

**Report of On-site Training/National Workshop on Capacity
Building for Establishment of “Fisheries Refugia” and Coastal
Resources Management
14 – 16 June 2006, Phu Quoc, Vietnam**



**Southeast Asian Fisheries Development Center
The Secretariat**

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TABLE OF CONTENTS

		Paragraph No
I.	Introduction	1-3
II.	Opening of the Training/Workshop	4-7
III.	Adoption of the Agenda and Arrangement of the Training/Workshop	8
IV.	Background and Rationale of the Training/Workshop	9-10
V.	Phu Quoc Island and Kien Giang Province: Overview of Fisheries and Coastal Resources Management	11
VI.	Synthesis of Experience and Lessons Learned from Coastal Resource Management with Emphasis given to Marine Protected Areas	12-20
VII.	Establishment of Fisheries Refugia in Phu Quoc Island	21-22
VIII.	Potential Collaborative Mechanisms between Vietnam and Cambodia in the Implementation of Fisheries Refugia	23-29
IX.	Clarification of next step for SEAFDEC-Sida HRD Program in Vietnam	30-34
X.	Closing of the Training/Workshop	35



**On-site Training/National Workshop on Capacity Building for the
Establishment of “Fisheries Refugia” and Coastal Resources Management
14-16 June 2006
Phu Quoc, Vietnam**

Key Words: Fisheries Refugia – Concepts, Experiences and Lessons Drawn from Projects/Initiatives, Linkages with Coastal Resource Management and Management of Fishing Capacity, Establishment Requirements, Development Plan and Supporting HRD, Transboundary Collaborative Mechanisms.

I. Introduction

1. The on-site Training/National Workshop on Capacity Building for the Establishment of “Fisheries Refugia” and Coastal Resources Management was co-organized by SEAFDEC and the Ministry of Fisheries in Phu Quoc, Kien Giang Province from 14 to 16 June 2006.
2. The objectives of the Training/Workshop were 1) to investigate the concepts and requirements (particularly supporting capacity building) for establishment of “Fisheries Refugia” near/in the Vietnam-Cambodia border; and 2) to promote human capacity building for coastal resources management by mobilizing the lessons learned from projects/initiatives based on the experiences in Kien Giang and other related provinces/projects.
3. The participants attended the Training/Workshop were fisheries officers from Phu Quoc and representatives from Kien Giang and Hai Phong provinces. Participants attended were also resource persons from the Ministry of Fisheries and projects related to coastal resources management (Cambodian Department of Fisheries, IUCN, MOFI MPA Project, UNEP/GEF/MOFI (Seagrass), Wildlife at Risk, Wetland Alliance/WorldFish Center) as well as representatives from SEAFDEC Secretariat. The list of participants appears as **Annex 1**.

II. OPENING OF THE TRAINING/WORKSHOP

4. Dr. Siri Ekmaharaj, Secretary General of SEAFDEC, in his welcoming remarks (**Annex 2**) emphasised the importance of human resource development for the success of sustainable fisheries management. Further on he pointed out the importance of a mixture of stakeholders taking part in both training and the lessons learnt for better understanding, planning, cooperation and implementation of future fisheries resources management. When it comes to the establishment of fisheries refugia in Vietnam, Dr. Siri saw great potential for future collaboration between Vietnam and Cambodia, both on bilateral bases and through relevant agencies as e.g. UNEP/GEF/South China Sea Project. He finally anticipated the Workshop/Training to become very fruitful.
5. Dr. Vu Van Trieu, SEAFDEC Alternate Council Director for the Socialist Republic of Vietnam, welcomed the participants to Vietnam and Phu Quoc (**Annex 3**).

He highlighted and emphasised the cooperation between SEAFDEC and MOFI which during the past years has been focusing on strengthening human resources capacity to assist in the implementation of the Code of Conduct for Responsible Fisheries Management in the coastal areas of Vietnam and in the Southeast Asian region. He described the outcomes from the national workshop held in Hai Phong October 2005 with the purpose to strengthen the coordination among the projects and related agencies in order to develop the common orientation for coastal resources management in Vietnam.

6. He also highlighted the national plan/strategy of how to strengthen human resources capacity for fisheries management that the meeting came up with as well as the selected sites, Hai Phong, Quang Binh and Kien Giang for the demonstration purposes to come. In follow up to the Hai Phong work shop Dr. Trieu anticipated the Phu Quoc training/workshop to be focusing on the strengthening of capacity for refugia establishment and coastal resources management and referred to the agenda for the meeting and underlined the importance of the potential cooperation mechanism between Cambodia and Vietnam in establishing fisheries refugia.

7. Dr. Magnus Torell, SEAFDEC Senior Advisor, welcomed the participants and resource persons to the On-site Training/Workshop in Phu Quoc. He made a brief summary of the so far obtained outcomes of the SEAFDEC-Sida HRD pilot process in Vietnam. He, as Dr. Siri, also underlined that the cooperation with and support from other projects and organizations is very constructive and is going to be important when it comes to future work with the establishment of fisheries refugia in the region. He was very happy to see all qualified delegates attending the venue and also the great interest shown from Vietnam and Cambodia when it comes to make efforts on collaboration on the important issues of fisheries refugia. He finally wished the workshop/training success.

III. ADOPTION OF THE AGENDA AND ARRANGEMENT OF THE TRAINING/WORKSHOP

8. The Agenda and arrangements of the Training/Workshop, which appears as **Annex 4**, was adopted

IV. BACKGROUND AND RATIONALE OF THE TRAINING/ WORKSHOP

9. Under the collaborative arrangement between SEAFDEC and Sida, the “Project on Capacity Building for Human Resource Development on the Support to the Implementation of the Code of Conduct for Responsible Fisheries (CCRF) in the ASEAN Region” was initiated since 2003. The project aims primarily at enhancing human capacity to implement the CCRF through the implementation of “pilot process” in four selected countries, namely Cambodia, Indonesia, Thailand and Vietnam. The pilot process is as an approach to define HRD needs and actions to enhance human capacity at national level, which will provide a basis for sharing of experience at the regional level.

10. As part of the pilot process in Vietnam, this Training/Workshop was conducted as a follow-up to the results of the National Workshop on Human Resource

Development for Fisheries Management in Vietnam held in Hai Phong Province from 5 to 6 October 2005.

V. PHU QUOC ISLAND AND KIEN GIANG PROVINCE: OVERVIEW OF FISHERIES AND COASTAL RESOURCE MANAGEMENT

11. Phu Quoc, Vietnam's southern most island in Kien Giang province, is abundant of various aquatic resources and important coastal habitats ranging from mangrove forest, sea grass beds, to coral reefs. The recent fast growing development in and around the island has contributed to loss of biodiversity of aquatic resources and deterioration of coastal eco-system. The commercially exploited coastal resources have also been threatened due to over-fishing and lack of effective management system for fisheries in place. The concern over the status of coastal resources stimulates a number of initiatives promoted by the Ministry of Fisheries and other agencies. The initiatives include introduction of integrated coastal management including marine protected areas, capacity development for management of coastal fisheries, etc. The government is inviting cooperation with the neighboring countries and from international/regional organizations to reinforce such efforts in the area.

VI. SYNTHESIS OF EXPERIENCE AND LESSONS LEARNED FROM COASTAL RESOURCE MANAGEMENT WITH EMPHASIS GIVEN TO MARINE PROTECTED AREAS

12. As a basis for sharing experience and discussion on the capacity building for the establishment of fisheries refugia and coastal resource management, the following projects/initiatives were presented at the Training/Workshop:

- Support to Marine Conservation in Phu Quoc Island, Kien Giang Province by Mrs. Nguyen Giang Thu, MOFI (**Annex 5**)
- IUCN and Its Training Activities on MPA in Vietnam, by Mrs. Tui Thi Thu Hien, IUCN-Vietnam by Mr. Dang Van Thi, RIMF (**Annex 6**)
- Overview of Fisheries Resources and Marine Eco-system in Vietnam Based on Indicator, RIMF (**Annex 7**)
- Integrated Coastal Zone Management (ICZM) in Coastal and Island Areas by Dr. Nguyen Chu Hoi, VIFEP (**Annex 8**)
- The Role of MPAs in Supporting the Refugia Needs of Coastal and Marine Fisheries Stocks: the Situation in Vietnam by Prof. Donald Macintosh, MPA Project, MOFI (**Annex 9**)
- Mainstreaming Conservation of Coastal Biodiversity through Formulation of a Code of Conduct for Sustainable Management of Mangrove Ecosystems by Dr. Thomas Nielson, University of Aarhus, Denmark (**Annex 10**)
- Status of Anchovy Fishing in Kien Giang Province, Kien Giang Fisheries Department (**Annex 11**)
- Assessment of Anchovy Resource and Fisheries in Phu Quoc, Kien Giang Area (**Annex 12**)
- Seagrass, Mangrove and Coral Reef in Phu Quoc, UNEP/GEF/SCS (**Annex 13**)

- Management and Conservation Program on Endangered Species and Commercially Important Species in Phu Quoc, Dr. Dao Manh Son, Vice Director of Research Institute for Marine Fisheries (**Annex 14**)
- Introduction of Fisheries Refugia based on SEAFDEC-UNEP/GEF/SCS and IUCN Experience by Ms. Bui Thi Thu Hien, IUCN-Vietnam (**Annex 15**)

13. Much effort and progress have been made by MOFI and various agencies in coastal resource management (CRM) in Vietnam including the enactment of the Fisheries Law 2003 and establishment of MPAs. It was noted that the concept of fisheries refugia has in fact been recently introduced to give due consideration to the livelihoods and sustainable utilization of resources.

14. In various ways, ICM, ICZM and CRM are used generally to refer to a management framework for multiple coastal resources uses that encourage partnership among stakeholders in coastal resource utilization and management. Important elements of a CRM system include, among others, understanding of CRM principles, development of supporting legal frameworks for concerned coastal activities, conflict resolution among coastal activities, community involvement/participation and trust, capacity development of communities for planning and implementation of CRM.

15. In the same manner as CRM, MPAs, Fish Refuges, and Fisheries Refugia are used to refer to a generic and flexible management tool, which is spatially and geographically defined, marine or coastal areas in which specific conservation and management measures (i.e. gear restriction and seasonal closure) at various degree of restriction are applied to sustain important species [fisheries resources] during critical stages of their life cycles, for their sustainable use. Experiences show that well-managed MPAs help preserve critical coastal habitats (mangrove forests, seagrass beds, and coral reefs), which are important to various stages (i.e. spawning and nursery) of fish life cycles. However, a common understanding of this concept and its linkage with CRM is not necessarily shared by concerned stakeholders. For future reference and promotion, the Training/Workshop agreed to refer the terminology in Vietnamese as “Fisheries Resources Protection Areas.”

