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The Meeting of the Regional Group of Experts on the
International Coral Reef Action Network (ICRAN)

Phuket, Thailand, 28-30 January 2002

Report of the Meeting of the Regional Group of Experts on
the International Coral Reef Action Network (ICRAN)

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MEETING REPORT

Background

Coral reefs are one of the planet's most diverse ecosystems, due to the high abundance of species and ecological complexity. This fragile ecosystem is being degraded as a result of over exploitation of coral resources and pollution from terrestrial and coastal run off. Southeast Asia contains one quarter of the world's known reefs, with over 80% listed as at risk, and over half at high risk. With more than 70% of the region's people's living in coastal areas, coral reefs in this region are particularly susceptible to anthropogenic impacts, such as over fishing, destructive fishing, coastal development, pollution, and sedimentation. There is a clear need for directed policy and management actions to prevent and reverse the further degradation of coral reefs.

The International Coral Reef Action Network (ICRAN) is a new joint initiative by several partners of the International Coral Reef Initiative (ICRI) aimed at reversing the decline in health of the world's coral reefs. The partners will implement a series of activities that will further good practices in coral reef management and conservation.

ICRAN's operations consist of three components, Management Action, Communication, and Assessment. The United Nations Environment Programme (UNEP), through its Regional Seas Programmes, will co-ordinate the Management Action component of ICRAN in the Wider Caribbean, Eastern Africa, the South Pacific, and East Asian Seas region.

A group of coral reef experts, nominated by the countries in the East Asian Seas region, were invited to the First Meeting of the Regional Group of Experts on ICRAN to provide guidance to UNEP East Asian Seas Regional Coordinating Unit (EAS/RCU) in implementing the ICRAN Project in the region. The participants were asked to propose and justify potential sites for project implementation, and recommend a network of partners to implement activities at the proposed sites. The sites were proposed in the context of three focal areas – marine protected areas, community-based management, and sustainable use for tourism. Two sets of sites were proposed:

- (1) demonstration sites where a reasonable level of successful coral reef management had been achieved, and where these practices could be translated to less successful sites, and
- (2) target sites with a clear need for urgent management action to prevent further degradation of coral resources.

The intended result is that demonstration sites would be able to provide results rather quickly, while target sites would build upon these results, using a longer time frame.

Session 1: Welcome and Orientation

1.1 Opening of the Meeting

The Meeting was opened by Dr. Hugh Kirkman, Co-ordinator, East Asian Seas Regional Coordinating Unit (UNEP EAS/RCU), at the Baan Sukhothai Hotel, Phuket, Thailand, on 28 January 2002. In his welcoming speech, Dr. Kirkman gave an overview of the status of coral reef management in the East Asian Seas region. The governing body of UNEP EAS/RCU, Secretariat for the Co-ordinating Body of the Seas of East Asia, and the Action Plan were also introduced.

Economic and population growths in this region, particularly in coastal areas, are contributing to the degradation of coral reefs. The rich biodiversity is under threat of development, pollution, over exploitation, destructive fishing, and unsustainable tourism. Degradation of coral resources is a transboundary event, and regional and global issues should be considered when implementing management plans.

EAS/RCU's achievements in coral reef management were presented, including areas for further initiatives, and actions and strategies to manage coral resources. Monitoring, research, integrated management, and capacity building were some of the areas that required further action. These include:

- developing a monitoring network,
- developing meta databases and usable databases,
- assessing impacts of destructive fishing,
- rehabilitating and measuring recovery of reefs,
- preparing an inventory of regional activities and maps, and
- training in reef restoration, education, and tourism.

Participants were informed of the objective of the Workshop, namely to advise UNEP EAS/RCU on where and how to implement the ICRAN Project. The regional experts were asked to propose sites for implementing activities.

All participants provided a brief self-introduction. The list of participants can be found in Annex 1.

1.2 Organization of the Meeting

(a) Designation of officers

The participants elected Dr. Chou Loke Ming from Singapore to chair the Workshop.

(b) Organization of work

Dr. Chou informed the participants of the structure and order of business for the Workshop. The Workshop will work in plenary for the most part, form working groups when necessary, and report back during plenary sessions. The Workshop will be an informal meeting, seeking to achieve the following objectives:

- i. To exchange information on coral reef management in the region,
- ii. Based on the above, to select and agree on sites to implement the ICRAN Project, and
- iii. To identify activities to be implemented at the sites.

