

DEMONSTRATION SITE SUMMARY SHEET

1.	SITE NAME AND GEOGRAPHIC CO-ORDINATES Mu Koh Chang, Trat Province Latitude 11° 56' – 12° 16' N Longitude 102° 25' – 102° 61' E
2.	COUNTRY IN WHICH THE SITE IS LOCATED: THAILAND
3.	PROVINCE IN WHICH THE SITE IS LOCATED: Trat Province Local government approval [yes or no] : Yes Date October 7, 2003 Local government involvement [yes or no] Yes Local government co-financing [yes or no] Yes If yes then in-kind or in-cash? in cash and in kind
4.	LINKAGE TO NATIONAL PRIORITIES, ACTION PLANS AND PROGRAMMES This proposal is consonant with and supports the goals and objectives of : - National Plan for Coral Reef Management (1992) - Mu Koh Chang Marine National Park Management Scheme (1997) - Development and Management Scheme for Koh Chang and its Vicinity (2002) - The Pilot Project for Coral Reef Zoning : Koh Chang (2002) The government established the Development Area for Sustainable Tourism Authority to carry out a pilot project at Mu Koh Chang. Since 2002, a total of 500 million Baht has been allocated for Mu Koh Chang development under three management strategies: Strategy I: Area management and communities organization, 19 projects: 308.69 million baht Strategy II: Development and improvement of goods and service quality, 7 projects: 118.20 million baht Strategy III: Management of long-term sustainable development, 11 projects, 71.59 million baht. Central government involvement [yes or no] Yes Central government co-financing [yes or no] Yes if yes then in-kind or in-cash? in cash and in kind
5.	DATE OF NATIONAL TECHNICAL WORKING GROUP MEETING WHICH CONSIDERED THE PROPOSAL AND RECOMMENDATION The proposal was reviewed and endorsed by the National Technical Working Group meeting on September 25, 2003. The meeting strongly supported as the first priority of coral reef demonstration sites from Thailand because of its importance for Thailand and the South China Sea.
6.	NATIONAL FOCAL POINT AND/OR NATIONAL FOCAL POINT ENDORSMENT AND/OR COMMENTS Most of coral reefs in Mu Koh Chang, Trat Province are still in a good condition. Both central and local governments are urgently in a process of involvement to develop and manage the area, especially for sustainable tourism. It is also high potential for transboundary management.
Signature:..... Name & Designation (Dr. Wanee Samphantharak) Secretary - General Office of Natural Resources and Environmental Policy and Planning Date:.....September 25, 2003.....	

DEMONSTRATION SITE PROPOSAL

7. SITE DESCRIPTION

AREA:

Mu Koh Chang is geographically located between 11° 56'–12° 16' N and 102° 25'–102° 61' E, southern area of Trat Province. It is in the eastern part of the Gulf of Thailand or the west coast of the South China Sea, near the border between Thailand and Cambodia. There are about 60 islands in the area which harbor approximately 16 km² of coral reef area. These comprise three main island groups, namely Mu Koh Chang, Mu Koh Mak and Mu Koh Kut. The Thai Government has paid more attention to Mu Koh Chang and declared it as a special administrative zone in 2002. Mu Koh Chang Marine National Park was established in 1982, covering an area of coral reef approximately 5 km².

ENVIRONMENT:

Koh Chang is the largest of this group of islands and the second biggest in Thailand after Phuket (Map, Annex 1). Mu Koh Chang's mostly granite islands are hilly if not mountainous in parts, and their rounded slopes are thickly covered with forest. The island runs parallel to the coast and appears very mountainous from the shore due to the mountain ridge which runs the length of the island. The ridge is composed of several summits. The tallest of which are Khao Lan, Khao Chom Prasat, Khao Khlong Mayom, Khao Salak Phet and Khao Yai, which is the highest peak reaching 743 m. above sea level. The island of Koh Chang has many streams and rivers which are fed by the rainfall collected on the mountainous slopes of the island. Due to the great amount of rainfall these streams are very clean and supply water all year round. In the southwest monsoon period, between May and October, high waves, strong winds, rain and some storms can be expected from time to time with consequent disruption of tourism activities. During the other, northeast monsoon period, November – April the seas are calm providing ideal conditions for diving and other marine sports. The tidal regime is of mixed type with a tidal range about 2.5 m. The oceanic current during high tides, flows in a northeast direction with a speed of approximately 0.5 km/hr while during low tides the direction is reversed with a similar speed. Sea surface temperatures are in a range of 26 – 30 °C. Salinity of seawater is 22 – 31 ppt. Dissolved oxygen of seawater in the area is 3.8 – 6.7 mg/l.

HABITAT(S):

On the island of Koh Chang, mountain slopes are covered by dense Tropical Evergreen Forest which due to the low level of habitation on the island has largely undisturbed until recently. The principle tree species present include; *Dipterocarpus* spp., *Anisoptera costata*, *Hopea odorata*, *Podocarpus neriifolius*, *Croton* spp., *Caryota* sp., *Calamus* spp., *Bauhinia* sp., *Pandanus* sp. and *Amomum* spp. Around the villages of Salak Phet, Salak Khok, Khlong Son and Khlong Phrao Bay are areas of Beach Forest. The dominant tree species here are; *Terminalia catappa*, *Melaleuca leucadendra*, *Eugenia grandis*, *E. spicata* and *Pandanus odoratissimus*. In the more sheltered spots, especially where freshwater enters the sea to produce brackish water, fairly large areas of mangrove forest are found. These mangrove forests are tree species of *Rhizophora mucronata*, *R. apiculata*, *Ceriops decandra*, *C. tagal*, *Bruguiera gymnorrhiza*, *B. parviflora*, *Avicennia alba*, *Xylocarpus granatum*, *X. moluccensis*, *Hibiscus tiliaceus* and *Cerbera odollum*. High biodiversity of marine habitats can be found in the area including rocky shores, sandy beaches, seagrass beds and coral reefs.

Fringing reefs develop around most of the islands and coral communities are also found on off-shore pinnacles. The total coral reef areas are approximately 16 km² and over 130 scleractinian coral species have been reported with average live coral coverage around 40% (Annex 1). Coral reef conditions around Koh Chang and small islands nearby, except the northern part, are poor. The dominant corals are *Porites lutea*, *Pavona decussata*, *Echinopora lamellosa*, *Goniopora* spp., *Pavona* spp., *Symphyllia* spp., *Fungia* spp. and *Astreopora* sp. The sponge, *Xetospongia* sp. is also abundant. Coral reef conditions of a group of small islands north of Koh Chang are fair with an abundance of *Porites lutea* and *Symphyllia* spp. Coral reef conditions of the Koh Mak group, the largest coral reef area, are poor. The dominant corals are *Porites lutea*, *Diploastrea heliopora*, *Goniopora* spp. and *Symphyllia* spp. The sponge *Xetospongia* sp., soft coral *Sinularia* sp., giant clam *Tridacna* spp. are also common in the area. Coral reef conditions around Koh Kut groups are fair with an abundance of coral *Porites lutea*, *Diploastrea heliopora*, *Symphyllia* spp., and Faviidae, and giant clams *Tridacna* spp. The severe coral reef bleaching phenomenon in 1998 resulted in coral reef degradation of Mu Koh Chang, however natural recovery is observed. Coral reef fishes of Mu Koh

Chang are comparatively high in both abundance and diversity. Over 113 species of fishes are recorded, comprising economically important species such as Lutjanidae, Serranidae and Haemulidae, coral reef indicator species such as Chaetodontidae and common coral reef fishes such as Apogonidae, Labridae and Pomacentridae. Several endangered species, such as sea cows, dolphins, whales, sea turtles (*Chelonia mydas* and *Eretmochelys imbricata*) and whalesharks (*Rhincodon typus*) can be found in the area. In general, the marine organisms found at Mu Koh Chang are of relatively high diversity for the western section of the South China Sea.

PRESENT USE:

Regarding administrative areas, there are two sub-districts in Mu Koh Chang, i.e., Koh Chang and Koh Kut sub-districts. A total population of 6,724 was recorded in 2002.

Sub-districts	Number of Population	Population Density /km ²
Koh Chang	4,773	30.83
Koh Kut	1,951	12.02

Source : Trat Province Statistics (2002)

Most of coral reefs in Mu Koh Chang are shallow overlain by clear water. Although a high percentage of the area suffered degradation due to the severe coral reef bleaching phenomenon in 1998, there is high potential of natural recovery. There are also some good coral reef areas remaining. These can provide substantial benefits to both the fisheries and tourism sectors. Coral reefs are important resources for food and revenue of local fishermen. There were 355 households in fishing villages on Koh Chang and the major fishing gear in the area include push nets, gill nets and traps. Mariculture by local communities is also developing.

Marine fisheries in Trat Province in 2003

Districts	Number of Fishing Households	Number of Fishing Boats	Total Catch (Kg.)	Landing Value (Baht)
Mueng	1,978	1,841	24,930,800	872,578,000
Kao Sming	131	122	1,647,000	57,645,000
Laem Ngob	506	471	6,358,500	222,547,500
Klong Yai	933	869	11,731,500	410,602,500
Bo Rai	7	7	94,500	3,307,500
Koh Chang	355	331	4,468,500	156,397,500
Koh Kut	136	127	1,714,500	60,007,500
Total	4,046	3,811	50,945,300	178,085,500

Sources : Trat Provincial Fisheries Office Statistics (2003).

Mariculture in Trat Province in 2003

Districts	Shrimp		Fish		Blood Cockle		Oyster		Green mussel		Pearl		Crab	
	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)	Number of Household	Areas (Rai)
Mueng	563	7,705	120	500.7	-	-	209	289	10	10	-	-	28	370.5
Kao Sming	173	2,286	6	5.16	-	-	86	451	-	-	-	-	3	67
Laem Ngob	120	1,686	6	19.5	7	70	119	238	-	-	-	-	4	28
Klong Yai	51	808	4	0.03	-	-	-	-	3	10	-	-	-	-
Bo Rai	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Koh Chang	15	228	55	19.4	-	-	-	-	-	-	-	-	2	2.5
Koh Kut	-	-	45	2.21	-	-	-	-	-	-	1	3,471	-	-
Total	922	12,713	236	547	7	70	414	978	13	20	1	3,471	37	468

Sources : Trat Provincial Fisheries Office Statistics (2003)

Remark: 1 Rai = 1,600 m²

Beautiful and diverse coral reef organisms are attractive to tourists and there are quite substantial numbers of visitors snorkeling and SCUBA diving over coral reefs. A total of 384,733 stay and non-stay tourists, including both domestic and foreign, were recorded by the Tourism Authority of Thailand in 2000. There are numerous hotels and resorts, especially along the western coast of Koh Chang.

Hotels, resorts and tourism companies in Mu Koh Chang

Location	Number of hotels, resorts and tourist companies
Koh Chang	103
Koh Phrao Nok	1
Koh Ngam	1
Koh Lao Ya	1
Koh Wai	2
Koh Mak	11
Koh Kradat	1
Koh Ra Yang	1
Koh Kham	1
Koh Kut	11

Source : Tourism Authority of Thailand (2000).

Visitors of Mu Koh Chang

visitors	Domestic	Foreign
Stay tourist	271,601	68,556
Non stay	36,304	6,272

Source : Tourism Authority of Thailand (2000).

MANAGEMENT REGIME:

Approximately 30 % of the coral reef in this area is within the area of jurisdiction of Mu Koh Chang Marine National Park. The park has had its own management scheme since 1997. Trat Province also declared Koh Kra-Tein as a fisheries sanctuary in 1991 under the Fisheries Act (1947). The Department of Marine and Coastal Resources has responsibility to conserve and manage coral reef areas and cabinet adopted a national coral reef strategy and action plan in 1992. However, this has not resulted in reversal of coral reef degradation because it has not been operationalised at the local level. The Office of Natural Resources and Environmental Policy and Planning has realized the problem and selected Mu Koh Chang as a pilot study site for coral reef zoning for utilization in the Gulf of Thailand in 2002. Regarding coral reef zoning in Thailand, there are three zone types:

- (1) general use zone, areas outside marine national parks and fisheries sanctuaries where local communities are permitted to fish;
- (2) recreation zone (intensive tourism and ecotourism), areas used for sustainable tourism; and,
- (3) ecological preservation zones, areas where only research is permitted.

Most of the coral reef areas in Mu Koh Chang are categorized as ecotourism zones. Over the last three years tourism development in Mu Koh Chang has grown rapidly. The Thai Government intends to develop Mu Koh Chang as an important tourist destination. Therefore the cabinet approved quite a large budget for urgent development plan for Mu Koh Chang in 2001. Mu Koh Chang was also selected as a model special administrative zone in 2002. The special administrative board of Mu Koh Chang together with Trat Province act as the coordinator for any resource management projects in the area.

8. STAKEHOLDERS

There are two types of stakeholder in the area, namely individuals and organizations (local government institutions, non-government groups or organizations and central government organizations). Listed in annex 2 are the identified key stakeholders in the Mu Koh Chang area together with their respective involvement or roles/responsibilities and activities conducted. During the preparation for Development and Management Scheme for Koh Chang and its Vicinity (2002), the Pilot Project for Coral Reef Zoning: Koh Chang (2002) and the preparation of this demonstration site

proposal, there have been several meetings at Koh Chang among all involved stakeholders. Therefore NGOs community-based organizations, local and central governmental agencies and other stakeholders understand the processes of project participation. Trat Province Office and Special Administrative Board of Mu Koh Chang are the key co-management agencies in the area. As the Trat Province Governor is now a Chief Executive Officer, it is practicable for Trat Province Office to play a major role for coral reef conservation projects. Several activities initiated by government institutions, private sector and local communities have been conducted in the area for conservation and sustainable utilization of coral reefs. Certain local communities realize the importance of coral reefs and marine ecosystems. New groups or associations for marine resources protection were established with financial and legal support from government agencies.

