



REVERSING ENVIRONMENTAL DEGRADATION TRENDS IN THE SOUTH CHINA SEA AND GULF OF THAILAND

REGIONAL WORKING GROUP ON
LAND-BASED POLLUTION



Report of the Second Meeting
Batam, Indonesia, 18-21 September 2002



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

REPORT

**Second Meeting of the Regional Working Group for
the Land-based Pollution Component**

Batam, Indonesia, 18th – 21st September 2002

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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, UNEP GEF Project Co-ordinating Unit, welcomed all participants on behalf of Dr. Klaus Topfer the Executive Director of UNEP, Dr. Ahmed Djoghla, Director, Division of GEF Co-ordination, and Dr. John Pernetta, Project Director. He conveyed the apologies and regrets of Dr. Pernetta, who was unable to attend the meeting. Mr. Jiang thanked the State Ministry for the Environment, and the City Administration of Batam, for the excellent arrangements made for the meeting. Mr. Jiang informed the meeting that while there had been progress since the project started in January 2002, there were needs for improvements in implementation of the project activities. He outlined the critical tasks to be completed by this meeting that included assessment of national information according to the guidelines agreed during the last meeting, and the characterisation of hot spots of impacts of contaminants in the South China Sea marine basin. He noted further, that, this was an important meeting in the development of the project, as it would determine whether or not the overall workplan for the first two years could be completed on time or if any adjustments to the work plan would be required.

1.1.2 The Deputy Minister of the State Ministry for the Environment, Indonesia, Dra. Liana Bratasida welcomed the participants to Indonesia for the Second Meeting of the Land-based Pollution component of the project, and thanked them for their presence at this important meeting. She stressed the importance of the work of the Regional Working Group, in relation to the marine resources that are shared by the countries of the South China Sea.

1.1.3 Mr. Asman Abnur welcomed participants to Batam, and thanked the State Ministry of Environment and UNEP for their confidence in selecting Batam as the meeting venue. He said the selection was justified based on the location of Batam, as an Island surrounded by industrial areas of Singapore, Indonesia, and Malaysia, and therefore Batam may be one of the pollution hot spots, which are identified for characterisation under the project.

2. ORGANISATION OF THE MEETING

2.1 Designation of officers

2.1.1 The Chairperson reminded the meeting of the agreement of the First Meeting of the working group which was as follows:

It was proposed and agreed that the Chairperson, Vice-chairperson and Rapporteur of the RWG-LbP would serve for one calendar year in order to ensure proper representation of the RWG-LbP to the next meeting of the RSTC. Para 4.3.2 of document UNEP/GEF/SCS/RWG-LbP.1/3.

2.1.2 Following this agreement, Mr. Sudaryono, Focal Point for Land-based Pollution from Indonesia acted as Chairperson, and Dr. Phan Van Ninh, Focal Point for Land-based Pollution from Vietnam acted as vice Chairperson.

2.1.3 Mr. Jiang informed the meeting that the Rapporteur of the last meeting and the Focal Point for Land-based Pollution from Thailand, Dr. Pornsook, was not able to attend this meeting. He informed the meeting that there are two options: (i) entrust her replacement, Mr. Ekachai Praekulvanich, to assume the role of Rapporteur, and (ii) carry out an election of the Rapporteur. The meeting agreed to the first option and Mr. Ekachai acted as Rapporteur for the meeting.

2.1.4 The List of Participants is attached as Annex 1 to this report.

2.2 Organisation of work

2.2.1 Mr. Jiang briefed the participants on the Provisional List of Documents available to the meeting (UNEP/GEF/SCS/RWG-LbP.2/Inf.1), the administrative arrangements for the conduct of the meeting, and the proposed organisation of work (UNEP/GEF/SCS/RWG-LbP.2/Inf.3). He advised the meeting that, the Provisional List of Documents had now been revised as the reports from Vietnam, Indonesia, and Cambodia had been received just prior to the meeting, and these have been duplicated, distributed and added to the revised List of Documents. The Secretariat had today also received a report from China, and this will added to the List of Documents as UNEP/GEF/SCS/RWG-LbP.2/Inf.7. The final List of Documents is contained in Annex 2 of this report.

2.2.2 Mr. Jiang informed the meeting that there would be a field trip, organised by the State Ministry for the Environment, Indonesia, on the last day of the meeting, provided the meeting proceeded within the proposed schedule.

2.2.3 Participants agreed that the meeting will be conducted in plenary as far as possible, although sessional working groups may be formed if deemed necessary, and that the meeting will be conducted in English.

3. ADOPTION OF THE MEETING AGENDA

3.1 The Chairperson invited participants to consider the Provisional Agenda prepared by the Secretariat as document UNEP/GEF/SCS/RWG-LbP.2/1, and invited any amendments or additional items for consideration.

3.2 Based on suggestion from Mr. Henk Uktolseya, the meeting agreed that the matter of the GIS database will be discussed under agenda item 8, and the meeting also agreed to add an agenda item 10.1, *The Relationship Between the Land-based Pollution Component And The Other Components Of The Project*.

3.3 The agenda was then adopted with no further changes, and it is attached as Annex 3 to this report.

4. REPORT OF THE SECRETARIAT CONCERNING THE MID-YEAR REVIEWS AND REPORTS FROM PARTICIPATING COUNTRIES

4.1 The Chairperson invited Mr. Kelvin Passfield to make a presentation, on behalf of the Secretariat, on the mid-year reviews and reports, based on document UNEP/GEF/SCS/RWG-Lbp.2/4. This related to the findings of the PCU following receipt of the six monthly progress reports, expenditure statements and cash advance requests from the Specialised Executing Agencies.

4.2 Following the presentation, Mr. Henk asked how countries could submit outputs for a consultancy when the due date for receipt of the report had not yet been reached. Mr. Passfield explained, that when the total funds allocated for an activity were reported as expended, then it would be expected that there would be a substantive outputs, which should be sent to the PCU. If funds were only partially spent, e.g. where an initial payment had been made on a consultancy project, a progress report would be expected to accompany the six months expenditure report.

4.3 Dr. Pham Van Ninh explained that he had signed individual contracts, before receiving a clear statement from the PCU that these should be with institutions. Mr. Passfield informed Dr. Ninh that in the approved budgets, the 2000 budget line was clearly labelled as being for contracts with non-profit institutions. He urged all participants to look closely at the approved budgets, and spend according to the details they contained.

4.4 Mr. Passfield advised the Focal Points for the Land-based Pollution from the participating countries that the title for a contract should be carefully determined as it should be obvious to anyone reading the contract, which of the agreed outputs in the expenditure report and budget that it relates to.

4.5 Dr. Ninh informed the meeting that in the case of Vietnam, project money would be better spent on individual rather than institutions, as this would provide better results.

4.6 Mr. Passfield explained that the Project Director had agreed that up to a maximum of 50% of the 2000 budget line for institutions could be transferred to the 1000 personnel budget line.

4.7 Mr. Jiang stated that the reasons for signing contracts with institutions were to enhance capacity of the participating institutions and to strengthen communication and co-ordination between institutions at national level, which is one of the overall goals of the project. Although individual contracts may get better results in the short term, sometimes contracts with individuals are not fulfilled fully. With an institution, it was easier to ensure delivery of the final product.

4.8 Mr. Zulkifli Din informed the meeting that the Department of Environment, Malaysia, had signed the MOU, and this has been sent to the Ministry of Science, Technology, and Environment, Malaysia, for final approval. It should be sent to the PCU within this month. Hopefully Malaysia can then be more active in the implementation of project activities. He also offered the apologies of Mr. Mohammad Jaaffar, who had attended the last meeting, but was unable to be here for the second meeting.