The working language of the Workshop was English. See Annex 2 for the Workshop programme.

1.3 Introduction of ICRAN and its Implementation

Dr. Meriwether Wilson, Director, ICRAN, introduced the ICRAN initiative. Participants were requested to review the Strategic Plan that was distributed with the Workshop Programme, and provides the overview of ICRAN. ICRAN is a global partnership of various organizations that will collaborate in accelerating work on coral reef management. The three components of ICRAN are management, communication, and assessment. ICRAN has now reached the Action Phase 2001-2005, with the management component being implemented by four of UNEP's Regional Seas Programmes – Wider Caribbean, Eastern Africa, the South Pacific, and East Asian Seas.

Mr. Yihang Jiang, UNEP EAS/RCU, gave a brief overview of the ICRAN Project in the EAS region and another related project co-ordinated by EAS/RCU, particularly the coral reef component of the UNEP/GEF Project on "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand." The goal of this Project is, "By 2010, to maintain the area of coral reef with more than 50% live cover at the present (1998) level." Proposed activities at the national and regional level were presented. Although these activities are still under discussion, the list serves to inform participants of related regional initiatives.

One participant commented that when implementing these projects, one should keep in mind that the projects are resource driven, rather than country based. There is a need to include countries that are not involved with COBSEA and not present at the Workshop.

Session 2: Demonstration Sites: Best Practices at the National Level

Each participant, with the exception of Singapore, was invited to give a presentation on an example of best management practices at the national level with focus on marine protected areas, community-based management, and tourism management. In addition, there were three invited presentations on marine parks and Reef Base's contribution to the ICRAN Project. Prior to the Workshop, participants had been informed to structure their country presentations to include the following topics:

- Objectives of the site
- Demographic, socio-economic, and ecological features
- Threats
- Legislation and policy support
- Management structure
- Activities
- Stakeholder involvement
- Financing mechanisms
- Major successes and failures
- Major needs

The country presentations are summarized briefly below.

2.1 Australia

Dr. Laurence McCook from Australia gave a presentation titled, "Australia: The Great Barrier Reef Marine Park." The Great Barrier Reef Marine Park is a World Heritage Area that meets all 4 natural heritage criteria:

- Outstanding example representing major stages in earth's natural history,
- Outstanding example representing significant ongoing ecological & biological processes,
- Superlative natural phenomenon, and
- Important & significant habitats for in situ conservation of biological diversity.

The main objectives are conservation and sustainable use. A 25-Year Strategic Plan for the GBR WHA states that, "In the GBRWHA in 25 years there will be:

- A healthy environment,
- Sustainable multiple use,
- Maintenance & enhancement of values,
- Integrated management,
- Knowledge-based but cautious decision making in the absence of information,
- An informed, involved, committed community."

Although there is legislation for the park's management, some threats to GBR WHA include destructive fishing, tourism, ports and shipping, and terrestrial runoff from adjacent land uses. Long-term monitoring with internet accessible data is in place. Major management successes include multiple use zoning, fleet reduction in Eastern Trawl fishery, Dugong Protection Areas, strict legislation for water quality in aquaculture, and overall broad acceptance of the value of the marine park. Some of the failures include crown-of-thorns outbreaks, little jurisdictional capacity to influence land use and terrestrial runoff issues, the GBRMPA is considered too bureaucratic by stakeholders, the GBRMPA is considered ineffective by conservationists, and failure to produce unequivocal demonstration of natural and human impacts. Thus, the needs for enhanced management successes of GBR WHA include increased political effectiveness, more influence over terrestrial land use and runoff, better surveillance such as the introduction of vessel monitoring systems, and an increased capacity for coral reef restoration on meaningful scales.

2.2 Cambodia

Mr. Kim Sour from Cambodia proposed a site in Cambodia for designation as marine protected areas, Koh Rong – Rong Samlim Marine Protected Area. Fishermen and farmers inhabit this site. The goals are to protect coral reefs and biodiversity within the MPA, restore fisheries and promote sustainable management, and promote compliance with MPA regulations by increasing income for local fishers (through enhancement of local fisheries, training of alternative livelihood, and promotion of eco-tourism).

Over fishing, dynamite and cyanide fishing, coral mining, deforestation and pollution from upstream, and natural disasters are threats to the areas. Although there is legislation protecting the areas, a lack of finances, capacity, and local community participation are the main setbacks to successful management.