16. Successful MPAs:

- Should be integrated into a CRM framework with appropriate legislative support and appropriate management measures;
- Should be supported by capacity development at all levels to ensure understanding and cooperation of concerned stakeholders, enhance local initiatives and ownership, which will lead to increasing of management compliance and long-term effectiveness of MPAs;
- Should be supported by practical data, information and index/indicators, which can be derived from statistics, administrative records and research. Besides biological and resource aspects, social and economic aspects should be given due consideration;
- Depends on/requires good knowledge from life cycle research, which can be used to support appropriate site selection and identification of appropriate management measures for MPAs;

- Helps support applied research including life cycle analysis of commercially exploited species;
- Provide incentive for active community involvement and to ensure sustainability of the initiatives. This will lead to striking a balance between local livelihoods and habitat/aquatic resource conservation. In other words, while certain access to certain critical habitats are prohibited or regulated, access to alternative areas should be made available; and
- Should consist of several smaller core areas, which function better than a single larger area, provided they are inter-linked via life cycle migration patterns.

17. In the context of Vietnam, MPA sites are located around small islands scattered along the coast line as representatives of bio-geographical characteristics. A network of 15 MPAs along the coastal zone supports MPA learning processes, exchange of experience and provides expertise, and “spill over effects”. However, the MPA network is not a biological network, therefore consideration should be given to establish larger and more coastal MPAs to better support critical habitats needed for commercial fisheries species.

18. The Training/Workshop noted that conservation and management of aquatic species should be incorporated into the coastal resource management plan, which includes the use of fisheries refugia as a management tool. Single species conservation and management in the context of tropical multi-gear/species may not be appropriate. However, species conservation as “flagship” species for conservation (i.e. sea turtles and dugong) helps enhance better understanding and recognition on the concept of conservation and management of aquatic resources. This would then lead to higher cooperation and compliance of stakeholders in conservation and management of coastal resources including management of MPAs.

19. Capacity development supporting materials (training curriculum and modules, toolkits, guidelines, codes of conduct, etc.) for MPA and CRM developed by various projects/initiatives are readily available; these provide useful referential sources for planning and implementation of future capacity building activities. While noting that various projects/initiatives related to MPA/Fisheries Refugia apply similar principles and concepts, there are diverse usage of terminologies, common understanding on the concept and principle could help interface various sets of materials to allow better usage by various users.

20. While noting that efforts for the on-going initiatives related to CRM and MPAs should be continued and intensified, key challenges that still need to be addressed are:

- Strengthening coordination mechanisms (among agencies and at various levels) for CRM, including MPAs;
- Mainstreaming approaches among CRM projects into national policy and strategy including linking MPA to ICM and converting project initiatives to nation-wide program/long-term implementation – a need for a national CRM master plan;
- Assessment of effectiveness and impacts of MPAs in coastal resource management;
- Simple and practical index/indicators as a tool for communication among stakeholders particularly at local level as well as for decision making and management of coastal resources;

- Life-cycle research of the species for which MPAs are being developed;
- Improvement of measures for addressing destructive fishing gear and practices;
- Sustainable financing of CRM and MPA – what works, what doesn't, and why?;
- Considering critical stages of life cycle, transboundary collaborative mechanisms for MPAs among provinces and neighboring countries;
- Integrating approaches and objectives of biodiversity, livelihood and economic valuation assessments in fisheries refugia; and
- To clarify the role of fisheries refugia in the management of fishing capacity.

VII. ESTABLISHMENT OF FISHERIES REFUGIA IN PHU QUOC ISLAND

21. Proposed establishment of MPA in Phu Quoc Island was presented by Ms. Nguyen Ngoc Phuong, Kien Giang Fisheries Department. As one of the 15 MPA sites in Vietnam, the Phu Quoc MPA is the initiative of Kien Giang Fisheries Department with support given by MOFI. The value of taking initiative and ownership by the Department is regarded important for the successful implementation of MPA programs. The plan and procedures based on the experience by the MPA Project (starting from identification of MPA sites, establishment of MPA management board, development of MPA management plan and system, and identification of future required supports and activities) has been developed. In addition, reference was made to the Regional Guidelines on the Use of Fisheries Refugia for Capture Fisheries Management in Southeast Asia. These references and related experience are expected to give guidance for future planning of other MPA sites in the country.

22. Among several supporting activities required to support the establishment of fisheries refugia in Phu Quoc Island, the following were highlighted:

- Awareness building for stakeholders on the importance and role of fisheries refugia in coastal resource management; and
- Capacity development for fisheries refugia managers as well as community strengthening and organization in the planning and management of fisheries refugia.

VIII. POTENTIAL COLLABORATIVE MECHANISMS BETWEEN VIETNAM AND CAMBODIA IN THE IMPLEMENTATION OF FISHERIES REFUGIA

23. A Plan for the Establishment of Fisheries Refugia in Cambodia was presented by Mr. Ouk Vibol, Department of Fisheries, Cambodia (**Annex 16**). Mr Vibol described the proposal of a plan to implement fisheries refugia in/near the Cambodia-Thailand border respectively the Cambodia-Vietnam border. The proposal has been developed by the UNEP/GEF/SCS project, in which representatives from DoF Cambodia are seated. The proposal of the plan has been drafted after investigating the concept and requirements of establishing fisheries refugia in Cambodia and by evaluating the experiences and lessons learnt from the UNEP/GEF/SCS project in Koh Kong and other similar projects/provinces. Based on these evaluations the plan for establishing fisheries refugia in Cambodia took form as an outcome of the

Workshop on Human Resource Development for Establishment of Fisheries Refugia and CRM held in Koh Kong March 2006.

24. As regards the contents of the plan it includes what suitable areas there are in Cambodia and why there is a need for establishment of fisheries refugia at these sites. Further on, the plan is describing the selection and establishment process itself, including gathering of relevant information, mapping, consultations, coordination and support, final proposal and decision taking.

25. When it comes to management of the fisheries refugia, the workshop in Koh Kong came up with some key conditions that have to be fulfilled for a successful implementation, e.g. clearly demarcated boundaries of the refugia, clear and adapted regulations, creation of patrolling groups, involvement of local communities, improvement of public awareness on the importance of fisheries refugia, capacity building among relevant institutions and establishment of management plans and committees.

26. Mr. Vibol continued to describe the possibilities and efforts needed to successfully establish transboundary fisheries refugia between Cambodia and its neighboring countries, Vietnam and Thailand. Together with Vietnam, Cambodia has to carry out research to identify migratory species and what areas that could be suitable for fisheries refugia. Further on, a management board together with a technical advisory group is recommended to be set up to work out the management structures (see bp.25). Mr Vibol pointed out that both Kien Giang and Kampot provinces have shown a great interest in taking part in these activities.

27. The collaboration between Cambodia and Thailand is in an initial phase, first requiring an agreement between the governments, then the creation of a technical advisory group to actively work with issues like administration and legal framework, HRD, fishing activities, alternative livelihoods and forms of exchanging information.

28. In view of better management of fisheries refugia particularly where the sites are located along the country boundaries (i.e. Vietnam and Cambodia), the concept of establishing collaborative mechanisms between Kampot and Kien Giang provinces was welcomed. Together with existing experiences in both countries, the following were identified as potential collaborative mechanisms:

- Establishment of a joint management mechanism
 - Management board (chaired by Governors of Kien Giang and Kampot Provinces) to work on management aspect
 - Technical Advisory Group (chaired by the Cambodian Department of Fisheries and Vietnam MOFI) to work on technical aspect
- Development of policy and cooperation framework for the connected fisheries refugia between the two countries
- Conduct of joint annual meetings for both the management board and technical advisory group;
- Development of collaborative research including:
 - Identification of important migratory species (dugong, dolphin, sea turtle)
 - Study on possibility to establish fisheries refugia between the two countries

- Development of common management measures for fisheries refugia including
 - Stop illegal trade of threatened/endangered species i.e. dugong, sea turtles, coral reef and sea grass). The attempt should be promoted in close collaboration with other related authorities (i.e. the Custom Department) within the two countries.
 - Reduce or stop completely the use of illegal fishing activities within the demon-site
- Development of guidelines for resource assessment and monitoring
- Development of joint GIS database
- Training on common approaches to management of fisheries refugia and coastal resource management

29. As a follow-up action to the above proposed collaborative mechanisms, the Training/Workshop urged the representatives from Cambodia and Kien Giang Province to explore in greater details with appropriate higher authorities. This is in order to bring forward for finalization of the collaborative mechanism between the two countries.

IX. CLARIFICATION OF NEXT STEP FOR SEAFDEC-SIDA HRD PROGRAM IN VIETNAM

30. According to the SEAFDEC-Sida program plan, the Training/Workshop was informed of the future planned activities as follows:

National Level

- A training/workshop on establishment of fisheries refugia and coastal resource management to be held in Quang Binh Province in the near future. The training/workshop will be planned based on the issues and requirements identified at the national workshop on HRD support to fisheries management held in Hai Phong from 5 to 6 October 2005.

Regional Level

- Preparatory Expert Meeting on HRD Supporting Materials for Fisheries Management to be held in Hua Hin, Thailand to discuss the compilation of HRD supporting materials for fisheries management in the four pilot process countries
- SEAFDEC-Sida and UNEP/GEF/SCS Joint Workshop on Establishment of Fisheries Refugia to be held in Sihanouk Ville, Cambodia to discuss on common issues in the establishment of fisheries refugia and collaborative mechanism for the management of fisheries refugia among Koh Chang – Thailand, Cambodia, and Phu Quoc, Vietnam
- Regional Technical Consultation on HRD Support to Fisheries Management in Southeast Asia to be held in Phuket, Thailand to present experience in the four pilot process countries and identify recommendations for future support from SEAFDEC-Sida collaboration

31. The Training/Workshop was also informed that the discussion and output at this meeting would be useful inputs for planning of future Sida support for the year 2007

and onward. It was also identified that a broader scope of fisheries refugia i.e. Gulf of Thailand is worth investigated in future Sida support.

32. The Training/Workshop urged SEAFDEC-Sida program for continued support to both Phu Quoc, Vietnam and to Kampot, Cambodia in future undertaking of fisheries refugia. In addition, collaboration with other agencies i.e. UNEP/GEF/SCS, IUCN, WWF and other potential international/regional organizations should be explored. Research Institute for Marine Fisheries could help seeking possibility for entering into collaboration.

33. The Training/Workshop took note of positive response and willingness of both Kien Giang and Kampot provinces in involving SEAFDEC-Sida program in their establishment of fisheries refugia and future collaborative arrangement. The involvement is envisaged to provide useful information and inputs for planning future Sida support to the respective areas.

34. Considering the transboundary issues of fisheries refugia between Kampot and Kien Giang provinces, the Training/Workshop urged that the Cambodian Department of Fisheries and the Vietnam's Ministry of Fisheries would continue to provide advisory and technical supports to respective areas as well as taking a leading role in the promotion of collaborative arrangement between the two areas.

