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Facility

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

REPORT

**Third Meeting of the Regional Working Group for
the Wetlands Sub-component**

Bali, Indonesia, 4th – 7th March 2003

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Report of the Meeting

1. OPENING OF THE MEETING

1.1 Welcome address

1.1.1 Mr. Yihang Jiang, Senior Expert, opened the meeting on behalf of the Executive Director of UNEP, Dr. Klaus Töpfer, the Director, Division of GEF Co-ordination, Dr. Ahmed Djoghlaif and the Project Director, Dr. John Pernetta. He provided a brief overview of the outcomes of the second meetings of the Regional Scientific and Technical Committee (RSTC), the Project Steering Committee (PSC), and the GEF Assembly, and highlighted the importance of several decisions of these meetings to the work of the Regional Working Group on Wetlands (RWG-W).

1.1.2 He briefed the meeting on the implementation of the project activities and overall achievements since the last round of regional working group meetings. He informed the meeting that presentations of the project were provided to the 2nd International Water Conference of the GEF (Dalian, China, August 2002), and the GEF Assembly (Beijing, China, October 2002). The design and implementation of the project activities received strong interest from countries around the world and from other GEF projects. During the opening session of the GEF Assembly, the representative of China and UNEP Executive Director expressed their satisfaction regarding the implementation of the project.

1.1.3 Mr. Jiang noted that there were still some problems in the implementation of agreed project activities. These problems are mainly delays on the part of the Focal Points in providing outcomes from the agreed activities according to the deadlines of agreed work plans. He informed the meeting that according to the agreed workplan there will be new tasks facing the national committees including preparation of the project proposals for the priority sites to be identified by the regional working groups during their third meetings.

1.2 Introduction of members

1.2.1 Members and observers were invited to introduce themselves to the meeting and the list of participants is attached as Annex 1 to this report.

2. ORGANISATION OF THE MEETING

2.1 Election of Officers

2.1.1 Mr. Jiang reminded the meeting of the Rules of Procedure which state that, the working group shall elect from amongst the members, a Chairperson, Vice-Chairperson and Rapporteur to serve for one year. The rules state further that, officers shall be eligible for re-election no more than once. Mr. Dibyo Sartono, Ms. Marlynn Mendoza and Mr. Narong Veeravaitaya who have served as Chairperson, Vice-Chairperson and Rapporteur respectively during 2002, are therefore all eligible for re-election. Members were invited to nominate members as Chairperson, Vice-Chairperson, and Rapporteur for 2003.

2.1.2 Mr. Dibyo nominated Ms. Mendoza as Chairperson, and Mr. Narong seconded this nomination. Mr. Narong nominated Mr. Sok Vong as Vice Chairperson, and Dr. Mai Trong Nhuan seconded the nomination. Mr. Narong proposed Dr. Nhuan as Rapporteur, and Mr. Dibyo seconded the nomination. Ms. Mendoza, Mr. Vong, and Dr. Nhuan were elected unanimously to the positions of Chairperson, Vice-Chairperson, and Rapporteur respectively.

2.2 Documents available to the meeting

2.2.1 The Chairperson invited Mr. Jiang to introduce the documentation available to the meeting. Mr. Jiang referred participants to the document folder, and highlighted the important discussion documents that would need to be considered during the meeting. He noted that the published reports of the second round of regional meetings were also made available and that all the documentation for

the meeting was also available on a CD-ROM. Additional documents tabled by Focal Points at the commencement of the meeting were noted and added to the list of documents (UNEP/GEF/SCS/RWG-W.3/INF.2). The revised list of documents is attached as Annex 2 to this report.

2.3 Organisation of work

2.3.1 Mr. Jiang briefed participants on the administrative arrangements for the conduct of the meeting, and the proposed organisation of work (UNEP/GEF/SCS/RWG-W.3/INF.3). Formal sessions of the meeting will be conducted in English and in plenary although it is envisaged that, sessional working groups will be formed to complete the various reviews and analyses.

2.3.2 Participants were advised that a joint session would be convened with the Regional Working Group on Mangroves to jointly review the outcomes of work related to site characterisation and prioritisation and to consider preliminary listings of potential demonstration sites.

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/RWG-W.3/1, and to propose any amendments or additional items for consideration.

3.2 Mr. Dibyó informed the meeting that some change to the schedule might be required to accommodate a speech from the Deputy Minister for the Environment of Indonesia, who was expected to arrive on the morning of March 5th. With this proviso, the agenda and programme were adopted with no changes, and the agenda is attached as Annex 3 to this report.

4. OPENING REMARKS FROM THE FOCAL POINTS FOR WETLANDS FROM EACH PARTICIPATING COUNTRY

4.1 The Chairperson invited the focal points from the SEAs to provide a short overview of their progress subsequent to the second meeting of the RWG-W and to highlight any additional documentation tabled at the meeting. Presentations were made by all countries on their progress in relation to the planned outputs anticipated to be prepared during the period between the second and third meetings of the RWG-W.

4.2 Mr. Dibyó informed the meeting that, several of the outstanding reports from Indonesia, i.e. the economic valuation, and GIS data for the Indonesian Wetland sub-component will be completed in conjunction with the outputs of other Indonesian habitat sub-component national committees. Mr. Dibyó also expressed his belief that there is a need for funds to conduct additional surveys, and not just for collecting existing data, which may in some cases no longer be valid.

4.3 In reply, Mr. Jiang stated that the purpose of collecting existing data was to identify what kind of sites exist, so that site characterisation can proceed quickly, and to provide a regional knowledge base concerning the characteristic habitats and environments bordering the South China Sea.

4.4 Mr. Vong made a brief presentation on behalf of Cambodia. They had made progress on producing draft reports on the review of past and ongoing activities, the national data and information, the economic valuation, the national legislation and management regime and finally site identification and characterisation, and national criteria and priorities. There has also been some progress on development of a database of socio-economic indicators and some maps have also been produced and the development of national meta-database is ongoing. Cambodia started the project with limited data and information, but the experts in the project tried their best, to overcome the difficulties to achieve the progress made so far.

4.5 Professor Chen Guizhu then gave a presentation on progress made by the Chinese Wetlands sub-committee since the last meeting. She noted that the sub-committee had submitted four reports to date, i.e. the review of past and ongoing activities, review of national management and legislation,

identification and characterisation of sites, and a report on the remote sensing survey and development of a GIS database of coastal wetlands. The economic valuation report was still outstanding.

4.6 Dr. Ebil made a brief presentation on the progress of Malaysia, which was attempting to catch up with other countries involved in the project, following a delayed start due to the late signing of the MOU by Malaysia.

4.7 Mr. Narong informed the meeting that Thailand has characterised 19 sites, but only fully translated 2 from Thai into English so far. Others will be translated and included in the very near future. He further stated that the final GIS report would be given to SEA START, and the NTWG, before being made available to UNEP, due to the possibility of data sensitivity.

4.8 Dr. Nhuan made a brief presentation on the progress to date in Viet Nam, where 14 sites have been identified, characterised, and ranked. In addition the majority of the anticipated outputs were available in final or near final form.

4.9 Mr. Jiang congratulated Mr. Narong and Dr. Nhuan and on their excellent progress, and their presentations which followed closely the guidance which had been provided in the annotated agenda. He asked if Dr. Nhuan could share his experiences and outline the approach used in Viet Nam to achieve such excellent results.

4.10 Dr. Nhuan replied that he had contracted expert groups and they had produced the required outputs, which had subsequently been shared between the groups, which had facilitated in ensuring the quality of the end results.

4.11 Mr. Jiang cautioned all participants on investing too much time on initial ranking at the national level, since the criteria used may differ from those adopted at a regional level. He also asked if national criteria could be made available for consideration at a regional level, and informed participants that a causal chain analysis and threat analysis need to be completed as part of the demonstration site proposals in advance of the next meeting.

5. REPORTS FROM THE PROJECT CO-ORDINATING UNIT (PCU) REGARDING OVERALL PROGRESS TO DATE

5.1 Status of end-year progress reports, expenditure reports, and budgets

5.1.1 A summary of the status of budgets and reports from the Specialised Executing Agencies in the participating countries, contained in Document UNEP/GEF/SCS/RWG-W.3/4, was presented to the meeting by the Project Director Dr. John Pernetta. The dates of receipt of the 6 monthly progress reports, expenditure reports, and cash advance requests from each Focal Point are contained in Table 1 of this document. The Project Director highlighted the difficulties of the PCU and problems consequent upon the failure of the Focal Points to meet agreed timelines and submission dates. In particular delays in submission of the reports resulted in their being received by the PCU during the busy preparatory period for the regional meetings, resulting in delays in response by the PCU.

5.1.2 The attention of members was drawn to the agreement of the Project Steering Committee that all SEAs would submit their administrative and financial reports within ten working days of the due dates (30th June and 31st of December) and that the PCU would then undertake to respond within 10 working days of receipt.

5.1.3 Mr. Dibyo apologised for the non-delivery of his 6 monthly reports, and explained that they had been delayed since he was waiting for the completion of the audit report. He noted however that he would now send the reports immediately, and not wait for the audit report.

5.1.4 He also noted that in his view the calculated cost per page of outputs was not an adequate way in which to evaluate the outputs and noted that he had submitted more reports than appeared to

have been taken into account in the calculation. He expressed the wish that Table 4 of the document be deleted, as it is not adequate.

5.1.5 In response Dr. Pernetta noted that the cost per page was a crude but simple method of measuring the quantity of outputs but that the quality was of equal concern as evidenced by the agreement of the PSC that a review process be initiated. He noted that he would be up-dating this tabulation based on the reports tabled at this meeting and that due to the sensitivity of the material this document had not been up-loaded to the project website.

5.1.6 Mr. Vong commented that table 4 was a useful reminder to facilitate report submission, and it would have been useful to receive, as an internal document to the focal points only, in advance of the meeting.

5.2 Status of planned substantive outputs from the national level activities

5.2.1 The attention of members was drawn to Annex 8 of the first meeting report (UNEP/GEF/SCS/RWG-W.1/3) and Annex 5 of the second meeting report (UNEP/GEF/SCS/RWG-W.2/3) in which the agreements of the Regional Working Group on Wetlands regarding the delivery of outputs was documented as follows:

1. Review of past & ongoing activities: 1st draft June; final draft August 2002
The second meeting agreed that the first "final" draft would be produced by October and the second final by December 2002
2. Review of national data and information: No dates specified
3. Identification & characterisation of "sites" 1st draft September, Final December
The second meeting agreed that first drafts would be produced by December and the second set by end of January 2003
4. Review National legislation 1st draft September, Final December
The second meeting agreed to defer the first draft to November, the second to January and the final document for publication by end March 2003
5. National Meta-database to be created by February 2003
6. Draft National Priorities by June Final by July 2003
7. Preparation and revision of National Action Plan 1st draft July final August 2003

5.2.2 Documentation received by the Secretariat from the Focal Points up to the end of January has been circulated by e-mail, and was included in the documents available to the meeting. Electronic copies of all reports and documents received from the national level were provided to the meeting, together with hard copies of the site characterisations for reference of each member.