4.9 On behalf of the PCU, Mr. Jiang expressed his appreciation to the participant from Malaysia for the information that the MOU between Department of Environment, Malaysia and UNEP has been signed by the Department, and would be sent to PCU within this month. He was looking forward to receiving the signed MOU.

4.10 He also informed the meeting that the PCU staff will make individual appointments with focal points from participating countries during the course of this meeting to discuss and clarify any issue that participants had with regard to the six monthly reports, six-month expenditure statement and the cash advance request. Any outstanding budget revision should be dealt with as soon as possible if the next cash advance is to be processed promptly.

5. BRIEF REMARKS BY THE FOCAL POINTS FOR THE LAND-BASED POLLUTION COMPONENT FROM THE PARTICIPATING COUNTRIES ON THE PROGRESS AND DIFFICULTIES ENCOUNTERED TO DATE

5.1 The Chairperson invited the Focal Points to present a brief summary on the progress made, and difficulties encountered since the last meeting of the Working Group.

5.2 Mr. Pak Sokharavuth, Focal Point for Land-based Pollution from Cambodia reported that Cambodia has completed the first draft report according to the guidelines agreed by the first meeting of the Regional Working Group, but still needs to add more information to the draft report, and to submit the draft report to the National Committee for Land-based Pollution in Cambodia. He also informed the meeting that the national action plan is now under preparation. He informed the meeting that there are three hot spots that have been identified in Cambodia, and one hot spot has been characterised. The meeting noted that some of the data and information required are not available in the country, and more monitoring work was required.

5.3 Mr. Han Baoxin, Focal Point for Land-based Pollution from China informed the meeting that three meetings of their National Committee for Land-based Pollution were organised in China, and one meeting was held with the relevant institutions in Hong Kong. They have signed some agreements with institutes, to undertake the identified project activities. The agreements will be sent to the PCU, after translating into English. Although China has finished a draft report, more information is still needed to add to the report. He informed the meeting that there was a lack of data and information before 1995. The meeting noted with satisfaction that the report provided substantive data and information as required by the Regional Working Group.

5.4 Ms. Inar Ichsana Ishak reported that Indonesia has formed a National Committee for the Land-based Pollution component that has held several meetings. Three hot spots have been selected in Indonesia, i.e. Batam, Jakarta, and Pontianak. She informed the meeting that due to some policy

changes within the Government, the implementation of the project activities had been delayed. While the report is being finalised, there is a gap between data requirements for the project and existing data. She confirmed to the meeting that more data and information will be added.

5.5 Mr. Zulkifli Din informed the meeting that due to the delayed signing of the MOU, there had been little progress in Malaysia. He realised that there is a need to form the National Committee for the Land-based Pollution component in Malaysia after signing the MOU. He also said that although the Department of Environment is a national governmental institution, pollution control in Malaysia is undertaken by local governmental agencies.

5.6 Mr. Vicente R. Diaz, Focal Point for Land-based Pollution from the Philippines informed the meeting that the implementation of the agreed activities in the Philippines had also been delayed, and no funds had been expended in the first reporting period. This was due to the problems involved in overcoming the government rules on fund disbursement within the country. They have now formed the National Committee for the land-based Pollution component. Relevant activities have been implemented including a review of the legal and institutional framework on pollution management, and identification of possible hot spots.

5.7 Mr. Ekachai Praekulvanich informed the meeting that Thailand had held four meetings of the National Committee for the Land-based Pollution component, and there are 13 people on the National Committee. He presented a report on their progress to date, particularly in regard to identifying hot spots. There are two locations proposed as hot spots, i.e. the Upper Gulf of Thailand and the Songkhla Lake basin. Although there is a significant amount of information available for the hot spot in the Upper Gulf of Thailand, there is not much data and information available for the Songkhla Lake basin. A lack of consistency in the data is also making it hard to make temporal comparisons.

5.8 Dr. Pham Van Ninh, Focal Point for Land-based Pollution from Vietnam said that Vietnam had submitted a draft report to the PCU. They have selected three hot spots, which are Ha Long – Hai Phong sea area; Vung Tau - Ganh Rai area; and Danang - Dung Quat area. He provided data and information on the three proposed hot spots according to the guidelines agreed by the Regional Working Group at its first meeting. They have also collected some information for the meta-database, although as they received the meta-database format only recently, this has not yet been entered into the regional meta-database format.

5.9 In response to the summaries from all participating countries, Mr. Jiang expressed the appreciation of the PCU to all focal points for their hard work during the inter-sessional period, which had resulted in substantive progress in implementation of agreed activities.

5.10 He also expressed his appreciation to Mr. Han for his efforts to acquire data from Hong Kong as suggested by the first meeting of the Regional Working Group. He further stated that if it would be the recommendation of this meeting, the RWG-LbP can seek assistance from PSC to try to find a solution concerning relevant data and information acquisition from Hong Kong. This area is around the mouth of the Pearl River, and is considered to be an important hot spot impacted by land-based pollution from the Pearl River. The Regional Working Group requested the Chairperson to report this matter to the Regional Scientific and Technical Committee and the Project Steering Committee to seek assistance, in data and information acquisition from Hong Kong.

5.11 Mr. Jiang expressed his appreciation for the comprehensive report from Thailand. Regarding the question on having more financial autonomy, Mr. Jiang responded that the PCU has already accommodated a request for a budget revision, and is always ready to assist as much as is possible within the UN and GEF rules. The role of the PCU is not to interfere with the execution of the activities agreed by the Project Steering Committee, but to help the participating countries to implement those activities approved by the PSC.

5.12 He concluded by saying that it now appears that the problems faced by several countries with regard to delayed project budget distribution are solved. He assured the meeting that the financial rules for this project are among the simplest of the GEF projects, and once the countries gain an understanding of these rules, there should be very few if any future problems.

6. IDENTIFICATION AND CHARACTERISATION OF HOT SPOTS

6.1 Presentations of the national reviews of hot spots and their relevant data and information, based on the criteria, indicators, data and information needs prepared by the first meeting

6.1.1 The Chairperson invited the Focal Points for the Land-based Pollution Component from the participating countries to present the data and information collected during the intersessional period, in accordance with the decisions of the first meeting of RWG-LbP, namely:

- (i) (paragraph 7.9) *There followed a discussion of the nature of the data and information that should be assembled by the National Committees and it was agreed that the focus of the initial work should be on hot spots rather than the entire coastline. It was agreed however that the generalised information required at a regional scale was presented in the National Reports and TDA and that the national committees should review this material in order to identify gaps, weaknesses or data sets that were more recent than those included in the National Reports.*
- (ii) (paragraph 8.4) *The RWG-LbP agreed that in the initial stages the assessment of impacts of land-based pollution in the marine environment should focus on the river inputs. Those participating countries which have data and information on atmospheric deposition and groundwater discharge should include these data in the analysis of hot spots and provide information regarding the way in which these fluxes had been measured and/or estimated.*
- (iii) (paragraph 8.6) *In order to obtain appropriate data and information on sources, pathways and distribution of land-based contaminants, the meeting agreed that the National Committees on Land-based Pollution should review the relevant data and information provided in the national reports, and provide additional information whenever deemed necessary.*
- (iv) (Annex 7) *Initial guidance for the National Committees on Land-based Pollution regarding criteria, indicators data and information needs for the analysis of Hot Spots in the South China Sea and Gulf of Thailand.*

6.1.2 The first presentation was made by Mr. Ekachai and Ms. Sirimati Nimmanheminda, from Thailand. The presentations covered the Upper Gulf of Thailand, and Songkhla Lake basin, two of the hot spots identified by Thailand, and was extracted from their draft report. The report contains an extensive review of existing data and information, in particular in the Upper Gulf of Thailand. The data and information provided a comprehensive overview according to the guidelines agreed by the first meeting of the Regional Working Group.