X. CLOSING OF THE TRAINING/WORKSHOP

35. Dr. Vu Van Trieu, Acting Director, International Cooperation Department, MOFI thanked the participation of representatives from Hai Phong, Quang Binh and Kien Giang provinces. The Workshop supported by SEAFDEC-Sida project has provided a platform for exchange of experiences. All thanked the representatives from MPA Project and RIMF as well as from Cambodia, IUCN, WorldFish Center and Wildlife at Risk for sharing information and experience in the Workshop.

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**Welcoming Remarks
by Dr. Siri Ekmaharaj
Secretary General of SEAFDEC**

Dr. Vu Van Trieu, SEAFDEC Alternate Council Director for the Socialist Republic of Vietnam

Dr. Magnus Torell, SEAFDEC Senior Advisor, and his delegation.

Distinguished participants, ladies and gentlemen,

It is indeed a great privilege and honor for me to be here in front to address a welcoming statement for this important event, On-site Training and National Workshop on Capacity Building for the Establishment of Fisheries Refugia and Coastal Resources Management.

As we realized, the development of human resource development will always play a significant role in a success implementation of such fisheries program activities, therefore, SEAFDEC has supported the organization of the sequence of onsite training and national workshop for human capacity building to support sustainable fisheries management for the Member Countries.

Through this training and workshop, I hope the synthesis gained from the experiences of past and on going project concerning human resource developments shall be shared among fisheries stakeholders, relevance organization and other initiatives for better future planning and cooperation, and implementation. With regards to this concerned workshop, the experiences and lesson learned will provide a very good reference to all participants to apply in the implementation of fisheries resources management in Vietnam in the near future. I also note that our discussion on the issues of establishment of fisheries refugia will help in facilitating future collaboration with Cambodia, your neighboring country, which we could further expand more activities for this initiative with other relevant agency such as UNEP/GEF South China Sea Program through various regional programs initiated by SEAFDEC.

Ladies and Gentlemen,

May I again request your utmost concentration and commitments to make this training and workshop a success. Your active participation and contribution to this training and workshop will be most appreciated. I wish you all a successful workshop and I now welcome you all to the On-site Training and National Workshop on Capacity Building for the Establishment of Fisheries Refugia and Coastal Resources Management.

Thank you!

**The speech stated by Dr. Vu Van Trieu
On site training/ National Workshop
Phu Quoc, Kien Giang, Vietnam**

His Excellency Dr. Siri Ekmahai – Scretariat General
Dr. Magnus Torell – Senior Advisor for SIDA-SEAFDEC project

Distinguish Participants,

Under the cooperation mechanism among members, since 2005, SEAFDEC has started to carry out some activities within the “Strengthening Human resources for assisting to the implementation of Code of Conduct in the Region” project in Cambodia, Indonesia, Thailand and Vietnam that were sponsored by Sida.

Included in this support package, during 2005, SEAFDEC collaborate with Ministry of Fisheries of Vietnam to hold a national workshop in Hai Phong, aimed at strengthening coordination among projects, agencies in order to develop the common orientation for coastal resources management in Vietnam. The workshop also supported for the implementation of National Plan/ strategy of Strengthening Human Resources for Fisheries Management, focusing on identifying the implementing scope, necessary activities, work plan and selected sites to carry out support activities in Vietnam. This workshop selected 03 sites to be the demonstration pilots including Hai Phong, Quang Binh, Kien Giang.

In this connection, following up the National Workshop hold in Hai Phong, today, MOFI with the collaboration of Sida-SEAFDEC project organize the on site training/ national workshop on Strengthening Capacity for Refugia Establishment and Coastal Resources Management.

The workshop aims at the following objectives:

1. To carry out plan for further implementation of Refugia Establishment process in the combination with community – based management;
2. To consider the definition as well as brief design for Refugia Establishment;
3. To identify the conjunctions between Refugia and coastal resources management based on community
4. To define the demands and strengthening capacity activities including materials on building human resources supporting refugia establishment;
5. To design an outline on training and strengthening human resources package in refugia management as well as coastal resources community-based management in Vietnam;
6. To discuss the potential cooperation mechanism between Vietnam and Cambodia in establishing refugia implementation;
7. To define the follow-up activities under Sida-SEAFDEC project.

It is my hope that the attention of international, SEAFDEC specialists, internal experts and others participants of competent authorities, functional units of MOFI, the workshop would gain worthy comments, contributing to the Workshop’s objectives.

Sincere thanks.

AGENDA AND ARRANGEMENT OF THE TRAINING/WORKSHOP

Time	Activities	Person in Charge
First Day (14/6/2006)		
08:00-08:30	Registration	
08:30-09:00	Opening Remark	
09:00-09:30	Outputs of Project Support to MPA Network in Vietnam and Introduction	MPA Project
09:30-10:00	Training Activities on Conservation Management and ICZM in Vietnam	IUCN
10:00-10:30	Coffee break	
10:30-10:45	Master Plan on MPA Network in Vietnam	VAPEP
10:45-11:00	Development of the Network on Management of MPA	WWF
11:00-11:30	ICZM in Vietnam	
11:30-13:30	Lunch	
13:30-14:00	Coastal Resource Management in Kien Giang Province	Kien Giang Fisheries Department
14:00-14:30	Status of Anchovy Fishing in Phu Quoc	Kien Giang Fisheries Department
14:30-15:00	Seagrass, Mangrove, and Corel Reef in Phu Quoc	UNEP/GEF/South China Sea Project
15:00-15:30	Coffee break	
15:30-16:00	Management and Conservation Programme on Endangered Species and Commercially Important Species in Phu Quoc	Dr. Dao Manh Son
16:00-16:30	Answers and Questions	
Second Day (15/6/2006)		
08:30-09:00	Introduction of Fisheries Refugia	UNEP/GEF/SCS
09:00-09:30	Establishment of MPA in Phu Quoc and Proposed Activities for the Support	Kien Giang Fisheries Department
09:30-10:00	Plan for Establishment of Fisheries Refugia and Possible Collaborative Issues and Mechanism for Fisheries Refugia between Vietnam and Cambodia	Cambodia Department of Fisheries
10:00-10:30	Coffee Break	
10:30-11:30	Discussion on Cooperation with Cambodia on “Fisheries Refugia” Establishment	ICD
11:30-13:30	Lunch	
13:30-15:00	Continue to discuss on: - Plan and Procedure on Fisheries Refugia in Vietnam - Outline of the training package	

	HRD on Management of Fisheries Refugia - Proposed Activities for the Support to Establish MPA in Phu Quoc	
15:00-15:30	Coffee break	
15:15-16:30	Clarification of Next Step for SEAFDEC-Sida HRD Programme in Vietnam	
16:30	Conclusion and Closing	
Third Day (16/6/2006)		
08:30-17:00	Field Trip to see Seagrass, Mangrove and Coral Reefs and Demonstration Site of UNEP/GEF/SCS	

**Project Support to Marine Protected Area Network in Vietnam
by Mrs. Nguyen Giang Thu, MOFI-DANIDA MPA Project**

Support to MPA network in Vietnam Project



Support to Marine conservation in
Phu Quoc Island, Kien Giang
Province

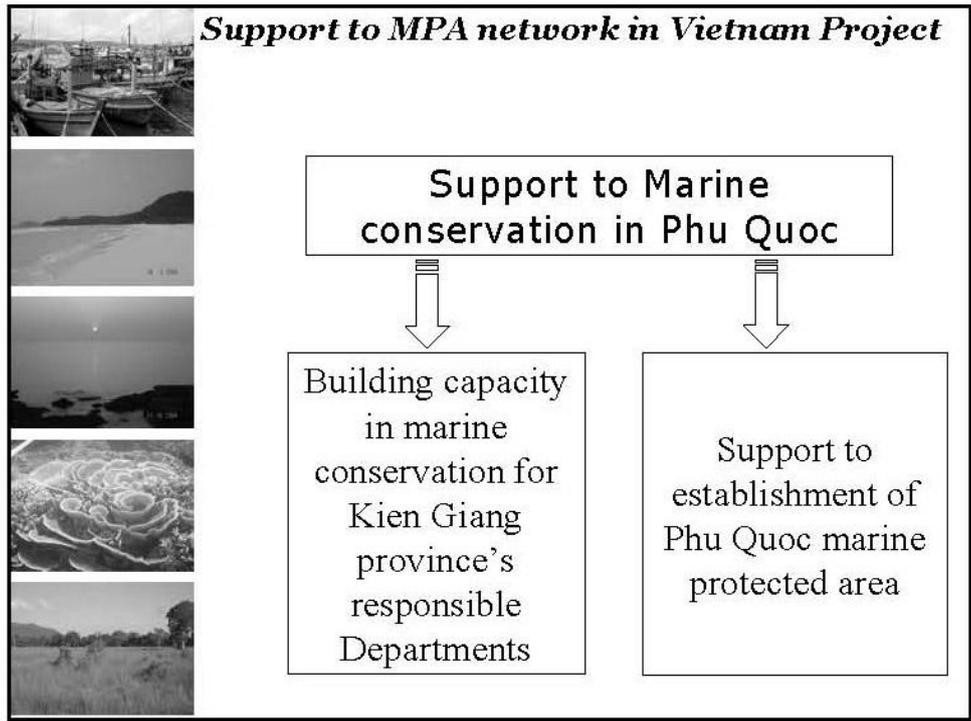
Presented by: Nguyen Giang Thu

Support to MPA network in Vietnam Project

Phu Quoc is ranked as one of the priority
site of the project



Supports have been provided to Phu
Quoc since 2004, right after the
project started



Support to MPA network in Vietnam Project

Building capacity in marine conservation for Kien Giang province's responsible Departments

The first training course on “An introduction to management of marine protected area”, held in Hanoi from 11 to 15 May 2004: Three participants from Phu Quoc joined the training

The participants of the workshop have been provided with concept of Marine protected area, why MPA, how MPA function, how to have effective MPA management and lessons learnt from Con Dao and Hon Mun



Support to MPA network in Vietnam Project

Building capacity in marine conservation for
Kien Giang province's responsible
Departments (*cont'd*)

Training on "Marine Protected area management", held in Hoi An, Quang Nam from 2 to 8 Nov. 2005: Two participants from Departments of Fishery and Phu Quoc People's Committee participated in.

Participants of the training course have been provided with policy and regulations on marine and wetland management, MPA management approaches including Community based management and enforcement, lessons learnt from Hon Mun; how to recognize different players in management of marine protected area etc.



Support to MPA network in Vietnam Project

Building capacity in marine conservation for
Kien Giang province's responsible
Departments (*cont'd*)

Training course on "MPA monitoring information system, held in Hanoi from 18 to 21 April, 2006: one participant from Kien Giang Department of Fishery of Kien Giang participated in.