5.2.3 Dr. Pernetta drew the attention of members to the agreement of the Project Steering Committee regarding the need for an independent peer review of the outputs to provide a measure of quality assurance to the GEF Secretariat. He noted that this would be conducted in a manner similar to the review process for articles submitted to refereed journals and that the reviewers would be anonymous and would be asked to provide constructive criticism to the authors of the reports as a mechanism to assist them in improving the reports prior to their being made public.

5.2.4 He also informed the meeting that the Project Steering Committee had further agreed to establish two Regional Task Forces, one for legal matters and one covering issues relating to economic valuation of coastal resources. He noted that the reviews of national legislation and economic valuation would be provided to the Regional Task Forces for their review and consideration and that these Task Forces would be used to provide consolidated advice and guidance to the national committees and regional working groups.

5.2.5 The Chairperson asked if any participant required clarification and some minor points of clarification were sought by Dr. Ebil regarding the timing of production of the outputs, which were addressed through reference to the agreed work plan and the schedule listed in paragraph 5.2.1 above.

5.2.6 Mr. Narong stated that all participants were going through a learning process in conducting this project, and that it was sometimes difficult to assemble the committee members at a time convenient to everyone. He had managed to overcome many minor difficulties through use of telephone conversations to clarify difficult issues.

5.2.7 Ms. Mendoza commented that email communication between members of her committee represented a significant contribution in time by the focal points in addition to the time spent in meetings. Dr. Pernetta noted that this was originally included in the 25% of the focal points time which was committed to the project under the Memoranda of Understanding.

6. REVIEW AND EVALUATION OF COUNTRY REPORTS

6.1 Past and on-going activities including economic valuation

6.1.1 The Chairperson invited the focal points from the SEAs to provide a short overview of the highlights of their reports.

6.1.2 Mr. Narong presented the review of past and ongoing activities in Thailand. He noted that in preparing this he had consulted with involving organisations, distributed questionnaires, compiled and analysed the results, and submitted these to the National Wetland Committee. The results were then sent back to the respondents for verification.

6.1.3 He noted that there were a total of 72 wetland projects identified, most of which concentrated on wetlands surveys; of these, 8 were still ongoing and Table 2 of the report, summarises the results of the analysis. Mr. Narong went on to present the report on economic valuation, which covered use and non-use values.

6.1.4 Mr. Dibylo asked how the economic value of wetlands had been determined. Mr. Narong advised that he had provided guidance to the consultant, who had produced the report, and a document by Barbier *et al.* (1997), distributed by RAMSAR, had been used as the key reference.

6.1.5 Dr. Ebil asked whether everyone should use standardised methods for economic valuation. Dr. Pernetta stated that initially the purpose was to assemble a body of empirical data from the countries rather than conduct new valuation studies. He noted however that the demonstration site proposals might involve the calculation of economic values in order to determine the cost benefits of interventions. In addition, the Regional Task Force might consider how such data could be used at a regional level in providing regional level guidance regarding the economic aspects of sustainable management of coastal areas and habitats.

6.1.6 Dr. Nhuan made a presentation on economic valuation of wetlands in Viet Nam, as an earlier presentation had covered past and ongoing wetland activities in Viet Nam. He presented the values determined for 11 sites, giving high and low estimates for all sites.

6.1.7 During discussion Mr. Narong suggested that aquaculture, and fisheries, should be included in the category of direct use values rather than indirect use values. Dr. Nhuan noted that he had followed the recommended methodology of Barbier *et al.* whilst Dr. Pernetta noted that in one sense it was not important how one classified the different uses provided that all uses were in fact included in the total estimate of economic value.

6.1.8 Dr. Nguyen Hoang Tri, expert member of the RWG-M and a specialist in environmental economics was invited to comment on this matter and suggested that the value of the mangroves as a nursery ground or spawning ground for fisheries would be considered as an indirect values, whilst any extractive activity would normally be considered a direct use. He also noted that this was not an important distinction since one was primarily interested in total economic values, which included services such as coastal protection in the case of mangroves.

6.1.9 Dr. Ebil informed the meeting that at this stage, he was not able to report on the review of economic valuation.

6.1.10 Professor Chen made a brief presentation on the past and ongoing activities and provided the meeting with details of 13 past and ongoing projects. She noted that to date economic valuation has not been completed for two sites.

6.1.11 Mr. Vong presented an overview of Cambodia's past and on-going activities, based on the agreed format. As there was no information specifically related to wetlands in Cambodia, the compilation included activities that were related to the environment in general.

6.1.12 There followed some discussion on the relevance of some of the activities and projects listed in the table for Cambodia. It was agreed that if the project or activity were directed specifically towards the use or management of a wetland environment, then it should be included but that activities, which were conducted in the coastal zone should not be included. Dr. Pernetta also noted that this table is identical to the table presented by Cambodia at the mangroves meeting.

6.1.13 The Chairperson suggested that Cambodia look again at the list, and restrict the listing to those activities directly concerned with wetlands, to which Mr. Vong agreed.

6.1.14 Ms. Mendoza gave a brief presentation, and explained difficulties in locating reports of past projects in the Philippines, which had resulted in several lessons, learned in order to improve institutional memory.

6.1.15 Mr. Dibyo asked Ms. Mendoza why the report had not followed the agreed guideline, and also asked why the economic valuation report was so brief. In response Ms. Mendoza agreed that the report should be in the agreed format, and that she would proceed to reformat it accordingly. She also stated that the economic valuation report was very brief since there did not appear to be a site in the Philippines for which a full economic valuation had been undertaken.

6.1.16 Dr. Pernetta noted that there was probably more data available for the Philippines and other countries than appeared on the basis of the contents of the reports but that this was unlikely to be comprehensive and was likely also to be highly sectorial in nature. Data for example on fish landings and the economic values of fish catches were likely to be fairly common.

6.2 Review of national data and information, creation of national meta-database and national inputs to the regional GIS database

6.2.1 The Chairperson invited the focal points from the SEAs to provide a short overview of their reports and the status of the national meta-databases. She noted that presentations should include information regarding the number of meta-data forms submitted to the SEA START RC, and the status of the national meta-data and databases. In this regard members should note that although several of the reports contain map-based data, no submission of these or other Geo-referenced information has been made to SEA START RC.

6.2.2 Mr. Dibyo said he had submitted his site list of wetlands covering 40 sites at the second meeting, and they are now focussing on these areas for data and information. There are 27 past projects and 7 ongoing projects, as well as 12 expected projects, which were covered in his review, and these are listed in the agreed format. Economic valuation has not yet been done, as this will be done for all habitat sub-components together in Indonesia, under the direction of the NTFP. For GIS data, they have not yet collected the data, for any sites, and only have site data as a point, not lines or polygons.

6.2.3 Mr. Dibyo then presented his report on National Legislation, which was tabled at the meeting and is included in the revised list of documents.

6.2.4 Dr. Nhuan made a presentation of the data and information on 14 wetland sites that had been assembled according to the criteria agreed in the first meeting. However, he noted that he had been unable to enter the data into the GIS questionnaires since he had only received the questionnaire in pdf format. Mr. Passfield made available electronic copies of the MS Word format for the benefit of Dr. Nhuan.

6.2.5 Professor Chen made a presentation on the progress on collection of data and information in China, which had been, categorised into 5 types of wetlands, estuary, intertidal flats, shallow sea area, lagoon, and rocky coast.

6.2.6 A question was raised on the number of types of wetlands for which data and information were to be collected. It was noted that the scope of work had been extensively discussed prior to and during the second meeting of the Regional Working Group on Wetlands at which it had been agreed to extend the scope beyond the originally agreed three wetland types.

6.2.7 Mr. Vong presented his report on behalf of Cambodia concerning data and information, followed by the report on the review of national legislation, institutional and administrative arrangements. He noted that there were no laws specifically concerned with wetlands in Cambodia and no particular institution with responsibility for wetlands, although both Department of Forestry and Department of Fisheries of the Ministry of Agriculture, Forestry and Fishery, and the Department of Nature Conservation and Protection of the Ministry of the Environment were all responsible for aspects of the planning and management of wetlands.

6.2.8 Dr. Ian Campbell asked whether international conventions and treaties should be included in the legislation review, to which Sok Vong replied that the focal area of this project is in the coastal and marine environment. The absence of reference to the Mekong River Agreement was noted by the meeting.

6.2.9 Mr. Narong presented a report on progress in developing the GIS database in Thailand. He presented a GIS map showing the location of 109 sites identified around Thailand, of which 19 had been selected for characterisation, and 2 of these selected were being considered as potential demonstration sites. The meta-database was still to be completed.

6.2.10 Regarding the review of national legislation, institutional and administrative arrangements, he explained that there were no specific laws for wetlands, but many laws that could be applied. The review included international conventions and treaties, some of which still have to be ratified. He also informed the meeting of the various Government organisations dealing with wetlands in Thailand.

6.2.11 Dr. Ebil had nothing to report at this stage, and Ms. Mendoza proceeded with the report for the Philippines. She informed the meeting that a GIS map based on data and information is under preparation. The review of national legislation, institutional and administrative arrangements has been submitted.

6.3 Review of national legislation, institutional and administrative arrangements

6.3.1 Discussion on this agenda item for most countries had been covered along with the agenda item 6.2. Dr. Nhuan gave a brief presentation on the review of national legislation, institutional and administrative arrangements in Viet Nam. Professor Chen then gave a presentation on the review of national legislation, institutional and administrative arrangements in China.

6.3.2 Members were reminded of the decision of the Project Steering Committee to create a Regional Task Force on legal matters and were advised to consider the manner in which this group might assist in finalising these reports.

7. CHARACTERISATION OF NATIONAL WETLAND SITES AND THEIR REGIONAL PRIORITISATION

7.1 The Project Director made two presentations, introducing to the meeting the principles and procedures agreed and approved by the Regional Scientific and Technical Committee and the Project Steering Committee concerning the nature of proposed demonstration sites, their description and ranking for determination of regional priorities (UNEP/GEF/SCS/RSTC.2/10/Amend.1 & UNEP/GEF/SCS/RSTC.2/8).

7.2 He informed the meeting that the development of full proposals for demonstration sites will involve considerable effort and it is unlikely that proposals can be properly developed for more than three to five sites in each country.

7.3 Dr. Pernetta informed the meeting that mid October was the deadline for submission of full and final proposals for demonstration sites to be considered for approval by the Project Steering Committee and consideration by a donors meeting held in conjunction with the Regional Scientific Conference. Some general discussion followed on the indicators that might be adopted as the best for use in the cluster analysis.

7.4 Mr. Narong suggested that the participants look again at Annex 7 of the first meeting report, which contained the originally agreed criteria, and indicators and then review their site characterisation data to see how many of the indicators were represented by concrete data in these data compilations.

7.5 Following some discussion, a draft table was prepared outlining the data and information, which should be tabulated for use in a subsequent cluster analysis. Participants agreed to try and enter data for their sites overnight.

7.6 The tables of site characteristics prepared by the participants overnight were incorporated into a single table for the purpose of conducting the preliminary cluster analysis (Table 1, Annex 4).