2.3 China

Mr. Zhang Qiaomin from China gave a presentation on Sanya National Coral Reef Nature Protective Area. The coral reef ecosystem serves as the life support system for coastal populations that derive their livelihoods from them, benefiting from the multiple services that reefs provide in shoreline protection, nutrient cycling, recreation, tourism, and fisheries. This ecosystem provides key resources for coastal tourism in Sanya City.

Threats to the reefs are similar to those experienced in Cambodia, with the additions of tourism and aquaculture. In the past ten years, state and municipal governments have passed legislation to preserve the coral reefs. Coral transplantation experiments have been carried out to rehabilitate the reefs. Additional monitoring, increased public awareness, enforcement, and financial support are the main needs for Sanya.

2.4 Indonesia

Dr. Sri Hartiningsih and Mr. Widodo Ramono from Indonesia presented three sites in eastern Indonesia:

- (1) Kapoposang Island, South Sulawesi Province, is a Marine Nature Recreational Park that began in 1996. It is a nature conservation area aimed at recreation and tourism. The rich biodiversity is very promising for marine eco-tourism development, however, the number of tourists is still low. The livelihood of people on Kapoposang Island relies mainly on fisheries (75%), with some agriculture, trade, government, and private employers. There is a need for an effective management plan to conserve the coral resources, increased involvement of local communities, monitoring, patrolling, and law enforcement.
- (2) Gili Island is part of a series of islands comprising a marine nature recreational park established in 1993. Corals in this area have been degraded, with less than 50% live cover. Inhabitants rely on tourism, seaweed farming, fishing, and agriculture for income. Legislation is in place to protect the corals, but enforcement of the laws is required. The needs for effective management are the same as with Kapoposang Island.
- (3) Alor Islands Marine Park in eastern Indonesia has potential to be developed for an eco-tourism site. Currently, destructive fishing, pollution, conflicting uses, and lack of public awareness are contributing to coral reef decline. As with the above two sites, community empowerment and alternative livelihoods, law enforcement, surveying, training, and capacity building are some of the needs for this site.

Threats at the three sites include illegal fishing, pollution, harvesting marine resources, tourism, lack of management, and lack of public awareness. Planned activities include legislation schemes, training, infrastructure development, field survey, pilot projects, public awareness, and environmental education. Expected outcomes after activity implementation include increased livelihood, awareness, and putting a new management scheme in place.

2.5 Korea

Dr. Jong Geel Je from Korea gave a presentation titled, "MPAs in Korea," focusing on Jeju Island as an example. There are four types of national parks/MPAs in Korea – cultural property, natural environment, natural ecosystem, natural monument. Management plans are in place for tourism and development, but not for monitoring. Research and monitoring activities have been implemented, but they have all been one-time efforts, and not long-term programmes. Dr. Je suggested that to improve management of MPAs in Korea, additional requirements include studying biogeography of corals and inhabitants in coral areas, inventory species and their habitats, including migratory species, long term monitoring, and increasing communication amongst government agencies within the country.

2.6 Malaysia

Dr. Ridzwan Abdul Rahman gave a presentation on a proposal for establishing a North Borneo Islands Marine Park. This park would be established in an area consisting of 32 islands, 44 villages,

low population density, and high biodiversity, including marine mammal migration. Threats to coral reefs include over fishing, destructive fishing, land based pollution, and development. Thus, the challenge is how to conserve resources, while improving livelihoods.

The local community is of poor fishermen that have been introduced to alternative income opportunities to prevent the further destruction of coral reefs. Alternative activities include seaweed farming, carp culture, and growing vegetables. Unemployed youth groups have also been targeted to partake in the activities.

Management schemes will have to include numerous national agencies to address exploitation of resources, trawling, sedimentation from rivers, threat of oil pollution, unsustainable terrestrial land uses, and domestic waste disposal.

Due to the close proximity of North Borneo to the Philippines, this proposed marine park might be linked to the Palawan Islands, Philippines, creating one of the first transboundary marine parks in the region.

2.7 Philippines

Drs. Perry Ali o and Ed Gomez gave a presentation titled, "Review of Initiatives in Philippine Coral Reef Science and Management: How much spill over do we need?" A series of surveys and simulations were carried out in the Philippines to determine where MPAs could be established. The potential MPAs had to demonstrate the ability to replenish resources (fish, macroinvertebrates). Successes of this study included enhanced public awareness, development of good relationships with local communities, networking, and providing community stewardship. Shortcomings included lack of integration between science and management, low quality monitoring, and ensuring benefits are allocated to the correct groups. Monitoring and feedback, capacity building, interdisciplinary research, enhancing ecological governance, and sustaining stewardship are some future actions to implement.