During the training, participants were provided with knowledge relevant to how to select criteria for monitoring the environment and resources; and the application of software dedicated to managing MPA monitoring information

Support to MPA network in Vietnam Project

Building capacity in marine conservation for Kien Giang province's responsible Departments (*cont'd*)

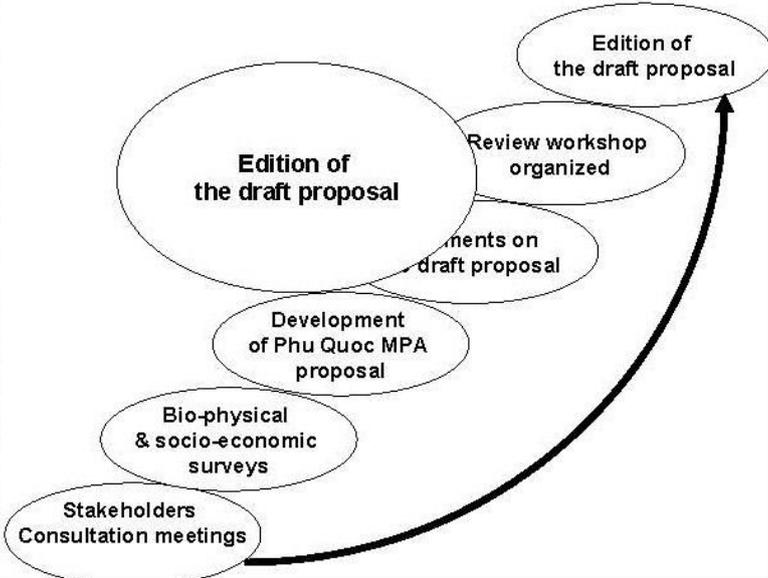




Study tour to MPA sites of Vietnam and other countries were organized for key leaders of Kien Giang province

Support to MPA network in Vietnam Project

Support to establishment of Phu Quoc MPA

Stakeholders Consultation meetings

Bio-physical & socio-economic surveys

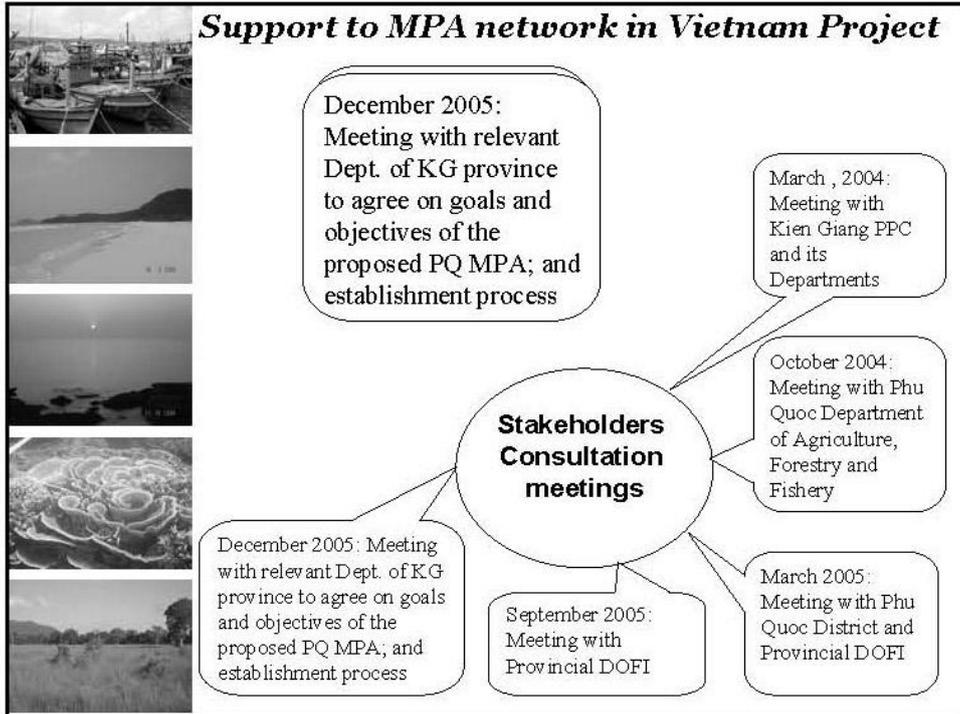
Development of Phu Quoc MPA proposal

Comments on draft proposal

Review workshop organized

Edition of the draft proposal

Edition of the draft proposal



Support to MPA network in Vietnam Project

Bio-physical & socio-economic surveys

Scuba diving surveys were undertaken in An Thoi area to study coral reef biodiversity and coral reefs' reliant species; Interview amongst fishing communities were conducted in Bai Thom, Hon Roi, An Thoi and Duong Dong

Marine biodiversity profile and socio-economic state of fishing community in the proposed MPA region were prepared

The results of the surveys serve as a critical input for developing Phu Quoc MPA proposal

Support to MPA network in Vietnam Project



Development
of Phu Quoc MPA
proposal

A steering committee at provincial level was set up; under this steering committee, a technical working group comprising of technical staff from several departments of Kien Giang province was established.

The MPA - technical working group of Kien Giang province worked closely together with staff and consultants of MPA project at national level to write the proposal for Phu Quoc MPA

Support to MPA network in Vietnam Project



Comments on
the draft proposal

The draft proposal was circulated amongst relevant stakeholders of Kien Giang province for getting comments

The first draft was revised basing on the comments collected from provincial stakeholders

Support to MPA network in Vietnam Project



**Review workshop
organized**

One technical review workshop was organized in March 2006 with the aim to discuss, get more comments on; and agree upon the proposal from wide range of stakeholders including management agencies, national MPA steering committee, research institutions at national level and management agencies at provincial level as well as local communities

Several issues that were brought to the workshop participants' attention were the livelihood of local people living inside and around the proposed MPA, the urgent need for effective management of the MPA and the mechanism for working together to protect the MPA

Support to MPA network in Vietnam Project



**Edition of
the draft proposal**

Basing on all comments drawn from the technical review workshop, the proposal for Phu Quoc MPA was edited by MPA project staff and consultant as well as the technical working group of Kien Giang province

For the time beings, the proposal is waiting for being approved by the Province and MOFI



Support to MPA network in Vietnam Project

Training need for Phu Quoc MPA

Training on development of project proposal for PQ MPA staffs so that they can write convincing proposals to get funding for their work and make use of availability of funding sources, e.g. funding from LMPA component

Training on project management, how to manage and get project activities implemented in an effective manner

Training on MPA management including management planning, zoning and enforcement etc.,

Training on communication skill: this technique needed for PQ MPA staffs to work with relevant stakeholders to raise public awareness and environmental education;



Support to MPA network in Vietnam Project

Basic reef check technique: it is important for PQ MPA staffs to monitor the effectiveness of their management

Scuba diving also needs to be trained for PQ MPA staff to do research, monitoring and evaluation of management effectiveness

Nature based tourism development: Apparently, PQ is a tourism site; the number of tourists to PQ has been increasing dramatically for the past years. In the future, it is anticipated that the volume of tourist come to visit PQ MPA will be increased and consequently, the needs for environmental sound tourism development is higher

Community based resource management: working together with local people and involve the active participation of local community in MPA management to manage marine resources is very critical in the context of Vietnamese fisheries, which is characterized by subsistent fisheries



Support to MPA network in Vietnam Project

Future support for PQ MPA under MOFI - DANIDA MPA component

MPA component will support sustainable livelihood for people living in and around PQ MPA. Funding is very contingent on proposals submitted by PQ MPA management board

Under capacity training programme of MOFI/DANIDA MPA component, staffs of PQ MPA will be offered to participate in trainings

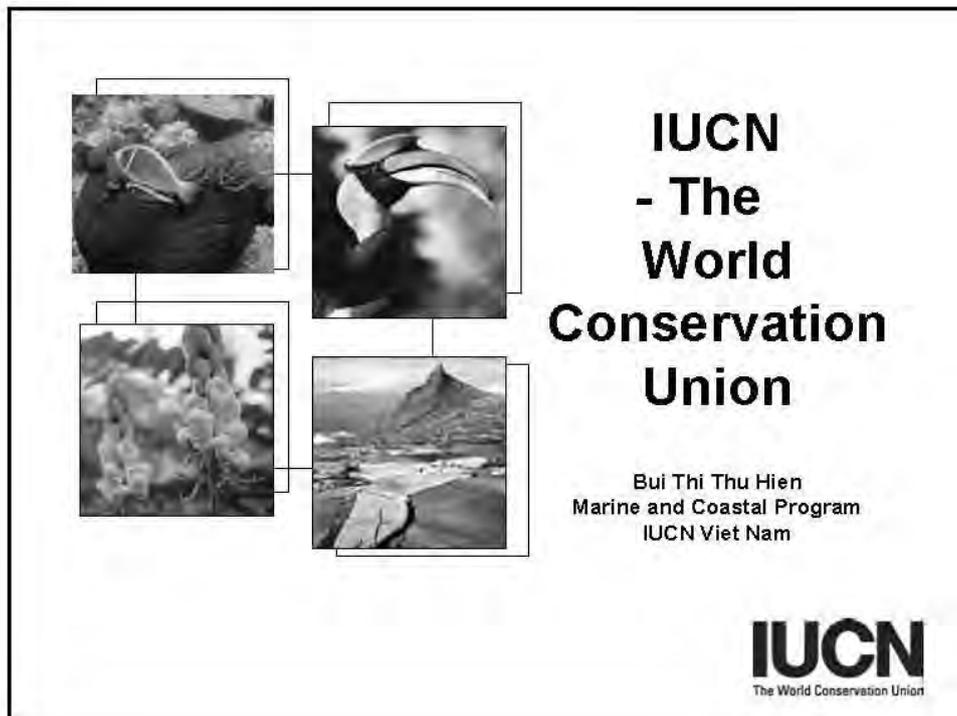


Support to MPA network in Vietnam Project

Support from outside needed for PQ MPA

1. Prepare management plan for PQ MPA and support for the implementation of the management plan (patrolling, enforcement etc.)
2. Set up a monitoring programme with the participation of local community and support the implementation of the programme
3. Development of regulation for managing PQ MPA
4. Environmental education programme to raise support from relevant stakeholders including tourism operators, local community
5. Community based resource management programme set up
6. Identification of Alternative Income Generation options for People living in and around PQ MPA
7. Development of zoning scheme for PQ MPA with special focus on tourism development including diving tourism

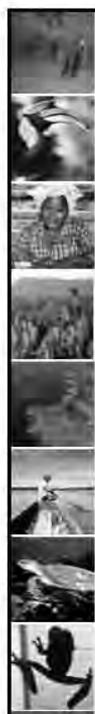
IUCN and Its Training Activities on MPA in Vietnam, IUCN-Vietnam