7.7 A question was raised regarding the parameters "migratory species" and "spawning grounds" and following discussion it was agreed that Mr. Passfield, the Fisheries Expert from the PCU would circulate electronically, the habitat chapter from the country reports of Fishery component from Cambodia, Indonesia, and Viet Nam during the week after this meeting. To date no report had been received from the Philippines, and the Thailand habitat chapter is still being completed, but these would also be circulated as soon as they were available to the PCU.

7.8 The compilation of national site data resulted in a spreadsheet (Table 2, Annex 4) containing data for 9 parameters and a total of 37 sites as follows: 13 sites from Thailand; 10 from Viet Nam; 6 from China; 3 from Indonesia; 3 from Cambodia; and 2 from Philippines. Gaps in the data were filled using estimates based on expert knowledge, and on the understanding that these will be corrected by the focal points when they return to their own countries. This data table was imported into SPSS and a number of cluster analyses were completed using the data with and without log transformation of several parameters, namely area, number of fish species, number of bird species, number of plant species and number of endemic species (Annex 5).

7.9 The resultant dendrograms and data tables were printed and distributed to the participants for closer consideration. Participants were asked to examine the dendrograms and based on their knowledge and experience, determine whether the results reflect reality and were acceptable, or whether additional analyses should be conducted using additional characters or transformations. For example, it might be found necessary to weight certain parameters if the group considers them to be of greater importance in the context of selecting demonstration sites.

7.10 It was suggested that a cluster analysis should be done for each category, e.g. a lagoon cluster analysis, an estuarine analysis and a mudflat analysis to reflect the different "types" of wetlands encompassed in the work of the group. It was agreed that initially this would not be done since the data sets collected had not been specifically tailored to each individual type of wetland. Had the data sets been different then it would not have been possible to analyse them simultaneously and such an approach would have been valid.

Joint Meeting of the Regional Working Groups on Wetlands and Mangroves

7.11 On the morning of 5th March a joint session between the Regional Working Groups on wetlands and mangroves was convened. The Project Director opened the special joint session, and said that this session had been convened at the request of several members of the regional working groups who felt there was a need for greater communication between the working groups at the regional

level. He noted that the programme for the session was flexible and that the purpose was to share experiences between the two groups and to perhaps discuss the overlap in coverage of site characterisations at the national level.

7.12 Dr. Pernetta noted that as this was a joint session, and some members of each of the working groups might not be known to each other. He therefore invited the participants to introduce themselves, and there followed a “*tour de table*” in which all participants briefly outlined their experience and involvement in the project.

7.13 Following this, Dr. Pernetta invited the Chairs of the two regional working groups to co-chair the session and opened the floor for any suggestions or proposals that members felt required joint discussion, noting that he felt it would be useful for the group to hear an overview of the experiences of the mangrove working group with the application of the cluster analysis. It was agreed that any issues would be dealt with, if and when, they arose.

7.14 Dr. Pernetta then invited, Dr. Gong to present an overview of the results of the exercise conducted by the mangrove group in undertaking the cluster analysis and developing the criteria that could be used for the ranking of sites within clusters. The limitation of parameters that, could be used, was set by, those sites with the least available sets of data and ultimately seven parameters were identified and used in the initial set of cluster analyses. It was noted by the group however that seven was not sufficient for the purpose of developing final clusters, and attempts should be made to expand the number of parameters used including presence or absence data for genera of true mangrove trees.

7.15 The mangrove group felt that it was important to give more weight to the trees, by including the genera (presence or absence) in the final table although this had not been done at this time. Mr. Jiang noted that the cluster analysis had also used only data from only 5 countries, as Indonesia had collated their data by Province rather than by site. Dr. Pernetta noted that the purpose of conducting the initial cluster analysis was to assist in the process of selection of sites by grouping similar sites that would be ranked within the finally identified clusters.

7.16 Dr. Tri highlighted the importance of being careful in collecting and entering data in order to ensure that anomalous results did not result from inaccurate data collection or entry.

7.17 During discussion, the issue of whether the assumption that large size would automatically mean higher biodiversity, was a reflection of reality. It was noted that this is not always the case, as some extensive mangrove areas could be close to monoculture systems for example. It was also noted that, high biodiversity was not necessarily the sole reason for selecting demonstration sites, but sites could also be selected to demonstrate effective management regimes in low diversity areas. It was also noted that the cluster analysis was merely the first of three steps in making recommendations for the choice of demonstration sites.

7.18 Dr. Gong then presented the results of the work of the RWG-M in addressing the second step, of the process in which the indicators, criteria and weights were to be discussed and decided. She noted that the starting point for the work of the group had been the Vietnamese national criteria presented by Dr. Do Dinh Sam.

7.19 A question was raised regarding how the missing data sets were to be addressed in determining an overall rank for a particular site since there are likely to be a high number of these. Dr. Gong indicated that this issue had not yet been discussed but would need to be considered by the group as the tabulation was developed.

7.20 Dr. Sonjai commented that certain key characters of international importance were not covered by the parameters used for site characterisation and ranking, and cited the example of the work done with Japanese and Thai scientists, which indicates that mangroves are better for carbon sequestration than terrestrial forests. Dr. Pernetta alerted the meeting to the fact that there are a number of venture capital companies investing in reforestation, on the basis of agreements with the governments, which gave the companies vested rights in the carbon credits. He noted that such considerations might be

added to the criteria and that private capital might be a possible source of future co-financing restoration activities.

7.21 Mr. Santoso raised an important question regarding the boundaries of areas designated as demonstration sites, using as an example Rambut Island, which is a very extensive breeding site for many bird species which feed in areas quite a long distance from the Island. It was noted that in this example merely protecting the breeding ground, would be completely ineffective if the feeding grounds were destroyed, hence management interventions on the island alone would be ineffective. It was vital therefore that the objectives need to be considered carefully in establishing each demonstration site. In this example, one would need to manage both the breeding and roosting site (Rambut Island), and the feeding grounds. This should be addressed in the proposals for demonstration sites, which should be integrated where required.

7.22 Dr. Fan stated that, there must be a consideration of the types of species present, and not just the number of species. For example, there are sub-tropical mangroves that do not exist in tropical areas and these were characterised by different communities of species.

7.23 Dr. Pernetta asked whether the members of the wetlands group had any comments or observations, which they wished to make on the work of the mangrove group and the value of the cluster analysis. He noted that perhaps the combined session might wish to discuss how one might rank sites, which encompassed more than one habitat type in a single demonstration proposal. There followed a discussion of the relationships between the mangrove and wetland ecosystems, as defined under the project.

7.24 During the discussion Dr. Sonjai noted that it was very difficult to separate a mangrove demonstration site from the adjacent mudflats, estuaries and swamp forests and it was generally agreed that the demonstration sites should encompass all "habitat" types within the defined area of the demonstration site. This problem was further elaborated in diagrammatic form and it was suggested that each group might wish to include a criterion reflecting the number of habitat types in each demonstration site with higher scores going to multiple habitat sites. Dr. Pernetta noted that, where the same physical location had been considered by the national focal points then, these data should be ranked independently by the regional working groups but that, at a national level some co-ordination would be necessary particularly if such a location was identified as a priority for the development of a demonstration site proposal. It was also agreed that not all sites chosen should be multiple habitat sites but that this should be used as one criterion to be added to the overall ranking.

7.25 Dr. Gong reminded participants that different demonstrations would have different purposes but that the overall goal was to select demonstration sites at which it was possible to demonstrate reversal of environmental degradation trends. In this connection Dr. Pernetta noted that it was important to not consider demonstration sites as individual sites, but as components of an integrated framework of demonstration activities that would serve to raise awareness of the problems and potential solutions at all levels and amongst all stakeholders having interests in the South China Sea.

7.26 Dr. Fan emphasised the importance of the demonstration sites in successful outreach, coordination and dissemination of lessons that, can be transferred to the rest of the country and to the region as a whole.

7.27 Dr. Ian Campbell noted that the discussion had shown the importance of the review of past and ongoing projects, as this review will be extremely useful for information transfer, identifying potential lessons learned, and hence in deciding on the types of existing demonstration sites that could be included in the regional framework.

7.28 Dr. Sanit suggested that one might decide to allocate demonstration sites on the basis of for example; one integrated site, one isolated mangrove ecosystem, and one other type to make up the three selected.

7.29 Dr. Mai asked about the mechanism for national coordination in demonstration site selection between the components. Dr. Pernetta indicated that initially this is the responsibility of the NTWG in

each country and that it was at that level that the consideration of relative importance of demonstration activities in each component should be decided.

7.30 Ms. Mendoza, Co-Chair, concluded the session with a request for closer collaboration with the mangrove group in the selection of demonstration sites during the course of this year.

Resumption of the Third Meeting of the Regional Working Group on Wetlands

7.31 The Chairperson asked whether the participants agreed with the outcome of the cluster analyses, following their consideration overnight. All members found that the analyses agreed with their perceptions of the similarities between those sites with which they were familiar. However, Dr. Nhuan expressed some reservations since this analysis had utilised far too many estimates for missing data, he also noted the need to include other parameters in the analysis since the present dendrogram was based on too few character sets. Despite the absence of Malaysian data in the analysis Dr. Ebil stated that, he considered the exercise had demonstrated the utility of the cluster analysis method to assist in site selection.

7.32 Recognising that the sites represented different types of Wetlands Mr. Jiang suggested that the participants go through the dendrogram to identify each of the 37 sites on the list, according to the wetland type they represented and ascertain whether the clusters represented aggregations of similar wetland types.

7.33 Dr. Pernetta made a brief presentation on the use of cluster analysis as a tool and emphasised that it is only as good as the data that is put into it. The fewer data sets you put in, the weaker it is, consequently as Dr. Nhuan had noted the limited data at present meant that this could only be considered a very preliminary analysis. He therefore suggested that deciding if the cluster analysis had separated the wetland types would be useful way of ascertaining whether the right types of data had been included to date.

7.34 The group proceeded to identify the types of wetland represented by each number in the dendrogram. It was found that the sites fell more into geographical clusters rather than wetland type. It was agreed that the types of data input to this analysis would not discriminate the wetland type. This was also possibly due to the fact that so many of the wetland sites were not exclusively of one type, but included a combination of two or more types. It was also noted that as this exercise relied so much on estimates, the clusters may have fallen out differently with real data.

7.35 Professor Chen said that it was important that the groups with fewer sites characterised should not be excluded from the next step of the analysis merely because there were fewer of them. In China, for example, they have lagoons, which they consider extremely important sites with significant ecological value.

7.36 It was agreed that separate cluster analyses should be conducted for the estuaries and the tidal mud flats, as these were the only 2 types with sufficient data sets to run separate analyses. It was agreed that the column, containing endemic species would be removed from these analyses, as it contained obvious anomalies.

7.37 While the cluster analysis was being undertaken by, Mr. Jiang, the group began discussion of the second step, which was how to rank the sites. The discussion was initially based on the ranking approach used by Thailand, and presented by Mr. Narong, which followed the criteria from Annex 7 of the first meeting report. Dr. Mai then presented the approach used in Viet Nam for ranking.