2.8 Thailand

Dr. Thamasak Yeemin from Thailand gave a presentation on Mu Koh Chang National Park in eastern Thailand. The status of the corals around this island is mostly fair to good. Local communities are mostly fishers with low income. The national park is divided into zones according to level and type of use:

- Intensive Use Zone (IUZ)
- Outdoor Recreation Zone (ORZ)
- Special Conservation Zone (SCZ)
- Primitive Zone (PRZ)
- Special Use Zone (SUZ)
- General Use Zone (GUZ)

Despite having a zoning structure in place, enforcement of regulations is limited, as is awareness by local people and tourists to minimize impacts on coral reefs and related ecosystems. There is a critical need to improve education, health of the local communities, and interagency co-ordination, increased funds and manpower to manage the park effectively.

2.9 Viet Nam

Dr. Vo Si Tuan gave reviews on coral reef distribution, on-going activities for coral reef conservation, and plans to develop MPA in Vietnam, and proposed three sites in Viet Nam for the ICRAN Project implementation:

- (1) Con Dao Island National Park is important for biodiversity conservation. WWF-Indochina's work here may allow Con Dao to serve as an MPA model for Viet Nam, but this area may still be difficult to manage due to conflicting policies. For example, marine conservation efforts were incompatibly coupled with a large fish port development. Furthermore, an ill-prepared EIA resulted in the siting of the port in the island's last substantial mangrove

stand adjacent to some of the island's best reef resources. Thus, there is a need to move from sectoral to integrated management.

- (2) Community-based activities at Ninh Hai district (Ninh Thuan Province), south central Viet Nam, include fisheries, cement production, and potential for tourism. WWF-Japan is working in the area, but national and local government support is needed.
- (3) Nha Trang in south central Viet Nam hosts one of the country's most diverse reef resources. Biodiversity conservation, effective tourist management schemes, and returning benefits to local communities are the objectives of this proposed site.

2.10 Invited Presentations

2.10.1 Coastal Resource Management in Apo Island

Dr. Ed Gomez from Philippines gave a presentation titled, "Coastal Resource Management in Apo Island." Apo is a 74-hectare volcanic island, declared a marine reserve to 500 m offshore, with controlled and non-destructive fishing. A sanctuary fronting 450 m of shore on the southeast side of the island was established as a no-take zone with access by permission only. In the 1970's, Silliman University began conducting scientific studies, including assessment of the status of coral reefs for a national survey. Since then, numerous other studies and activities have been carried out at Apo Island.

Successful activities include the establishment of an education centre and community co-operative store on the island, while increase in fish species diversity has been observed. Some emerging needs include:

- (1) Regulating and harmonizing multiple uses, access and tenurial mechanisms for replication,
- (2) Scaling up results for management, and
- (3) Improved revenue sharing and incentives for sustaining community participation.

2.10.2 Komodo National Park

Mr. Mirza Pedju from The Nature Conservancy gave a presentation on Komodo National Park in Indonesia. The Park has been designated as a Man and Biosphere Reserve and World Heritage Site. The objectives of the Park are: (1) Conserve coastal and marine biodiversity in coral reef systems and associated habitats, and (2) Protect a viable portion of populations that are commercially exploited to safeguard future use. The local communities in the Park consist of subsistence fishers and informal traders and investors. There is little income from tourists at present.

Fishing cooperatives are rare. Economic institutions, such as banks and village unit cooperatives, are present in a few locations and are not generally effective. Existing banks have primarily traders as their clients, and rarely advance credit to local fishermen. Investors and traders form influential informal institutions in the dynamics of community development.

Blast fishing is the biggest threat to coral reefs throughout Indonesia. A 25-year management plan for the Park was endorsed by the government, which helps to reduce and ban destructive fishing in many areas. The private sector, government, and local communities have endorsed a zoning plan. This coupled with law enforcement, community awareness, alternative income opportunities, eco-tourism, and monitoring and research at 185 sites has helped the Park achieve a rather high level of success. Currently, funding comes mainly from grants and some visitor fees. It is anticipated that sustainable long term financing for park management can be achieved from eco-tourism revenue through gradual increases in visitor's fees and number of visitors to the Park. Lessons in management learned in Komodo National Park may be transferred to other areas in Indonesia and in the region.