9. THREATS

Coral reefs in Mu Koh Chang have been recognized as a good diving site in Thailand. Since tourism development has grown rapidly there will be a trend of coral reef degradation if appropriate management plans are not immediately implemented. The major threats are as follows:

- **Infrastructure development:-** This led to soil erosion and resulted in heavy sedimentation and caused degradation of coral reefs and seagrass beds.
- **Expansion of tourism business:-** The number of tourists is increasing rapidly but the carrying capacity of the area is limited. Tourism development plan is required to reduce the impacts.
- **Unskilled divers:-** Some snorkellers and SCUBA divers have no diving skills. They usually trample on coral colonies in shallow water, resulting in coral breakage. Diving business management should be improved.
- **Illegal fishing:-** Some local fishermen and fishermen from outside Mu Koh Chang use illegal fishing gear such as chemicals and certain illegal fishing nets and collect sea cucumbers and abalone.
- **Coral reef bleaching and storms:-** The severe coral reef bleaching in the Gulf of Thailand in 1998 resulted in extensive coral reef degradation.

Some underlying causes were identified as follows:

- **Lack of awareness of diving operators:-** Some diving boats do not use mooring buoys. They anchor on coral reef areas.
- **Local communities misunderstanding of marine ecosystems:-** Some local people do not realize the importance of the marine ecosystem and effects of coral reef degradation on their livelihoods. Garbage and sewage management are urgently needed.
- **Failure of coordination among agencies:-** Coordination among government institutions, private sector and local communities should be immediately improved.
- **Limited number of officials:-** Because of limited budget, the number of officials available to manage the area is not enough. Therefore law enforcement is not efficient. Certain powerful local people have influenced the area management.

Based on the causal chain analysis (Annex 3), 6 main areas of intervention have been identified namely: building public awareness and education on coral reef ecosystem; better coordination among agencies; sustainable ecotourism development; capacity building; livelihood development; and monitoring and rehabilitation. Because of the ecological and socio-economic importance of Mu Koh Chang the Thai government has a policy to promote Mu Koh Chang as an important regional tourism destination. It has been strongly supported in terms of financing, establishing development and management scheme and special administration. The adoption of Mu Koh Chang as a UNEP/GEF project demonstration site will be significant in strengthening future management plans.

10. GOALS & PURPOSE

The main objective of this project is to remove or reduce the causes of coral reef degradation in Mu Koh Chang by applying a new model of co-management in the area and restoring certain deteriorated areas for education and tourism purposes. The project highlights the importance of coordination among government institutions, private sectors and local communities for sustainable tourism development. The success of the management model in Mu Koh Chang can be applied to other areas which have similar problems in Thailand and other countries in the South China Sea. The present coral reef site is also high of potential for transboundary management with Cambodia.

11. RATIONALE AND OBJECTIVES

As Mu Koh Chang is located near the border of Cambodia and not far from Vietnam, and harbors some of the richest marine communities in the western South China Sea. The Thai Government has initiated a project to develop Mu Koh Chang as an important regional ecotourism site. A relatively large amount of funding has been spent on infrastructure development and establishing new development and management schemes. The additional support from the UNEP GEF/SCS project will emphasize immediate objectives as follows.

- Raise public awareness and education on ecological importance and sustainable use of coral reefs.
- Build networks among government institutions, private sectors and local communities for coral reef management and conservation as well as get approved mechanism for network long – term co-ordination.
- Develop a sustainable ecotourism program for Mu Koh Chang and its vicinity.
- Encourage capacity building in all levels and sectors.
- Develop alternative income generating program for fishermen.
- Support for coral reef monitoring and rehabilitation.

12. OUTCOMES

The project will strengthen local government and local communities for coral reef co-management to achieve sustainable tourism development in the area and improvement of living standard of local communities. The relationship between objectives, outcomes and indicators is outlined in the following table:

Objectives	Outcomes	Indicators
1. Building awareness and education on ecological importance and sustainable use of coral reefs.	1.1 Local communities and all stakeholders realize the importance of coral reefs.	1.1 Numbers of permanent notice boards, brochures and posters; numbers of people receiving information and knowledge coral reefs ecosystems.
	1.2. Community based conservation groups involved in coral reef management through voluntary action.	1.2 Numbers of students, tour guides, tourism businessmen and local people attending the training course of marine ecosystem; number of people receiving in formation via radio television and website; numbers of handbooks and education media produced and distributed to target groups.
2. Networking among government institutions, private sectors and local communities for coral reef management and conservation and network co-ordination mechanism.	2 New project development from coordination among involved agencies. Wide participation of stakeholders in coral reef management and conservation	2. Number of individuals/ organizations participating in the networks; active mooring buoy committee; number of people attending seminars/ meetings and number of newsletters.
3. Development of a sustainable ecotourism program for Mu Koh Chang and its vicinity	3. Growth of sustainable ecotourism, adequate income of local tour guides.	3 Reports on carrying capacity study and tourist fee; numbers of tourists using underwater trail and mooring buoys; performance of local guide center and local guides; revised management plan; quantity of solid waste on coral reefs.
4. Encouragement of capacity building in all levels and sectors	4. Adequate number of experienced personnel for coral reef management	4. Numbers of volunteers and trainers attending the training courses; number of active members of the networks; amount of financial support for research projects.
5. Development of alternative income generating program for fisherman	5. Increased income of local fishermen, decreased illegal fishing	5. Number of fishermen attending the mariculture training; report on socio-economic study; number of reports published and distributed to local fishermen; amount of fishery production.
6. Support for coral reef rehabilitation.	6. Reduce impacts of anthropogenic disturbances and demonstration sites for coral reef restoration	6. Report on monitoring of coral reef conditions and mapping additional coral reef area; number of visitors of the demonstration projects; water quality; number of staff attending the training courses; presence of digitised map; number of research reports.

13. PLANNED ACTIVITIES TO ACHIEVE OUTCOMES (SEE ANNEX 4 FOR MONITORING AND EVALUATION PLAN)

The activities will be undertaken through co-management by the Trat Province Office together with the Special Administrative Board with the assistance and coordination of other government agencies, private companies, NGOs and local communities. The planned activities to achieve the desired outcomes are as follows:

Component 1. Public awareness and education

Building public awareness will involve training and seminars for students, tourism operators, government staff and local people in order to raise their understanding on coral reefs and other marine ecosystems and sustainable utilization of marine resources. Education activities to encourage and empower volunteer groups for coral reef conservation will be taken. They are the key manpower to protect coral reef in long-term management.

- 1.1 Produce permanent notice boards for raising awareness on coral reefs.
- 1.2 Produce brochure, poster for raising public awareness on coral reefs.
- 1.3 Training course of marine ecosystem and its sustainable utilization for local students.
- 1.4 Training course on marine ecosystem and its sustainable utilization for tour guides, tourism businessmen, local communities.
- 1.5 Broadcast knowledge of coral reefs ecosystem on local radio and television and web site.
- 1.6 Produce coral reef ecosystem conservation handbook for schools, universities, local libraries, stakeholders and involved institutions.
- 1.7 Develop education materials on biodiversity and distribute them to schools and communities.

Component 2. Networking among stakeholders

The project will encourage coordination among government agencies, private sector, NGOs, and local communities during planning, operation and evaluation phases to strengthen co-management of all activities in the area and to reduce any obstacles to project implementation.

- 2.1 Establish networks for coordination between government institutions and local communities.
- 2.2 Establish the mooring buoy committee to manage all mooring buoys.
- 2.3 Meeting or seminar among NGOs for cooperation of resource management including publishing newsletter.
- 2.4 Establish international coral reef information network for exchange of marine biodiversity data.

Component 3. Sustainable tourism development

Tourism development project design, preparation and implementation will be carefully conducted in a perfect model. Tourism development projects usually result in significant coral reef deterioration. Studies on carrying capacity of the area are critical for sustainable tourism planning. Socio-economic tools will be applied for management of all tourism activities.

- 3.1 Study carrying capacity for tourists.
- 3.2 Diving trails including underwater notes on coral reef organisms.
- 3.3 Establish local guide center and encourage local guide activities.
- 3.4 Install additional mooring buoys.
- 3.5 Academic support for local communities and private sector to encourage public participation in coral reef management and conservation for ecotourism.
- 3.6 Encourage local people and tourism organization to clean up coral reefs.
- 3.7 Study to determine tourist fee for coral reef management purposes.

Component 4. Capacity Building

The project will increase numbers of researchers, site managers and experienced NGOs through research fund raising, training, seminars, and study visits. Site managers could have clear visions for coral reef management and better understanding on modern management approaches.

- 4.1 Training for coral reef protection volunteer groups.
- 4.2 Establish networks between coral protection volunteer groups and government agencies for patrolling.
- 4.3 Training the trainers for local communities.
- 4.4 Encourage research fund and study visit for coral reef management to researchers, government officers and NGOs.

Component 5. Sustainable livelihoods

Local fishermen will be trained for alternative sustainable livelihoods such as mariculture and diving tour guides in order to reduce impacts from illegal fishing.

- 5.1 Training of alternative livelihood for illegal fishermen.
- 5.2 Socio-economic study in local communities that use coral reef as a fishing ground.
- 5.3 Publish and distribute information concerning fisheries and coral reef conservation.
- 5.4 Encourage establishment of artificial reefs.

Component 6. Improvement of site management to support coral reef rehabilitation

Demonstration activities for coral reef restoration will be conducted in certain localities. The projects will raise community awareness on coral reef issues and the role they could play in improved management and benefits that could be derived. The project will also include impact mitigation design to accelerate natural coral reef recovery.

- 6.1 Monitoring coral reef conditions (ecological and socio-economics aspects) and mapping additional coral reef areas.
- 6.2 Demonstration project of coral reef restoration by using coral fragments and natural recruitment.
- 6.3 Monitor and control land-based pollution.
- 6.4 Training and assign particular staff from relevant agencies to research on coastal development.
- 6.5 Build-up coral reef and marine organism database by using GIS.
- 6.6 Support researches on mariculture of economically important marine organisms.

14. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT

Sustainability Analysis:

The success and sustainability of the project rely on effective co-management in the area. The sustainability analyses of the project are as follows:

□ Long-term financial support

Regarding the development and management scheme for Koh Chang and its vicinity (2002), The Thai government will continue to support relevant activities in the area until 2022. The budget allocated from the government during the fiscal years 2004 – 2006 will be over 600,000 US\$. Financial support from the UNEP/GEF will be very important during the initial phase of the long-term management plan. After 2006, all activities could be carried out with additional funding of revenue obtained from tourism activities, such as park fee and local district administration charges. Representative from the Bureau of the Budget has also participated at initial phase of the project planning.

□ Capacity building

Since Mu Koh Chang was selected by the Thai government as the first priority area for tourism development, building capacity at the community and national levels could be supported in a long term. Several government institutions and NGOs intend to support the project with their capacities. The planned activities for capacity building are comprehensive and practicable.

□ Institutional arrangement

The main co-management agency, Trat Province office, in collaboration with the Special Administrative Board has obvious authority to coordinate with other government agencies, private sectors and NGOs. The planned activities for better coordination among agencies of this project could encourage networking for particular goals of coral reef management.

The UNEP/GEF project can play a major role during initial phase of the new management model which could be transferred to other locations in the South China Sea region.

Risk Assessment:

The most likely risks anticipated for the project are as follows.

1. The project is not financially supported in a long term. This should not be for the case of Mu Koh Chang because of strong commitment of the government under the management plan.

2. There are inadequate staff for project implementation. This problem should be solved by several training programs of the proposed project.
3. There will be difficulties and inefficient cooperative management of the project. Obvious specific executive board of Koh Chang together with the Chief Executive Officer, Trat Province's Governor, should authorise all relevant agencies to implement the project activities.
4. Information for raising public awareness reaches relatively small group of local people. Activities for raising public awareness under the proposed project will apply various methods and public media.
5. Private sector may not actively participate in the proposed projects. Several activities of the project will provide substantive incentives for tourism businessmen, guide tours and diving operators.
6. Relevant individuals/organizations may not actively involve themselves in networks established by the proposed project. The project will concentrate on cooperation among various target groups and periodically monitoring and evaluation of active participation.
7. Coral reef degradation caused by inappropriate ecotourism management may continue. The project realizes this issue therefore there will be many activities for sustainable ecotourism development.
8. Failure to use mooring buoys for coral reef conservation may occur. The proposed project will establish the mooring buoy committee to effectively manage all mooring buoy problems.
9. Financial support for research are not forthcoming. The proposed project will highlight the importance of research for providing relevant information required by managers.
10. Illegal fishing activities may not decrease. The proposed project will provide training and support for alternative livelihood development.
11. It is difficult to assign suitable leaders in local communities who can play major role for the project implementation. Department of Marine and Coastal Resources and universities would be able to provide necessary support for the selection process.
12. Conflict between relevant government institution may be an obstacle for the project implementation. The Governor of Trat Province, as a CEO, would be able to negotiate for problem solving.
13. Project management is dominated by government agencies. The project manager should bring more representatives from NGOs and local communities.
14. Stakeholders do not agree on coral reef restoration sites and methods. The project management team should use a transparent process for site and method selection with strong academic support.
15. Ineffectiveness of law enforcement may undermine coral reef conservation efforts. Volunteer groups from local communities are willing to patrol the coral reef areas with support from relevant government institution.
16. Local fishermen do not gain expected benefits from mariculture. Department of Fishery should pay more effort to develop effective mariculture/sea ranching projects.
17. Benefit from relevant business derived from the project is dominated by a few individuals. The project management team should have a clear management plan and process to control all activities.
18. Poor local people do not receive reasonable incomes from the project outcomes. Basic information concerning the socio-economics of local people are urgently required for planning and implementing this important task of the project.