6.1.3 Mr. Boonyong Lohwongwatana, Expert member, asked if there had been any work on the current or potential consequences of the high concentrations of pollutants, e.g. algal blooms, reduced biodiversity, effect of fish quality on human health, and whether these could be included as indicators.

6.1.4 Mr. Ekachai replied that they are now collecting information on the incidence of red tides and eutrophication. However, data such as the number of cases of Paralytic Shellfish Poisoning (PSP) was so far difficult to determine.

6.1.5 Mr. Jiang said that these impacts on the marine environment are important. At the first meeting, they decided to first identify hot spots, characterise these hot spots, and then establish criteria to compare the sites and prioritise sites for further comparative study. For instance, there were a number of factors that contribute to algal blooms, which makes it difficult to use these for comparative indicators solely of pollution. After identification and characterisation of the sites, a causal chain analysis will be undertaken, which will focus on management interventions to reduce such things as algal blooms.

6.1.6 Ms. Inar from Indonesia congratulated Thailand on their excellent presentations, and asked how the gap in information between the source of contaminants and the impact on the marine environment would be addressed, as this would assist in determining the activities that cause the pollution.

6.1.7 Ms. Nimmanheminda replied that they were currently working on this aspect, by identifying the sources of pollution, which is the step following the identification of the impacts.

6.1.8 Mr. Jiang asked why Thailand is concentrating on Songkhla Lake basin, as this would have a limited influence the Gulf of Thailand, as the lake is a semi-enclosed area with little water exchange or flow to the sea.

6.1.9 Ms. Nimmanheminda replied that water overflow and high discharge during the rainy season will push most of the contaminants held in the Songkhla Lake basin out into the Gulf of Thailand. The lake basin also has high biodiversity, and is an important breeding and nursery ground for important living resources.

6.1.10 A brief group discussion followed, relating to which standards were being used by the various countries. This discussion concluded that this question had been extensively discussed at the first meeting of the Regional Working Group, and at that time it was decided that for the regional consideration of hot spots, ASEAN Marine Water Quality Criteria would be used, together with water criteria used in China. Countries would of course still use any national standards or local standards for other activities in their countries, as appropriate. There is a relevant document, UNEP/GEF/SCS/RWG-LbP.2/5, in the List of Documents for the meeting, e.g. List of Obligate and Optional Parameters for the use of National Committees in the descriptions of individual hot spots.

6.1.11 Dr. Ninh then made a presentation on the activities relating to land-based pollution in Vietnam. He informed the meeting that three hotspot areas had been chosen, one each in the northern, central and southern coastal areas of Vietnam. The National Committee for Land-based Pollution in Vietnam has set up the national priorities, and Ha Long - Haiphong area was selected as the national priority area. The summary report on which the presentation was based was contained in document UNEP/GEF/SCS/RWG-LbP.2/Inf. 4.

6.1.12 Mr. Lohwongwatana asked if there were figures for the dissolved oxygen levels at the mouth of the rivers and along the shorelines, as these figures would provide a good indication of the present status with regard to pollution.

6.1.13 Dr. Ninh replied that the average dissolved oxygen level was quite good in relation to ASEAN criteria, and the maximum was 4.52. However, figures fluctuate with the tide and over time.

6.1.14 Replying to a question from Mr. Jiang on the criteria in setting national priorities, Dr. Ninh said that prioritisation of the hot spots at national level was based on many aspects, including the criteria table agreed at the first meeting of the Regional Working Group. One of the considerations for prioritisation of hot spot area was that if the site is a world heritage site, a National Park, or a reservation area.

6.1.15 In response to a question from Mr. Henk on the reason for the high levels of pollution in the proposed areas, Dr. Ninh replied that there is no treatment facility at any of those areas, and all discharge is therefore untreated. There are, however, plans to build some treatment facilities, and if rules on discharge are followed, these may reduce the level of land-based pollution by up to 60%.

6.1.16 Dr. Gullaya Wattayakorn, Expert member, asked if actual concentrations of pollutants were available for the various sites, as these will be important for prioritising hot spots on a regional basis. Dr. Ninh replied that they have such data, though these were not included at present in the draft report.

6.1.17 Ms. Inar expressed some concerns about using the criteria decided at the first meeting, as she felt these applied more to industrial discharges, whereas in Indonesia the main problem was domestic waste, not industrial waste.

6.1.18 Mr. Jiang informed the meeting that the agreed criteria also cover domestic waste, as the criteria deal with the uses of the sea water. If the root cause of pollution was untreated domestic waste, then a causal chain analysis would identify this and quantify the sources.

6.1.19 He added that this project is focussing on the impacts of contaminants in the marine environment, while a parallel regional project of the East Asian Seas Action Plan on the regional implementation of GPA/LBA is focussing on the sources of pollution.

6.1.20 Mr. Kaswadi made a presentation based on the Indonesian report that had been submitted and was included in the meeting documents as UNEP/GEF/SCS/RWG-LbP.2/INF.5. In his presentation, he noted that the National Committee for Land-based Pollution in Indonesia proposed 3 hot spot areas, Batam, West Kalimantan, and the Jakarta Bay. However, considering various constraints, it was decided that Indonesia will focus on the first two hot spots, and the priority area was Batam, as development here is extremely rapid, and pollution is a rapidly growing problem.

6.1.21 In response to a question from Mr. Lohwongwatana on some highly variable measurements for different years, Mr. Richardus said that they would check the figures for accuracy.

6.1.22 Mr. Henk added that Indonesia required more time for collecting data and for co-ordination with other agencies, and the current report should just be considered as a progress report to date.

6.1.23 Mr. Sokharavuth then presented the report covering the major sources of pollution in Cambodia. After presented the general situation in Cambodia, he focused his presentation on the 3 hot spots that the National Committee for Land-based Pollution in Cambodia proposed, i.e. Sihanoukville, Koh Kong and Kampot. He provided relevant data and information to the meeting. The meeting noted that several data sets required under the agreed guidelines are not available at this moment.

6.1.24 In response to a question from Mr. Lohwongwatana, Mr. Sokharavuth informed the meeting that they do not yet have measurements for specific parameters in the marine environment, but discussions have been held with the PCU on which parameters they should analyse. They have already requested assistance from a Japanese expert attached to the Ministry of Environment, Cambodia regarding the monitoring activities necessary for a better understanding of contamination in the marine environment.

6.1.25 The next presentation was by Mr. Han, who provided a brief overview of the contents of the draft report from China, which was tabled at the meeting as document UNEP/GEF/SCS/RWG-LbP.2/Inf.7. He provided general information of the coastal areas of China along the South China Sea coastline, the pollution loads, oceanographic conditions and the impacts of pollutants in the marine environment in the coastal areas. The National Committee for Land-based Pollution in China proposed three hot spot areas. These areas are: Neilingding of the Pearl River Estuary, Daya Bay and Beihai City coastal area. Detailed data and information assembled according to the regional guidelines were provided for the Pearl River Estuary, and the Daya Bay. The relevant information for the Beihai city area needs to be added at a later stage.

6.1.26 Mr. Lohwongwatana noted that the red tides indicate high pollution levels in the Pearl River estuary, and he suggested data on dissolved oxygen, heavy metals and *E. coli* concentrations for sites along the shoreline should be collected.

6.1.27 Mr. Han agreed with this suggestion and informed the meeting that a lot of the contaminants came from agriculture and associated over use of chemical fertilisers, as well as from domestic sources and aquaculture.