2.10.3 Reef Base

Dr. Jamie Olive from the World Fish Center gave a presentation on how Reef Base could serve as the repository of information for the ICRAN Project. Reef Base emphasizes information rather than data. The aim is to provide a user-friendly system containing country summaries, workshop presentations, and information found in gray literature. Examples from the Reef Base web site, <http://www2.reefbase.org>, were displayed.

2.11 Interim Results of the Gap Analysis for Coral Reef Management

Ms. Heidi Schuttenberg, UNEP EAS/RCU, presented the interim results of a study analysing gaps in coral reef management. The study, to be completed in March 2002, was carried out in five countries – Indonesia, Malaysia, Philippines, Thailand, Viet Nam. National, state, and local levels of coral reef management were examined to determine where and what types of pilot projects could be implemented to enhance management schemes. A list of successful sites that can serve as models were presented, as well as a list of not so successful sites. The results of this study provided supporting evidence for site selection later in the Workshop, and may provide information for site selection in future phases of ICRAN.

2.12 Proposed Demonstration and Target Sites

Mr. Yihang Jiang reiterated the coral reef component of the South China Seas Project that was presented on the first day of the Workshop. The Project Budget and management chart showing steering committee, national committees, and the interaction between the different groups were explained. This project will focus on non-oceanic coral reefs outside disputed areas. Initial sites will be chosen from participating Southeast Asian countries. Participants noted that the ICRAN and South China Seas Projects have many similarities and collaboration between the two is essential.

Mr. Jiang then gave an overview of proposed demonstration site activities for regional implementation under the three themes of: (1) marine protected areas, (2) community-based management, and (3) sustainable use of coral reefs in tourism.

Marine protected areas are an effective way to protect coral resources. They provide a framework for illustrating and sharing useful management schemes. Expected outcomes under this theme include:

- Regular assessment of coral reef data and information to support management
- Legal approaches to assist management
- Monitoring successful management
- Capacity building
- Alternative income opportunities

Community based management is important because local communities can often be considered "owners" of the coral resources. Activities under this theme will incorporate the socio-economic factors related to coral reef management. Expected outcomes include:

- Working with local communities to identify/improve the requirements for community-based management
- Preparation of management plans with participation from local communities, considering salient features of the locality
- Alternative income opportunities

Southeast Asia is a region that is popular for tourism, especially diving. However, many places lack effective management schemes for sustainable tourism. The demonstration sites will seek support from dive agencies in implementing sustainable management schemes. Expected outcomes include:

- Establishment of a partnership network
- Preparing guidelines for managing dive tourism
- Improving regulations for dive tourism
- Introducing a management fee for dive tourism
- Training and capacity building for monitoring and data analysis

Mr. Jiang then proposed the method of project implementation. All together there are three options. The first will be to select reasonably well managed sites, using the successes as examples for sites that are not so well managed. The second option is to select not so successful sites, using examples from well managed sites for improvement. The third option is to select a combination of successful and non-successful sites. Activities in the former will focus on improving existing schemes, while the latter will focus on initiating appropriate management schemes.

Participants reached a consensus on selecting the third option.

Session 3: Site Selection

Eighteen criteria adapted from the "ICRAN Strategic Plan" were compiled to set up a matrix to rank the proposed sites (See Annex 3). Participants worked in small groups, by country, to rank each criterion as high, medium, or low. Each proposed site was also ranked as demonstration or target under one of the three focal themes.

Almost a full day's work was required for agreement on selecting sites. Extensive discussions took place on proposing, justifying, and reaching an agreement on the sites. An initial list consisting of 23 sites was recommended. Additional proposed sites that were not mentioned during the country presentations were also introduced to the participants. These sites include:

- Ha Long Bay, Viet Nam
- Ream National Park, Cambodia
- Koh Surin and Koh Tao, Thailand
- Pulau Redang, Malaysia
- Bunaken Island, Indonesia
- The Philippines had suggested 7 sites, but later withdrew 6.