15. ESTIMATED BUDGET (THE DETAILED BUDGET PRESENTED IN ANNEX 5)

Total budget of the Demonstration Site Project is 1,036,388 \$US in which:

- GEF source:	373,588 US\$
- Co-funding in – kind:	604,400 US\$
- Co-funding in – cash:	58,800 US\$

16. IMPLEMENTATION PLAN:

Activities	Persons/agencies involved	2005				2006				2007			
		1	2	3	4	1	2	3	4	1	2	3	4
I. Public awareness and education													
1.1 Produce permanent notice boards for raising awareness on coral reefs	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
1.2 Produce brochure, poster for raising public awareness on coral reefs	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
1.3 Training course of marine ecosystem and its sustainable utilization for local student	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
1.4 Training course on marine ecosystem an its sustainable utilization for tour guides, tourism businessmen, local communities	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
1.5 Broadcast knowledge of coral reefs ecosystem on local radio and television and web site	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Office of Public Relation of Trat Province, Universities												
1.6 Produce coral reef ecosystem conservation handbook for schools, universities, local libraries, stakeholders and involved institutions	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Office of Public Relation of Trat Province, Universities												
1.7 Develop education media on biodiversity	Universities, Eastern Gulf of Thailand Marine Resource Research and Development Center												

Activities	Persons/agencies involved	2005				2006				2007				
		1	2	3	4	1	2	3	4	1	2	3	4	
II. Networking among stakeholders														
2.1 Establish networks for coordination between government institutions and local communities	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Volunteer Group, NGOs													
2.2 Establish the mooring buoy committee to manage all mooring buoys	Mu Koh Chang Marine National Park, local communities, private sector, government agencies and NGOs for mooring buoy installation													
2.3 Meeting or seminar among NGOs for cooperation of resource management including publishing newsletter	Trat Province office, Mu Koh Chang Marine National Park, Wildlife fund Thailand, Local Tourist Guide Association, Trat Province, Koh Chang Conservation Association, Coral Reef Conservation Volunteer Group													
2.4 Establish international coral reef information network for exchange marine biodiversity data	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities													
III. Sustainable Ecotourism Development														
3.1 Study carrying capacity for tourists	Universities, Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center													
3.2 Diving trails including underwater notes on coral reef organisms	Universities, Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center													
3.3 Establish local guide center and encourage local guide activities	Tourism and Sport Center, Trat Province Local Tourist Guide Association, Trat Province Local District Administration Office, private sector													
3.4 Install additional mooring buoys	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities, local communities, private sector													

Activities	Persons/agencies involved	2005				2006				2007			
		1	2	3	4	1	2	3	4	1	2	3	4
3.5 Academic supports for local communities and private sector to encourage public participation for coral reef management and conservation for ecotourism	Universities, NGOs, Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Natural Resources and Environment Office of Trat Province												
3.6 Encourage local people and tourism organization to clean up coral reefs	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Trat Province office, Natural Resources and Environment Office of Trat Province, NGOs												
3.7 Study to determine tourism fee for coral reef management purposes	Universities												
IV. Capacity Building													
4.1 Training for coral reef protection volunteer groups	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center												
4.2 Establish networks between coral protection volunteer groups and government agencies for patrolling	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Trat Province, private sector, local communities, NGOs												
4.3 Training the trainers for local communities	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Trat Province, Universities, private sector, local communities, NGOs												
4.4 Encourage research fund and study visit for coral reef management to researchers, government officers and NGOs	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Trat Province, Universities, private sector, local communities, NGOs												

Activities	Persons/agencies involved	2005				2006				2007			
		1	2	3	4	1	2	3	4	1	2	3	4
V. Livelihood development													
5.1 Training of alternative livelihood for illegal fishermen (e.g. mariculture)	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center												
5.2 Socio-economic study in local communities that use coral reef as a fishing ground	Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities, NGOs												
5.3 Publish and distribute information concerning fisheries and coral reef conservation	Mu Koh Chang Marine National Park, Trat Province Fisheries Office, Natural Resources and Environment Office of Trat Province, NGOs												
5.4 Encourage establishing artificial reefs	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Trat Province Fisheries Office, NGOs.												
VI. Improvement of site management to support coral reef rehabilitation													
6.1 Monitoring coral reef conditions (ecological and socio-economics aspects) and mapping additional coral reef areas	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
6.2 Demonstration project of coral reef restoration by using coral fragments and natural recruitment	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
6.3 Monitor and control land-based pollution	Mu Koh Chang Marine National Park, Universities, Local Government, NGOs												
6.4 Training and assign particular staff from relevant agencies to research on coastal development	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Local Government												
6.5 Build-up coral reef and marine organism database by using GIS	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities												
6.6 Support researches on mariculture of economically important marine organisms	Mu Koh Chang Marine National Park, Eastern Gulf of Thailand Marine Resource Research and Development Center, Universities, NGOs												

17. PROPOSED MANAGEMENT OF THE ACTIVITIES (SEE ANNEX 6 FOR MANAGEMENT AND COORDINATION FRAMEWORK)

The demonstration site shall be implemented through a co-management system under the leadership of the Trat Province Office. Special Administrative Board, Mu Koh Chang Marine National Park and Eastern Gulf of Thailand Marine Resources Research and Development Center are the key involved government agencies.

Universities, private sector, NGOs and local communities are important partnership through training, seminars, research information exchange and networking.

The success results of the project can be transferred and applied to other locations in Thailand and the South China region through connection with national and international coral reef networks. Information exchange network and developed strategic planning for coral reef management can be applied in areas where similar problems are faced.

18. INFORMATION ON PROPOSED EXECUTING AGENCY

Ramkhamhaeng University will be the agency responsible to UNEP for execution of the project activities in Thailand and will be represented on the Project Management Board. Ramkhamhaeng University is a government university, established in 1971. There are currently twenty campuses with over 600,000 registered students in the field of social and natural sciences. Ramkhamhaeng University was appointed by the Office of Natural Resources and Environmental Policy and Planning as a consultant to carry out the revised National Coral Reef Strategy for Thailand including policy and action plan and to conduct the pilot project of coral reef zoning for utilization at Mu Koh Chang, Trat Province. Ramkhamhaeng University will work in collaboration with Trat Province and other assigned agencies, in executing the activities and with the UNEP/GEF Network at the regional level.

19. EXECUTING AGENCY CONTACT PERSON

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ANNEX 1 SITE CHARACTERISATION

Annex 1.1 Environmental Parameters and Biodiversity Data

Coral reef site name: Mu Koh Chang Location: Trat Province, Thailand
Latitude: 11°56'N - 12°16'N Longitude: 102°25'E - 102°61'E

1. Physical environment
 - Reef type: Fringing (mainland & island)
 - Coral reef area: 15.558 km²
 - Depth Range: 1-15 m.
2. Biological diversity
 - Corals
 - Number of hard coral (genera/species): 45/130
 - Live coral cover (all species): 20-50%
 - Algae
 - Present algae cover: 5-10%
 - Coral reef fish
 - Number of coral reef fish (genera/species): 63/129 (*Satapoomin, 2002*)
 - Mammal
 - Number of mammal species: 5 (PMBC, 1996)
 - Ecosystem function
 - Number of other ecosystems interact with this coral reef: 4 (seagrass, estuary, mangrove and sandy beach)
3. Transboundary Significance
 - Number of migratory species
 - Number of transient fish (genera/species): 9/12 (Fisheries Department, 1996)
 - Tourism: Yes
 - Cross-boundary fishing: Yes
4. Regional and/or global significance
 - Number of endangered and threatened species (IUCN Red List Categories)
 - Critical species (number): 9 (*Dugong dugon*, some dolphins, some whales)
 - Endangered (EN) (number): 6 (*Eretochelys imbricate*, *Caretta caretta*, *Chelonia mydas*, *Lepidochelys olivacea*, *Tridacna squamosa* and *Tridacna crocea*)
 - Vulnerable (VU) (number): 1 (*Rhincodon typus*)
5. Threats
 - Fishing impact: Medium
 - Development impact: High
 - Coral mining: No
 - Land-based pollution: High
 - Natural impact (typhoon, bleaching and COT star fish): High
6. National significance
 - Identified as a national priority: 1
 - Level of direct stakeholder involvement in managements: High
 - Socio-economic value: High
7. Finance consideration – co-financing
 - Potential for co-financing: ≥1:1
8. Local stakeholder/ community involvement: High
9. Potential transboundary management: High

Annex 1.2 List of Species

Lists of hard corals			
<i>Stylocoeniella armata</i>	<i>Montipora hoffmeisteri</i>	<i>Oulastrea heliopora</i>	<i>Goniastrea palauensis</i>
<i>Pocillopora damocornis</i>	<i>Montipora spongodes</i>	<i>Leptoseris scabra</i>	<i>Goniastrea retiformis</i>
<i>Pocillopora verucosa</i>	<i>Diaseris</i> sp.	<i>Coeloseris mayeri</i>	<i>Goniastrea pectinata</i>
<i>Acropora humilis</i>	<i>Fungia fungites</i>	<i>Pachyseris speciosa</i>	<i>Platygyra daedalea</i>
<i>Acropora</i> cf. <i>digitifera</i>	<i>Fungia echinata</i>	<i>Pavona cactus</i>	<i>Platygyra lamellina</i>
<i>Acropora formosa</i>	<i>Fungia surpulosa</i>	<i>Pavona decussate</i>	<i>Platygyra sinensis</i>
<i>Acropora muricata</i>	<i>Fungia scaraba</i>	<i>Pavona frondifera</i>	<i>Leptoria phrygia</i>
<i>Acropora nobilis</i>	<i>Fungia granulose</i>	<i>Pavona varians</i>	<i>Montastrea curta</i>
<i>Acropora microphthalma</i>	<i>Fungia concinna</i>	<i>Pseudosiderastrea tayamai</i>	<i>Montastrea magnistellata</i>
<i>Acropora millepora</i>	<i>Fungia repanda</i>	<i>Psammocora contigua</i>	<i>Montastrea valenciennesi</i>
<i>Acropora pulchra</i>	<i>Fungia poumotensis</i>	<i>Psammocora nierstraszi</i>	<i>Leptastrea purpurca</i>
<i>Acropora hyacinthus</i>	<i>Fungia corona</i>	<i>Psammocora profundacella</i>	<i>Leptastrea tranversa</i>
<i>Acropora nasuta</i>	<i>Herpetoglossa simplex</i>	<i>Psammocora digitata</i>	<i>Cyphastrea serailia</i>
<i>Acropora cytherea</i>	<i>Herpolitha limax</i>	<i>Galaxea astreata</i>	<i>Cyphastrea chalcidicum</i>
<i>Acropora florida</i>	<i>Polyphyllia talpina</i>	<i>Galaxea fascicularis</i>	<i>Cyphastrea microphthalma</i>
<i>Acropora valida</i>	<i>Sandalolitha robusta</i>	<i>Barabattoia amicorum</i>	<i>Echinopora lamellosa</i>
<i>Astreopora gracilis</i>	<i>Podabacia</i> cf. <i>crustacean</i>	<i>Favia pallida</i>	<i>Diploastrea heliopora</i>
<i>Astreopora myriophthalma</i>	<i>Lithophyllon edwardsi</i>	<i>Favia favus</i>	<i>Hydnophora exesa</i>
<i>Astreopora ocellata</i>	<i>Porites australiaensis</i>	<i>Favia speciosa</i>	<i>Hydnophora microconos</i>
<i>Montipora aequituberculata</i>	<i>Porites labata</i>	<i>Favia matthaii</i>	<i>Merulina ampliata</i>
<i>Montipora grisea</i>	<i>Porites lutea</i>	<i>Favia maxima</i>	<i>Acanthastrea hillae</i>
<i>Montipora foliosa</i>	<i>Porites cylindrical</i>	<i>Favia rotumana</i>	<i>Lobophyllia hemprichii</i>
<i>Montipora efflorescens</i>	<i>Porites lichen</i>	<i>Favites abdita</i>	<i>Lobophyllia hattai</i>
<i>Montipora hispida</i>	<i>Porites rus</i>	<i>Favites chinensis</i>	<i>Symphyllia recta</i>
<i>Montipora cebuensis</i>	<i>Porites solida</i>	<i>Favites complanata</i>	<i>Symphyllia radians</i>
<i>Montipora danae</i>	<i>Goniopora djiboutiensis</i>	<i>Favites flexuosal</i>	<i>Pectinia lactuca</i>
<i>Montipora digitata</i>	<i>Goniopora columna</i>	<i>Favites halicora</i>	<i>Pectinia paeonia</i>
<i>Montipora informis</i>	<i>Goniopora fructicosa</i>	<i>Favites pentagona</i>	<i>Echinophyllia aspera</i>
<i>Montipora millepora</i>	<i>Goniopora lobata</i>	<i>Favites russelli</i>	<i>Oxypora lacera</i>
<i>Montipora monasteriata</i>	<i>Goniopora somaliensis</i>	<i>Goniastrea aspera</i>	<i>Turbinaria peltata</i>
<i>Montipora peltiformis</i>	<i>Goniopora tenuidens</i>	<i>Goniastrea australiaensis</i>	<i>Turbinaria frondens</i>
<i>Montipora tuberculosa</i>	<i>Oulastrea crispapa</i>	<i>Goniastrea edwardsi</i>	<i>Dendrophyllia micranthus</i>
		<i>Goniastrea favulus</i>	<i>Plerogyra sinuosa</i>

