafts by PCU and despatch to reviewers
- 31st May (Cambodia and Vietnam)
- 30th June (Indonesia, Philippines, Thailand)

1.2 Dispatch to independent reviewers
- 30th June (Cambodia and Vietnam)
- 31st July (Indonesia, Philippines, Thailand)

1.3 Receipt by PCU of independent reviews and dispatch to Focal Points.

1.4 Finalisation of the reports based on peer review by Focal Points and return to PCU 1 month
31st July (Cambodia and Vietnam)
31st August (Indonesia, Philippines, Thailand)

1.5 English editing & formatting of reports in PCU minimum 1month
31st August (Cambodia and Vietnam)
30th September (Indonesia, Philippines, Thailand)

1.6 Translation into national languages, as required
30th September (Cambodia and Vietnam)
31st October (Indonesia, Philippines, Thailand)

1.7 Finalisation & publication minimum 1month
31st October (Cambodia and Vietnam)
30th November (Indonesia, Philippines, Thailand)

Notes

A ***Step 1.1*** *Assumes reports received by due date. So far reports from Cambodia and Vietnam have been received on schedule. There has been some delay in identifying peer reviewers due to delayed response and non-receipt of CVs of some potential reviewers.*

B ***Step 5*** *In reality steps 1.5 and 1.6 may involve more time since reports will need to be sent back and returned at least once prior to finalisation and the amount of English editing is likely to be extensive. This could result in delays in step 1.7.*

Task 2. Review GIS database compilation of data submitted to SEA START RCU:

Steps

2.1 Receipt of GIS data by SEA START RC.

2.2 Entry, and confirmation of accuracy.

Task 3. Review progress in assembling meta-data:

Steps

3.1 Submission of meta-data forms to SEA START RC.

3.2 Entry, and confirmation of accuracy.

Task 4. Review of the first draft of the Regional Overview of the national reports:

Steps

4.1 Receipt of the final drafts of the national reports by the PCU.

4.2 Preparation of the first draft by the PCU member in consultation with the Chairperson, Vice-Chairperson and Regional expert members of the RWG *1.5 months.*

4.3 Finalisation and approval by the RWG (via e-mail) of the draft prior to publication.

Notes

A ***Step 4.3*** *Final Regional Reviews need to be available in advance of the Regional Scientific Conference.*

Task 5. Development of work plans and timetable for activities in 2004 including *inter alia*

Steps

5.1 Review and approval of activities and timetable specifically dealing with blast fishing detection trials.

5.2 Development of regional management plans for a regional system of refugia for transboundary fish stocks.

5.3 Preparation, translation into local languages and dissemination of public awareness materials.

5.4 Participation in regional workshops to promote the FAO global and SEAFDEC regional code of conduct on responsible fisheries and organisation of national level activities.

Table 3 Schedule for the Fisheries Component.

Year	2003								2004											
Month	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Action																				
Preparation of National Reports																				
Cambodia	x	R19	F	T	P															
Indonesia		x	R	F	T	P														
Philippines		x	R	F	T	P														
Thailand		x	R	F	T	P														
Viet Nam	x	R	F	T	P															
Create and maintain of National meta-database																				
Cambodia		x																		
Indonesia				x																
Philippines			x																	
Thailand		x																		
Viet Nam				x																
Provide data in GIS format to regional Database																				
Cambodia				x																
Indonesia					x															
Philippines				x																
Thailand	x																			
Viet Nam						x														

Additional Elements of the 2003 Workplan

During the second meeting of the RSTC and the Project Steering Committee it was agreed to create two regional task forces, one to advise the Regional Working Groups on legal matters and one to provide advice regarding economic valuations of coastal resources. It was originally envisaged that the first meetings of these groups would be convened during June and July, however given the delays in the other activities it is now proposed that these be convened in August and September.

2004 Workplan

Originally the 2004 work plan envisaged one meeting of each of the Regional Working Groups scheduled to take place during the fourth quarter of the year. At this stage it is proposed that these meetings remain in the schedule, but depending upon the progress in implementing the demonstration sites there may be the need to delay one or more of these meeting until the first quarter of 2005. Decisions regarding such delays should be taken during the next round of regional working group meetings and during the subsequent Regional Scientific & Technical Committee meeting in February 2004.

Discussion

It is clear that, the consequences of non-delivery of the anticipated national outputs, has delayed the entire process to date. Whilst these delays have been designed to maximise participation in the subsequent project activities they penalise those countries and focal points, which have met the agreed deadlines in terms of submission of anticipated outputs.

The RSTC decided that, there was a need to promote a balance between the desire for complete participation by all countries and the disruption to project plans and schedules consequent upon delays caused by only one or two countries. The RSTC endorsed the following principles that:

- failure to submit required inputs, including demonstration site proposals on time shall result in their non inclusion in the overall work plan;
- no focal point may host a regional working group meeting when their own inputs have not been submitted by the due date;

[19] *R = independent review of the national reports. F = finalisation of national reports on the basis of the review; T = Translation into national languages; P = Publication.*

- no future meetings shall be held outside potential demonstration sites considered as high priority by the RSTC.

Recognising the extent of current delays The RSTC reviewed the current schedule of meetings as approved by the PSC in December 2002 and following extensive discussion agreed to adopt a revised schedule as presented in Tables 4 and 5. This involves delaying the fourth meetings of four of the Regional Working Groups and re-scheduling the Regional Scientific Conference, the Regional Scientific & Technical Committee and the PSC meetings until February 2004, a delay of two months.

In recommending this revision the RSTC recognised the fact that the following three consequences will result:

- firstly, the median point for initiation of demonstration activities will be delayed to the second quarter of 2004;
- secondly, existing MoUs will need to be extended at least until July 2004 before being replaced by those reflecting the individual agreed demonstration sites; and,
- thirdly, the necessity to extend the Project duration to permit a full three years of operation of the demonstration sites hence the date of completion of anticipated activities funded under the GEF grant will be June 30th 2007, rather than 31st December 2006.

Table 1 **Revised schedule of meetings for 2003.** (RWG= Regional Working Group; -M= Mangroves; -C= Coral reefs; -S = 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.)

	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	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			
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 N.Y.																																
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
								RWG-M-3																					RWG-S-3							
									RWG-W-3																				RWG-C-3							
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					
		RWG-F-3											***Thai N.Y.***																							
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		
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
																						RSTC-3														
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				
								RWG-LbP-3																													
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	
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						
											RTF-E-1				RTF-L-1																					
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			
																RWG-M-4													*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	
						Ramadan																										RWG-C-4 & S 4				
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					
		rwg-s-4													RWG-W-4										*Xmas*											

Notes: Fourth meetings of the Regional Working Groups on Coral reefs and Seagrass will overlap RWG-Cr-4 from 27-30th November; RWG-S-4 from 29th November to 2nd December 2003.

Table 2 **Schedule of meetings for 2004** (RWG= Regional Working Group; -M= Mangroves; -C= Coral reefs; -S= 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.)

	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	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		
																RWG-LbP-4										Chinese NY					RWG-F-4					
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	29	
																		Regional Science Conference			RSTC-4										PSC-3					
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					
									RTF-E-2																												
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			
																Thai NY																				
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
									RTF-L-2																												
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					
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-F-5														
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				
																RWG-LbP-5														RWG-M-5						
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	
										RWG-W-5						RWG-S-5							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						
									Ramadan														RWG-C-5														
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			
												RSTC-5				PSC-4												Xmas									