After some voluntary withdrawals and summation of the criteria rankings, a short list of sites was selected as follows:

Demonstration:

- Mu Koh Surin, Thailand
- Apo Island, Philippines
- Bunaken, Indonesia

Target:

- Sanya, China
- Koh Rong, Cambodia
- Ninh Thuan, Viet Nam
- Gili Island, Indonesia

Alternative sites were also selected:

- Demonstration – Komodo Island, Indonesia
 - North Borneo Island, Malaysia
 - Kapoposang Island, Indonesia
 - Nha Trang, Viet Nam
- } Target

Session 4: Implementation of Activities

4.1 Discussion of Activity Implementation at Short-listed Sites

After the short-list sites were agreed on, the final day of the workshop was devoted to suggesting partners and activities for implementation. A general discussion took place concerning global and regional needs, and how the activities should be proposed in the context of these needs. Rehabilitation, capacity building, public awareness, transfer to policy, exchange of information through developing and using networks, importing relevant lessons from other regions, and alternative income opportunities were suggested as some of the priority needs.

A brief movie clip was shown to reiterate the objectives of ICRAN, and how the suggested activities should fit into the ICRAN framework. Countries then worked in parallel to compose the lists of implementing partners and current and future activities for the selected sites, keeping in mind how demonstration sites became successful, how management plans were developed, the selling points to target sites, and future needs. Target sites were requested to list objectives, current deficiencies, what and how to implement actions, and specific needs.

4.2 Working Group Reports

Upon return to the plenary, participants reported on their small group discussions. The presentations are summarized briefly below.

The four proposed demonstration sites vary widely in size and shape. Some are a single island (Apo), while others are archipelagoes. All have legislation and management plans to administer the areas, but some of the laws are quite old, and enforcement of regulations needs to be improved. At all four sites, the local communities and stakeholders are closely involved with management. Park fees, research grants, and trust funds currently support the demonstration sites, but these amounts are not very large, and additional funding is required. Education and raising awareness are activities that have been on going, and are expected to continue. Scientific researches, monitoring, and coral rehabilitation are additional activities that have contributed to the successful management of these sites, however, these activities need to be continued to ensure long-term sustainability. In conclusion, there is a need for enhancement of management plans and infrastructure, furthering the involvement of stakeholders, increasing capacity building, and expanding on the available data.

The seven proposed target sites vary widely in socio-economic and demographic features, past activities, and existing management schemes.

Mountains along the coast isolate the area of Ninh Hai district (Ninh Thuan Province) in Viet Nam. A management plan is yet to be developed with input from local communities of fisheries and agriculture. Support from donor agencies and the province have allowed the implementation of some activities in sea turtle conservation, public awareness, and surveys. Capacity building, drafting of a management plan, and enforcement are needed at this site.

Nha Trang, Viet Nam, known for its bird's nest business, was proposed as an eco-tourism target site. Temporary zoning and regulations of Hon Mun Protected Area (south of the bay) have been implemented, however a management plan, training, and returning benefits to local communities need to be initiated.

Sanya City and marine areas in China was proposed as a target site for MPA. Its long history of agriculture and fisheries is seeing the introduction of tourism and aquaculture in the past 10 years. Some coral transplants, surveys, and Reef Check training have been carried out in Sanya. Improving partnerships with local government, improving legislation, additional monitoring, and enhanced infrastructure are needed at this site.

Koh Rong, Cambodia has recently been designated as a marine protected area. Universities, donor agencies, and international agencies have begun working with local communities in coral reef conservation. Destructive fishing has been banned. The government has decentralized natural resource management, and is focusing on community-based resource management. Baseline surveys, training, monitoring, developing a management plan, developing an enforcement strategy, and long-term financing mechanisms are needed at this site.

Fishing, live-fish industry, agriculture, diving, marine eco-tourism, and seaweed cultivation are some of the socio-economic features of the proposed North Borneo Island Marine Managed Area. The Universiti Malaysia Sabah is working closely with the State Government to propose a new management approach towards establishing a Marine Managed Area rather than an MPA. The Universiti and NGOs are carrying out inventories. UMS is also conducting R&D on seaweed. If the government approves the proposed MMA, future activities will include marine fish culture, sea cucumber and fish ranching, a stakeholder workshop, and development of a management plan.

Kapoposang Islands, Indonesia, has seen initial activities in park planning and management, institutional development, ecosystem management, and community participation in management schemes. There is a need for networking stakeholders, law enforcement, monitoring, and training.

Gili Islands, Indonesia, relies heavily on the tourist industry for income. The education level of the local communities is rather low, with only 10% having a high school education. Similar to Kapoposang Islands, there is a need to network between stakeholders and NGOs and universities. Some initial activities include installing park boundary signs, education, law enforcement, and monitoring. Additional activities include training for monitoring, increasing conservation awareness campaigns,

enforcement, surveying, mapping, monitoring, improving tourist facilities, and increasing public participation in management plans to be drafted.