7.38 Mr. Jiang suggested that a more objective procedure would be needed for regional ranking. Considerable discussion followed, where various rankings and weightings were discussed. Criteria that, had been agreed upon at the first meeting of the working group, and that were included in Annex 7 of the first meeting report, were reviewed in detail, by the participants. Any of these criteria that the participants now thought were less relevant, or were too difficult to quantify in regards to completing site characterisations, were discarded.

7.39 With regard to the overall ranking of the indicators used in the cluster analysis, the meeting felt that the ranking for biological diversity should be higher than for other categories, e.g. area, transboundary significance, and regional and global significance. On the basis of the range of data received by the regional working group in some of the required parameters, the ranking range for each indicator was prepared, discussed and agreed.

7.40 A similar procedure was used in deciding on the weight of the "socio-economic" indicators during the meeting. The meeting agreed that the national priorities identified in the participating countries, based on the criteria agreed by the regional working group, should have more weight than the other criteria.

7.41 The meeting also felt that it was important to include the national commitments to the international and regional conventions and/or agreements into the ranking procedure. Taking into account the fact that the wetland sub-component is relevant to most global environmental conventions and agreement, such as CBD, CITES, etc., it would be practically easier if consideration is given only with respect to the RAMSAR convention.

7.42 The criteria that were finally agreed were incorporated into two tables, one of environmental indicators and one for socio-economic indicators. These tables are appended as Annex 6, to this report.

7.43 It was agreed that participants would enter their data into the tables overnight, and these completed tables would be considered again at the next session. These tables are appended as Annex 7, to this report.

7.44 Ms. Mendoza thanked the meeting for their support, and for their confidence in electing her as Chairperson. She offered her apologies, as she would not be able to attend the final day of the meeting, as she had to return to Manila and noted that, the final session would be chaired by Mr. Sok Vong, Vice-Chairperson.

7.45 Mr. Jiang collected all the data, which participants had entered into the tables overnight, and combined this into a single table including both environmental and socio-economic indicators, for the consideration of the meeting.

7.46 It was apparent that there was some misunderstanding in relation to the ranking of national priority. This was corrected by the participants during the session.

7.47 The weighting between the environmental and socio-economic categories of indicators was then discussed. Various combinations were considered, all with a higher weighting given to the environmental indicators. A consensus of 70% to environmental and 30% to socio-economic indicators was finally agreed.

8. PREPARATION OF SITE SPECIFIC PROPOSALS FOR DEMONSTRATION SITES INCLUDING THE REVIEW OF THREATS AT SITE LEVEL AND IDENTIFICATION OF THE PROXIMATE AND ULTIMATE CAUSES OF DEGRADATION

8.1 The Chairperson invited Mr. Jiang to introduce document UNEP/GEF/SCS/RWG-W.3/6, which included guidance to the focal points for wetlands in the preparation of site specific proposals for demonstration sites. Also included with this document was a preliminary guide to completing a causal chain analysis, threat analysis, and management interventions for potential demonstration sites, which had been presented at the 2nd RSTC meeting. Mr. Jiang advised the meeting that these activities will comprise the bulk of the work for the RWG leading up to the fourth meeting.

8.2 Mr. Narong asked whether proposed sites, selected for preparation of the project proposal, could be changed at a later date, for example during the preparation of the site proposal, the site may secure funding under another project.

8.3 Mr. Jiang said that if a site was funded by another project, with certain agreements, it would be beneficial for this project as it could be a self funding demonstration site or a site with more co-financing resource.

8.4 Mr. Dibyo informed the meeting that in two of their proposed sites, there are already a number of projects. However environmental problems still exist, and by including these sites it may be possible to achieve the objectives more effectively.

8.5 With clarifications provided to the meeting, the regional working group accepted the proposed format prepared by PCU.

9. REVISION OF THE WORKPLAN AND ACTIVITIES FOR THE REGIONAL WORKING GROUP ON WETLANDS

9.1 During the first and second meetings of the regional working group a flow chart of activities and workplan and timetable were developed and agreed. However it is noticeable that some countries have been unable to meet the deadlines for submission of outputs as planned.

9.2 In the light of the discussion and agreements reached under prior agenda items, the meeting was invited to review and revise the flow-chart and workplan extending to at least January 2004.

9.3 In this respect members were urged to be realistic in agreeing upon the timelines and schedule for submission of outputs and subsequently to make every effort to ensure that the deadlines are met, since outputs from the first phase must be in final form together with any proposals for demonstration sites, well in advance of the Regional Scientific Conference if they are to be presented to donors in an acceptable form.

9.4 A revised schedule was discussed for completion of the outstanding reports. A revised work plan was agreed, and is attached as Annex 8 to this report.

9.5 The meeting expressed its appreciation to the Focal Point for the Wetland sub-component from Malaysia for his agreement to meet the major deadlines, despite the delay in signing the MOU.

10. DATE AND PLACE OF THE FOURTH MEETING OF THE REGIONAL WORKING GROUP ON WETLANDS

10.1 Members were invited to consider and agree upon the proposed time and place for the fourth meeting of the RWG-W. The schedule of meetings currently has the fourth meeting scheduled for October 6th to 9th, members were invited to confirm their availability during these dates. No member identified a conflict between the proposed dates and their other commitments.

10.2 Malaysia and Viet Nam were proposed as meeting venues and both Dr. Ebil and Dr. Nhuan offered to host the meeting. The meeting agreed that the next meeting will be organised in Malaysia. The PCU will consult with the focal points for the Wetland sub-component from Malaysia on the venue of the meeting. Halong Bay in Viet Nam was to be the alternate venue.

10.3 Professor Chen outlined the difficulties involved for her to get a visa, and asked for invitation letters to be issued 2 months before the date of the meeting. Mr. Jiang noted that assistance from the local host for making necessary arrangements for the meeting is highly appreciated, especially in the initial negotiations with the hotels. It would be helpful if the host government could issue original hard copy invitation letters to the participants at least one month in advance of the meeting.

10.4 Mr. Jiang also reminded the meeting that in order to ensure the success of the fourth meeting, the site proposals should be received by the PCU at the deadlines agreed by the regional working group.

10.5 Mr. Dibyo noted that it is also important to keep the host Focal Point in the communication loop, in case of any difficulties experienced in negotiations between the PCU and the hotel.

10.6 Members were informed that PEMSEA has, in collaboration with the Government of Malaysia scheduled a major East Asian Seas Congress during the week commencing 8th December, which conflicts with the approved dates for the Regional Scientific Conference and fourth meeting of the Regional Scientific and Technical Committee. Members were invited to discuss potential conflicts and to consider possible alternative dates for the Regional Scientific Conference.

10.7 It was noted that none of the participants from this working group intended to attend the PEMSEA meeting, and in fact had not received the information.

10.8 Following an extensive discussion, it was agreed that it would be extremely difficult to change the dates for the meetings already planned. The meeting asked the Project Director to discuss this matter with PEMSEA, and find an appropriate solution.

11. ANY OTHER BUSINESS

11.1 Dr. Nhuan asked about the status of the request for satellite images. Mr. Jiang referred the meeting to the report of the second RSTC meeting, paragraph 7.1.8 which states:

"Mr. Sudariyono asked about the situation regarding the provision of satellite images by UNEP to the SEAs of the participating countries. Dr. Pernetta stated that he had received approval from the highest levels in UNEP to access these satellite images but that the specific requirements needed to be identified by the Regional Working Groups, in order that a single request could be made to the GRID centre in Sioux Falls. To date only a limited number of requests have been received by the PCU."

11.2 It was agreed that Dr. Nhuan would co-ordinate the request by collecting the individual requests from each participant. Dr. Mai would provide the format to each focal point, and they would submit the request to him in March, after which the formal request would be forwarded to the PCU. Any requests not received by the 20th March would not be included in the request.

12. ADOPTION OF THE REPORT OF THE MEETING

12.1 The Chairperson invited Dr. Nhuan, as Rapporteur, to present the draft report prepared by the Secretariat.

12.2 The report was considered paragraph-by-paragraph, amended as required, and adopted as contained in this document.

12.3 Mr. Dibyo moved the formal motion for the adoption of the report of the third meeting of the Regional Working Group on Wetlands, which was passed by acclamation.

13. CLOSURE OF THE MEETING

13.1 The Chairperson thanked all members, focal points, experts and the Secretariat for their hard and constructive work both before and during the meeting. He urged all members to take particular note of the deadlines and timetable established during the meeting and to do their utmost to ensure that these were met.

13.2 Mr. Dibyo expressed his pleasure, on behalf of the Government of Indonesia at being given the opportunity to host this important meeting in Bali, and his hope that the participants had enjoyed their time on the island.

13.3 Mr. Jiang expressed his appreciation to the Indonesian Government for the arrangements made for the meeting, and for the field trip. He also thanked the focal points for their hard work before and during the meeting.

13.4 There being no further business the chairperson closed the meeting at 1810 on the evening of Friday 7th March 2003.

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ANNEX 2

List of Documents

Discussion documents

UNEP/GEF/SCS/RWG-W.3/1	Provisional agenda
UNEP/GEF/SCS/RWG-W.3/2	Provisional annotated agenda
UNEP/GEF/SCS/RWG-W.3/3	Draft report of the meeting (to be prepared during the meeting)
UNEP/GEF/SCS/RWG-W.3/4	Current status of budgets and reports from the Specialised Executing Agencies in the participating countries.
UNEP/GEF/SCS/RWG-W.3/5	Preliminary wetland site characterisations for consideration during the 3 rd meeting of the Regional Working Group on Wetlands.
UNEP/GEF/SCS/RWG.3/6	Guidelines for the preparation of demonstration site proposals and format for use in their presentation.
UNEP/GEF/SCS/RWG-W.3/7	Schedule of meetings and current workplan for the Regional Working Group on Wetlands.
CD-ROM	National reports and site characterisations for mangroves and wetlands (see the Appendix 1 for the list of mangrove related reports).
UNEP/GEF/SCS/RSTC.2/8	Draft proposal for regional criteria and procedures to be used in ranking and selecting demonstration sites in the framework of the UNEP/GEF Project entitled: <i>“Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand.”</i>
UNEP/GEF/SCS/RSTC.2/10/Amend.1	Guidance to the PSC on the nature and types of potential demonstration sites to be established within the Framework of the UNEP/GEF Project

Information documents

UNEP/GEF/SCS/RWG-W.3/INF.1	Provisional list of participants
UNEP/GEF/SCS/RWG-W.3/INF.2	Provisional list of documents
UNEP/GEF/SCS/RWG-W.3/INF.3	Draft programme
UNEP/GEF/SCS/RWG-W.2/3	Second Meeting of the Regional Working Group on the Wetlands Sub-component for the UNEP/GEF Project <i>“Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand”</i> . Report of the meeting. UNEP/GEF/SCS/RWG-W.2/3 Shenzhen, China, 4 - 7 September 2002.
UNEP/GEF/SCS/RWG-M.2/3	Second Meeting of the Regional Working Group on the Mangroves Sub-component for the UNEP/GEF Project <i>“Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand”</i> . Report of the meeting. UNEP/GEF/SCS/RWG-M.2/3 Ho Chi Minh City, Viet Nam, 10 - 13 September 2002.