Lists of coral reef fish

<i>Rhincodon typus</i>	<i>Diploprion bifasciatum</i>	<i>Lutjanus fulviflamma</i>
<i>Taenidae lymna</i>	<i>Diagramma pictum</i>	<i>Lutjanus lemniscatus</i>
<i>Atherinomonus sp.</i>	<i>Plectorhinchus albovittatus</i>	<i>Lutjanus monostigma</i>
<i>Kyphosus cinerascens</i>	<i>Plectorhinchus gibbosus</i>	<i>Lutjanus russelli</i>
<i>Archamia fucata</i>	<i>Plectorhinchus chaetodonoides</i>	<i>Lutjanus vitta</i>
<i>Archamia goni</i>	<i>Plectorhynchus picus</i>	<i>Pteriotris microlepis</i>
<i>Apogon cyanosoma</i>	<i>Myripristis hexagona</i>	<i>Parupeneus indicus</i>
<i>Apogon taeniophorus</i>	<i>Sargocentrum rubrum</i>	<i>Upeneus tragula</i>
<i>Cheilodipterus artus</i>	<i>Kyphosus vaigiensis</i>	<i>Gymnothorax sp.</i>
<i>Cheilodipterus macrodon</i>	<i>Cheilinus chlorourus</i>	<i>Siderea thyrsoidea</i>
<i>Cheilodipterus quinquelineatus</i>	<i>Cheilinus fasciatus</i>	<i>Scolopsis bilineatus</i>
<i>Caesio caerulea</i>	<i>Cheilinus trilobatus</i>	<i>Scolopsis ciliatus</i>
<i>Caesio cunning</i>	<i>Choerodon schoenleinii</i>	<i>Scolopsis margaritifer</i>
<i>Pterocaesio chrysozoma</i>	<i>Diproctacanthus xanthurus</i>	<i>Scolopsis monogramma</i>
<i>Chaetodon octofasciatus</i>	<i>Epibulus insidiator</i>	<i>Ostracion cubicus</i>
<i>Chaetodon weibeli</i>	<i>Halichoeres argus</i>	<i>Pempheris oualensis</i>
<i>Chelmon rostratus</i>	<i>Halichoeres chloropterus</i>	<i>Pomacanthus annularis</i>
<i>Hemiochus acuminatus</i>	<i>Halichoeres hortulanus</i>	<i>Abudefduf bengalesis</i>
<i>Diodon histrix</i>	<i>Halichoeres margaritaceus</i>	<i>Abudefduf notatus</i>
<i>Diodon lituosus</i>	<i>Halichoeres marginatus</i>	<i>Abudefduf sexfasciatus</i>
<i>Platax teira</i>	<i>Halichoeres melanulus</i>	<i>Abudefduf sordidus</i>
<i>Diademichthys lineatus</i>	<i>Halichoeres nebulosus</i>	<i>Abudefduf vaigiensis</i>
<i>Amblygobius nocturnes</i>	<i>Halichoeres nigrescen</i>	<i>Amblyglyphidodon curacao</i>
<i>Cryptocentrus cinctus</i>	<i>Halichoeres purpurescen</i>	<i>Amphiprion peridarion</i>
<i>Cryptocentrus fasciatus</i>	<i>Hemigymnus fasciatus</i>	<i>Cheiloprion labiatus</i>
<i>Cryptocentrus leptocephalus</i>	<i>Hemigymnus melapterus</i>	<i>Chromis atripectoralis</i>
<i>Cryptocentrus strigiliceps</i>	<i>Labroides dimidiatus</i>	<i>Chromis cinerascens</i>
<i>Cryptocentrus sp.1</i>	<i>Novaculichthys taeniourus</i>	<i>Chrysiptera unimaculata</i>
<i>Cryptocentrus sp.2</i>	<i>Oxycheilinus digrammus</i>	<i>Dacyllus reticulatus</i>
<i>Ctenogobiops pomastictus</i>	<i>Stethojulis interrupta</i>	<i>Dacyllus trimaculatus</i>
<i>Istigobius ornatus</i>	<i>Stethojulis trilineata</i>	<i>Neoglyphidodon melas</i>
<i>Mahidolia mystacina</i>	<i>Lutjanus argentimaculatus</i>	<i>Neopomacentrus cyanomos</i>
<i>Valenciennea mularis</i>	<i>Lutjanus decussatus</i>	<i>Neopomacentrus filamentosus</i>

Lists of reef fish (Continued)	Lists of crustaceans	
<i>Plectoglyphidodon lacrymatus</i>	<i>Atypopenaeus stenodactylus</i>	<i>Synalpheus pachymeri</i>
<i>Pomacentrus alexanderae</i>	<i>M. palmensis</i>	<i>S. theano</i>
<i>Pomacentrus chrysurus</i>	<i>M. stridulans</i>	<i>Thalassocaris crinita</i>
<i>Pomacentrus coelestis</i>	<i>Metapenaeus affinis</i>	<i>Eutrichocheles modestus</i>
<i>Pomacentrus cuneatus</i>	<i>M. conjunctus</i>	<i>Clibanarius longitarsus</i>
<i>Pomacentrua moluccensis</i>	<i>M. intermedius</i>	<i>Dradanus hessii</i>
<i>Scarus frenatus</i>	<i>M. lysianassa</i>	<i>D. imbricatus</i>
<i>Scarus ghobban</i>	<i>M. moyebi</i>	<i>Pachycheles sculptus</i>
<i>Scarus niger</i>	<i>Parapenaeopsis hungerfordi</i>	<i>Petrolisthes asiaticus</i>
<i>Scarus prasiognathos</i>	<i>Penaeus japonicus</i>	<i>P. boscii</i>
<i>Scarus rivulatus</i>	<i>P. merguiensis</i>	<i>P. hastatus</i>
<i>Anyperodon leucogrammicus</i>	<i>P. monodon</i>	<i>P. teres</i>
<i>Cephalopholis argus</i>	<i>P. semisulcatus</i>	<i>P. obesulus</i>
<i>Cephalopholis boenak</i>	<i>P. silasi</i>	<i>Dromidia unidentata</i>
<i>Cephalopholis cyanostigma</i>	<i>Trachypenaeus malaianus</i>	<i>Dromidiopsis craniodes</i>
<i>Cephalopholis formosa</i>	<i>Sicyonia lancifera</i>	<i>Dorippe quadridens</i>
<i>Cephalopholis sp.</i>	<i>Lucifer hanseni</i>	<i>Dorippoides facchino</i>
<i>Epinephelus rivulatus</i>	<i>Acetes vulgaris</i>	<i>Neodorippe callida</i>
<i>Epinephelus fasciatus</i>	<i>Atyopsis moluccensis</i>	<i>Calappa terrae-reginae</i>
<i>Epinephelus quoyanus</i>	<i>Caridina brachydactyla</i>	<i>Ashtoret lunaris</i>
<i>Plectopomus maculatus</i>	<i>Alpheus acutocarinatus</i>	<i>M. victor</i>
<i>Siganus corallinus</i>	<i>A. acutofemoratus</i>	<i>Cryptocnemus siamensis</i>
<i>Siganus guttatus</i>	<i>A. ehlersi</i>	<i>Ebalia heterochalaza</i>
<i>Siganus javus</i>	<i>A. funafutensis</i>	<i>E. woodmasoni</i>
<i>Siganus punctatus</i>	<i>A. gracilipes</i>	<i>Tlos muriger</i>
<i>Siganus vermiculatus</i>	<i>A. lobidens</i>	<i>Leucosis craniolaris</i>
<i>Siganus virgatus</i>	<i>A. obesomanus</i>	<i>L. haematostrita</i>
<i>Sphyraena baracuda</i>	<i>A. paracrinitus</i>	<i>L. longifrons</i>
<i>Sphyraena genie</i>	<i>A. prviostris</i>	<i>L. margaritata</i>
<i>Sphyraena obtusata</i>	<i>A. sudara</i>	<i>L. pulcherrima</i>
	<i>Athanas dimorphus seedang</i>	<i>L. urania</i>
	<i>Salmones cristatus</i>	<i>L. vittata</i>

List of crustacean (Continued)

<i>Arcania heptacantha</i>	<i>Podophthalmus vigil</i>	<i>Carcinoplax purpurea</i>
<i>A. septemspinosa</i>	<i>Charybdis affinis</i>	<i>C. sinica</i>
<i>A. undecimspinosa</i>	<i>C. anisodon</i>	<i>Eucrate alcocki</i>
<i>Iphiculus spongiosus</i>	<i>C. callianassa</i>	<i>E. solaris</i>
<i>Ixa cylindrus</i>	<i>C. feriatus</i>	<i>E. sulcatifrons</i>
<i>Myra elegans</i>	<i>C. hellerii</i>	<i>Heteroplax dentate</i>
<i>M. pentacantha</i>	<i>C. lucifera</i>	<i>H. transversa</i>
<i>Myrodes eudactylus</i>	<i>C. ornata</i>	<i>Camatopsis rubida</i>
<i>Nursia lar</i>	<i>C. rorstrata</i>	<i>Chasmocarcinops gelasimoides</i>
<i>Pariphiculus mariannae</i>	<i>C. truncata</i>	<i>Scalopidia spinosipes</i>
<i>Philyra globulosa</i>	<i>C. vadorum</i>	<i>Ceratoplax ciliata</i>
<i>P. olivacea</i>	<i>Lupocyclus rotundatus</i>	<i>Rhizopa gracilipes</i>
<i>Pseudophilyra tridentata</i>	<i>Portunus brockii</i>	<i>Typhlocarcinops canaliculata</i>
<i>Menaethius monoceros</i>	<i>P. gladiator</i>	<i>T. nudus</i>
<i>Paratymolus pubescens</i>	<i>P. gracilimanus</i>	<i>Lambdophallus anfractus</i>
<i>Micippa philyra</i>	<i>P. granulatus</i>	<i>T. orientalis</i>
<i>M. thalia</i>	<i>P. hastatoides</i>	<i>Eriphia smithi</i>
<i>Doclea canalifera</i>	<i>P. inomiantus</i>	<i>Myomenippe granulose</i>
<i>D. terruptera</i>	<i>P. longispinosus</i>	<i>Sphaerozius nitidus</i>
<i>Hyastenus diacanthus</i>	<i>P. pelagicus</i>	<i>Halimede ochtodes</i>
<i>H. oryx</i>	<i>P. pulchricristatus</i>	<i>H. thurstoni</i>
<i>H. spinosus</i>	<i>P. rubromarginatus</i>	<i>Eurycarcinus orientalis</i>
<i>Neorhynchoplax exiguus</i>	<i>P. sanguinolentus</i>	<i>Glabropilumnus edamensis</i>
<i>Rynchoplax coralicola</i>	<i>P. tenuipes</i>	<i>Heteropanope changensis</i>
<i>Cryptopodia fornicata</i>	<i>P. tuberculosus</i>	<i>Pilumnopeus sexangula</i>
<i>Echinoecus pentagonus</i>	<i>P. tweediei</i>	<i>Heteropilumnus trichophorus</i>
<i>Parthenope longimanus</i>	<i>Scylla tranquebarica</i>	<i>Actumnus asper</i>
<i>Rhinotambrus contraries</i>	<i>Thalamita crenata</i>	<i>A. setifer</i>
<i>R. longispinis</i>	<i>T. imparimanus</i>	<i>Pilumnus forskali</i>
<i>R. pelagicus</i>	<i>T. prymna</i>	<i>P. hirsutus</i>
<i>Lissocarcinus boholensis</i>	<i>T. sima</i>	<i>P. longicornis</i>
<i>Carupa tenuipes</i>	<i>Liagore rubromaculata</i>	<i>P. vespertilio</i>

List of crustacean (Continued)

<i>Tetralia glaberrima</i>	<i>N. versicolor</i>	<i>M. verreauxi</i>
<i>Actaea savignyi</i>	<i>Neosarmatium indicum</i>	<i>M. vietnamensis</i>
<i>Pilodius nigrocrinitus</i>	<i>N. smithi</i>	<i>Ocypode ecratophthalma</i>
<i>Cymo melanodactylus</i>	<i>Parasesarma lanchesteri</i>	<i>O. nobilii</i>
<i>Liomera margaritata</i>	<i>P. plicatum</i>	<i>O. stimpsoni</i>
<i>Demania scaberrima</i>	<i>Perisesarma eumolpe</i>	<i>Uca annulipes</i>
<i>Leptodius exaratus</i>	<i>P. fasciata</i>	<i>U. forcipata</i>
<i>L. sanguineus</i>	<i>P. haswelli</i>	<i>U. paradussumieri</i>
<i>Neoxanthops lineatus</i>	<i>Pseudosesarma moeschi</i>	<i>U. perplexa</i>
<i>Atergatis dilatatus</i>	<i>Sarmatium crassum</i>	<i>U. urvillei</i>
<i>A. floridus</i>	<i>S. germani</i>	<i>U. vocans</i>
<i>Cardisoma carnifex</i>	<i>Acmaeopleura rotunda</i>	<i>Dotilla myctiroides</i>
<i>Grapsus albolineatus</i>	<i>Ilyograpsus paludicola</i>	<i>D. wichmanni</i>
<i>G. tenuicrustatus</i>	<i>Varuna litterata</i>	<i>Scopimera intermedia</i>
<i>Metopograpsus frontalis</i>	<i>Asthenognathus hexagonum</i>	<i>S. proxima</i>
<i>M. latifrons</i>	<i>Mortensenella forceps</i>	<i>Pleurophrycoides roseus</i>
<i>M. messor</i>	<i>Pinnotheres affinis</i>	<i>Gonodactylaceus ternatensis</i>
<i>M. oceanicus</i>	<i>P. burgeri</i>	<i>Harpiosquilla harpax</i>
<i>M. quadridentatus</i>	<i>P. gracilis</i>	<i>H. japonica</i>
<i>Percnon planissimum</i>	<i>P. kutensis</i>	<i>H. raphidea</i>
<i>Plagusia tuberculata</i>	<i>P. parvulus</i>	<i>Clorida bombayensis</i>
<i>Chiromantes lividum</i>	<i>P. quadratus</i>	<i>C. decorata</i>
<i>Clistocoeloma merguensis</i>	<i>P. siamensis</i>	<i>Cloridina chlorida</i>
<i>C. suvaense</i>	<i>Neoxenophthalmus obscurus</i>	<i>Erugosquilla woodmasoni</i>
<i>Holometopus limbense</i>	<i>Xenophthalmus pinnotheroides</i>	<i>Miyakea nepa</i>
<i>Metaplax dentipes</i>	<i>Camptandrium sexdentatum</i>	
<i>Metasesarma aubryi</i>	<i>Cleistostoma lingulatum</i>	
<i>Nanosesarma batavicum</i>	<i>Macrophthalmus convexus</i>	
<i>N. edamensis</i>	<i>M. crassipes</i>	
<i>N. minutum</i>	<i>M. dentatus</i>	
<i>Neopisesarma brockii</i>	<i>M. erato</i>	
<i>N. mederi</i>	<i>M. latreillei</i>	