IUCN
- The
World
Conservation
Union

Bui Thi Thu Hien
Marine and Coastal Program
IUCN Viet Nam

IUCN
The World Conservation Union



Content

- Introduction of IUCN
- What is MPA?
- MPA categories (IUCN)
- MPA categories (Viet Nam)
- Zoning function
- Case study in Nha Trang (zoning and management plan)
- Incorporating MPAs into Integrated Coastal Zone Management

IUCN
The World Conservation Union



Who We Are

Created in 1948 - the world's oldest and largest global conservation body

1031 **members** (states, government agencies, NGOs, and affiliates) in more than 140 countries

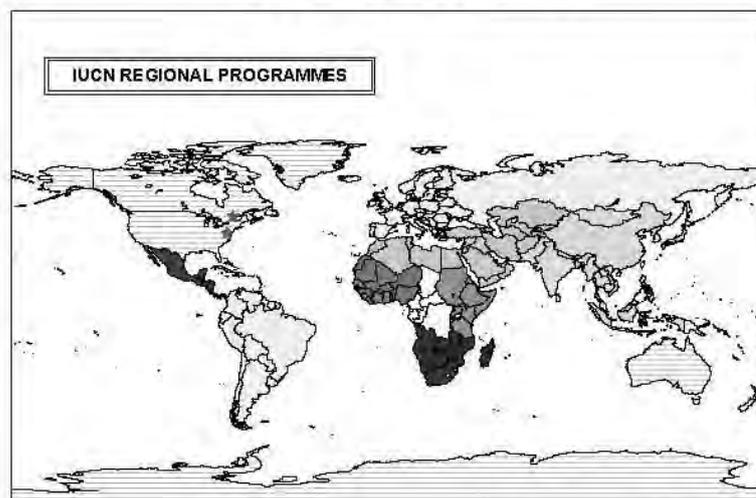
More than 10,000 scientists and experts from 181 countries in a unique worldwide network – IUCN's **Commissions**

The **Secretariat** is headquartered in Switzerland, with more than 40 offices around the world

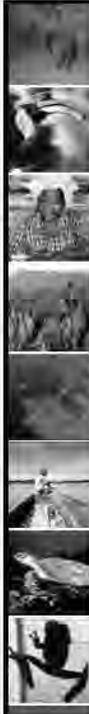
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Where We Are



IUCN
The World Conservation Union



IUCN's experiences

- IUCN is the leading institution on many issues related to biodiversity conservation and particularly on protected area issues.
- Through its Programme on Protected Areas and the World Commission on Protected Areas (WCPA), IUCN has been at the forefront of global efforts for the establishment and management of a world-wide representative network of terrestrial and marine protected areas.

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The World Conservation Union



IUCN's experiences

- During the last 20 years IUCN has been promoting new concepts and innovative ideas on protected areas issues including a global system for protected areas management categories, the concept and practice of co-management, the notion of system planning and the need to plan and manage protected areas as part of the broader landscapes.
- All these concepts are based on best-practice experiences in protected area management worldwide, which are compiled and evaluated through the WCPA Network.

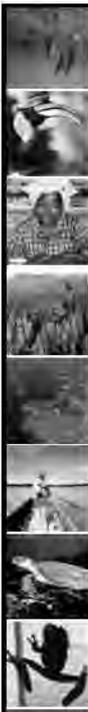
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What is MPA?

- Marine Protected Area (MPA)
“Any area of the intertidal or subtidal terrain, together with its overlaying water and associated flora and fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.” (IUCN 1988)

IUCN
The World Conservation Union



MPA Categories (IUCN)

- I. Strict Nature Reserve/Wildness Area
- Ia. Strict Nature Reserve Area (mainly for scientific research)
- Ib. Wildness Area (mainly for wildlife resources conservation)
- II. Marine Park: to protect eco-systems but it can be used for entertainment, resort and tourism
- III. Marine Natural Monument: to protect some components of marine nature and culture that are valuable

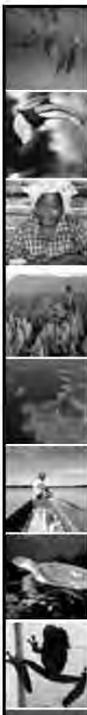
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MPA Categories (con't)

- IV. Marine Habitat/Species Management Area: to protect environment in special habitats of valuable marine organisms
- V. Marine Landscape Protected Area: to protect Marine natural landscapes, that have high value on aesthetic aspect, for entertainment, resort and tourism
- VI. Managed Marine Resource Protected Area: to conserve natural resources by management measures.

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MPA categories (Viet Nam)

- National Marine Park
- Species Conservation (wildlife sanctuary)
- Natural marine resources protection



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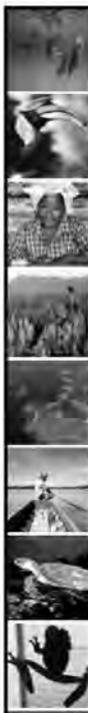
Zoning function

- Core/sanctuary
- Habitat restoration areas
- Development areas



Hon Mun MPA

IUCN
The World Conservation Union



Zoning in Nha Trang Bay MPA

- Core zone/sanctuary/no take zone
- Habitat Protection/Rehabilitation Zone
- Buffer zones
 - Recreation sub-zones
 - Aquaculture sub-zones
 - Buffer Sub-zones
- General Use Zone



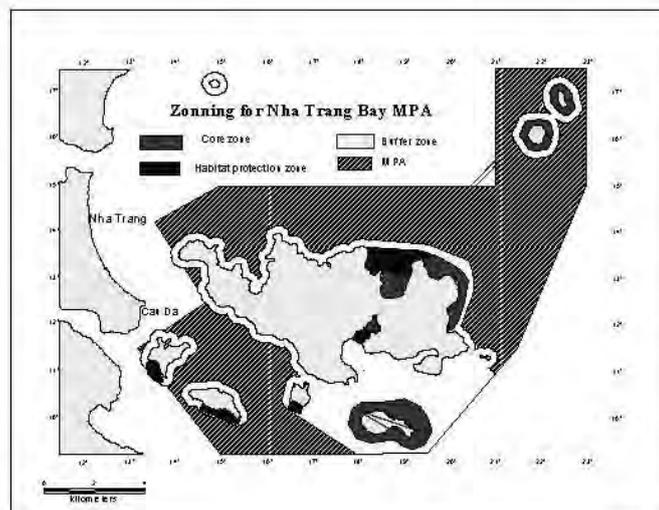
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Zoning in Nha Trang Bay MPA (Con't)

- **Don't** use dynamite, electricity, cyanide, chemicals or trawling nets for fishing
- **Don't** anchor on, damage, or take corals
- **Don't** collect or buy corals, turtles and other protected marine life
- **Don't** throw rubbish, oils or chemicals into water

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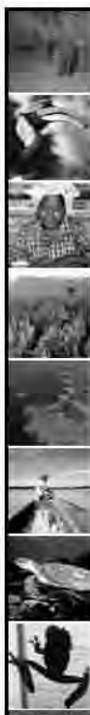
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Management Plan of Nha Trang Bay MPA

- Introduction to Nha Trang Bay and Plan of Management
- Description of the resources of Nha Trang Bay
- Threats and challenges in managing Nha Trang Bay
- Plan of zoning for Nha Trang Bay Marine Protected Area
- Plan of Management of Nha Trang Bay Marine Protected Area.

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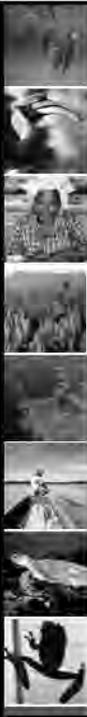


Management Plan of Nha Trang Bay MPA (con't)

- Implementation of Zoning Plan
- Patrolling and Enforcement Plan
- Mooring Buoy Plan
- Research and Monitoring



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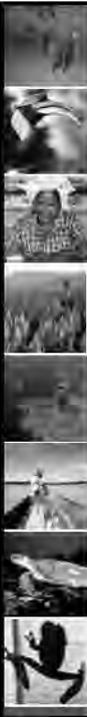


Management Plan for Nha trang Bay MPA

Comprehensive Action Plan was developed to complement the Zoning System with 21 specific actions and 35 detailed activities focusing on eight broad themes:

- Community development and gender issues
- Education and awareness
- Capacity building
- Enforcement of laws and regulations
- The system of mooring buoys
- Research and monitoring
- Sustainable financing strategies
- Inter-sectoral coordination

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Viet Nam's situation

- The Government of Vietnam's Ministry of Fisheries formally set a target to establish 15 MPAs by 2010
- The development of an ICM framework is a high priority in Vietnam at the national and local levels.
- A representative system of MPAs is an important step towards the conservation of marine biodiversity in Vietnam

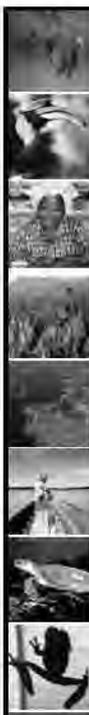
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The Role of MPA in Coastal Zone Management

- Most impacts within the MPA are from human activities *outside* the boundaries of the MPA, e.g., land-based activities, agriculture, urban development, aquaculture, tourism, and port development and maintenance (dredging and dredged material disposal).
- MPAs can not be managed effectively in isolation from their surroundings in the coastal zone

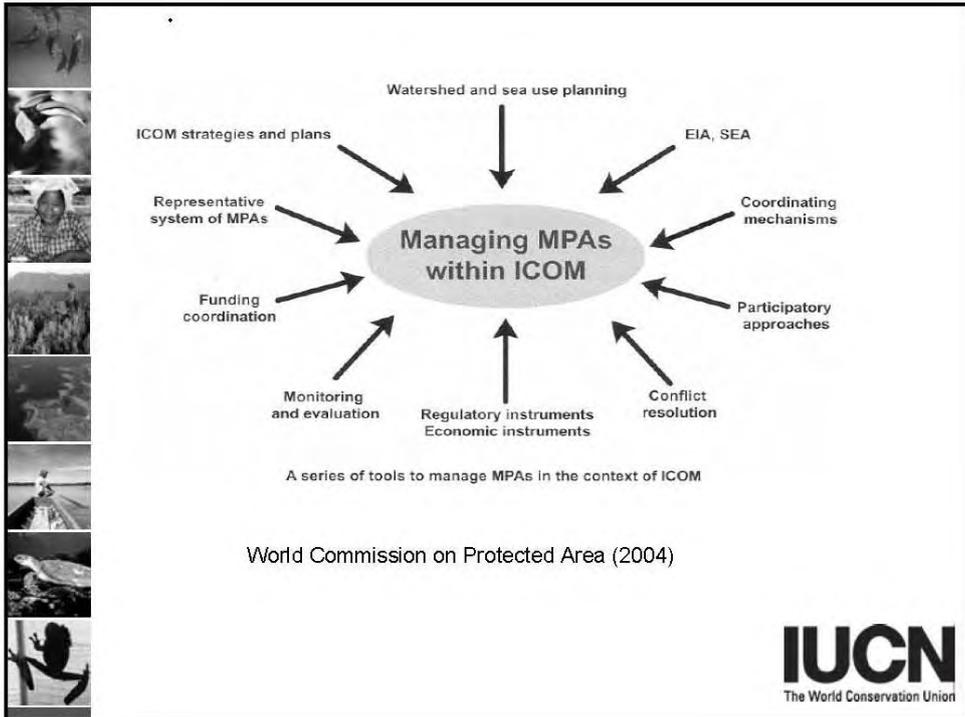
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Incorporating MPAs into Integrated Coastal Zone Management

- Strengthening of the ecological and socio-economic linkages between MPAs and the wider coastal and marine area
- The development of governance arrangements to incorporate MPAs into broader framework of ICM; and
- Fostering implementation of MPAs through enhanced policy and management tools

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Overview of Fisheries Resources and Marine Eco-system in Vietnam Based on Indicators, Research Institute for Marine Fisheries

Tæng quan nguån lîi h¶i s¶n vµ hÖ sinh th, i biÖn ViÖt Nam dựa trên các chỉ số

Ecosystem and resources profile based on indicators

Dang Van Thi

Research institute for marine fisheries

170 Le lai, Hai phong

Email: Dangthi@hn.vnn.vn

- Tæng quan nguån lîi vµ hÖ sinh th, i lµ g×?