- UNEP/GEF/SCS/RWG-LbP.2/3 Second Meeting of the Regional Working Group on the Land-based Pollution Component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. *Report of the meeting*. UNEP/GEF/SCS/RWG-LbP.2/3 Batam, Indonesia, 18 - 21 September 2002.
- UNEP/GEF/SCS/RWG-F.2/3 Second Meeting of the Regional Working Group on the Fisheries Component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. *Report of the meeting*. UNEP/GEF/SCS/RWG-F.2/3 Phuket, Thailand, 7 - 11 October 2002.
- UNEP/GEF/SCS/RWG-CR.2/3 Second Meeting of the Regional Working Group on the Coral Reef Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. *Report of the meeting*. UNEP/GEF/SCS/RWG-CR.2/3 Sihanoukville, Cambodia, 23 - 26 October 2002.
- UNEP/GEF/SCS/RWG-SG.2/3 Second Meeting of the Regional Working Group on the Seagrass Sub-component for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. *Report of the meeting*. UNEP/GEF/SCS/RWG-SG.2/3 Hue, Viet Nam, 28 - 31 October 2002.
- UNEP/GEF/SCS/RSTC.2/3 Second Meeting of the Regional Scientific & Technical Committee for the UNEP/GEF Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. *Report of the meeting*. UNEP/GEF/SCS/RSTC.2/3 Nha Trang, Viet Nam, 11 - 13 December 2002.
- 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*. UNEP/GEF/SCS/PSC.2/3 Hanoi, Vietnam, 16 - 18 December 2002.
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Appendix 1

**List of Substantive Reports Relating to the Wetland Sub-component, Received by the Project
Co-ordinating Unit as of February 1st 2003.**

**Supplied to the Third Meeting of the Regional Working Group on Wetlands,
as pdf files on cd-rom.**

Cambodia

Review & develop national data and information for wetland. January 2003. 8pp.
Report of Review of past and ongoing projects and activities January 2003. 10pp.
Cambodia meta-database for wetlands¹.
Excel spreadsheet containing around 500 data fields but no data.

Reports tabled during the meeting

- Report of Review of National Legislation and Management Regime for Wetlands, January 2003, 35pp.
- Draft Report of Review of National Criteria and Priorities, February 2003, 18pp.
- Final Draft Report of Review of National Data and Information for Wetlands, December 2002, 10pp.
- Final Draft Report of Review of Past and Ongoing Project and Activities, January 2002, 12pp.
- Draft Report of Review Information of Economic Valuation of Wetland in Cambodia, February 2003, 29pp.

China

Review of Past and On-going Activities in China - 3pp.
Summary of National Legislation in China (in Report of Work of the National Committee for Wetlands of South China Sea. 9pp.)
Identification and Characterisation of Sites for National Prioritisation in China: Huidong Sea Turtle Preserve and Pearl Estuary *Sousa chinensis* preserve. 8pp.

Reports tabled during the meeting

- Identification and Characterisation of Sites of Wetlands of SCS in China, 46pp.
- Review of National Management and Legislation on Wetland of SCS in China, 36pp.
- Project Report for Remote Sensing Survey and GIS Database of Coastal Wetland in South China Sea (China Region)
- Review of Past and On-going Activities on Wetland of SCS in China, 9pp.

Indonesia

Review of Past and On-going Activities in Indonesia (First Draft) August 2002. 5pp.
South China Sea Project: Number of wetlands in 9 Provinces bordering the South China Sea - Site List of "Coastal Wetlands" of Indonesia for the South China Sea Project August 2002. 3pp.

Reports tabled during the meeting

- Report on Past-Ongoing Expected Projects Wetlands Sub-component Indonesia, December 2002, 8pp.
- Identification and Characterization of Sites for National Prioritization
- Review of Legislation in Indonesia Wetlands Sub-component, December 2002, 6pp.

Malaysia

None

Philippines

Review of Past and On-going Activities in the Philippines (First Draft)
National Legislation on Wetlands in the Philippines - Draft list [combined in one document. 15pp.]

¹ This document is identical in all respects, except for the title, to the report submitted to the Regional Working Group for Mangroves, entitled Cambodia meta-database for mangroves.

Site Characterisations:

- Pansipit River
- Taal Lake
- Balayan Bay
- Candaba swamp
- El Nido Palawan
- Lingayen Gulf
- Malampaya sound
- Manila Bay
- Pangasinan wetlands

Reports tabled during the meeting

- Review of Past and Current Projects on Agreed Philippine Wetlands Connected to the South China Sea, 4pp.
- Economic Valuation Studies Done for SCS Wetlands in the Philippines, as of Feb. 2003, 1pp.
- List of Past Projects, 10pp.
- List of On-going Projects, 14pp.
- Minimum Dataset for Wetlands (Philippines), 3pp.
- Philippine Wetlands: National Legislation, 14pp.

Thailand

Final Report of Past and On-going Activities in Thailand. January 2003. 21pp.

Review of National Criteria and Priorities: Wetland Sub-component, Thailand. January 2003. 7pp.

Legal aspects and institutional framework regarding coastal wetlands Thailand, Jan. 2003, 46pp.

Site Characterisations:

- Ta Chin River
- Waru estuary
- Mu Koh Chang
- Pak Phanang Bay
- Mae Klong River
- Phru Kan Tulee
- Pattani Bay
- Ban Don Bay
- Thung Kha Bay - Savi Bay
- Mu Koh Ang Thong marine national park
- Phru to Daeng
- Saiburi River
- Thale Sap Song Khla Non- hunting Area
- Thale Noi Wildlife Non-hunting Area
- Khao Sam Roi Yot National Park
- The Inner Gulf of Thailand
- Bang Pakong River
- Chao Phraya River
- Don Hoi Lord

Reports tabled during the meeting

- Review of National Data and Information & Identification and Characterisation of 2 Potential Demonstration "Sites" (Draft Report), February 2003, 36pp.

Viet Nam

Six Monthly Report of Vietnam Wetland Component", 14 October 2002. 7 pages plus 8 annexes

Past and On-going Activities in Viet Nam²

Review of National Legislation on Wetland in Viet Nam³

Biodiversity of Selected Sites⁴ in Vietnam

² In the document "Six Monthly Report of Vietnam Wetland Component", 14 October 2002.

³ In the document "Six Monthly Report of Vietnam Wetland Component", 14 October 2002.

⁴ Section 3, "Six Monthly Report of Vietnam Wetland Component", 14 October 2002.

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**
 - 2.2 Documents available to the meeting**
 - 2.3 Organisation of work**
- 3. ADOPTION OF THE MEETING AGENDA**
- 4. OPENING REMARKS FROM THE FOCAL POINTS FOR WETLANDS FROM EACH PARTICIPATING COUNTRY**
- 5. REPORTS FROM THE PROJECT CO-ORDINATING UNIT (PCU) REGARDING OVERALL PROGRESS TO DATE**
 - 5.1 Status of end-year progress reports, expenditure reports, and budgets**
 - 5.2 Status of planned substantive outputs from the national level activities**
- 6. REVIEW AND EVALUATION OF COUNTRY REPORTS**
 - 6.1 Past and on-going activities including economic valuation**
 - 6.2 Review of national data and information, creation of national meta-database and national inputs to the regional GIS database**
 - 6.3 Review of national legislation, institutional and administrative arrangements**
- 7. CHARACTERISATION OF NATIONAL WETLAND SITES AND THEIR REGIONAL PRIORITISATION**
- 8. PREPARATION OF SITE SPECIFIC PROPOSALS FOR DEMONSTRATION SITES INCLUDING THE REVIEW OF THREATS AT SITE LEVEL AND IDENTIFICATION OF THE PROXIMATE AND ULTIMATE CAUSES OF DEGRADATION**
- 9. REVISION OF THE WORKPLAN AND ACTIVITIES FOR THE REGIONAL WORKING GROUP ON WETLANDS**
- 10. DATE AND PLACE OF THE FOURTH MEETING OF THE REGIONAL WORKING GROUP ON WETLANDS**
- 11. ANY OTHER BUSINESS**
- 12. ADOPTION OF THE REPORT OF THE MEETING**
- 13. CLOSURE OF THE MEETING**

ANNEX 4

Tabulation of Raw Data Relating to Identified Wetlands Sites Bordering the South China Sea

Background

Focal Points in the Specialised Executing Agencies were requested to assemble data and information relating to wetland sites bordering the South China Sea in GIS format and/or using the agreed lists of data and information requirements developed during the first two Regional Working Group meetings. These were brought to the third meeting of the Regional Working Group for use in the preliminary cluster analysis and these data are presented in Table 1.

Review of the data

In reviewing the data it became apparent that certain parameters, which had originally been identified as being necessary for site characterisation were in fact not readily available. Only Viet Nam had recorded information on migratory pathways, whilst less than half the sites had data relating to numbers of amphibian and reptiles species. In addition a lack of clarity regarding what was precisely intended by some parameters, for example number of spawning or feeding species, resulted in many cells being left blank. These parameters were not used in the subsequent analyses and it was agreed that certain parameters should not be included in the cluster analysis, these columns are shaded in grey in Table 1.

A review of the data contained in Table 1 indicates that certain sites in Thailand were not directly comparable to sites from other countries and it was agreed that the rivers included in the Thai site characterisation would not be included in the preliminary analysis. These rows are shaded in grey.

Transformations and estimations of data

Table 2 presents the data for those parameters that should be included in the final cluster analysis. Shaded cells in Table 2, are cells for which empirical data were absent, but for which an expert estimate was made by the regional working group in order to retain both the parameter and the site in the initial cluster analysis.

The final set of data used in the analysis involved 9 parameters for 37 sites: 3, Cambodia; 6, China; 3 Indonesia; 2, Philippines; 13, Thailand; 10, Viet Nam.

Table 1 *continued*.