List of Echinoderms

<i>Dichrometra bimaculata</i>	<i>Asterina sarasini</i>	<i>Ophiogymna elegans</i>
<i>Dichrometra tenuicirra</i>	<i>Asteropsis caranifera</i>	<i>Ophiogymna pellicula</i>
<i>Lamprometra palmata</i>	<i>Acanthaster planci</i>	<i>Ophiopsammium semperi</i>
<i>Liparometra articulata</i>	<i>Euretaster cribosus</i>	<i>Ophiopsammium rugosum</i>
<i>Stephanometra oxycantha</i>	<i>Echinaster luzonica</i>	<i>Ophiopterum elegans</i>
<i>Stephanometra spicata</i>	<i>Ophiomyxa irregularis</i>	<i>Ophiopterum vitense</i>
<i>Luidia maculata</i>	<i>Euryale aspera</i>	<i>Ophiopterum punctocoeruleum</i>
<i>Luidia penangensis</i>	<i>Asteronyx loveni</i>	<i>Ophiothela danae</i>
<i>Astropecten granulatus</i>	<i>Amphilycus scripta</i>	<i>Ophiothrix (Acanthophiothrix) armata</i>
<i>Astropecten fasciatus</i>	<i>Amphioplus relictus</i>	<i>Ophiothrix (Acanthophiothrix) spinosissima</i>
<i>Astropecten indicus</i>	<i>Amphioplus</i>	<i>Ophiothrix (Ophiothrix) abstinens</i>
<i>Astropecten hartmeyeri</i>	<i>(Amphichilus)cesareus</i>	<i>Ophiothrix (Ophiothrix) exigua</i>
<i>Astropecten monacanthus</i>	<i>Amphioplus (Lymanella) depressa</i>	<i>Ophiothrix (Ophiothrix) plana</i>
<i>Astropecten polyacanthus</i>	<i>Amphipholis misera</i>	<i>Ophiothrix (Ophiothrix) prostrata</i>
<i>Astropecten vappa</i>	<i>Amphipholis squamata</i>	<i>Ophiothrix (Ophiothrix) stelligera</i>
<i>Astropecten zebra</i>	<i>Amphiura (Amphiura) abbreviata</i>	<i>Ophiocoma lineolata Müller</i>
<i>Craspidaster hesperus</i>	<i>Amphiura (Amphiura) sexradiata</i>	<i>Ophiocomella sexradia</i>
<i>Psilaster andromeda</i>	<i>Amphiura (Felleria) heptacantha</i>	<i>Ophiomastix sexradiata</i>
<i>Stellaster equestris</i>	<i>Dougaloplus acanthinus</i>	<i>Ophionereis dubia</i>
<i>Stellaster incei</i>	<i>Ophiactis affinis</i>	<i>Ophionereis porrecta</i>
<i>Stellaster princeps</i>	<i>Ophiactis helmitiles</i>	<i>Ophiolepis cincta</i>
<i>Anthenea chinensis</i>	<i>Ophiactis savignyi</i>	<i>Ophioplocus japonicus</i>
<i>Anthenea pentagonula</i>	<i>Ophiosphaera insignis</i>	<i>Ophiura kinbergi</i>
<i>Astropecten indicus</i>	<i>Macrophiothrix aspidota</i>	<i>Stegophiura sterilis</i>
<i>Astropecten hartmeyeri</i>	<i>Macrophiothrix bedoti</i>	<i>Prionocidaris bispinosa</i>
<i>Astropecten monacanthus</i>	<i>Macrophiothrix galateae</i>	<i>Astropyga radiata</i>
<i>Astropecten polyacanthus</i>	<i>Macrophiothrix hirsuta.</i>	<i>Chaetodiadema granulatum</i>
<i>Astropecten vappa</i>	<i>Macrophiothrix longipeda</i>	<i>Diadema saxatile</i>
<i>Astropecten velitaris</i>	<i>Macrophiothrix martensi</i>	<i>Diadema setosum</i>
<i>Astropecten zebra</i>	<i>Macrophiothrix nereidina</i>	<i>Echinothrix calamaris</i>
<i>Craspidaster hesperus</i>	<i>Macrophiothrix striolata</i>	<i>Paratrema doederleini</i>
<i>Psilaster andromeda</i>	<i>Macrophiothrix variabilis</i>	<i>Salmaciella dussumieri</i>
	<i>Ophiocnemis marmorata</i>	<i>Salmacis bicolor</i>

List of Echinoderms (continued)

<i>Salmacis sphaeroides</i>	<i>Holothuria (Halodeima) edulis</i>	<i>Acaudina</i> sp.2
<i>Salmacis virgulata</i>	<i>Holothuria (Lessonothuria) pardalis</i>	<i>Paracaudina chilensis ransonnettii</i>
<i>Temnopleurus alexandri</i>	<i>Holothuria (Lessonothuria) verrucosa</i>	<i>Molpadia roretzi</i>
<i>Temnopleurus reevesi</i>	<i>Holothuria (Mertensiothuria) leucospilota</i>	<i>Opheodesoma australensis</i>
<i>Temnopleurus toreumaticus</i>	<i>Holothuria (Metriatyla) albiventer</i>	<i>Opheodesoma grisea</i>
<i>Temnotrema siamensis</i>	<i>Holothuria (Metriatyla) martensi</i>	<i>Opheodesoma lineate</i>
<i>Gymnechinus pulchellus</i>	<i>Holothuria (Metriatyla) ocellata</i>	<i>Synaptula recta</i>
<i>Pseudoboletia maculate</i>	<i>Holothuria (Metriatyla) scabra</i>	<i>Synaptula</i> aff. <i>virgata</i>
<i>Toxopneustes pileolus</i>	<i>Holothuria (Platyperona) difficilis</i>	
<i>Tripneustes</i> sp.	<i>Holothuria (Semperothuria) flavomaculata</i>	
<i>Heliocidaris</i> sp.	<i>Holothuria (Stauropora) fuscocinerea</i>	
<i>Heterocentrotus mammillatus</i>	<i>Holothuria (Theelothuria) notabilis</i>	
<i>Parasalenia gratiosa</i>	<i>Holothuria (Theelothuria) spinifera</i>	
<i>Strongylocentrotus echinoides</i>	<i>Holothuria (Thymiosycia) impatiens</i>	
<i>Clypeaster (Coronanthus) latissimus</i>	<i>Pearsonothuria graeffei</i>	
<i>Clypeaster (Rhaphidoclypus) reticulatus</i>	<i>Stichopus chloronotus</i>	
<i>Arachnoides placentra</i>	<i>Stichopus hermanni</i>	
<i>Fibularia acuta</i>	<i>Stichopus horrens</i>	
<i>Fibularia angulipora</i>	<i>Stichopus japonicus</i>	
<i>Laganum decagonale</i>	<i>Stichopus naso</i>	
<i>Laganum depressum</i>	<i>Stichopus variegatus</i>	
<i>Peronella orbicularis</i>	<i>Cercodemus anceps</i>	
<i>Echinodiscus auritus</i>	<i>Colochirus quadrangularis</i>	
<i>Echinodiscus bisperforatus</i>	<i>Cucumaria frondosa</i>	
<i>Maretia planulata</i>	<i>Mensamaria bicolumnata</i>	
<i>Maretia ovata</i>	<i>Mensamaria intercedens</i>	
<i>Lovenia elongata</i>	<i>Plesiocolochirus australi</i>	
<i>Lovenia subcarinata</i>	<i>Pseudocolochirus</i> sp.	
<i>Schizaster (Schizaster) lacunosus</i>	<i>Cladolabes schmeltzii</i>	
<i>Anametalia sternaroides</i>	<i>Havelockia versicolor</i>	
<i>Brissopsis luzonica</i>	<i>Phyllophorus (Phyllophorella) kohkutiensis</i>	
<i>Brissus (Brissus) latecarinatus</i>	<i>Phyllophorus (Phyllophorella) robusta</i>	
<i>Metalia sternalis</i>	<i>Phyllophorus (Phyllothuria) cebuensis</i>	
<i>Rhynobrisus pyramidalis</i>	<i>Phyllophorus</i> sp.	
<i>Actinopyga echinites</i>	<i>Selenkiella malayense</i>	
<i>Actinopyga</i> sp. 2	<i>Selenkiella siamense</i>	
<i>Bohadschia marmorata</i>	<i>Stolus buccalis</i>	
<i>Bohadschia vitiensis</i>	<i>Stolus conjugens</i>	
<i>Holothuria (Acanthotrapeza) coluber</i>	<i>Thyone okeni</i>	
<i>Holothuria (Cystipus) rigida</i>	<i>Acaudina leucoprocta</i>	
<i>Holothuria (Halodeima) atra</i>	<i>Acaudina</i> sp.1	

List of Algae

Blue-Green Algae

Oscillatoria tenuis
Trichodesmium hildebrandtii
Phormidium inundatum
Symploca hydroides
Phormidium inundatum
Desmonema wrangelii
Scytonema mirabile
Scytonema ocellatum
Scytonema schmidtii
Scytonema javanicum
Scytonema guyanense
Scytonema crispum
Stigonema mamillosum
Stigonema informe
Stigonema turfaceum
Stigonema minutum
Stigonema ocellatum
Stigonema hormoides
Hapalosiphon fontinalis
Brachtrichia quoyi
Brachtrichia maculans
Calothrix crustaceae
Calothrix scopulorum

Green Algae

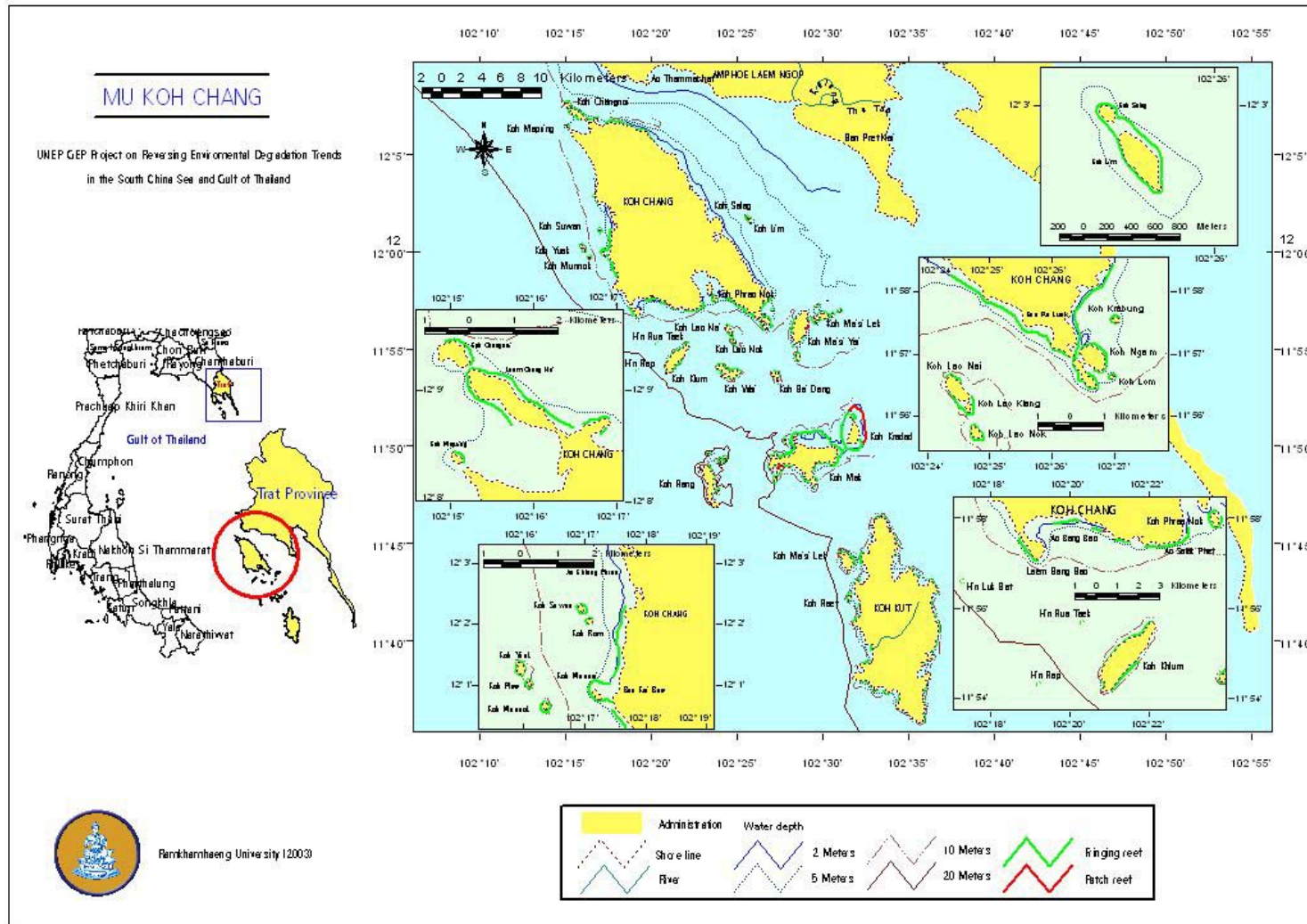
Protoderma sp.
Enteromorpha plumosa
Valonia forbesii
Struvea delicatula
Siphonocladus zollingeri
Boodlea siamensis
Udotea glaucescens
Avrainvillea comosa
Avrainvillea papuana
Halimeda macroloba
Caulerpa filiformis
Caulerpa freycinetii
Caulerpa peltata
Caulerpa plumaris
Caulerpa racemosa
Caulerpa sedoides
Caulerpa urvilliana
Ectocarpus indicus
Ectocarpus simpliciusculus
Sphacelaria furcigera
Dictyota divaricata
Haliseris polypodioides
Padina boryana
Padina commersonii
Hydroclathrus cancellatus

Asperococcus fastigiatus
Cystoseira latifrons
Erythrotrichia ceramico
Archaeolithothamnion schmidtii
Lithothamnion fruticulosum
Lithothamnion funafutirnse
Lithothamnion siamense
Lithothamnion simulans
Lithophyllum racemus
Lithophyllum crassa
Lithophyllum yendoii
Melobesia farinosa
Dermatulum pustulatum
Corallina tenella
Cryptonemia sp.
Gracilaria firma
Gracilaria percurrans
Gracilaria salicornia
Gracilaria minuta
Hypnea musciformis
Ceramium kutzinganum
Plysiphonia scopulorum
Acanthophora orientalis
Laurencia dendroidea
Laurencia divaricata
Rhabdonia schmidtii
Caloglossa mnioides

List of Endangered Species

Common name	Scientific name	Status
Sittang whale	<i>Balaenoptera edeni</i>	CR
Irawaddy dolphin	<i>Orcaella brevirostris</i>	CR
Humpbacked dolphin	<i>Sousa chinensis</i>	CR
Bottlenose dolphin	<i>Tursiops aduncus</i>	CR
Common dolphin	<i>Delphinus capensis</i>	CR
Spinner dolphin	<i>Stenella longirostris</i>	CR
False killer whale	<i>Fseuorca crassidens</i>	CR
Finless porpoise	<i>Neophocoena phocoenoides</i>	CR
Dugong	<i>Dugong dugong</i>	CR
Whale shark	<i>Rhincodon typus</i>	VU
Hawkbill turtle	<i>Eretmochelys imbricata</i>	EN
Green sea turtle	<i>Chelonia mydas</i>	EN
Loggerhead turtle	<i>Caretta caretta</i>	EN
Olive ridley turtle	<i>Lepidochelys olivacea</i>	EN
Giant clam	<i>Tridacna spp.</i>	EN