*B¶n m« t¶ thµc tr¹ng, khuynh h-íng thay ®æi cña
nguån lîi vµ hÖ sinh th, i th«ng qua c, c chØ sè
nguån lîi vµ hÖ sinh th, i*

Môc Ých

- Khi qu,t thuc tr'ng vµ sù thay @æi b^an trong hỒ sinh th_j vµ nguån lĩi h¶i s¶n mµ nã cũ thÓ lµm c"n cø cho viÖc ra quyÖt @¶nh li^an quan @Ön qu¶n lý nghÒ c₃. Nh- vËy tæng quan nuy sĩ chuyón sè liÖu th¶nh th«ng tin.

Tæng quan sĩ:

- ✓ C« @ång sè liÖu hiÖn cũ @Ó cũ c₃ nh×n kh_j qu,t
- ✓ Cung cËp th«ng tin vÒ nh-ng tÝnh chËt chÝnh cũa hỒ sinh th_j vµ nguån lĩi
- ✓ Cung cËp th«ng tin vÒ hiÖn tr'ng cũa hỒ sinh th_j vµ nguån lĩi
- ✓ Cung cËp th«ng tin vÒ sù ph,t trión/khuynh h-ing hiÖn tr'ng cũa hỒ sinh th_j vµ nguån lĩi
- ✓ Cĩng vĩi th«ng tin tã tæng quan nghÒ c₃ cung cËp th«ng tin vÒ ,p lúc l¶n hỒ sinh th_j vµ nguån lĩi

C₃ch tiÕp cËn

- Tæng quan ®-íc x@y dùng trªn c- sè c₃c chØ sè ph¶¶n nh c¶¶ c₃c khÝa c'ch riªng cña hÖ thng nh-:

- ✓ Tæng ®µn c₃ riªng biÕt (single stock)
- ✓ Phøc hÖ ®a loµi (multispecies stock complex)
- ✓ M«i tr-êng sng, n-i sinh sng (habitat)
- ✓ Chøc n'ng hÖ sinh th₃i (ecosystem functioning)

Vµ p lùc, tr'ng th₃i cña hÖ sinh th₃i vµ nguån lîi

- ViÖc ®₃ nh gi₃ c₃c chØ sè ®Ó ®-a ra c₃c kÕt luËn vÒ thüc tr'ng vµ sù ph,t triÓn cña hÖ sinh th₃i vµ nguån lîi ph¶¶i ðua trªn khuynh h-íng biÕn ®æi theo thêi gian vµ ®₃ nh gi₃ ®ång thêi nhiÒu khuynh h-íng cña nhiÒu chØ sè

C₃c chØ sè trong tæng quan nguån lîi vµ hÖ sinh th₃i

µn c₃ ®-n lî (single stock species):

p lùc (Pressure):

- ✓ Tæng c-êng lùc khai th₃c (Total efforts)
- ✓ Tæng s¶¶n l-íng khai th₃c cña loµi (Total catch)
- ✓ ChiÒu dµi trung b×nh c₃ khai th₃c (Mean length)
- ✓ L_m (Length at first mature)

HiÖn tr'ng (State)

- (sè liÒu tã c₃c chuyÕn ®iÒu tra):
(Data from surveys)
- ✓ N'ng suËt ®₃ nh b¾t (CPUE)
(Mean CPUE)
 - ✓ Tr- l-íng (biomass)
 - ✓ S¶¶n l-íng (Production)
 - ✓ ChiÒu dµi trung b×nh (Mean length)
 - ✓ L_m (Length at first mature)

Phức hÖ ®a loai Multispecies stock complex

Áp lực (Pressure):

- ✓ Tæng c-êng lúc khai th_c
(Total effort)
- ✓ Tæng s¶n l-êng khai th_c
chung
(Total catch)
- ✓ S¶n l-êng khai th_c theo c_c
nhãm sinh th_j
(Total catch by ecological group)

HiÖn tr'ng(State):

- ✓ N'ng suÊt ®_nh b¾t (CPUE)
(Mean CPUE)
- ✓ Tr- l-êng chung
(Biomass)
- ✓ N'ng suÊt ®_nh b¾t theo c_c
nhãm sinh th_j
(CPUE by ecological group)
- ✓ Tr- l-êng theo c_c nhãm
sinh th_j
(Biomass by ecological group)



N-i sinh cư Habitat

Áp lực (Pressure):

- ✓ Tæng c-êng lúc khai th_c cña
c_c tÇu l-i kÐo ®_y
(Dragged gear effort)
- ✓ M¸c ®é ®_nh b¾t b»ng c_c
ph-¬ng ph_p huû diÖt
(Extent of and development in
destructive fishing)
- ✓ Sù suy gi¶m vÒ diÖn tÝch
nh-ng khu vùc sèng nhËy c¶m
(decline in sensitive areas)

HiÖn tr'ng:

- ✓ C_c khu vùc sinh sèng cña
c_c nguån líi h¶i s¶n
(Areas of sensitive habitat areas –
possible for coastal habitats?)



Chức năng hệ sinh thái Ecosystem functioning

Áp lực (Pressure):

- ✓ Tăng cường lực khai thác trong khu vực (total fishing effort in area)
- ✓ Tăng trữ lượng bắt khai thác trong khu vực (Total catch of all species in area)
- ✓ Sự biến động về số lượng cá thể nhạy cảm của các loài nhạy cảm (changes in abundance of sensitive species)

Hiện trạng (State):

- ✓ Cấu trúc dinh dưỡng: (Trophic structure)
 - Mức dinh dưỡng trung bình (Mean trophic level in system)
 - Số lượng cá thể của các loài săn mồi đỉnh (Abundance of top predators)
- ✓ Chỉ số đa dạng sinh học (Biodiversity indices)



Loại nhạy cảm và nhóm sinh thái

• Loại nhạy cảm (Sensitive species):

Lưu ý: những loài cá có sinh sản thấp, tốc độ sinh trưởng chậm, tuổi thọ cao (species with low reproduction, slow growth, high L_m)

• Nhóm sinh thái (Ecological group):

Kết hợp các đặc điểm sinh sống (habitat) và vị trí trong chuỗi dinh dưỡng (trophic status) (Combine habitat and trophic status)

Ví dụ: - Demersal carnivore, demersal omnivore...



HiÖn tr'ng x©y dùng c, c chØ sè

Nhãm chØ sè	ChØ sè	T×nh tr'ng	Ghi chó
Loi ㄌㄞˊ	<ul style="list-style-type: none"> - N'ng suÊt ㄌㄞˊ, nh b%t - Tr+ l-íng - S'jín l-íng - ChiÖu dui trung b×nh - Lm - Tæng c-êng lúc khai th, c - S'jín l-íng khai th, c 	<ul style="list-style-type: none"> -OK - OK - OK - OK - OK - ThiÖu - ThiÖu 	<ul style="list-style-type: none"> -CPUE trung b×nh, SE, giíi h'n - Tr+ l-íng trung b×nh theo 3 c, ch tÝnh, theo d'j ㄌㄞˊ s« vµ toµn v'ng - Theo v'ng - Theo v'ng - Theo v'ng - ThiÖu sè liÖu tÇu thuyÖn, BAC vµ thµnh phÇn loi trong c, c nhãm th-íng phÊm - ThiÖu sè liÖu tÇu thuyÖn vµ BAC
Phoc hÖ ㄆㄨㄛˊ	<ul style="list-style-type: none"> -N'ng suÊt ㄆㄨㄛˊ, nh b%t -Tr+ l-íng -N'ng suÊt ㄆㄨㄛˊ theo nhãm sinh th, j -Tr+ l-íng theo c, c nhãm sinh th, j - S'jín l-íng khai th, c theo c, c nhãm sinh th, j - Tæng c-êng lúc khai th, c 	<ul style="list-style-type: none"> -OK -OK -OK -OK - ThiÖu -ThiÖu 	<ul style="list-style-type: none"> -Trung b×nh, SE, giíi h'n, theo d'j ㄆㄨㄛˊ s©u vµ toµn v'ng - Trung b×nh, S, giíi h'n theo d'j ㄆㄨㄛˊ s©u vµ toµn v'ng - ThiÖu sè liÖu tÇu thuyÖn, BAC vµ thµnh phÇn loi trong c, c nhãm th-íng phÊm

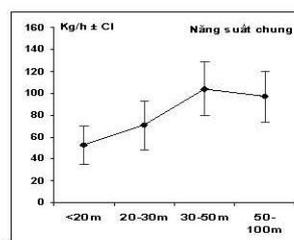
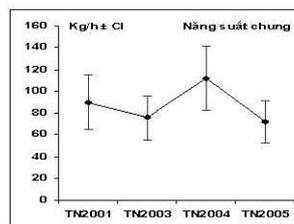
HiÖn tr'ng x©y dùng c, c chØ sè

Nhãm chØ sè	ChØ sè	T×nh tr'ng	Ghi chó
HÖ sinh th, j	<ul style="list-style-type: none"> -N'ng suÊt ㄆㄨㄛˊ, nh b%t của c, c loi lua chán - Tæng c-êng lúc khai th, c trong khu vuc -Tæng tr+ l-íng bP khai th, c - Møc dinh d-íng trung b×nh - N'ng suÊt ㄆㄨㄛˊ của c, c loi d+ hµng ㄆㄨㄛˊ - ChØ sè ㄆㄨㄛˊ d'ng sinh hãc 	<ul style="list-style-type: none"> - OK -ThiÖu - ThiÖu -OK -OK --OK 	<ul style="list-style-type: none"> - CÇn c©n nh%c lua chon c, c loi trong danh s, ch nµy