Raw data compiled from site characterisations and GIS questionnaires for wetland sites bordering the South China Sea. Light shading of horizontal rows indicates sites, mainly rivers that were discarded, as being inappropriate for consideration as a single wetland. Shaded vertical columns indicates parameters that were subsequently not included in the analysis due to lack of data

Site	Area (ha)	No Fish	No birds	No plants	No mammal	No reptiles	No amphibian	No wetland types	No migratory pathways	No migratory spp.	No spawning spp.	No feeding spp	No visitors	Value produced	No endemic spp.	No endangered spp.	No indigenous spp.	No rare spp.
Philippines																		
Balayan Bay		262	70		10	10	3	7		40	10	300			15	10	50	10
Malampaya Sound		156	40		11	4	5	10		10	10	40			22	1	22	1
Viet Nam																		
Balat Estuary	26,397	130	207				175	3	5									
Tam Giang-Cau Lagoon		168						2	3									
Tien River Estuary	151,500	155		39				4	5									
Ca Mau Southwest Tidal Flat	286,040	147	171		28	34		4	5	54							117	
Dong Nai River Estuary	160,000	131	130		19	31	9	3	5	22						4		
Kim Son Tidal Flat	12,620							10	3									
Van Uc Estuary	6,989	32	4	15				4	5									
Bach Dang Estuary	80,358	32		26				8	5									
Tien Yen Estuary	24,738	183						5	5							2		2
Tra O Lagoon	1200	68		23				4	3							2		2
China																		
Dan zhou lingao	364	105	70		10			4		50	50	50	500	134 mil	2	10		34
Beilun	1,083	105	80	277	20			4		50	50		5,000		2	15	18	39
Hepu	3,951	125	83	229	20			4		50	50	50	10,000		2	16	20	45
Pearl River	22,200	214	189	420	30			7		50	50	50	100,000	6,000 mil	37	22	45	53
Shantou	1,435	183	139	233	20			4		50	50	50	10,000	1,460 mil	30	13	43	35
Wenchang	184	160	120	30	16			3		50	50	50	10,000	103 mil	2	22	5	43
Cambodia																		
Koh Kapik	13,482		30		3		9	2	3	6					4	5		
Beung Kachhang	4,503	17		13			9	2								3		
Russey Srok-Tourl Sragnam	4,890	10	9	19				3								2		

Table 2 Selected data sets used in the preliminary cluster analysis including estimates for missing data (light shading)

Site No	Site	Area (ha)	No Fish	No birds	No plants	No mammals	No wetland types	No Migratory spp	No endemic spp.	No endangered spp.
1	Waru River Estuary	25,000	59	22	32	8	3	10	30	7
2	Mu Koh Chang National Park	65,000	42	74	50	8	6	11	61	14
3	Don Hoi Lord	2,409	20	18	20	5	3	22	1	4
4	The Inner Gulf of Thailand	931,800	70	36	26	2	6	30	7	31
5	Khao Sam Roi Yot National Park	13,000	25	316	150	14	6	22	30	23
6	Thale Noi Wildlife Non-hunting Area	45,700	35	217	260	6	3	4	121	29
7	Thale Sap Song Khla Non- hunting Area	36,466	88	216	12	6	1	6	131	28
8	Phru To Daeng Wildlife Sanctuary	34,636	62	217	250	59	2	19	169	26
9	Mu Koh Ang Thong Marine National Park	10,200	36	53	20	16	3	9	32	6
10	Thung Kha Bay-Savi Bay	4,816	50	99	20	8	2	2	53	5
11	Pattani Bay	5,000	32	28	25	5	4	2	20	7
12	Pak Phanang Bay	15,000	50	13	11	3	3	6	20	5
13	Phru Kan Tulee	140	29	50	36	19	1	1	9	3
14	Sambilang	205,700	155	318	200	46	5	28	2	8
15	Berbak NP	162,700	116	335	282	57	4	28	3	2
16	Muara Kendawangan	150,000	87	96	29	11	4	20	2	2
17	Balayan Bay	97,000	262	70	50	10	7	40	15	10
18	Malampaya Sound	50,000	156	40	50	11	10	10	22	1
19	Balat Estuary	26,397	130	207	40	9	3	50	25	5
20	Tam Giang-Cau Lagoon	216,000	168	120	25	20	2	40	20	4
21	Tien River Estuary	151,500	155	160	39	25	4	60	30	6
22	Ca Mau Southwest Tidal Flat	286,040	147	171	50	28	4	54	25	6
23	Dong Nai River Estuary	160,000	131	130	25	19	3	22	20	4
24	Kim Son Tidal Flat	12,620	30	90	16	15	10	20	15	2
25	Van Uc Estuary	6,990	32	4	25	15	4	20	15	2
26	Bach Dang Estuary	80,358	32	60	26	15	8	25	20	2
27	Tien Yen Estuary	24,738	183	70	40	20	5	25	15	2
28	Tra O Lagoon	1,200	68	50	23	10	4	10	10	2
29	Dan zhou lingao	364	105	70	365	10	4	50	2	10
30	Beilun	1,083	105	80	277	20	4	50	2	15
30	Hepu	3,951	125	83	229	20	4	50	2	16
32	Pearl River	22,200	214	189	420	30	7	50	37	22
33	Shantou	1,435	183	139	233	20	4	50	30	13
34	Wenchang	184	160	120	300	16	3	50	2	22
35	Koh Kapik	13,482	25	30	25	3	2	6	4	5
36	Beung Kachhang	4,503	17	12	13	3	2	4	1	3
37	Russey Srok-Tourl Sragnam	4,890	10	9	19	3	3	3	2	2

ANNEX 5

Dendrograms Resulting from the Preliminary Cluster Analyses Conducted During the Third Meeting of the Regional Working Group on Wetlands

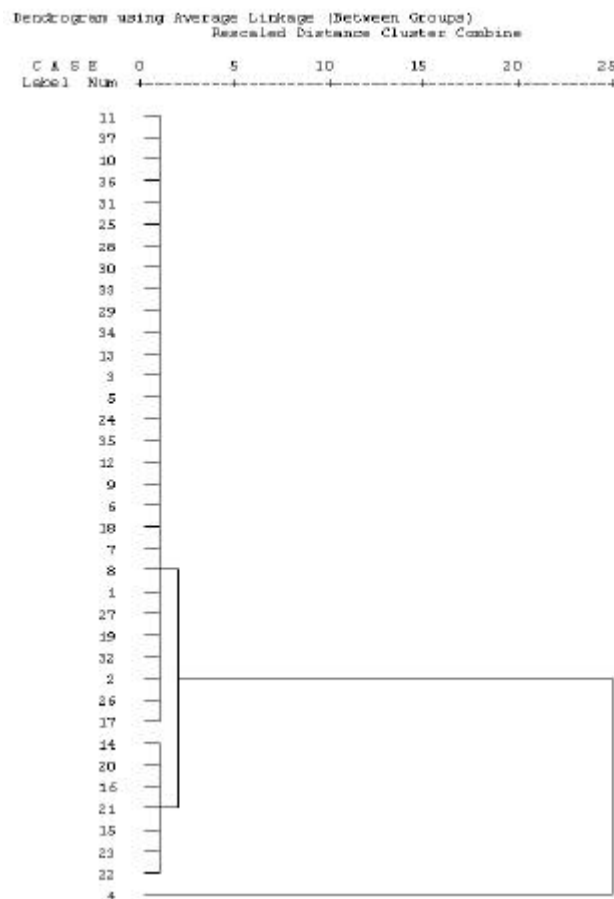
Introduction

The purpose of the cluster analysis is to group sites on the basis of their similarity, thus enabling ranking and selection of demonstration sites from different groups to ensure that as wide a range of conditions as possible are included within the final selection of demonstration sites.

Results

Table 2 of Annex 4 presents the data available for inclusion in the preliminary analyses representing 37 sites from 6 countries. The cluster programme from the SPSS package was utilised for these preliminary analyses and Figure 1 presents the outcome using average between groups linkage, for the data contained in Table 2 of Annex 4, without transformation.

Figure 1 Dendrogram using average linkage between groups based on the untransformed data presented in Table 3 of Annex 4



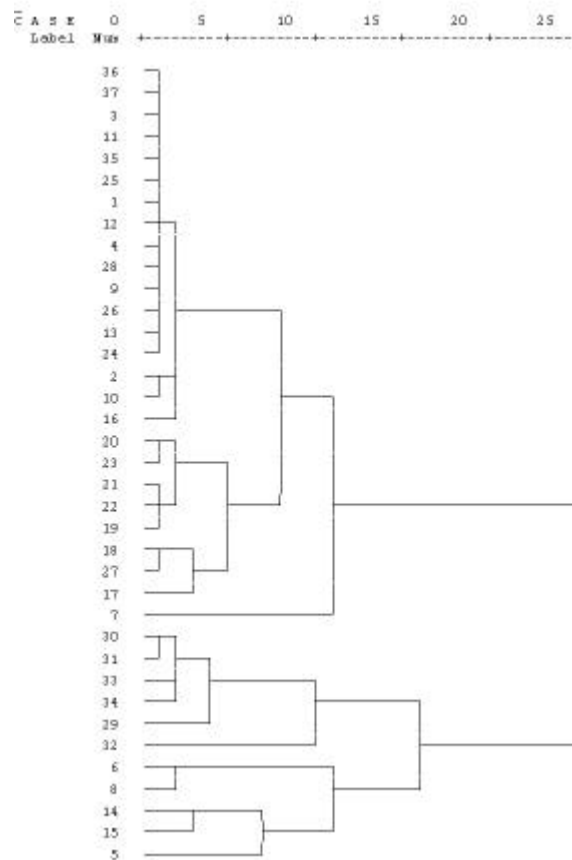
It can be seen that this figure fails to distinguish similarities amongst the majority of the sites and appears to be strongly influenced by the figures for total area of the site. This results in the majority of sites (29) falling into one cluster with a second cluster of 7 sites and one outlier. The outlier is the Inner Gulf of Thailand, which with an area of nearly one million hectares is three times larger than the next largest site. The small group of 7 sites are all extensive, with areas varying between 150,000 and 286,000 hectares whilst the larger group of 29 sites range in size from 184 to 97,000 hectares.

The outcome is neither very informative nor helpful for the intended purpose hence it was decided to transform the data for area of the site, using a logarithmic transformation. The transformed data are presented in Table 1 and the resultant dendrogram is shown in Figure 2.

Table 1 Logarithmic Transformation of Area. Shaded cells contain estimates agreed by the RWG-W

Site	Area (ha)	No Fish	No birds	No plants	No mammals	No wetland types	No Migratory spp	No endemic spp.	No endangered spp.
Waru River Estuary	4.4	59	22	32	8	3	10	30	7
Mu Koh Chang National Park	4.81	42	74	50	8	6	11	61	14
Don Hoi Lord	3.38	20	18	20	5	3	22	1	4
The Inner Gulf of Thailand	5.97	70	36	26	2	6	30	7	31
Khao Sam Roi Yot National Park	4.11	25	316	150	14	6	22	30	23
Thale Noi Wildlife Non-hunting Area	4.66	35	217	260	6	3	4	121	29
Thale Sap Song Khla Non- hunting Area	4.56	88	216	12	6	1	6	131	28
Phru To Daeng Wildlife Sanctuary	4.54	62	217	250	59	2	19	169	26
Mu Koh Ang Thong Marine National Park	4.01	36	53	20	16	3	9	32	6
Thung Kha Bay -Savi Bay	3.68	50	99	20	8	2	2	53	5
Pattani Bay	3.7	32	28	25	5	4	2	20	7
Pak Phanang Bay	4.18	50	13	11	3	3	6	20	5
Phru Kan Tulee	2.15	29	50	36	19	1	1	9	3
Sambilang	5.31	155	318	200	46	6	28	2	8
Berbak NP	5.21	116	335	282	57	4	28	3	2
Muara Kendawangan	5.18	87	96	29	11	4	20	2	2
Balayan Bay	4.99	262	70	50	10	7	40	15	10
Malampaya Sound	4.7	156	40	50	11	10	10	22	1
Balat Estuary	4.42	130	207	40	9	3	50	25	5
Tam Giang-Cau Lagoon	5.33	168	120	25	20	2	40	20	4
Tien River Estuary	5.18	155	160	39	25	4	60	30	6
Ca Mau Southwest Tidal Flat	5.46	147	171	50	28	4	54	25	6
Dong Nai River Estuary	5.2	131	130	25	19	3	22	20	4
Kim Son Tidal Flat	4.1	30	90	16	15	10	20	15	2
Van Uc Estuary	3.84	32	4	25	15	4	20	15	2
Bach Dang Estuary	4.91	32	60	26	15	8	25	20	4
Tien Yen Estuary	4.39	183	70	40	20	5	25	15	2
Tra O Lagoon	3.08	68	50	23	10	4	10	10	2
Dan zhou lingao	2.56	105	70	365	10	4	50	2	10
Beilun	3.03	105	80	277	20	4	50	2	15
Hepu	3.6	125	83	229	20	4	50	2	16
Pearl River	4.35	214	189	420	30	7	50	37	22
Shantou	3.16	183	139	233	20	4	50	30	13
Wenchang	2.26	160	120	300	16	3	50	2	22
Koh Kapik	4.13	25	30	25	5	2	6	4	5
Beung Kachhang	3.65	17	12	13	3	2	4	1	3
Russey Srok-Tourl Sragnam	3.69	10	9	19	3	3	3	2	2

Figure 2 Dendrogram using average linkage between groups based on the data presented in Table 1



It can be seen that the resulting clusters are less dominated by area and that varying degrees of similarity are apparent between different groups within the two main clusters. Site number 4, the Inner Gulf of Thailand is no longer an outlier demonstrating close similarity with thirteen other sites in the larger of the two main clusters. Within this cluster, site number 7 is an outlier whilst in the second cluster sites 6 and 8 form an isolated outlying pair.