Annex 1.3 Map of Mu Koh Chang



ANNEX 2 STAKEHOLDER INVOLVEMENT PLAN

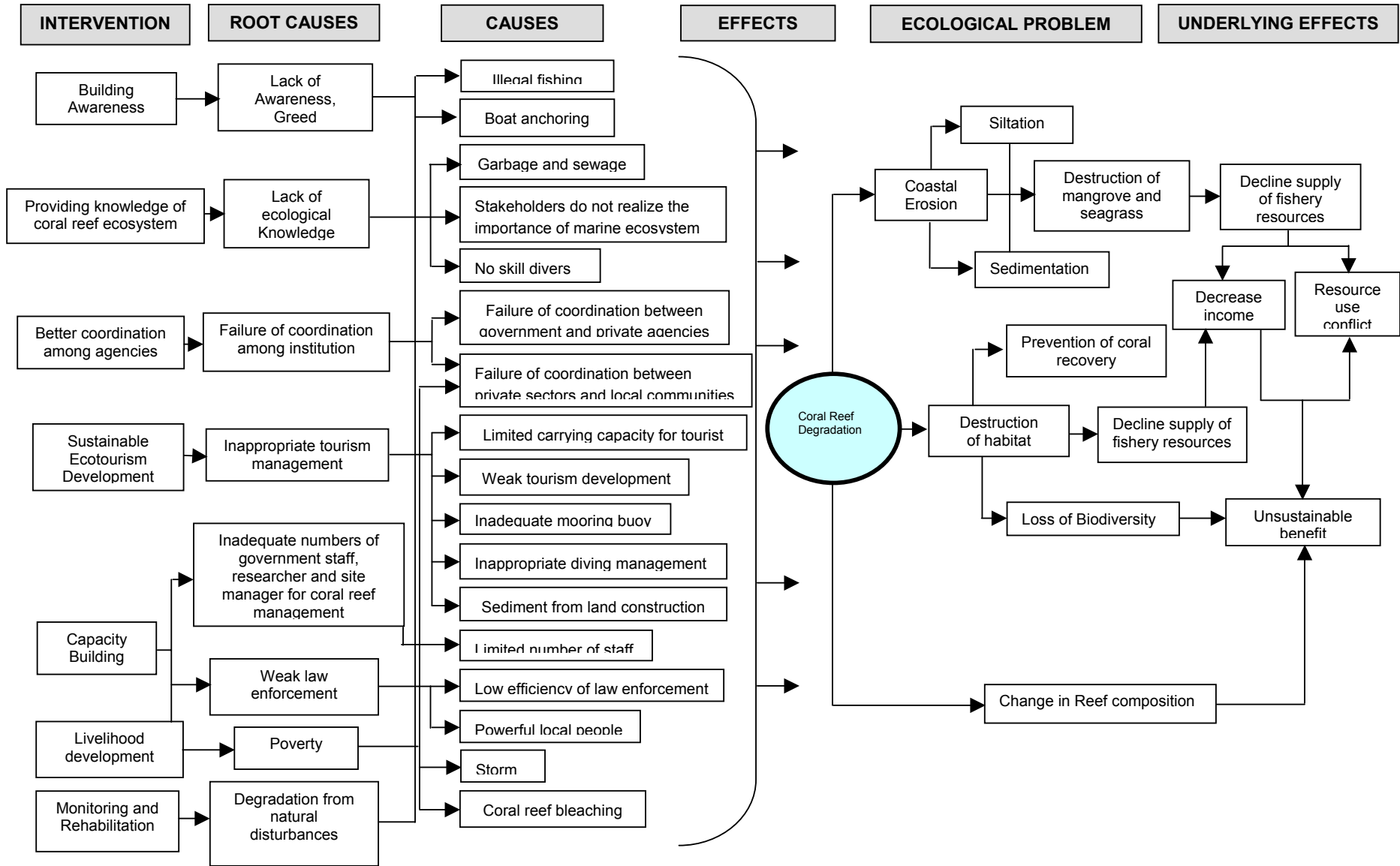
Various stakeholders in the project have been identified from the first phase. Details of stakeholder information are summarized in the following table:

Type / Name of Stakeholder	Involvement/ Interests	Activities/Problems	Role under the project
Individuals			
1. Local fishermen	Food, revenue	Fishing/boat anchoring, illegal fishing gears	Target groups for conservation activities, awareness campaigns and income generating activities.
2. Fishermen from outside Mu Koh Chang	Food, revenue	Fishing/boat anchoring, illegal fishing gears	Target groups for conservation activities, awareness campaigns.
3. Tourism businessmen, local tourist boats	Revenue	Guide tours/boat anchoring, garbage, sewage	Target groups for conservation activities, awareness campaigns and income generating activities.
4. Tour boats from outside Mu Koh Chang	Revenue	Guide tours/boat anchoring, garbage, sewage	Target groups for conservation activities, awareness campaigns.
5. Hotels, resorts	Revenue	Construction and land development/ sediment , sewage, garbage, collection of coral reef organisms	Target groups for conservation activities, awareness campaigns.
6. Tourism	Recreation	Snorkeling, SCUBA diving/ no diving skills, collection of coral reef organism, trampling on corals	Target groups for conservation activities, awareness campaigns.
Organizations			
I. Government Institutions located in the area			
1. Local District Administration Office	Management and protection of coral reefs	Planning and management of resources	Target for policy initiatives.
2. Mu Koh Chang Marine National Park	Conservation and protection of coral reefs	Planning and conservation of coral reefs, patrolling, buoy mooring, identify coral reef zoning	Implementation, target for training, communication with local people.
3. Trat Province Fisheries Office	Fisheries resources management	Control of fishing efforts, promote mariculture	Implementation, networking.
4. Natural Resources and Environment Office, Trat Province	Management of coral reef resources	Planning, manage and conserve coral reef resources	Advisory and networking.
5. Tourism and Sport Center, Trat Province	Management of coral reef tourism	Ecotourism planning	Advisory and networking.
6. Trat Province Office	Management of all aspects in Trat Province	Co-management of coral reefs in Mu Koh Chang	Advisory, networking and communication with local people
7. Special Administrative Board of Mu Koh Chang	Planning and management	Co-management of coral reefs in Mu Koh Chang	Advisory and networking

Type / Name of Stakeholder	Involvement/ Interests	Activities/Problems	Role under the project
II. Central Government Organization			
1. Eastern Gulf of Thailand Marine Resources Research and Development Center	Management and conservation of marine and coastal resources	Training, raising public awareness, coral reef monitoring and management	Advisory and networking.
2. Department of Marine and Coastal Resources	Management, conservation and resource protection	All relevant activities concerning marine and coastal resources	Advisory and networking.
3. National Park, Wildlife and Plant Conservation Department	Management and conservation within the marine park boundary	Perform all relevant activities concerning management and conservation of coral reef	Advisory and networking.
4. The Office of Natural Resources and Environmental Policy and Planning	Planning and management	Prepare policies, planning and budget for natural resources management	Advisory and networking.
5. The Bureau of the Budget	Financing the projects	Budgetary planning and financing relevant activities	Advisory.
6. Academic Institutions (Ramkhamhaeng University, Kasetsart University, Burapa University, Chulalongkorn University, etc.)	Study and research on scientific and socio-economics of coral reefs	Survey, study, research and consult concerning coral reef conservation and management	Technical advice and research; Ramkhamhaeng University for project co-ordinator
III. Local Non Government groups or organizations			
1. Koh Chang Local Tourism Association	Revenue and conservation of coral reefs	Ecotourism and home-stay	Advisory and networking
2. Local Tourist Guide Association, Trat Province	Revenue and conservation of coral reefs	Tour guides	Target groups for conservation activities, awareness campaigns and income generating activities.
3. Koh Chang Conservation Association	conservation of coral reefs	Perform activities to conserve coral reefs	Advisory, networking and Target groups for conservation activities, awareness campaigns.
4. Coral Reef Conservation Volunteer Group	Protection and conservation of fisheries resources and coral reefs	Coral reefs patrolling	Implementation, networking Target groups for conservation activities, awareness campaigns.

The project activities will be conducted with emphasis on stakeholder participation plan. Information will be disseminated to stakeholders using as wide a range of techniques as possible. Newsletters, networking and consultation will be important activities. A high level of public participation is crucial to the success of the project, and the project will aim to continue the tradition of successful public participation. The projects will concentrate on stakeholder participation in planning, decision-making, and execution for all project activities. Moreover certain social and participation issues will be carefully considered throughout the project.

ANNEX 3 CAUSAL CHAIN ANALYSIS OF MU KOH CHANG, TRAT PROVINCE



ANNEX 4 MONITORING AND EVALUATION PLAN

1. *Collecting and reporting data on performance indicators*

The monitoring and evaluation of the project will require a set of key indicators of success. Monitoring and evaluation programs will be conducted by certain assigned universities. Participatory Rapid Appraisals (PRAs) at selected sites and questionnaire surveys will provide key information for monitoring and evaluation activities. Methods and frequency of data collection will be determined by the assigned evaluator to follow the donor requirements. The important indicators are as follows:

- improved coral reef conditions
- reduced impacts of coral reef degradation
- improved living conditions of local communities
- improved efficiency in management of coral reefs
- raising public awareness
- expansion of marine protected area
- legislation changes for better management and enforcement
- available coral reef assessment data
- improved stakeholder involvement in planning, implementation and evaluation
- user conflicts minimized or resolved
- human resources capacity built by the project
- additional financial support from national government, private sector and international agencies
- project expenditure against budget
- achievement of key project milestones

2. *Schedule of monitoring and evaluation*

Monitoring/Evaluation	2005				2006				2007			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Mid-term review												
2. Evaluation the Progress by management board												
3. Long-term ecological and socio-economics monitoring activities												
4. End of project evaluation												

Formal independent evaluations of the project will be carried out at the mid point of the project, eighteen months after the start of the project, and at the end of the project, three months before the termination date. Both reviews will be led by an external evaluator with experience in environmental conservation and community development. Each study will take the form of a joint evaluation by project staff and the evaluator into the management and environmental aspects of the project and an independent review of community gains and stakeholder participation by the evaluator. Evaluation the progress of the project will be regularly carried out by the management board. Long-term ecological and socio-economics monitoring program will be also performed by the assigned university.

3. *Description of how monitoring and evaluation activities will involve participants and stakeholders*

Monitoring and evaluation will be an integral part of the stakeholder participation element of the project. For each project activity and event, participants will carry out a simple evaluation activity, wherever possible to meet their own evaluation criteria. Stakeholders will be asked to give their perceptions of the project as part of the formal independent evaluation activities. Formal survey work will be conducted by project stakeholders, universities and research institutes. Local volunteers will be trained in survey techniques so that they are able to lead simple community surveys on a more frequent basis.

4. Resources that will be allocated to monitoring and evaluation

Budgetary provision of \$US 4,000 has been allocated to the mid-term and terminal evaluations to cover consultancy fees and expenses for external evaluators. It is estimated that monitoring and evaluation (including preparation of reports required to be submitted to the UNEP/GEF/SCS Project Coordinating Unit on behalf of UNEP and the GEF will take between 3-4 weeks per year (on average) of the project manager's time and 3 days per year of management team time.

5. Using monitoring and evaluation results for management

A three monthly monitoring report will be presented to the project management team by the Site Manager, who will highlight key issues for discussion at, management team meetings. As far as possible, reporting to the management team will be integrated with reporting to the UNEP as well. The Senior Advisory Group will also receive updates half yearly on key issues and the Specialised Executing Agency will provide such periodic reports to the National technical Working Group.

As part of the mid-term evaluation time will be set aside to allow the management team to review progress themselves, and it is anticipated that the findings of the mid-term review will also be discussed with the donor.

Following the final evaluation, an evaluation report will be published to help the donor, participants, managers, and other interested parties such as the global coral reef network learn lessons from the project.

In order to ensure that the project is carefully monitored and that the project derives the benefit of evaluation reviews, it is essential that the project manager and the chair of the project management team have a genuine commitment to evaluation and learning. This should be a factor in selecting appropriate individuals for appointment to these posts. Establishment of an appropriate system to enable feedback and information from stakeholders on the project implementation will be also conducted.