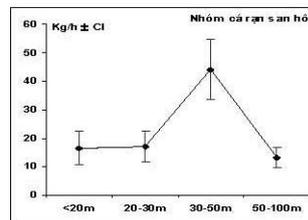
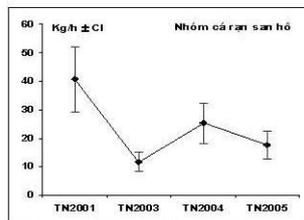
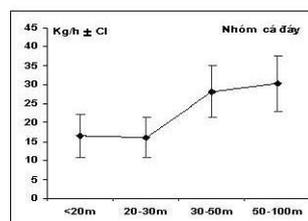
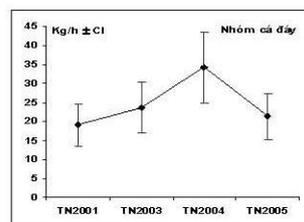
Thý dõ vò c, c chø sè

1. Biõn ðéng n'ng suýt ðnh b'át chung (kg/h) nguån líi c, ðnh ð-íc b'ng l-i kÐo ðy é VPnh B'ác Bé, theo c,c d'ñl ðé sÐu vù c,c chuyõn ðiõu tra (change in abundance of the trawlable resources in the Gulf of Tonkin, by depth strata and surveys)

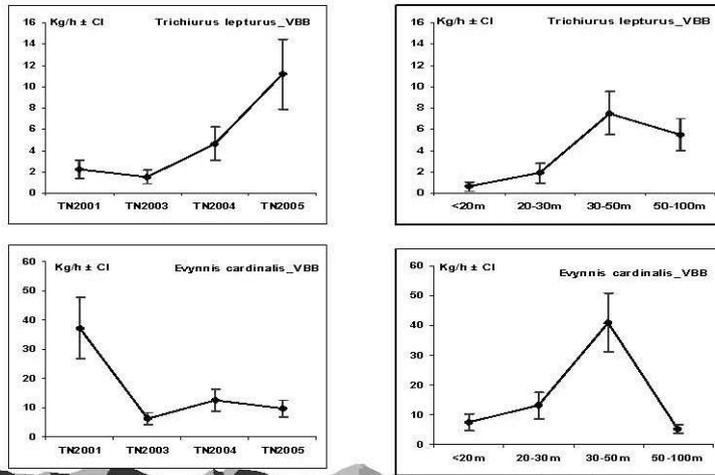
Chuyõn ðiõu tra	<20m	20-30m	30-50m	50-100m	Toan vùng
TN2001	59.1	73.8	119.4	81.5	89.8
TN2003	32.7	72.8	57.8	118.2	75.6
TN2004	88.4	65.3	178.1	114.1	111.7
TN2005	36.1	68.7	93.4	75.5	71.9
Trung bình	52.9	70.7	104	97	86.8



2. Biõn ðéng n'ng suýt ðnh b'át cña nhãm c, ðy vù c, r'ñn san h' theo c,c chuyõn ðiõu tra vù d'ñl ðé sÐu, VPnh B'ác Bé (Ecological groups)



3. Biến động năng suất thu hoạch của các loại lúa chân (single stock species) theo các chuyến khảo sát vùng thí nghiệm



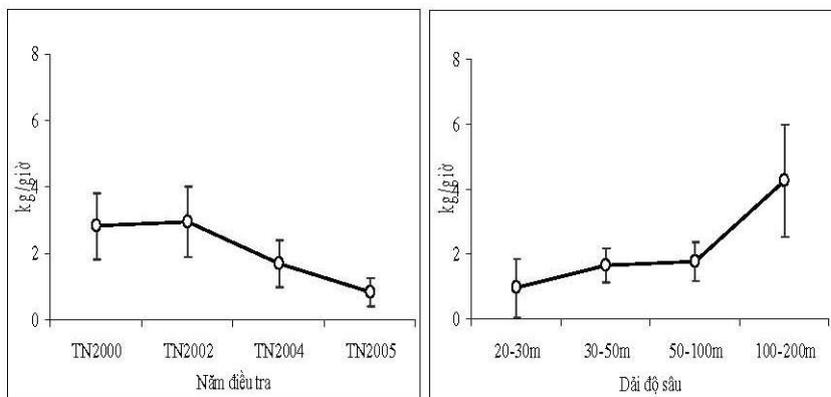
4. Sử dụng chỉ số trung bình so với L50

Chỉ số trung bình của hệ (Trichiurus lepturus) qua các chuyến khảo sát vùng thí nghiệm, VBB

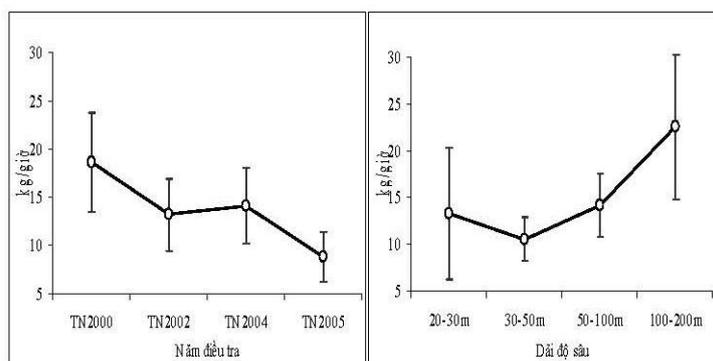
Chuyến điều tra	<20m	20-30m	30-50m	50-100m	Toàn vùng
TN 2001	46.3	45.8	52.8	67.9	61.2
TN 2003	35.7	51.4	54.8	54.7	54.6
TN 2004	49.2	48.6	55.1	51.3	54.4
TN 2005	47.9	52.3	51.9	54.9	52.4

L50 = 58,8 cm

5. Biến động nồng độ Hg^{2+} trong bivalve của nhóm loài nhạy cảm (sensitive species) theo các chuyến khảo tra vụ dũi ở Sầu, SNB



6. Biến động nồng độ Hg^{2+} trong bivalve trung bình của nhóm loài cá béc dinh dưỡng cao (Top predators) theo các chuyến khảo tra vụ dũi ở Sầu, SNB



7. Sự thay đổi chỉ số trophic trung bình theo thời gian
Change in mean trophic level by depth strata and surveys

Chuyến điều tra	Đãi độ sâu				Toàn vùng
	20-30m	30-50m	50-100m	100-200m	
TN2000	3,63	3,32	3,62	3,22	3,37
TN2002	3,50	3,41	3,58	3,73	3,58
TN2004	3,62	3,45	3,55	3,63	3,58
TN2005	3,41	3,37	3,38	3,73	3,53

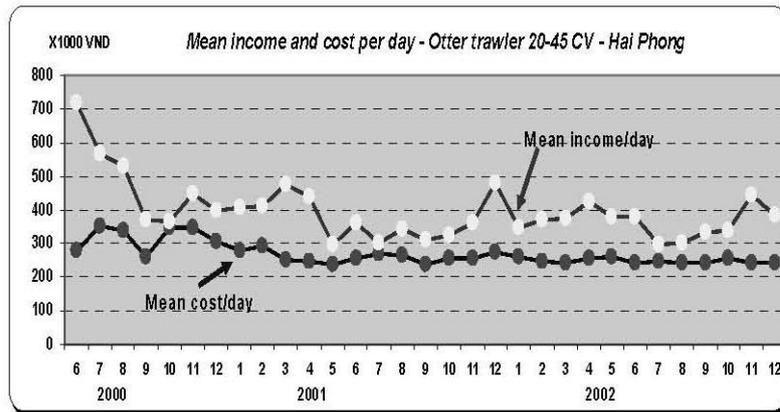
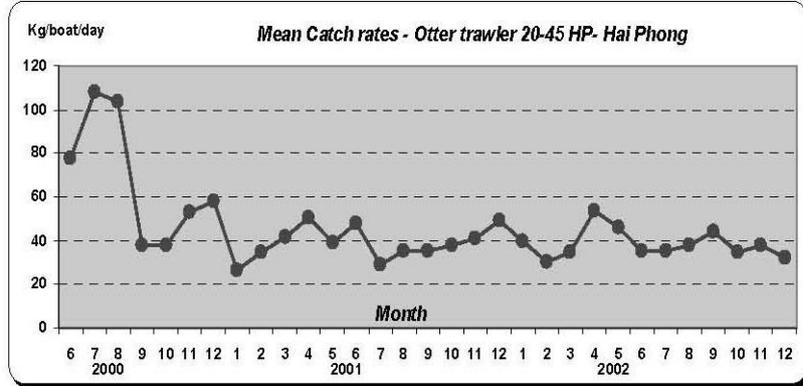


8. Chỉ số đa dạng sinh học (Shannon & Weiner), DNB
Biodiversity indices

Chuyến điều tra	Đãi độ sâu				Toàn vùng
	20-30m	30-50m	50-100m	100-200m	
TN2000	3,21	3,67	3,44	1,30	3,10
TN2002	2,98	3,96	3,72	3,67	4,15
TN2004	3,07	3,97	3,79	3,54	4,32
TN2005	3,40	3,70	3,58	3,14	4,03



10. Mét sè chØ sè cho c₂c ®éi tÇu khai th₂c



Đề xuất

- Tăng cường công tác thống kê chuyên ngành nghề khai thác cá biển định hướng vào việc đánh giá nguồn lợi và nghề cá hàng năm
- Đưa công tác điều tra đánh giá nguồn lợi hải sản và hệ sinh thái thành công tác thường niên
- Tăng cường công tác đào tạo đội ngũ cán bộ làm công tác trên
- Tăng cường hợp tác nghiên cứu giữa các Viện, Cục, Trường và các Sở thủy sản ven biển trong công tác nghiên cứu nhằm đưa ra những tư vấn tốt nhất cho Bộ



Xin trân trọng cảm ơn !