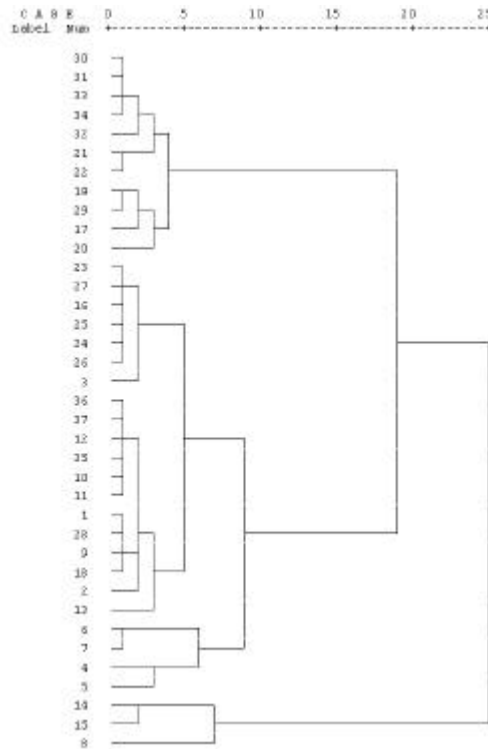
Examination of the data in Table 1 shows that these three sites are reported to have 131, 121 and 169 endemic species respectively. The highest numbers of endemic species recorded at any other site is 61. It is likely that these numbers are based on lists that are not comparable in terms of the taxa included. This illustrates the point that species lists for all these parameters must accompany the site characterisations prior to undertaking the final cluster analysis.

The RWG-W decided therefore to transform the data for a number of the parameters and conduct a further analysis using logarithmic transformations of: Area of the site; number of fish species; number of bird species; number of plant species; and number of endemic species. These data are presented in Table 2 and the resultant dendrogram in Figure 3.

Table 2 Selected data sets for wetland sites including estimates for missing data. Area of the site, number of fish species, number of bird species, number of plant species and number of endemic species have been transformed using a logarithmic transformation

Site	Area (ha)	No Fish	No birds	No plants	No mammals	No wetland types	No Migratory spp	No endemic spp.	No endangered spp.
Waru River Estuary	4.4	1.77	1.34	1.51	8	3	10	1.48	7
Mu Koh Chang National Park	4.81	1.62	1.87	1.7	8	6	11	1.79	14
Don Hoi Lord	3.38	1.3	1.26	1.3	5	3	22	0	4
The Inner Gulf of Thailand	5.97	1.85	1.56	1.41	2	6	30	0.85	31
Khao Sam Roi Yot National Park	4.11	1.4	2.5	2.18	14	6	22	1.48	23
Thale Noi Wildlife Non-hunting Area	4.66	1.54	2.34	2.41	6	3	4	2.08	29
Thale Sap Song Khla Non- hunting Area	4.56	1.94	2.33	1.08	6	1	6	2.12	28
Phru To Daeng Wildlife Sanctuary	4.54	1.79	2.34	2.4	59	2	19	2.23	26
Mu Koh Ang Thong Marine National Park	4.01	1.56	1.72	1.3	16	3	9	1.51	6
Thung Kha Bay-Savi Bay	3.68	1.7	2	1.3	8	2	2	1.72	5
Pattani Bay	3.7	1.51	1.45	1.4	5	4	2	1.3	7
Pak Phanang Bay	4.18	1.7	1.11	1.04	3	3	6	1.3	5
Phru Kan Tulee	2.15	1.46	1.7	1.56	19	1	1	0.95	3
Sambilang	5.31	2.19	2.5	2.3	46	6	28	0.3	8
Berbak NP	5.21	2.06	2.53	2.45	57	4	28	0.48	2
Muara Kendawangan	5.18	1.94	1.98	1.46	11	4	20	0.3	2
Balayan Bay	4.99	2.42	1.85	1.7	10	7	40	1.18	10
Malampaya Sound	4.7	2.19	1.6	1.7	11	10	10	1.34	1
Balat Estuary	4.42	2.11	2.32	1.6	9	3	50	1.4	5
Tam Giang-Cau Lagoon	5.33	2.23	2.08	1.4	20	2	40	1.3	4
Tien River Estuary	5.18	2.19	2.2	1.59	25	4	60	1.48	6
Ca Mau Southwest Tidal Flat	5.46	2.17	2.23	1.7	28	4	54	1.4	6
Dong Nai River Estuary	5.2	2.12	2.11	1.4	19	3	22	1.3	4
Kim Son Tidal Flat	4.1	1.48	1.95	1.2	15	10	20	1.18	2
Van Uc Estuary	3.84	1.51	0.6	1.4	15	4	20	1.18	2
Bach Dang Estuary	4.91	1.51	1.78	1.41	15	8	25	1.3	4
Tien Yen Estuary	4.39	2.26	1.85	1.6	20	5	25	1.18	2
Tra O Lagoon	3.08	1.83	1.7	1.36	10	4	10	1	2
Dan zhou lingao	2.56	2.02	1.85	2.56	10	4	50	0.3	10
Beilun	3.03	2.02	1.9	2.44	20	4	50	0.3	15
Hepu	3.6	2.1	1.92	2.36	20	4	50	0.3	16
Pearl River	4.35	2.33	2.28	2.62	30	7	50	1.57	22
Shantou	3.16	2.26	2.14	2.37	20	4	50	1.48	13
Wenchang	2.26	2.2	2.08	2.48	16	3	50	0.3	22
Koh Kapik	4.13	1.4	1.48	1.4	5	2	6	0.6	5
Beung Kachhang	3.65	1.23	1.08	1.11	3	2	4	0	3
Russey Srok-Tourl Sragnam	3.69	1	0.95	1.28	3	3	3	0.3	2

Figure 3 Dendrogram using average linkage between groups based on the transformed data presented in Table 2



The RWG-W was of the opinion, based on their expert knowledge that, this dendrogram represented a reasonable grouping of sites based on their similarity. Given that sufficiently large numbers of estuaries and tidal flats had been characterised the RWG-W decided to conduct a cluster analysis for these two groups of sites independently. The results are presented in Figures 4 and 5.

Figure 4 Cluster diagram using average linkage between groups based on the transformed data for estuarine sites only

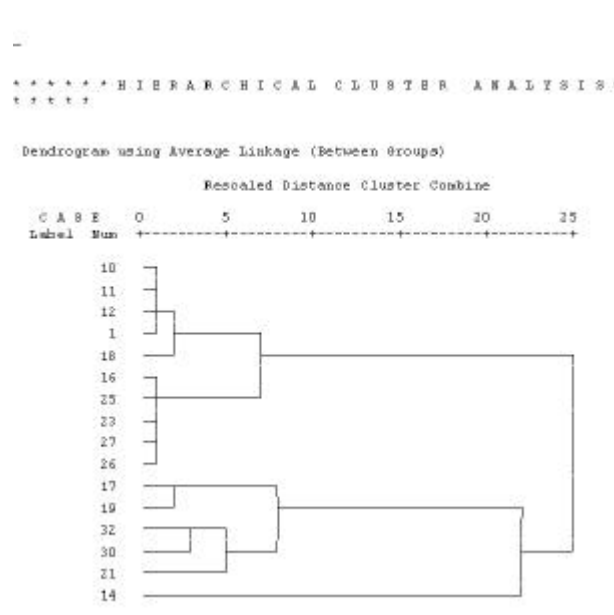
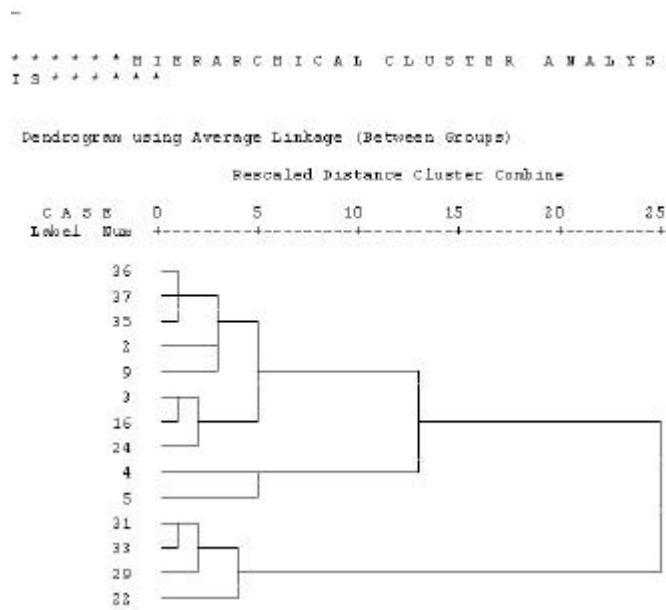


Figure 5 Cluster diagram using average linkage between groups based on the transformed data for tidal mudflat sites only



Conclusions

It is apparent that, the data need to be carefully verified prior to the conduct of the final cluster analysis, and hence full species lists for all the taxa used must be provided for each site.

ANNEX 6

Ranking Indicators and Weights for Determination of Priority within Clusters of Potential Demonstration Sites

Background

The Focal Points in each Specialised Executing Agency assembled, in advance of the third regional working group meeting, data and information required to characterise wetlands sites bordering the South China Sea. These data and information were based on the needs identified during the first regional working group meeting and listed in Annex 7 of the meeting report⁵.

Examination of this table clearly indicates that the range of data and information, envisaged to be assembled, in characterising wetlands sites, was lacking in detail such that the defined parameters were generic rather than specific. Hence for example the data requirements for biodiversity are simply specified as:

“No. of species of plants and animals in the wetland area; No. of individuals per unit area”

without specifying the taxa that were to be covered in this data compilation.