ANNEX 5.1 ESTIMATED BUDGET BY ACTIVITIES (NUMBER IN BRACKETS SHOWING CO-FUNDING IN - CASH)

Activities	GEF					Total	Government					Total
	1000	2000	3000	4000	5000		1000	2000	3000	4000	5000	
1.1.1 Assign Kasetsart University to design, produce and set 20 notice boards at appropriate sites and evaluation of the activities		6,000				6,000		9,000 (1,000)				9,000 (1,000)
1.2.1 Assign Kasetsart University to design, publish and distribute 3 types of brochure @ 2,000 copies and 3 types of poster @ 1,000 copies and evaluation of the activities		3,750				3,750		7,200 (2,500)				7,200 (2,500)
1.3.1 Training course for primary school students 2 times@40 students@4 days and for high school students 2 times@40 students@4 days			15,120			15,120			24,000 (2,000)			24,000 (2,000)
1.4.1 Training course for tour guides and tourism businessmen 2 times @ 40 participants @ 2 days and for local communities 2 time @ 40 participants @ 2 days			9,000			9,000			12,000 (1,000)			12,000 (1,000)
1.5.1 Assign consultants to prepare scripts for radio and television broadcasting ; 3 television scripts @ 750 US\$; 3 radio scripts @ 50 US\$	2,400					2,400	4,800					4,800
1.5.2 Assign a consultant to design and update web page for 3 years	1,375					1,375	0					0
1.5.3 Payment for broadcasting for radio (4500 US\$) and television (11,250 US\$), domain name and server (300 US\$)					16,050	16,050					18,000 (2,000)	18,000 (2,000)
1.6.1 Assign a consultant to prepare the manuscript	2,500					2,500	3,000					3,000
1.6.2 Publish the book 500 copies					3,125	3,125					6,000 (1,000)	6,000 (1,000)
1.6.3 Distribute the book 500 copies to relevant institutions					375	375					600	600
1.7.1 Assign consultant to prepare, produce and distribute 500 VCDs	2,750					2,750	3,000 (500)					3,000 (500)
TOTAL COMPONENT 1	9,025	9,750	24,120	0	19,550	62,445	10,800 (500)	16,200 (3,500)	36,000 (3,000)	0	24,600 (3,000)	87,600 (10,000)

Activities	GEF					Total	Government					Total
	1000	2000	3000	4000	5000		1000	2000	3000	4000	5000	
2.1.1 Meetings of government institutions and local communities of establish network 2 times @ 40 participants			4,200			4,200			6,000 (1,000)			6,000 (1,000)
2.1.2 Assign a consultant to prepare and publish newsletters (4 issues)					80	80					600 (100)	600 (100)
2.2.1 Meetings of mooring buoy committee 3 times @ 20 participants			1,350			1,350			3,000 (500)			3,000 (500)
2.3.1 Meeting among NGOs for cooperation of resource management 3 times @ 40 participants			2,700			2,700			3,000 (500)			3,000 (500)
2.3.2 Prepare and publish newsletters (3 issues)					225	225					600 (100)	600 (100)
2.4.1 Assign a consultant to prepare marine biodiversity database		5,000				5,000	9,000					9,000
2.4.2 Travel cost for International meeting / seminar / workshop of 3 participants	3,750					3,750	0					0
TOTAL COMPONENT 2	3,750	5,000	8,250	0	305	17,305	9,000	0	12,000 (2,000)	0	1,200 (200)	22,200 (2,200)
3.1.1 Assign Kasetsart University to study carrying capacity for tourists ; expenses for survey, analyses, reports and meetings in the area		15,000				15,000		18,000 (2,000)				18,000 (2,000)
3.2.1 Assign sub-contract to survey, set underwater signs, produce underwater notes @ 500 and maintenance		12,250				12,250		24,000 (1,000)				24,000 (1,000)
3.3.1 Rent and maintenance local guide center office				2,700		2,700				6,000		6,000
3.3.2 Purchase computer and accessories				1,000		1,000				0		0
3.3.3 Office expendable supplies				750		750					0	0
3.3.4 Administration officer 36 @ months @ 100 US\$	3,600					3,600	6,000					6,000
3.4.1 Assign sub-contract to design and install 10 mooring buoys at appropriate diving sites and maintenance		7,350				7,350		24,000 (2,000)				24,000 (2,000)

Activities	GEF					Total	Government					Total
	1000	2000	3000	4000	5000		1000	2000	3000	4000	5000	
3.5.1 Training for coral reef management and conservation for ecotourism for local communities and private sectors 2 times @ 50 participants			2,940			2,940			3,000 (1,000)			3,000 (1,000)
3.6.1 Assign a non – government organization to clean up coral reefs 2 times		3,000				3,000		3,000 (500)				3,000 (500)
3.7.1 Assign a consultant to study tourism fee for coral reef management	3,000					3,000	3,000 (500)					3,000 (500)
TOTAL COMPONENT 3	6,600	37,600	2,940	4,450	0	51,590	9,000 (500)	69,000 (5,500)	3,000 (1,000)	6,000	0	87,000 (7,000)
4.1.1 Training for coral reef protection volunteer groups 2 times @ 40 participants			2,150			2,150			3,000 (500)			3,000 (500)
4.2.1 Assign a consultant to hold the meeting for establishing between coral protection volunteer groups and government agencies for patrolling including support of communication equipments	3,400					3,400	6,000					6,000
4.3.1 Training the trainer for local communities 2 times @ 20 participants			1,520			1,520			3,000 (500)			3,000 (500)
4.4.1 Assign Mahidol University to research on coral reef management aspects		10,000				10,000		18,000 (3,000)				18,000 (3,000)
4.4.2 Support study visit for coral reef management for researchers, government officers and NGOs, 20 persons	5,000					5,000	6,000 (1,000)					6,000 (1,000)
TOTAL COMPONENT 4	8,400	10,000	3,670	0	0	22,070	12,000 (1,000)	18,000 (3,000)	6,000 (1,000)	0	0	36,000 (5,000)
5.1.1 Assign Fisheries Department to conduct mariculture training fishermen 3 times @ 20 participants @ 3 days; expenses for meals, transport, materials and instructors		18,750				18,750	30,000 (1,500)					30,000 (1,500)
5.2.1 Assign a consultant to conduct socio – economic study in local communities that use coral reef fishing ground	3,000					3,000	6,000 (1,000)					6,000 (1,000)

Activities	GEF					Total	Government					Total
	1000	2000	3000	4000	5000		1000	2000	3000	4000	5000	
5.3.1 Assign Coastal Development Centre to publish fisheries and coral reef conservation handbooks @ 500 copies		6,000				6,000		9,000 (2,000)				9,000 (2,000)
5.4.1 Assign Trat Provincial Fisheries Office to design and establish artificial reefs including assessment		25,000				25,000		48,000 (3,000)				48,000 (3,000)
TOTAL COMPONENT 5	3,000	49,750	0	0	0	52,750	36,000 (2,500)	57,000 (5,000)	0	0	0	93,000 (7,500)
6.1.1 Assign Rajamankala Institute of Technology, Bangkok Technical Campus to monitor coral reef conditions (ecological & economics aspects) and map additional coral reef areas		27,000				27,000		60,000 (2,000)				60,000 (2,000)
6.2.1 Assign Coastal Development Centre to carry out demonstrated project of coral reef restoration by using fragments in a diving spot: expenses for survey, area preparation, construction of a floating house for exhibition, public relation and management		16,500				16,500		30,000 (2,000)				30,000 (2,000)
6.3.1 Assign Pollution Control Department to monitor and report land based pollution; expenses for water quality monitoring and reporting		7,500				7,500		15,000 (1,000)				15,000 (1,000)
6.4.1 Training and assign particular staff from relevant agencies to work on coastal development and conservation 3 times @ 20 participants			2,850			2,850			3,000 (600)			3,000 (600)
6.5.1 Assign sub- contract to build – up coral reef and marine organism database by using GIS		7,500				7,500	18,000 (10,000)					18,000 (10,000)
6.6.1 Assign Burapha University to research on mariculture of certain economically important marine organisms		4,500				4,500		12,000 (10,000)				12,000 (10,000)
TOTAL COMPONENT 6	0	63,000	2,850	0	0	65,850	18,000 (10,000)	117,000 (15,000)	3,000 (600)	0	0	138,000 (25,600)

Activities	GEF					Total	Government					Total
	1000	2000	3000	4000	5000		1000	2000	3000	4000	5000	
7.1.1 one person @ 36 months @ 750 US\$	27,000					27,000	60,000					60,000
7.2.1 two person @ 36 months @ 250 US\$	18,000					18,000	60,000					60,000
7.3.1 one person @ 36 months @ 200 US\$	7,200					7,200	30,000					30,000
7.4.1 two person @ 36 months @ 252 US\$	9,000					9,000					0	0
7.5.1 Meeting 12 times @ 20 persons			3,000			3,000			6,000			6,000
7.6.1 Assign a consultant for financial stability study	5,000					5,000						
7.7.1 LCD Projector				2,000		2,000						
7.7.2 Desktop computer & accessories				1,250		1,250						
7.7.3 Notebook computer and accessories				1,250		1,250						
7.8 Office expendable supplies (Focal point and site manager)				2,328		2,328						
7.9 Rent and maintenance office (site manager)					0	0				18,000		18,000
7.10.1 Publish the result of project 500 copies					5,000	5,000						
7.11.1 Telephone / fax / postage					2,800	2,800					1,000	1,000
7.12.1 Auditor 3 year @ 250 US\$					750	750					0	0
7.13.1 Translation English-Thai, Thai-English, 500 pages					4,000	4,000					0	0
7.14.1 Monitoring and evaluation of the project					4,000	4,000					6,000	6,000
7.15.1 Operation and maintenance of office 3 years @ 3,000 US\$					9,000	9,000					18,000 (1,500)	18,000 (1,500)
TOTAL COMPONENT 7	66,200	0	3,000	6,828	25,550	101,578	150,000	0	6,000	18,000	25,000 (1,500)	199,000 (1,500)
Grand Total:	96,975	175,100	44,830	11,278	45,405	373,588	244,800	277,200	66,000	24,000	50,800	662,800
GEF total funding	96,975	175,100	44,830	11,278	45,405	373,588						
Government Co-funding in-kind:							230,300	245,200	58,400	24,000	46,100	604,000
Government Co-funding in-cash:							14,500	32,000	7,600	0	4,700	58,800

ANNEX 5.2 BUDGET BY OBJECT OF EXPENDITURE

	Activities	2005		2005		Total	2006		2006		Total	2007		2007		Total	Total of 3 years			
		1st		2nd			1st		2nd			1st		2nd			GEF	GOV	Total	
		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV					
1000	100	Project personnel																		
	1101	4,500	10,000	4,500	10,000	29,000	4,500	10,000	4,500	10,000	29,000	4,500	10,000	4,500	10,000	29,000	27,000	60,000	87,000	
	1102	1,500	5,000	1,500	5,000	13,000	1,500	5,000	1,500	5,000	13,000	1,500	5,000	1,500	5,000	13,000	9,000	30,000	39,000	
	1103	1,500	5,000	1,500	5,000	13,000	1,500	5,000	1,500	5,000	13,000	1,500	5,000	1,500	5,000	13,000	9,000	30,000	39,000	
	119	7,500	20,000	7,500	20,000	55,000	7,500	20,000	7,500	20,000	55,000	7,500	20,000	7,500	20,000	55,000	45,000	120,000	165,000	
	1200	Consultants																		
	1201	0	0	2,400	4,800	7,200	0	0	0	0	0	0	0	0	0	0	0	2,400	4,800	7,200
	1202	375	0	200	0	575	200	0	200	0	400	200	0	200	0	400	1,375	0	1,375	
	1203	0	0	0	0	0	2,750	3,000	0	0	5,750	0	0	0	0	0	2,750	3,000	5,750	
	1204	0	0	0	0	0	2,500	0	0	3,000	5,500	0	0	0	0	0	2,500	3,000	5,500	
	1205	600	1,000	600	1,000	3,200	600	1,000	600	1,000	3,200	600	1,000	600	1,000	3,200	3,600	6,000	9,600	
	1206	0	0	3,000	3,000	6,000	0	0	0	0	0	0	0	0	0	0	3,000	3,000	6,000	
	1207	0	0	3,400	6,000	9,400	0	0	0	0	0	0	0	0	0	0	3,400	6,000	9,400	
	1208	0	0	0	0	0	3,000	6,000	0	0	9,000	0	0	0	0	0	3,000	6,000	9,000	
	1209	0	0	0	0	0	0	0	0	0	0	5,000	0	0	0	5,000	5,000	0	5,000	
	129	975	1,000	9,600	14,800	26,375	9,050	10,000	800	4,000	23,850	5,800	1,000	800	1,000	8,600	27,025	31,800	58,825	
	1300	Administrative support																		
	1301	1,200	5,000	1,200	5,000	12,400	1,200	5,000	1,200	5,000	12,400	1,200	5,000	1,200	5,000	12,400	7,200	30,000	37,200	
	139	1,200	5,000	1,200	5,000	12,400	1,200	5,000	1,200	5,000	12,400	1,200	5,000	1,200	5,000	12,400	7,200	30,000	37,200	
	1600	Travel on official business																		
	1601	1,500	0	1,500	0	3,000	1,500	0	1,500	0	3,000	1,500	0	1,500	0	3,000	9,000	0	9,000	
	1602	0	0	0	0	0	1,250	0	1,250	0	2,500	1,250	0	0	0	1,250	3,750	0	3,750	
	1603	0	0	1,000	1,200	2,200	1,000	1,200	1,000	1,200	4,400	1,000	1,200	1,000	1,200	4,400	5,000	6,000	11,000	
	169	1,500	0	2,500	1,200	5,200	3,750	1,200	3,750	1,200	9,900	3,750	1,200	2,500	1,200	8,650	17,750	6,000	23,750	
	199	11,175	26,000	20,800	41,000	98,975	21,500	36,200	13,250	30,200	101,150	18,250	27,200	12,000	27,200	84,650	96,975	187,800	284,775	
2000	200	Sub-contract with non profit organization																		
	2201	0	0	6,000	9,000	15,000	0	0	0	0	0	0	0	0	0	0	6,000	9,000	15,000	
	2202	0	0	3,750	7,200	10,950	0	0	0	0	0	0	0	0	0	0	3,750	7,200	10,950	
	2203	0	0	5,000	9,000	14,000	0	0	0	0	0	0	0	0	0	0	5,000	9,000	14,000	
	2204	0	0	0	0	0	12,250	24,000	0	0	36,250	0	0	0	0	0	12,250	24,000	36,250	
	2205	0	0	7,500	9,000	16,500	7,500	9,000	0	0	16,500	0	0	0	0	0	15,000	18,000	33,000	
	2206	0	0	0	0	0	7,350	24,000	0	0	31,350	0	0	0	0	0	7,350	24,000	31,350	
	2207	0	0	0	0	0	1,500	1,500	0	0	3,000	1,500	1,500	0	0	3,000	3,000	3,000	6,000	
	2208	0	0	6,250	10,000	16,250	6,250	10,000	0	0	16,250	6,250	10,000	0	0	16,250	18,750	30,000	48,750	