6.1.28 Mr. Ekachai, said that it appeared from the presentation that the environmental state has declined in the coastal areas of China, and asked if any historical data were available for comparison. Mr. Han replied that at the first meeting it was agreed to collect information from 1990 and 2000 for comparison, but sufficient data have not yet been collected to satisfy this requirement. He informed the meeting that he will continue the collection of data and information after this meeting and will provide the data when available.

6.1.29 In reply to a question from Mr. Henk on the frequency and season of occurrence of red tides, Mr. Han replied that red tides occur (approximately three times per year) in the autumn in the Pearl River, but in Daya Bay, there was an average of only one occurrence per year.

6.1.30 Mr. Diaz presented the draft report on progress to date in the Philippines, where they have selected three hot spots, Lingayen Gulf, Manila Bay and Batangas Bay. In particular, there was a lot of recent data available for Manila Bay from the Pasig River Rehabilitation Programme. Mr. Diaz also provided a review of environmental legislation in the Philippines, and the composition of the National Committee for the Land-based Pollution. The draft report of the Philippines was, however not yet in a form that could be tabled at this meeting.

6.1.31 In response to a number of questions from Mr. Lohwongwatana, Mr. Diaz said that primary sewage treatment facilities existed for sewage around Manila Bay, which was discharged offshore through a submarine outlet. There are also standards in place for discharging wastewater resulting from mining activities, and pesticide importers and retailers need to be licensed, though there are no runoff standards for pesticides of which Mr. Diaz is aware.

6.1.32 Mr. Henk asked whether information on circulation was available, and the impacts of circulation on any pollution from oil refineries on the hot spots.

6.1.33 Mr. Diaz replied that circulation information suggests that pollutants will be transported by currents out from these semi-enclosed areas in to the South China Sea.

6.1.34 Mr. Din then made a presentation for Malaysia. He explained that the hot spots have not yet been decided, as they are still waiting for the finalisation of the MOU, and they also need to have the view of various relevant departments. For this, they first need to form a National Committee for the Land-based Pollution component. He informed the meeting that the largest industrial areas are on the west coast, so most discharge is in to the Straits of Malacca, rather than the South China Sea. However they still consider land-based pollution in to the South China Sea to be significant. The major sources of land-based pollution are from sewage treatment plants, industrial sector, pig farming, solid waste disposal site, and agriculture. Every year Malaysia produces the National Environment Quality Report (EQR), which includes a lot of data on pollution.

6.1.35 He reported to the meeting that there is also a problem with small and medium scale industries in Malaysia, which usually do not have wastewater treatment facilities. The accumulated discharge of many of them has become a problem. Malaysia would like to relocate these to locations where centralised treatment facilities are available on a user-pays basis. However, little progress has been made in this regard, as these businesses wish to remain located close to their established customer base. He presented some information contained in the Malaysia Country Report presented at the Regional Workshop on Identification of Candidate Pollution Hot Spots with focus on land-based sources and activities affecting the marine environment in the East Asian Seas Region, held at Hua Hin, Thailand, 21-23 August 2002.

6.1.36 He concluded by saying that at the next RWG-LbP meeting he hoped to report more on the hot spots that Malaysia considered significant.

6.1.37 In response to a question from Mr. Lohwongwatana on monitoring standards, Mr. Din informed the meeting that Malaysia uses the Malaysian Interim Marine Water Quality Standards. He added that they sometimes also used Chinese standards.

6.1.38 Mr. Jiang asked how long it take would to provide the data in the agreed format after signing the MOU. Mr. Din replied that he was not in a position to answer at present, but will do his best to answer as soon as possible.

6.1.39 Mr. Jiang thanked the participants for their presentations, which clearly demonstrate that substantial progress has been made since the last meeting. He asked that all reports, even in draft form, be supplied in electronic form to be summarised as an annex of the meeting report. He emphasised that all finalised documents for characterisation and prioritising of hot spots were needed by the beginning of

November, and these will be reported to the Regional Scientific and Technical Committee (RSTC) meeting and the Project Steering Committee to be held in December 2002. Mr. Jiang said he was confident that Malaysia can catch up to the other countries, as they obviously already possess much relevant data based on Mr. Din's report. The summary of the data and information received from the presentations will be published separately when final reports received.

6.2 Comparison of data and information received, and finalisation of a regional format for initial characterisation of the hot spots.

6.2.1 Mr. Jiang reminded participants of the agreed definition for the term hot spots, which was based on the impacts of land-based pollution in the South China Sea marine basin. He informed the meeting that at this stage efforts should not be focused in the selection of hot spots, and setting up the priorities, but in providing more data and information for more sites in order to obtain a relevant regional overview regarding the status of land-based pollution and associated impacts.

6.2.2 Referring to Annex 7 of the first meeting report, Mr. Jiang presented the draft criteria and indicators for characterisation of hot spots.

6.2.3 The Chairperson informed the members of the Regional Working Group that it would be necessary to prepare a regional format for a quantitative description of the characters of the hot spots. This format should provide the necessary tools to identify the characteristics of the identified hot spots in areas of different coastal water uses.

6.2.4 The Chairperson invited Dr. Wattayakorn, the regional expert to present a draft table format for characterising each of the proposed hot spots, for consideration of the meeting. During her presentation, Dr. Wattayakorn stated that the criteria for sediment and biological samples are necessary for the comparative analysis of the data and information received from the participating countries.

6.2.5 Mr. Han informed the meeting that China has standards for sediment and biological samples, which he would endeavour to make available to the participating countries.

6.2.6 After discussion on the relevant standards of sediment and biological samples, the meeting agreed to use the relevant national standards of China as the standards for comparison of the data and information for this project. It was also highlighted that these standards used in the project do not imply any legal obligation. The standards are attached as Annex 4 to this report.

6.2.7 In response to a question from Mr. Ekachai on how the affected marine communities were to be addressed if little or no data were available. Dr. Wattayakorn replied that the fields in the table could only be completed if information was available. Otherwise the "no information" checkbox would be marked. The meeting agreed the regional format for site characterisations, as attached as Annex 5 to this report.

6.2.8 In order to "field test" the agreed format as an exercise of characterisation of hot spots, the Chairman asked if any country could volunteer to put their data and information into the agreed format, and to present the outcomes to the meeting on the next day. Thailand generously agreed to complete the table. The meeting expressed its appreciation, and felt it was appropriate as Thailand had the most comprehensive data available at the meeting.

6.2.9 The Chairperson reopened agenda item 6.2 at the start of the morning session of day 3, and invited Thailand to present their completed table. Based on the difficulties experienced by Thailand, the format was discussed further, amended, agreed and is attached as Annex 6 to this report. The completed form containing the data and information of sites in Thailand is attached in Annex 7 as an example for easy reference.

6.2.10 Mr. Jiang thanked the representatives from Thailand for the hard work they had put in overnight. He also informed the meeting that the PCU would send the IUCN red list of threatened species to all focal points. Mr. Passfield further offered to send the list of threatened fish species,

which had been prepared for the Fisheries Component with assistance of the FISHBASE team at ICLARM, to all Focal points for land-pollution component in the participating countries.

6.3 Requirements for additional data and information to complete the characterisations of the hot spots

6.3.1 The Chairperson invited the members of the Regional Working Group to identify any additional data and information requirements needed to finalise the characterisation of hot spots during the next inter-sessional period, which will serve as the basis for initial ranking and prioritisation of hot spots in relation to the impact of contaminants in the marine environment in the South China Sea basin.

6.3.2 Mr. Jiang informed the meeting that the reports presented by the participating countries would be preliminary. Meanwhile, the participating countries should carry on collecting the data required to characterise the hot spots and finalise the reports, as indicated by most countries in their presentations. It was expected that Malaysia would be able to prepare relevant data and information based on existing information, which appeared quite extensive.