In considering the indicators to be used in ranking the priority of sites within each cluster two major considerations apply. The first is the over-riding need for transparency in the process of site selection, and the second, the need to ensure that data are comparable for all sites considered by the focal points in each country. The necessity for transparency in the process means that the indicators used in ranking sites must be simple, and non-overlapping in terms of the inherent characteristics covered by each indicator type.

In addition, to ensure comparability the data covered by each parameter must be interpreted in an identical manner by each focal point. Numbers of plants therefore is a weak indicator of biodiversity since it potentially includes a wide variety of taxa other than vascular plants, hence it is important that full lists of species covered in each category should be included in the site description. The use of any indicator, however important it might theoretically be, is precluded if data cannot be supplied for the majority of sites.

Choice of Indicators

Discussion of the choice of indicators was based on the preliminary sets of data and information assembled for 37 wetland sites and made available to the third meeting of the Regional Working Group on Wetlands. These data are presented in Table 1 of Annex 4.

As noted in Annex 4, data and information for some parameters had not been assembled for most sites and such parameters were excluded from the cluster analysis. In some cases these have also been excluded from the choice of indicators used in the ranking process. Table 1 lists the indicators selected by the Regional Working Group as being indicative of biological diversity, transboundary, regional and global significance.

The weighting to be assigned to the classes of indicator reflects the consensus view of members concerning the relative importance of each class. Hence within the category of environmental indicators the indicators of biological diversity were considered to merit the greatest weight overall, 60 % of the total. It should be recognised that in reality the indicators of transboundary, regional and global significance are in fact also indicators of biological diversity, hence the environmental set of indicators is strongly weighted towards the biological characteristics of the sites concerned.

⁵ UNEP, 2002. *Report of the First Meeting of the Regional Working Group for the Wetland Sub-component of the Project Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*. UNEP GEF/SCS/RWG-W.1/3 Phuket, Thailand, 24 – 26 April 2002.

Table 1 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					
Area (ha)					
Area 10%	100 - 10,000	10,000-50,000	50,000-100,000	100,000-150,000	> 150,000
	2%	4%	6%	8%	10%
Biological diversity					
Number of Fish species 18%	1 - 50	51 - 100	101 - 150	151-200	> 200
	4%	7%	11%	15%	18%
Number of bird species 18%	1 - 50	51 - 100	101 - 150	151-200	> 200
	4%	7%	11%	15%	18%
Number of plant species 6%	1- 100	101-200	201-250	251-300	> 300
	1%	2%	3%	5%	6%
Number of mammal species 6%	1-10	11- 20	21 - 30	31-50	> 50
	1%	2%	3%	5%	6%
Wetland types 12%	1	2	3	4	> 5
	2%	4%	6%	10%	12%
Transboundary Significance					
Number of migratory Species 15%	1 - 10	11- 20	21 - 30	31-40	> 40
	3%	6%	9%	12%	15%
Regional/Global Significance					
Number of endemic species 7%	1	2	> 3		
	2%	4%	7%		
Number of endangered. species 8%	1 - 6	7 -10	> 10		
	3%	5%	8%		

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 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. The regional working group considered at length the number of divisions and weighting that would be appropriate to assign to any individual site value.

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

It was noted that a number of the indicators listed in Table 2 were highly subjective and it is clear that the proposals for demonstrations sites will need to present quite detailed reasoning as to why particular scores have been assigned.

Table 2 Socio-economic Indicators and Scores for wetlands bordering the South China Sea

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

Conclusion

The regional working group agreed on the use of this selection of indicators in a two tier 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 regarding the choice of sites are being made.

ANNEX 7

Results of Preliminary Ranking of Wetlands Sites Bordering the South China Sea

Background

The second meetings of the Regional Scientific and Technical Committee and the Project Steering Committee agreed to a three-step process of selecting demonstration sites based on:

- an initial clustering of similar sites followed by;
- ranking and determination of priority among sites within clusters.

Having agreed upon the nature of the indicators and the weight to be assigned to them the site characterisations available to the third meeting of the Regional Working Group on Wetlands were scored according to the agreed indicators and weights, presented and discussed in Annex 6 of this report.

Results

Table 1 presents the outcome of this exercise for all thirty-seven, wetland site characterisations with respect to the environmental and socio-economic indicators. Due to the incomplete nature of the data sets, together with differences in the definitions of the indicators used by each focal point it is not possible to combine the outcome of the ranking at a regional scale, at this time. Within each national set of data relating to the environmental indicators however, the comparative ranking reflects the regional importance of each site.

Table 1 presents two summary columns headed sub-total, the first representing the score with respect to the indicators of biological diversity, and the second the sub-total for the socio-economic, indicators. Where the data set for a particular site is incomplete then the rank score will be automatically lower, however for this exercise scores were assigned for all indicators including estimated values by the focal points.

The socio-economic scores were assigned, based on expert opinion of the focal points and generally without quantitative information to support the scores allocated. This is not unsurprising since at this stage the details of proposed interventions have still to be finalised. As a consequence these scores must be considered merely preliminary estimates that will be refined as concrete proposals for demonstration activities are developed.

Conclusions

The assignment of rank according to the agreed classes of indicators and their respective weighting can be finalised promptly provided that the focal points submit the missing data to the PCU.

Table 1 Results of Preliminary Ranking of Wetland Sites Bordering the South China Sea, with both objective and subjective criteria

	70%									Sub total	30%							Sub Total
	Area	Fish Spp.	Bird Spp.	Plant Spp.	Mammal Spp.	Wet land types	Migratory Spp.	Endemic Spp.	Endangered Spp.		External change	Internal Change	Nat'l. Priority	Stake holder	RAMSAR	Co-Finance	Community	
China																		
Danzhou Lingao	2	11	7	6	6	10	15	4	5	66	6	6	0	6	0	5	12	35
Beilun	2	11	7	5	2	10	15	4	8	64	6	6	0	10	5	5	12	44
He Pu	2	11	7	3	2	10	15	4	8	62	6	6	10	6	0	5	2	35
Peral R. delta	4	18	15	6	3	12	15	7	8	88	10	10	25	10	0		20	75
Shantou	2	15	11	3	2	10	15	7	8	73	10	10	15	10	0	5	12	62
Wang Cheng	2	15	11	5	2	6	15	4	8	68	10	10	0	6	3	5	12	46
Indonesia																		
Sembilang	10	15	18	2	5	12	9	4	5	80	10	10	25	2	3	20	12	82
Berbak NP	10	11	18	5	6	10	9	7	3	79	10	10	15	6	5	20	20	86
Muara Kendawangan	8	7	7	1	2	10	6	4	3	48	10	10	10	2	0	10	12	54
Philippines																		
Balayan Bay	6	18	7	1	1	12	12	7	8	72	10	10	15	10	0	20	12	77
Malampaya	6	15	4	1	2	12	3	7	3	53	10	10	0	6	3	20	12	61
Cambodia																		
Russey Srok-Tourl Sragnam Estuary	2	4	4	1	1	4	3	4	3	26	6	10	10	10	3	10	20	69
Beung Kachhang Mudflat	2	4	4	1	1	4	3	2	3	24	6	10	15	6	3	20	20	80
Koh Kapik	4	4	4	1	1	4	3	7	3	31	10	10	25	10	5	20	20	100

Table 1 *continued.* Results of Preliminary Ranking of Wetland Sites Bordering the South China Sea, with both objective and subjective criteria

	70%										Sub total	30%						Sub Total
	Area	Fish Spp.	Bird Spp.	Plant Spp.	Mammal Spp.	Wet land types	Migratory Spp.	Endemic Spp.	Endangered Spp.	External change		Internal Change	Nat'l. Priority	Stake holder	RAMSAR	Co-Finance	Community	
Vietnam																		
Balat Estuary	8	11	18	1	1	6	15	7	3	70	10	10	15	10	5	20	20	90
Tam Giang-Cau Lagoon	10	11	15	1	3	10	15	7	5	77	10	6	10	10	3	10	20	69
Tien River Estuary	10	11	11	1	2	10	15	7	5	72	10	10	0	6	3	20	20	69
Ca Mau Southwest Tidal Flat	4	4	7	1	2	12	6	7	3	46	10	6	0	2	0	5	12	35
Dong Nai River Estuary	10	15	11	1	2	10	12	7	3	71	10	10	25	10	3	20	20	98
Kim Son Tidal Flat	10	15	15	1	3	10	15	7	8	84	10	10	0	6	3	10	12	51
Van Uc Estuary	6	15	7	1	2	12	9	7	3	62	10	10	0	10	0	10	12	52
Bach Dang Estuary	4	15	7	1	2	10	9	7	3	58	6	6	0	6	3	10	12	43
Tien Yen Estuary	2	7	4	1	1	10	9	7	3	44	2	10	0	6	0	10	20	48
Tra O Lagoon	2	4	4	1	2	10	12	7	3	45	10	6	0	2	0	5	2	25
Thailand																		
Weru River Estuary	4	7	4	1	1	6	3	2	5	33	6	10	0	6	0	5	12	39
Pattani Bay	2	4	4	1	1	10	3	2	5	32	10	10	0	2	0	5	20	47
Thung Kha Savi	2	4	7	1	1	4	3	2	3	27	6	2	0	2	0	5	2	17
Mo Koh Ang Thong	4	4	7	1	2	6	3	2	3	32			0	10	5	5	2	22
Phu To Daeng	4	7	18	3	6	4	6	2	8	58	10	10	0	10	5	10	2	47
Thale Sap Songkla	6	7	18	1	1	2	3	2	8	48	10	6	15	6	0	10	2	49
Thale Noi	4	4	18	5	1	6	3	2	8	51	6	10	25	10	5	10	12	78
Khao Sam Roi Yod	4	4	18	2	2	12	9	2	8	61	6	10	0	10	3	10	2	41
The Inner Gulf of Thailand	10	7	4	1	1	12	9	2	8	54	10	10	10	6	0	5	2	43
Don Hoi Lord	2	4	4	1	1	6	9	2	3	32	10	6	0		5	5	20	46
Pak Phanang Bay	4	4	4	1	1	6	3	2	3	28	10	2	0	10	0	5	12	39
Mu Koh Chang	6	4	7	1	1	12	6	2	8	47	10	2	0	6	0	10	2	30

Table 2 Workplan and Timetable for completion of agreed activities in the Wetlands Sub-component: 2003

Tasks	Deadline	
	Malaysia	Others
Review of past & ongoing project	15-Apr	31-Mar
<i>independent review</i>	20-Apr	
<i>finalisation</i>	15-Jun	
Review of national data & info.	30-Apr	15-Apr
<i>input to GIS database</i>	15-May	
Creation of national meta database	30-May	
Identification and character of sites	30-Apr	
<i>National criteria & Priorities</i>	30-Apr	
Economic valuation	30-Apr	
Review National legislation	15-May	30-Apr
<i>review by the Regional Task Forces</i>	mid/late 2003	
Site data		
<i>submit data</i>	15-Apr	
<i>Cluster analysis</i>	30-Apr	
<i>feedback to SEAs</i>	01-May	
Demonstration site proposal	01-Oct	01-Sep