	Activities	2005		2005		Total	2006		2006		Total	2007		2007		Total	Total of 3 years		
		1st		2nd			1st		2nd			1st		2nd			GEF	GOV	Total
		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV		GEF	GOV	Total
2209	Research on coral reef management aspects by Mahidol University (5.4.1)	0	0	10,000	0	10,000	0	0	0	18,000	18,000	0	0	0	0	0	10,000	18,000	28,000
2210	Publish fisheries and coral reef conservation handbooks @ 500 copies by Coastal Development Centre (6.3.1)	0	0	0	0	0	6,000	9,000	0	0	15,000	0	0	0	0	0	6,000	9,000	15,000
2211	Design and establish artificial reefs including assessment by Trat Provincial Fisheries Office (6.4.1)	0	0	25,000	0	25,000	0	48,000	0	0	48,000	0	0	0	0	0	25,000	48,000	73,000
2212	Monitor coral reef conditions (ecological & economics aspects) and map additional coral reef areas by Rajamankala Institute of Technology, Bangkok Technical Campus to (6.1.1)	0	0	10,000	20,000	30,000	0	20,000	10,000	0	30,000	20,000	7,000	0	27,000	27,000	60,000	87,000	
2213	Carry out demonstrated project of coral reef restoration by Coastal Development Centre (6.2.1)	0	0	10,000	20,000	30,000	6,500	10,000	0	0	16,500	0	0	0	0	0	16,500	30,000	46,500
2214	Monitor and report land based pollution by Pollution Control Department (6.3.1)	0	0	2,500	5,000	7,500	0	0	2,500	5,000	7,500	0	0	2,500	5,000	7,500	7,500	15,000	22,500
2215	Build - up coral reef and marine organism database by using GIS Rajamankala Institute of Technology, Bangkok Technical Campus (6.5.1)	0	0	7,500	9,000	16,500	0	9,000	0	0	9,000	0	0	0	0	0	7,500	18,000	25,500
2216	Research on mariculture of certain economically important marine organisms by Burapha University (6.6.1)	0	0	4,500	0	4,500	0	6,000	0	0	6,000	0	6,000	0	0	6,000	4,500	12,000	16,500
229	Total	0	0	98,000	98,200	196,200	47,350	170,500	12,500	23,000	253,350	7,750	37,500	9,500	5,000	59,750	175,100	334,200	509,300
299	component total	0	0	98,000	98,200	196,200	47,350	170,500	12,500	23,000	253,350	7,750	37,500	9,500	5,000	59,750	175,100	334,200	509,300
3000	200 Group training																		
3201	Training course for primary school students 2 times @ 40 students and for high school students 2 times @ 40 students @ 4 days (1.3.1)	0	0	3,780	0	3,780	3,780	12,000	3,780	0	19,560	3,780	12,000	0	0	15,780	15,120	24,000	39,120
3202	Training course for tour guides and tourism businessmen 2 times @ 40 participants and for local communities 2 time @ 40 participants @ 2 days (1.4.1)	0	0	2,250	0	2,250	2,250	6,000	2,250	0	10,500	2,250	6,000	0	0	8,250	9,000	12,000	21,000
3203	Training for coral reef management and conservation for ecotourism for local communities and private sectors 2 times @ 50 participants (3.5.1)	0	0	1,470	0	1,470	0	1,500	1,470	0	2,970	0	1,500	0	0	1,500	2,940	3,000	5,940
3204	Training for coral reef protection volunteer groups 2 times @ 40 participants (4.1.1)	0	0	1,075	0	1,075	0	1,500	1,075	0	2,575	0	1,500	0	0	1,500	2,150	3,000	5,150
3205	Training the trainer for local communities 2 times @ 20 participants (4.3.1)	0	0	760	0	760	0	1,500	760.0	0	2,260	0	1,500	0	0	1,500	1,520	3,000	4,520
3206	Training and assign particular staff from relevant agencies to work on coastal development and conservation 3 times @ 20 participants (6.4.1)	0	0	950	0	950	0	1,500	950	0	2,450	0	1,500	950	0	2,450	2,850	3,000	5,850
329	Total	0	0	10,285	0	10,285	6,030	24,000	10,285	0	40,315	6,030	24,000	950	0	30,980	33,580	48,000	81,580
3300	Meeting/Conference																		
3301	Meetings of government institutions and local communities of establish network 2 times @ 40 participants (2.1.1)	0	0	2,100	0	2,100	0	0	2,100	3,000	5,100	0	0	0	3,000	3,000	4,200	6,000	10,200
3302	Meetings of mooring buoy committee 3 times @ 20 participants (2.2.1)	0	0	450	0	450	0	0	450	1,500	1,950	0	0	450	1,500	1,950	1,350	3,000	4,350
3303	Meeting among NGOs for cooperation of resource management 3 times @ 40 participants (2.3.1)	0	0	900	1,000	1,900	0	0	900	1,000	1,900	0	0	900	1,000	1,900	2,700	3,000	5,700
3304	Meeting of Management Board 12 times @ 20 persons (7.5.1)	500	1,000	500	1,000	3,000	500	1,000	500	1,000	3,000	500	1,000	500	1,000	3,000	3,000	6,000	9,000
339	Total	500	1,000	3,950	2,000	7,450	500	1,000	3,950	6,500	11,950	500	1,000	1,850	6,500	9,850	11,250	18,000	29,250
399	component total	500	1,000	14,235	2,000	17,735	6,530	25,000	14,235	6,500	52,265	6,530	25,000	2,800	6,500	40,830	44,830	66,000	110,830
4000	100 Expendable equipment																		
4101	Office expendable supplies for local guide center (3.3.3)	125	0	125	0	250	125	0	125	0	250	125	0	125	0	250	750	0	750
4102	Office expendable supplies (Focal point and site manager) (7.8)	388	0	388	0	776	388	0	388	0	776	388	0	388	0	776	2,328	0	2,328
419	Total	513	0	513	0	1026	513	0	513	0	1026	513	0	513	0	1,026	3,078	0	3,078
4200	Non Expendable equipment																		
4201	Purchase computer and accessories for local guide center (3.3.2)	0	0	1,000	0	1,000	0	0	0	0	0	0	0	0	0	0	1,000	0	1,000
4202	Office non-expendable equipment: LCD Projector, computer and accessories (Focal point) (7.7)	0	0	4,500	0	4,500	0	0	0	0	0	0	0	0	0	0	4,500	0	4,500
429	Total	0	0	5,500	0	5,500	0	0	0	0	0	0	0	0	0	0	5,500	0	5,500
4300	Premises																		
4301	Rent and maintenance local guide center office (3.3.1)	450	1,000	450	1,000	2,900	450	1,000	450	1,000	2,900	450	1,000	450	1,000	2,900	2,700	6,000	8,700
4302	Rent and maintenance office (site manager) (7.9)	0	3,000	0	3,000	6,000	0	3,000	0	3,000	6,000	0	3,000	0	3,000	6,000	0	18,000	18,000
439	Total	450	4,000	450	4,000	8,900	450	4,000	450	4,000	8,900	450	4,000	450	4,000	8,900	2,700	24,000	26,700
499	component total	963	4,000	6,463	4,000	15,426	963	4,000	963	4,000	9,926	963	4,000	963	4,000	9,926	11,278	24,000	35,278

	Activities	2005		2005		Total	2006		2006		Total	2007		2007		Total	Total of 3 years			
		1st		2nd			1st		2nd			1st		2nd			Total	GEF	GOV	Total
		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV		GEF	GOV	GEF	GOV					
5000	100	Operation and maintenance of equipment																		
	5101	Operation and maintenance of office 3 years @ 3,000 US\$ (7.15.1)																		
		1,500	3,000	1,500	3,000	9,000	1,500	3,000	1,500	3,000	9,000	1,500	3,000	1,500	3,000	9,000	9,000	18,000	27,000	
	519	1,500	3,000	1,500	3,000	9,000	1,500	3,000	1,500	3,000	9,000	1,500	3,000	1,500	3,000	9,000	9,000	18,000	27,000	
	5200	Reporting Costs																		
	5201	Publication of the coral reef ecosystem conservation handbook 500 copies (1.6.2)																		
		0	0	0	0	0	3,125	6,000	0	0	9,125	0	0	0	0	0	3,125	6,000	9,125	
	5202	Distribution of the book 500 copies to relevant institutions (1.6.3)																		
		0	0	0	0	0	375	600	0	0	975	0	0	0	0	0	375	600	975	
	5203	Publish newsletters for government institutions and local communities to establish network (4 issues) (2.1.2)																		
		20	100	20	100	240	20	100	20	100	240	0	100	0	100	200	80	600	680	
	5204	Publication of reports for the result project 500 copies (Focal Point) (7.10.1)																		
		0	0	0	0	0	0	0	0	0	0	0	0	5,000	0	5,000	5,000	0	5,000	
	5205	Publish newsletters for cooperation of resource management among NGOs (3 issues) (2.3.2)																		
		0	0	75	200	275	0	0	75	200	275	0	0	75	200	275	225	600	825	
	5206	Translation (7.13)																		
		0	0	800	0	800	800	0	800	0	1,600	800	0	800	0	1,600	4,000	0	4,000	
	529	20	100	895	300	1,315	4,320	6,700	895	300	12,215	800	100	5,875	300	7,075	12,805	7,800	20,605	
	5300	Sundry																		
	5301	Payment for broadcasting for radio (4500 US\$) and television (11,250 US\$), domain name and server (300 US\$) (1.5.3)																		
		0	0	10,000	0	10,000	6,050	0	0	9,000	15,050	0	0	0	9,000	9,000	16,050	18,000	34,050	
	5302	Communication (focal point and site manager) (7.11)																		
		600	200	400	150	1,350	400	150	400	150	1,100	400	150	600	200	1,350	2,800	1,000	3,800	
	539	600	200	10,400	150	11,350	6,450	150	400	9,150	16,150	400	150	600	9,200	10,350	18,850	19,000	37,850	
	5500	Evaluation																		
	5501	Monitoring and evaluation of the project (7.14)																		
		0	0	0	0	0	2,000	3,000	0	0	5,000	0	0	2,000	3,000	5,000	4,000	6,000	10,000	
	5502	Audit expenses 3 years (7.12)																		
		0	0	250	0	250	0	0	250	0	250	0	0	250	0	250	750	0	750	
	559	0	0	250	0	250	2,000	3,000	250	0	5,250	0	0	2,250	3,000	5,250	4,750	6,000	10,750	
	599	Component total																		
		2,120	3,300	13,045	3,450	22,691	14,270	12,850	3,045	12,450	40,391	2,700	3,250	10,225	15,500	26,901	45,405	50,800	96,205	
	Total	14,758	34,300	152,543	148,650	350,251	90,613	248,550	43,993	76,150	459,306	36,193	96,950	35,488	58,200	222,057	373,588	662,800	1,036,388	

ANNEX 6 ARRANGEMENTS FOR MANAGEMENT AND CO-ORDINATION

SITE LEVEL MANAGEMENT

The Koh Chang demonstration site will appoint a Site Manager who will report all project activities to the Focal Point for coral reefs in the SEA and to the national coral reefs resource committee. The Site Manager should have responsibility for managing the activities at the demonstration site, under the direction of the Management Board, including UNEP GEF SCS Management Body and Management Advisory Group for Coral Reefs of Trat Province.

The Site Manager shall take responsibility for:

- Executing the work plan according to the timetable in the project proposal;
- Planning, and managing on a day to day basis the demonstration activities identified in the implementation plan, including preparation and supervision of annual work plan and timetables;
- Financial responsibility for the approved budget within clearly defined limits set by the management body, including keeping proper books of account and preparing financial reports for the management body;
- Responsibility for execution of the activities in accordance with the work plan and timetable and schedule of expenditures, initially defined by the demonstration site proposal and amended from time to time by the management body;
- Responsibility for acting as Secretary to the meetings of the Management Advisory Group for Coral Reefs;
- Reporting on activities and outcomes, to the management body, the focal point of the SEA, and the National Technical Focal Point according to an agreed schedule;
- Preparing inputs to the six-monthly expenditure reports, six monthly progress reports and cash advance requests to be submitted to the Project Co-ordinating Unit (PCU), through the SEA-Coral Reefs;
- Preparing and submitting to the PCU, through the SEA-Coral Reefs, technical reports in accordance with the defined outputs of the demonstration site; and,
- Attending such national and regional meetings as shall be determined on an individual basis.

UNEP GEF SCS Management Body

Trat Province has two demonstration sites under the UNEP GEF SCS Project, one for mangrove and one for coral reef components. UNEP GEF SCS Management Body should be established to have authority and responsibility for the conduct of activities at the demonstration site.

Composition

1. Governor of Trat Province	Chairperson
2. Vice Governor of Trat Province	Vice chairperson
3. Head of Development Strategies, Trat Province	Member
4. Head of Fisheries Office, Trat Province or representative	Member
5. Director of Central Office of Tourist Authority of Thailand or representative	Member
6. Director of Tourism and Recreation Center, Trat Province or representative	Member
7. Division of Mangrove Resources Management or representative	Member
8. Representative of Development Area for Sustainable Tourism Authority	Member
9. Representative from Royal Thai Navy Region I	Member
10. Representative from Office of Natural Resources and Environmental Policy and Planning	Member
11. Chief, Eastern Gulf of Thailand Marine Resources Research and Development Center or representative	Member
12. Chief Mangrove Resources Management No. 4 or representative	Member
13. Chief, Mu Koh Chang Marine National Park or representative	Member
14. Natural Resources and Environment Provincial Office, Trat Province or representative	Member
15. Chairman, SEA-Mangrove	Member and vice-secretary
16. Chairman, SEA-Coral Reefs	Member and vice-secretary

Responsibility

1. Determine strategies for implementation of activities in mangrove and coral reef demonstration sites.
2. Control and monitor project activities in the demonstration sites in accordance with work plan and budget proposed.
3. Consider, review and approve reports of project activities in the demonstration sites prepared by Management Advisory Group and site managers
4. Consider, review and assess outputs of project activities in the demonstration sites and provide recommendation for integrated management.
5. Review project action plans in accordance with policies and plans for marine and coastal resources and provincial and national level.

Management Advisory for Coral Reefs in Trat Province

The Management Advisory Group for Coral Reefs in Trat Province should be established to consider, analyse and provide technical and academic supports for project implementation in the coral reef demonstration site at Mu Koh Chang.

Composition

- | | |
|---|----------------------|
| 1. Chairman, SEA-Coral Reefs | Chairperson |
| 2. Deputy of district officer of Koh Chang District or representative | Member |
| 3. Deputy of district officer of Koh Kut District or representative | Member |
| 4. Chairman, Tambon Koh Chang Administration Office or representative | Member |
| 5. Chairman, Tambon Koh Chang Tai Administration Office or representative | Member |
| 6. Chairman, Tambon Koh Mak Administration Office or representative | Member |
| 7. Chairman, Tambon Koh Kut Administration Office or representative | Member |
| 8. A coral reef management expert | Member |
| 9. Site manager | Member and secretary |

**PROPOSED MANAGEMENT FRAMEWORK FOR MU KOH CHANG
DEMONSTRATION SITE (CORAL REEF), TRAT PROVINCE, THAILAND**