6.3.3 Mr. Din asked for clarification on water quality at hot spots, in particular whether information on sources of pollution is needed. Mr. Jiang repeated his comments of the previous day that agreed parameters in annex 7 of the report of the first meeting of the Regional Working Group contain details of the agreed data to be collected. In principle, this project is dealing with the impacts of contaminants on the marine environment, and the East Asian Sea regional programme on GPA/LBA would deal with sources of pollution. However, to address impacts of pollution, information on sources of pollution will be needed for the causal chain analysis, which will help determine appropriate management intervention to reduce the impact of pollution on the marine environment.

7. CONSIDERATION OF PRIORITISING HOT SPOTS

7.1 Criteria for prioritisation

7.1.1 The Chairperson invited Mr. Jiang to provide some introductory comments to guide discussion on the criteria for prioritising hot spots. According to the initial characterisation of the hot spots prepared under the agenda item 6.2, Mr. Jiang informed the meeting that it was premature to attempt to agree on regional criteria, as the data and information for identification and characterisation of hot spots have not yet been completed. At this stage, it would be appropriate to concentrate efforts on putting more data and information together, and that it was not yet necessary to limit the number of possible sites of hot spots for consideration. He suggested the meeting consider a procedure for preparing draft criteria to be discussed at the next meeting of the Regional Working Group.

7.1.2 In response to a question from the Chairperson on the composition of the Regional Working Group, Mr. Jiang informed the meeting that the members include the Focal Points for Land-based Pollution component of the seven participating countries, up to four regional experts and one member from the PCU. The Chairperson then asked for volunteers to prepare a first draft.

7.1.3 Mr. Henk said that the presentations already made at this meeting should provide some initial guidance on the criteria that countries considered important. We should consider the criteria, which resulted in the selection of the proposed hot spots in the presentations made at this meeting as a starting point.

7.1.4 In response to a suggestion from Mr. Lohwongwatana on using an outside consultant, Mr. Jiang replied that even this would be an option, from his experience, however, consultants from outside the region often have a lack of regional knowledge and understanding of the whole process of development of the project. He indicated that since the preparation of the criteria, and prioritisation of hot spots are important and sensitive issues, it is critical that the participating countries feel that they have more complete ownership of the process. He suggested that an inter-sessional working group could be established, to prepare draft criteria and discuss the draft through an e-discussion group.

The draft criteria could then be circulated to all focal points for land-based pollution in the participating countries for consideration.

7.1.5 The meeting agreed to this suggestion and decided to establish an inter-sessional working group, consisting of the Focal Points for Land-based Pollution from China, Indonesia, and Vietnam, Dr. Wattayakorn, and Mr. Jiang.

8. NATIONAL AND REGIONAL DATA SHARING AND MANAGEMENT GIS WORKSHOP

8.1 The Chairperson invited Mr. Jiang to give a presentation on the outcomes of the GIS technical workshop, (7-9 August 2002, Bangkok). M. Jiang referred the participants to the report of the GIS workshop, provided in the meeting documents as UNEP/GEF/SCS/EW.1/3.

8.2 Mr. Jiang also referred the participants to the questionnaire on the requirements for the GIS database, which was prepared based on Annex 7 to the report of the first meeting of RWG-LbP, and was included in the documents for this meeting as UNEP/GEF/SCS/RWG-LbP.2/8.

8.3 Mr. Jiang also introduced the format for the meta-database, which had been prepared based on a NASA format and an ASEAN format. He also provided some guidance on how to access the instructions that are embedded in the form to assist in completing each individual field.

8.4 The Working Group was invited to discuss the questionnaire, make necessary amendments and agree upon the questionnaire.

8.5 In response to a question from Dr. Richardus on updating data in the GIS database and meta-database, Mr. Jiang replied that the database and meta-database will be able to be updated online when the databases are linked with the homepage of the project, or by sending the correction to the PCU. PCU is responsible for updating the databases in co-operation with SEA START RC, anytime new data is available.

8.6 In response to a question from Ms. Nimmanheminda on the media type of data to be entered, Mr. Jiang referred to section 14 of the meta-database form, where the type of data being entered is identified. Mr. Passfield suggested that in some case, information on hard copies of reports would be a significant component for the meta-database.

8.7 Mr. Henk asked for clarification of the requirement for GIS activities, which are only included in the MOUs for the coral reef sub-component, signed by the SEAs in the participating countries.

8.8 Mr. Jiang said although GIS is not specifically mentioned, it was indicated in the MOUs that a regionally agreed format should be used for accessing data and information at national level. The GIS format was the one of the formats agreed to at the first meeting RWG-LbP to be used as the regionally agreed format.

8.9 In response to a question from Mr. Diaz on whether the data required is just for the proposed hot spots, or the whole country, Mr. Jiang advised that for hot spots data was adequate initially, but if countries wished to submit more data and information, it would be more beneficial for the participating countries and the project.

8.10 The meeting agreed to the GIS questionnaire and the meta-database format as presented, with the proviso that they can be revised in future if any significant difficulties are encountered.

9. REVIEW AND UPDATE OF WORKPLANS FOR THE NATIONAL COMMITTEES AND REGIONAL WORKING GROUP FOR 2002-2003

9.1 Review and update of workplans

9.1.1 The Chairperson invited Mr. Jiang to provide guidance in the discussion for this agenda item. Mr. Jiang referred participants to the workplan agreed at the first meeting of RWG-LbP, and contained

in the report of that meeting. He asked members of the RWG-LbP to review the workplan for the National Committees and the Regional Working Group for 2002-2003, and agree on the activities during the next inter-sessional period, taking into account the Flow Chart of Actions agreed during the first meeting of the RWG-LbP.

9.1.2 Mr. Ekachai asked for clarification on the review of the regional database. Mr. Jiang responded that his understanding was that the review of regional database has been initially carried out within the frame of this project. As an initial result, the GIS database and meta-database have been established, which will serve for the entire period of the project. However, review of the regional databases should be continued with the implementation of the project activities.

9.1.3 The workplan was discussed, amended, and agreed and is attached as Annex 7 to this report.

9.2 Report to the Regional Scientific and Technical Committee (RSTC), and the Project Steering Committee (PSC)

9.2.1 The Chairperson invited members of the RWG-LbP to discuss and agree on the format and contents of the report to be presented to the Regional Scientific and Technical Committee (RSTC), and the Project Steering Committee (PSC).

9.2.2 The meeting agreed that the meeting reports of the first and second meetings should be the basis for a report to the RSTC and PSC. In the meantime as some countries would like to add more data and information to their reports, the meeting decided that mid of November 2002 as a timeline for final inputs to the report to the RSTC.

10. ANY OTHER BUSINESS

10.1 Relationship with Other Components of the Project

10.1.1 The Chairperson invited members to raise any other matters for discussion under this agenda item. Mr. Henk commented on the success that Singapore had in cleaning their river over a 10-year period, and suggested the participation of Singapore in the project would provide useful experience.

10.1.2 Mr. Jiang informed the meeting that the only reason that Singapore is not involved in the project was their ineligibility for GEF funding. However, the participation of Singapore in the project could be facilitated through other sources of funding. The meeting suggested that the PCU discuss this issue and seek possible means to involve Singapore in the implementation of the project activities.

10.1.3 Taking into account the interaction between the land-based pollution component and other components and sub-components of the project, Mr. Henk suggested that stronger linkage and communication among the Regional Working Groups should be established.

10.1.4 The meeting requested the Project Director to communicate with all Regional Working Groups, and through the Regional Scientific and Technical Committee to ensure a proper co-ordination and co-operation among all groups. The PCU should also provide a brief summary of the current status of the other project components to the next Regional Working Group meeting.