4.3 Site Matrix

In closing the session, Dr. Meriwether Wilson presented a site matrix for each country to complete. The value of the matrix illustrates a profile of each site that may allow collaboration with other agencies, and may be used to leverage funding for future phases of ICRAN.

Dr. Jamie Oliver reminded participants that Reef Base was willing to host data, information, and photos resulting from the ICRAN Project.

Session 5: Summary of the Workshop

Dr. Hugh Kirkman informed the Workshop that the site information provided over the past three days would be further analysed by UNEP EAS/RCU. EAS/RCU will then prepare a programme of action for Project implementation.

The Workshop agreed that EAS/RCU will produce the draft Workshop Report, and circulate by e-mail to all participants for comments.

Session 6: Closing of the Workshop

In closing the meeting, Dr. Kirkman thanked the Workshop Chair and participants for their hard work and assistance in initiating the implementation of the ICRAN Project in the East Asian Seas region. The participants expressed their thanks to ICRAN and UNEP EAS/RCU for providing the opportunity to contribute to improved management of the region's coral reefs. Dr. Kirkman expressed his appreciation to the excellent organisation of the Workshop by the EAS/RCU staff in Bangkok, and to the Baan Sukhothai Hotel staff for their hospitality.

The Workshop closed at 17:00 on 30 January 2002.

ANNEX 1

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ANNEX 2

Workshop Programme

28 Jan. 2002	Session 1. Welcome and Orientation
	08:00-8:30 Registration
	08:30-8:50 Welcome and introduction (by Hugh Kirkman)
	08:50-9:20 Overview of the Status of Coral Reef Management in the East Asian Seas (Hugh Kirkman)
	09:20-9:50 Introduction of ICRAN and its implementation in the East Asian Seas region (Meriwether Wilson & Yihang Jiang)
	09:50-10:10 Coffee break
	Session 2. Demonstration Sites: Best Practices at the National Level with focus on
	1. Marine Protected Area
	2. Community based management
	3. Tourism management
	10:10-10:30 Country presentation: Australia
	10:30-10:50 Country presentation: Cambodia
	10:50-11:10 Country presentation: China
	11:10-11:30 Country presentation: Indonesia
	11:30-11:50 Country presentation: Korea
	11:50-14:00 Lunch break
	14:00-14:20 Country presentation: Malaysia
	14:20-14:40 Country presentation: Philippines
	14:40-15:00 Coffee break
	15:00-15:20 Country presentation: Singapore
	15:20-15:40 Country presentation: Thailand
	15:40-16:00 Country presentation: Viet Nam
	16:00-17:00 Invited presentations
29 Jan. 2002	08:30-09:00 Presentation on initial results of the Gap Analysis for Coral Reef management (Heidi Schuttenberg)
	09:00-10:00 Presentations on the proposed demonstration projects (Yihang Jiang & Hugh Kirkman)
	10:00-10:20 Coffee break
	10:20-12:00 Discussion & agreement on the demonstration sites
	12:00-13:30 Lunch break
	13:30-15:00 Discussion & agreement on the demonstration sites (cont.)
	15:00-15:20 Coffee break
	15:20-17:00 Summary of the discussion & agreement on the demonstration sites
30 Jan. 2002	08:30-10:00 Activities in the demonstration sites
	10:00-10:20 Coffee break
	10:20-12:00 Activities in the demonstration sites (cont.)
	12:00-13:30 Lunch break
	13:30-15:00 Activities in the demonstration sites (cont.)
	15:00-15:20 Coffee break
	15:20-17:00 Activities outside demonstration sites
	17:00 Closure of the meeting

ANNEX 3

Criteria for Site Selection

1. political leverage
2. financial incentives/leveraging
3. addresses a regional or global need/gap
4. potential for success
5. relevance to other areas (replicability)
6. contributes to a good coverage of management tools
7. financial need
8. ecological relevance (by ecosystem or taxon)
9. international attraction to donors
10. urgency
11. potential to utilize knowledge from other sites (target sites)
12. capacity to host/transfer knowledge (demo sites)
13. can demonstrate both human and ecological benefits
14. can be self-sustaining
15. cross sectoral management
16. builds on existing initiative and good management
17. community engagement
18. can be enforced