11. DATE AND PLACE OF THE NEXT MEETINGS OF THE REGIONAL WORKING GROUP ON LAND-BASED POLLUTION

11.1 The Chairperson invited the members of RWG-LbP to consider and agree on the dates and venue for the next meeting.

11.2 The meeting agreed to the dates proposed by the PCU and to hold the next meeting on 25-28 February 2003.

11.3 Mr. Diaz, National Focal Point for Land-based Pollution from the Philippines offered to host the next meeting in the Philippines, subject to the final approval from his organisation. Dr. Han, National Focal Point for Land-based Pollution from China offered to host the fourth meeting of the Regional Working Group in China.

11.4 With appreciation to the Focal Points of the Philippines and China, the meeting agreed to convene its third meeting in the Philippines, and fourth meeting in China. The meeting requested the Project Director to communicate with the respective government to finalise the arrangements for the meetings.

12. ADOPTION OF THE REPORT OF THE MEETING

12.1 The Rapporteur presented the draft report of the meeting. The meeting report was discussed, amended and adopted, as contained in this document.

13. CLOSURE OF THE MEETING

13.1 Dr. Ninh, on behalf of the all participants, expressed the appreciation to the Indonesian organisers, and to the Secretariat for their excellent work, in preparing and arranging the meeting.

13.2 Mr. Jiang expressed his satisfaction at the outcome of the meeting, and on behalf of the Working Group, thanked the Chairperson. He also thanked Mr. Ekachai as Rapporteur and for the homework that he had carried out to ensure the smooth operation of the meeting. He thanked all participants for their work during the intersessional period. He was confident that the achievements to date indicated that the project will achieve a good result at the end of the first 2 years.

13.3 The Chairperson expressed his deep appreciation to all participants for their active participation in the second meeting of the RWG-LbP. He asked that all reaffirm their resolve to work with all stakeholders in the protection of the marine environment in the SCS region. He thanked all staff from the Batam City Office.

13.4 The Chairperson closed the meeting at 16:00 hour on 21st September 2002.

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ANNEX 2

List of Documents

Working documents

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|--------------------------|---|
| UNEP/GEF/SCS/RWG-LbP.2/1 | Provisional agenda. |
| UNEP/GEF/SCS/RWG-LbP.2/2 | Annotated provisional agenda. |
| UNEP/GEF/SCS/RWG-LbP.2/3 | Draft report of the meeting |
| UNEP/GEF/SCS/RWG-LbP.2/4 | Report of the Project Co-ordinating Unit concerning the mid-year reviews and reports from the Specialised Executing Agencies. |
| UNEP/GEF/SCS/RWG-LbP.2/5 | List of obligate and optional parameters for the use of National Committees in their descriptions of individual "hot spots". |
| UNEP/GEF/SCS/RWG-LbP.2/6 | Elements for Possible Inclusion in a Methodology for the Characterisation and Prioritisation of "Hot Spots" |
| UNEP/GEF/SCS/RWG-LbP.2/7 | Executive Summary to be reported to the 2 nd meetings of RSTC and PSC (to be prepared during the meeting) |
| UNEP/GEF/SCS/RWG-LbP.2/8 | Questionnaire for the GIS database concerning the Land-based Pollution Component |

Information documents

| | |
|------------------------------|--|
| UNEP/GEF/SCS/RWG-LbP.2/INF.1 | Provisional list of documents |
| UNEP/GEF/SCS/RWG-LbP.2/INF.2 | Provisional list of participants. |
| UNEP/GEF/SCS/RWG-LbP.2/INF.3 | Draft programme. |
| UNEP/GEF/SCS/RWG-LbP.2/INF.4 | Progress Report on Land-based Pollution – Vietnam |
| UNEP/GEF/SCS/RWG-LbP.2/INF.5 | Progress Report on Land-based Pollution – Indonesia |
| UNEP/GEF/SCS/RWG-LbP.2/INF.6 | Summary of the Progress Report on Land-based Pollution – Cambodia |
| UNEP/GEF/SCS/EW.1/3 | Report of the UNEP/GEF/SCS and SEA START RC, GIS Workshop, in support of the UNEP/GEF Project: <i>"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand"</i> , Bangkok, Thailand, 7–9 August 2002. |
| UNEP/GEF/SCS/PSC.1/3 | First Meeting of the Project Steering Committee for the UNEP/GEF Project <i>"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand"</i> . Report of the meeting. UNEP/GEF/SCS/PSC.1/3. UNEP, Bangkok Thailand. |
| UNEP/GEF/SCS/RSTC.1/3 | First Meeting of the Regional Scientific & Technical Committee for the UNEP/GEF Project <i>"Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand"</i> . Report of the meeting. UNEP/GEF/SCS/RSTC.1/3 <i>Pattaya, Thailand, 14 - 16 March 2002.</i> |
| UNEP/GEF/SCS/RWG-LbP.1/3 | First Meeting of the Regional Working Group for the Land-based Pollution 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-LbP.1/3 <i>Bangkok, Thailand, 3 - 5 April 2002.</i> |

| | |
|-------------------------|---|
| UNEP/GEF/SCS/RWG-W.1/3 | First Meeting of the Regional Working Group for the Wetland 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-W.1/3 Phuket, Thailand, 24 - 26 April 2002. |
| UNEP/GEF/SCS/RWG-M.1/3 | First Meeting of the Regional Working Group for the Mangrove 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-M.1/3 Phuket, Thailand, 29 April - 1 May 2002. |
| UNEP/GEF/SCS/RWG-SG.1/3 | First Meeting of the Regional Working Group for 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.1/3 Bangkok, Thailand, 6 - 8 May 2002. |
| UNEP/GEF/SCS/RWG-CR.1/3 | First Meeting of the Regional Working Group for 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.1/3 Bangkok, Thailand, 9 - 11 May 2002. |
| UNEP/GEF/SCS/RWG-F.1/3 | First Meeting of the Regional Working Group for 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.1/3 Bangkok, Thailand, 20 - 22 May 2002. |

ANNEX 3

Agenda

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 - 2.2 Organisation of work**
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- 4. REPORT OF THE SECRETARIAT CONCERNING THE MID-YEAR REVIEWS AND REPORTS FROM PARTICIPATING COUNTRIES**
- 5. BRIEF REMARKS BY THE FOCAL POINTS FOR THE LAND-BASED POLLUTION COMPONENT FROM THE PARTICIPATING COUNTRIES ON THE PROGRESS AND DIFFICULTIES ENCOUNTERED TO DATE**
- 6. IDENTIFICATION AND CHARACTERISATION OF HOT SPOTS**
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 - 10.1 Relationship with Other Components of the Project**
- 11. DATE AND PLACE OF THE NEXT MEETINGS OF THE REGIONAL WORKING GROUP ON LAND-BASED POLLUTION**
- 12. ADOPTION OF THE REPORT OF THE MEETING**
- 13. CLOSURE OF THE MEETING**

ANNEX 4

Chinese Criteria for Pollutant Concentrations in Body of Marine Organism and Sediments (Indicator organism : bivalves, unit: mg/wet/kg)

| Item | Purpose use | Fishery waters, natural conservation zone | Normal industry uses, scenery waters | Harbour waters, special industry uses, economic developing waters...etc. |
|-------------------|-------------|---|--------------------------------------|--|
| DDT | | 0.01 | 0.1 | 0.5 |
| HCB ¹ | | 0.02 | 0.15 | 0.5 |
| Hydrocarbon (Oil) | | 15 | 50 | 80 |
| Cu | | 10 | 25 | 50 |
| Pb | | 0.1 | 2.0 | 6.0 |
| Cd | | 0.2 | 2.0 | 5.0 |
| Zn | | 20 | 50 | 100 |
| ΣCr | | 0.5 | 2.0 | 6.0 |
| As | | 1.0 | 5.0 | 8.0 |
| ΣHg | | 0.05 | 0.10 | 0.30 |

¹ Benzene Hexachloride

Chinese criteria for pollutant concentrations (mg/dry/kg) of the surface Sediment

| Item | DDT | HCB | Hydrocarbon (Oil) | Cr | Cu | Pb | Cd | Zn | As | Σ Hg | Sulfide | Organic Carbon |
|---|------|-----|----------------------|-----|-----|-----|-----|-----|----|-------------|---------|-------------------|
| Purpose use | | | | | | | | | | | | |
| Fishery waters, natural conservation zone | 0.02 | 0.5 | 500 | 80 | 35 | 60 | 0.5 | 150 | 20 | 0.2 | 300 | 2.0 |
| Normal industry uses, scenery waters | 0.05 | 1.0 | 1000 | 150 | 100 | 130 | 1.5 | 350 | 65 | 0.5 | 500 | 3.0 |
| Harbour waters, special industry uses, economic developing waters...etc. | 0.10 | 1.5 | 1500 | 270 | 200 | 250 | 5.0 | 600 | 93 | 1.0 | 600 | 4.0 |

ANNEX 5

Regional Format for Site Characterisation of Hotspots Identification within the Frameworks of the Land-based Pollution Component of the UNEP/GEF Project entitled: *“Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand”*

Name of the hot spot:

Location of the hot spot:

Country:

| | | |
|-----------------------------------|------------------------------------|--|
| Impacts on the marine environment | Ambient water quality ² | <input checked="" type="checkbox"/> better than ASEAN/China water quality criteria; (indicating parameters and year) <input type="checkbox"/> 1 - 2 times of the criteria; (indicating parameters and year) <input type="checkbox"/> 2- 5 times of the criteria; (indicating parameters and year) <input type="checkbox"/> 5- 10 times of the criteria; (indicating parameters and year) <input type="checkbox"/> > 10 times of the criteria; (indicating parameters and year) <input type="checkbox"/> no information available |
| | Sediment quality ³ | <input type="checkbox"/> better than the sediment quality criteria <input type="checkbox"/> 1-2 times of the criteria; (indicating parameters) <input type="checkbox"/> 2 - 5 times of the criteria; (indicating parameters) <input type="checkbox"/> 5 - 20 times of the criteria; (indicating parameters) <input type="checkbox"/> 20- 50 times of the criteria; (indicating parameters) <input type="checkbox"/> no information available |
| | Biological samples | <input type="checkbox"/> better than seafood quality criteria; i.e. <input type="checkbox"/> 1 - 2 times of the criteria; (indicating species) <input type="checkbox"/> 2 - 5 times of the criteria; (indicating species) <input type="checkbox"/> 5 -10 times of the criteria; (indicating species) <input type="checkbox"/> 10 - 20 times of the criteria; (indicating species) <input type="checkbox"/> no information available |

² The concentration is the value of yearly average for whole area. If individual data over the standard, make reference to the data sources, and indicating the percentage of those data over the standard

³ For the sediment and biological sample standard, it is agreed to use the standard of China. The standard used in the project is only use for comparison of the data and information, which do not have any legal banding implication

| | | |
|-------------------------------------|--|--|
| | Changes in living marine organisms | (number of incidents / year for last 5 years) <input type="checkbox"/> 1 – 5 <input type="checkbox"/> 5 – 10 <input type="checkbox"/> 10 – 20 <input type="checkbox"/> > 20 <input type="checkbox"/> no information available |
| | Affected marine communities (mangroves, coral reefs, seagrasses, etc.) | (Percentage per year for last 5 years at least) <input type="checkbox"/> 1 < 10 % <input type="checkbox"/> 2 10 – 20 % <input type="checkbox"/> 3 20 – 50 % <input type="checkbox"/> 4 50 – 70 % <input type="checkbox"/> 5 > 70 % <input type="checkbox"/> no information available |
| Regional and/or global significance | Contaminant load | List top 5 parameters and provide data on the total load (unit: T/year in the proposed area) 1 2 3 4 5 <input type="checkbox"/> no information available |
| | Affected population | <input type="checkbox"/> Less than 10,000 <input type="checkbox"/> 10,000 – 100,000 <input type="checkbox"/> 100,000 – 500,000 <input type="checkbox"/> 500,000 – 1,000,000 <input type="checkbox"/> >1,000,000 |
| | Affected area (km ²) | <input type="checkbox"/> Less than 100 <input type="checkbox"/> 100 – 1,000 <input type="checkbox"/> 1,000 – 5,000 <input type="checkbox"/> 5,000 – 10,000 <input type="checkbox"/> >10,000 <input type="checkbox"/> indicating the importance of the area |
| | Affected species ⁴ | <input type="checkbox"/> None |

⁴ According to the IUCN list of endangered species

| | | |
|----------------------------|---|---|
| | | <input type="checkbox"/> 1 – 2; (indicating species). <input type="checkbox"/> 2 – 5; (indicating species) <input type="checkbox"/> 5 – 10; (indicating species) <input type="checkbox"/> >10; (indicating species) <input type="checkbox"/> no information available |
| Transboundary significance | Presence of contaminants from non-local, non national sources | <input type="checkbox"/> Yes (indicating parameter and concentration) <input type="checkbox"/> No <input type="checkbox"/> No information available |
| | Potential mode of transportation of contaminants and extent of water movement | <input type="checkbox"/> Groundwater <input type="checkbox"/> Air/rain fall <input type="checkbox"/> Water circulation <input type="checkbox"/> No information available |
| | “quality” of migratory species ⁵ | <input type="checkbox"/> Satisfactory <input type="checkbox"/> Stressful; (if so, indicating the species, parameters and concentration) <input type="checkbox"/> No information available |
| Human health | Food safety (including bacteria contamination) | <input type="checkbox"/> Satisfactory <input type="checkbox"/> not Satisfactory <input type="checkbox"/> no information available |
| | Sickness/disease (cases/year) | <input type="checkbox"/> Less than 10 <input type="checkbox"/> 10 - 100 <input type="checkbox"/> 100 – 1,000 <input type="checkbox"/> 1,000 – 5,000 <input type="checkbox"/> > 5,000 <input type="checkbox"/> no information available |
| Future threats | Socio-economic and culture development | Indicating the nature, size and costs of the projects and potential impact of the projects |
| | Population growth (next 5 and 10 years) | <input type="checkbox"/> Less than 1% <input type="checkbox"/> 1 - 2% (indicating number of increase) <input type="checkbox"/> 2 – 4% (indicating number of increase) <input type="checkbox"/> 4 – 6% (indicating number of increase) <input type="checkbox"/> > 6% (indicating number of increase) |

⁵ If there will no enough information in the participating countries, this indicator should be deleted

ANNEX 6

Example of the Site Characterisation of Thailand

| | | |
|-----------------------------------|------------------------------------|--|
| Impacts on the marine environment | Ambient water quality ⁶ | <input checked="" type="checkbox"/> 1. better than ASEAN/China water quality criteria; (Hg, Cd, Pb, Cr, Cyanide, Cr 6+) <input checked="" type="checkbox"/> 2. < 1 times above criteria; (Cu) <input type="checkbox"/> 3. > 5 times of the criteria; (indicating parameters) <input type="checkbox"/> 4. > 10 times of the criteria; (indicating parameters) <input type="checkbox"/> 5. > 20 times of the criteria; (indicating parameters) <input type="checkbox"/> no information available |
| | Sediment quality ⁷ | <input checked="" type="checkbox"/> 1. better than the sediment quality criteria; (Cu, Pb, Hg, Zn) <input checked="" type="checkbox"/> 2. < 1 times above criteria; (Cd: 1990-2000) <input type="checkbox"/> 3. > 5 times of the criteria; (indicating parameters) <input type="checkbox"/> 4. > 20 times of the criteria; (indicating parameters) <input type="checkbox"/> 5. > 50 times of the criteria; (indicating parameters) <input type="checkbox"/> no information available |
| | Biological samples ⁸ | <input checked="" type="checkbox"/> 1. Averagely better than seafood quality criteria; [<i>Rastrelliger branchysoma</i> , <i>Eleutheronema tetradactylum</i> , <i>Stolephorus indicus</i> : Cd (exceed 2/62 samples), Cu, Hg, Pb, Zn; Green Mussel 1994-97: Pb, Cu, Cr (exceed 3/5 sites), Cd] <input type="checkbox"/> 2. > 2 times of the criteria; (indicating species) <input type="checkbox"/> 3. > 5 times of the criteria; (indicating species) <input type="checkbox"/> 4. > 10 times of the criteria; (indicating species) <input type="checkbox"/> 5. > 20 times of the criteria; (indicating species) <input type="checkbox"/> no information available |
| | Changes in living marine organisms | (number of incidents / year for last 5 years) <input type="checkbox"/> 2 1 – 5 <input checked="" type="checkbox"/> 3 5 – 10 (Imposex 17-100% in 6 gastropods species due to TBT at six locations in 1997) <input type="checkbox"/> 4 10 – 20 <input type="checkbox"/> 5 > 20 <input type="checkbox"/> no information available |

⁶ The concentration is the value of average for whole area

⁷ For the sediment standard, it is agreed to use the standard of China. The standard used in the project is only use for comparison of the data and information, which do not have any legal banding implication

⁸ same as the footnote 2

| | | |
|--|--|---|
| | Affected marine communities [mangroves (1975-1996: decline 4% yearly), coral reefs, seagrasses, etc.] | (Percentage per year for last 5 years at least) <input checked="" type="checkbox"/> 1 < 10 % <input type="checkbox"/> 2 10 – 20 % <input type="checkbox"/> 3 20 – 50 % <input type="checkbox"/> 4 50 – 70 % <input type="checkbox"/> 5 > 70 % <input type="checkbox"/> no information available |
| Transboundary significance | Presence of contaminants from non-local, non national sources | <input checked="" type="checkbox"/> Yes (alpha 0.05-0.12 Bq/l) <input type="checkbox"/> No <input type="checkbox"/> No information available |
| | Potential mode of transportation of contaminants and extent of water movement | <input type="checkbox"/> 1 Groundwater <input type="checkbox"/> 2 Air/rain fall <input checked="" type="checkbox"/> 3 Water circulation <input type="checkbox"/> 4 No information available |
| | "quality" of migratory species ⁹ | <input type="checkbox"/> 1 Satisfactory <input type="checkbox"/> 2 Stressful; (if so, indicating the species, parameters and concentration) <input checked="" type="checkbox"/> 3 No information available |
| Regional and/or global significance | Contaminant load | List top 5 parameters and provide data on the total load (unit: T/year in the proposed area) 1 BOD: 406,000 2 TN: 300,000 3 TP: 73,400 4 5 <input type="checkbox"/> no information available |
| | Affected population | <input type="checkbox"/> 1 Less than 10,000 <input type="checkbox"/> 2 10,000 – 100,000 <input type="checkbox"/> 3 100,000 – 500,000 <input type="checkbox"/> 4 500,000 – 1,000,000 <input checked="" type="checkbox"/> 5 >1,000,000 (1,600,000) |
| | Affected area (km ²) | <input type="checkbox"/> 1 Less than 100 <input type="checkbox"/> 2 100 – 1,000 <input type="checkbox"/> 3 1,000 – 5,000 <input type="checkbox"/> 4 5,000 – 10,000 <input checked="" type="checkbox"/> 5 >10,000 |

⁹ If there will no enough information in the participating countries, this indicator should be deleted

| | | |
|----------------|--|--|
| | Affected species ¹⁰ | <input type="checkbox"/> indicating the importance of the area <input type="checkbox"/> 1 None (No IUCN list available) <input type="checkbox"/> 2 1 – 2; (indicating species). <input type="checkbox"/> 3 2 – 5; (indicating species) <input type="checkbox"/> 4 5 – 10; (indicating species) <input type="checkbox"/> 5 >10; (indicating species) <input checked="" type="checkbox"/> no information available |
| Human health | Food safety (including bacteria contamination) | <input type="checkbox"/> 1 Satisfactory <input type="checkbox"/> 2 not Satisfactory <input checked="" type="checkbox"/> no information available |
| | Sickness/disease (cases/year) | <input type="checkbox"/> 1 Less than 10 <input type="checkbox"/> 2 10 - 100 <input type="checkbox"/> 3 100 – 1,000 <input type="checkbox"/> 4 1,000 – 5,000 <input checked="" type="checkbox"/> 5 > 5,000 (111129 cases) <input type="checkbox"/> no information available |
| Future threats | Socio-economic and culture development | Indicating the nature, size and costs of the projects and potential impact of the projects (Chang Island Development, Mab Ta Phut Industrial Estate Phase II and Deep Sea Port Expansion Phase) |
| | Population growth (next 5 and 10 years) | <input type="checkbox"/> 1 Less than 1% <input checked="" type="checkbox"/> 2 1 - 2% (indicating number of increase) <input type="checkbox"/> 3 2 – 4% (indicating number of increase) <input type="checkbox"/> 4 4 – 6% (indicating number of increase) <input type="checkbox"/> 5 > 6% (indicating number of increase) |

¹⁰ According to the IUCN list of endangered species

ANNEX 7

Workplan and Timetable for Land-based Pollution Related Activities 2002-2003

Table 1. Revised Workplan

[illegible]

Table 2. Provisional Schedule of meetings for 2003

| | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | |
|-----------|---|---|-------|--------------------|--------------|---|---|---------|---|----|----|-----------|----|----|---------|----|----|----|----|----|----|---------|---------|----|----|------|----|----|-----------|-----------|----|----|----|----|----|----|--|
| January | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | | | |
| February | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | | | |
| | | | | | Chinese N.Y. | | | | | | | | | | | | | | | | | RWG-F-3 | | | | | | | RWG-LbP-3 | | | | | | | | |
| March | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | |
| | | | | | | | | RWG-M-3 | | | | | | | | | | | | | | | | | | | | | | RWG-S-3 | | | | | | | |
| | | | | | | | | RWG-W-3 | | | | | | | | | | | | | | | | | | | | | | RWG-C-3 | | | | | | | |
| April | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | |
| | | | | | | | | | | | | Thai N.Y. | | | | | | | | | | | | | | | | | | | | | | | | | |
| May | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | | |
| | | | | | | | | RSTC-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| June | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| July | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| August | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | RWG-LbP-4 | | | | | | | |
| September | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | | |
| | | | | | | | | RWG-F-4 | | | | | | | | | | | | | | | RWG-S-4 | | | | | | RWG-C-4 | | | | | | | | |
| October | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | | | |
| | | | Cont. | | | | | RWG-W-4 | | | | | | | RWG-M-4 | | | | | | | | | | | | | | | Ramadan | | | | | | | |
| November | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | |
| | | | | | Ramadan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| December | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | | | | | | |
| | | | | Regional Sci. Mtg. | | | | RSTC-4 | | | | | | | PSC-3 | | | | | | | | | | | Xmas | | | | | | | | | | | |