▪ QLTHVB tở 1970, chÝnh
thợc 2002
ViÕt Nam: KHCN 06-07



■ B¶n chÊt QLTHVB:
nhìn nhËn hÕ thờng,
ph¸t triÓn khu«n khæ
qu¶n lý liªn ngµnh

Nhu cÇu QLTHVB & NghÒ c,



Large seas, long coast and many inshore
islands

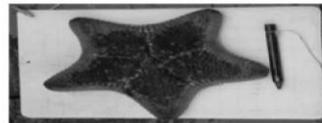
ICM Need

- Population in 2004:
over 80 mill. persons
- 29 coastal provinces,
125 coastal districts

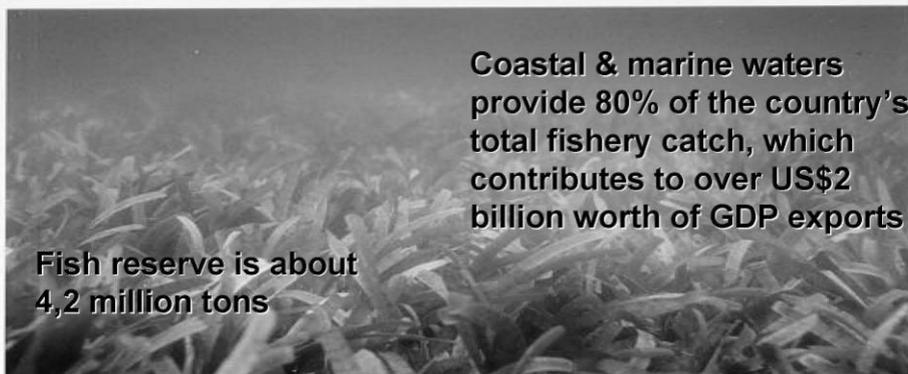


Some 50% of major cities
is in coastal areas with 40%
total population.

Rich in biodiversity



- Coastal and marine habitats/ecosystems
- About 11.000 species are recorded, among 2.038
species of marine fish.



Fish reserve is about
4,2 million tons

Coastal & marine waters
provide 80% of the country's
total fishery catch, which
contributes to over US\$2
billion worth of GDP exports

Coastal Sustainable Fisheries in Viet Nam

- Aquaculture and small-scale fisheries play the essential role in coastal development activities in Viet Nam,
- Its sustainability almost depends upon maintaining coastal marine ecosystems
- Interconnectivity of the coastal systems (including socio-economic system) and of the coastal ecosystems is key factors in coastal sustainability
- A strong and sustainable fisheries sector is a highest priority of Viet Nam in the next ten years.



Coastal Sustainable Fisheries...

- Almost impacts (70%) on coastal ecosystem and aquaculture/ fisheries originates from outside more than inside them, even from coastal watersheds
- Coastal area is to be interactive of all processes, so coastal aquaculture operation also causes negatively impacts to other sectors.

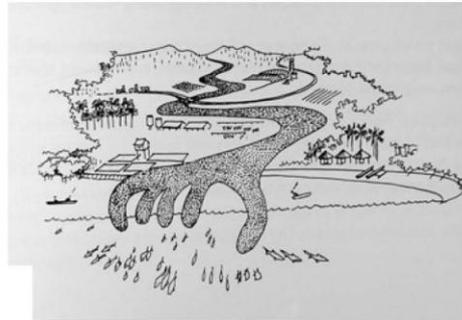


Challenges

- Loss of biodiversity
- Degradation of marine ecosystems, coastal habitat destruction



Land-based impacts



Coastal disasters and oil spills



Coastal and marine pollution
and red tide



Overfishing and overcapacity
of coastal aquaculture

Multi-use of coastal
recources.

Traditionally sectoral policies and managment

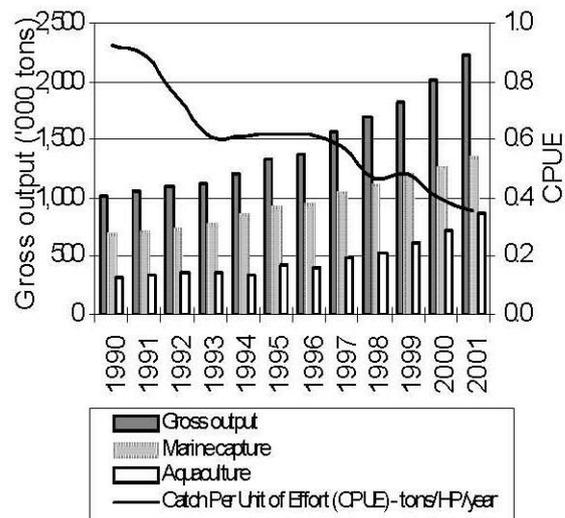


Threats

- Catch-per-unit-effort (CPUE) decreased sharply during the same period
- Extensive and growing use of destructive fishing methods have caused reduction of marine fish resources



Key Fisheries Trend in Viet Nam in years 1990-2001



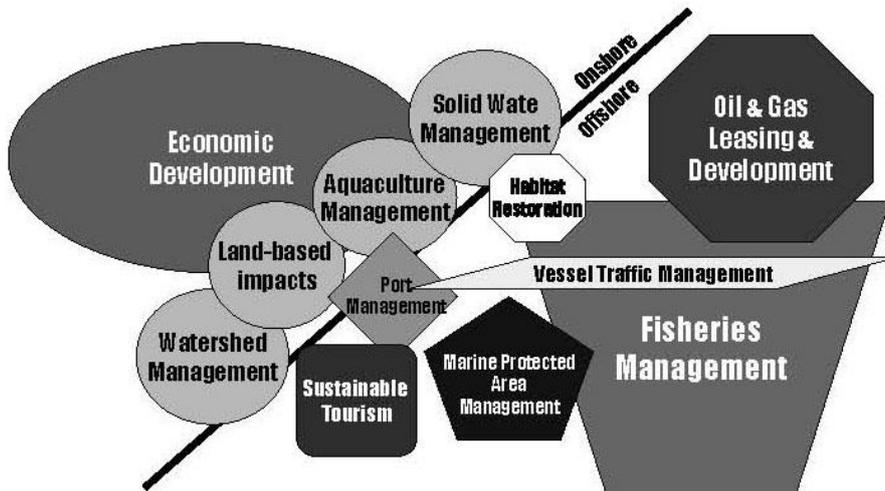
Source: Ministry of Fisheries, 2002

ThÓ chÕ chÝnh s, ch qu¶n lý vÞng bê c¶n nhiÒu bÊt cËp

- Kh«ng cã c¶ quan ®ñ m'nh ®Ó QLTHVB
- C¶ cÊu d©n c- t'p ngu¶n
- D©n trÝ thÊp, ph thuéc nhiÒu vµo tù nhiªn
- NghÒ ®i vµ chªnh lch trong ph, t trin
- D©n bit, d©n b¶n, d©n lµm, d©n kim tra ch-a th-c isù ®i vuo



Integrated Coastal Management (Activities)



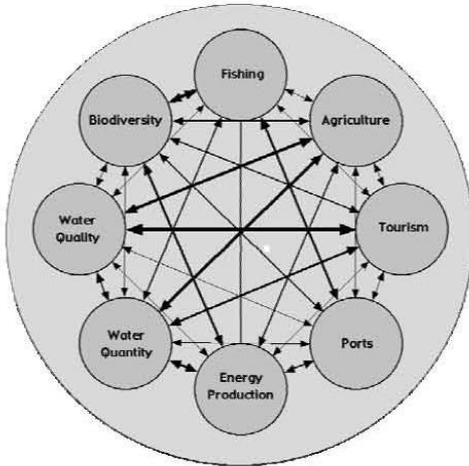
Integrated Management

- Economic Sectors, e.g., energy, transportation, nature conservation
- Space, including coasts, watersheds, oceans, & airsheds
- Institutional arrangements, both “horizontally” and “vertically,” public & private
- Disciplines, e.g., law, economics, geography, marine science
- Functions of Management, including planning, implementation, monitoring, evaluation, research, financing
- Management Incentives, e.g., regulation, economic incentives, moral suasion

ICM Principles

- “Sustainability” should be the centerpiece of coastal management
- Protection of coastal ecosystems should be a prerequisite and priority
- Watershed management should be linked to coastal management
- Include fisheries management and MPA management in ICM
- Wider use of spatial planning and marine zoning to resolve conflicts
- Plans and actions should be enforceable and accountable

Multiple Use Issues and Conflicts



- To solve benefit conflicts between coastal fisheries and aquaculture development and others in context of such multi-use and sectoral management, require effective management of the ecosystems and involve contributions of all stakeholders to one aquaculture/fisheries issue in a coordinated way

Efforts for ICM & Fisheries Management in Viet Nam

- Enacted important Laws on: Environmental Protection, Mines, Lands, Oil and Gas, Water Resources, Fisheries, Navigation...
- An institutional framework of environmental management from central to local level was established (1993) and more and more improved, including coastal areas
- Signed to participate in a number of International Conventions relating to coastal marine resource and environmental management
- Many research and investigative activities in seas and coastal areas have been undertaken



ICM & Fisheries management Supportive Tools

- National system on marine environmental monitoring and at some coastal provinces were established and conducted (1995)
- EIA tool has been applied for all separed development projects in the coastal areas, but not SEA.



ICM Projects

- First ICM project conducted by Vietnamese scientists during 1996-2000 years under the Gov. support as a national project on "Study in developing an ICM plan in Viet Nam" (code KHCV 06-07)
- Viet Nam - Netherlands: Nam Dinh (northern deltaic coastal area), Thua Thien-Hue (central lagoonal coastal area) and Ba Ria-vung Tau (southern estuarine coastal area), focusing local level plan
- Viet Nam - WB/ADB in poverty reduction for coastal communities (in some case studies in Central).
- Viet Nam - WorldFish Center sub-regional programme on facilitating ICM for Viet Nam, focusing development of Training Manual on ICM for Viet Nam at local level, TOT courses and ICM training networking
- Viet Nam - UNDP/IMO/GEF regional programme on ICM in Da Nang case study (central), focusing on coastal pollution management from land-based sources.

ICM Projects (cont.)

- NOAA/IUCN/MoFi project on Building Capacity on ICM in Tonkin Gulf, foci: ICM planning, linking MPA to ICM, ecosystem-based aquaculture management, sustainable tourism, institutional & policy and decision-making process for ICM, habitat mapping using SCUBA diving and GIS...



Initiative Efforts in Fisheries Management

- A national system of 15 MPAs is established to create “spillover effect”
- The proposed MPAs will protect both nearshore and offshore island habitats and would amount to a total of \approx 10% of the EEZ.



37



Policy & Institutional Landmarks

- The Law of Fisheries enacted by Gov. in 2004 and MPA Decree.
- A MPA establishment and management regulation was also drafted, including decentralized administration down to local level; MoFi only manage directly MPAs having tranboundary and interprovincial sites.
- A National Steering Committee of MPAs was established with intersectral coordination mechanism and a chairman is Vice-Minister of Fisheries.

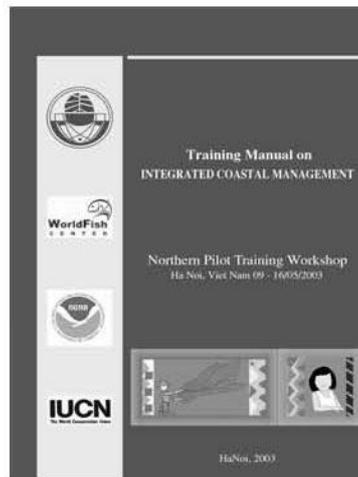
Landmarks... Steering Committee on SD for fisheries sector



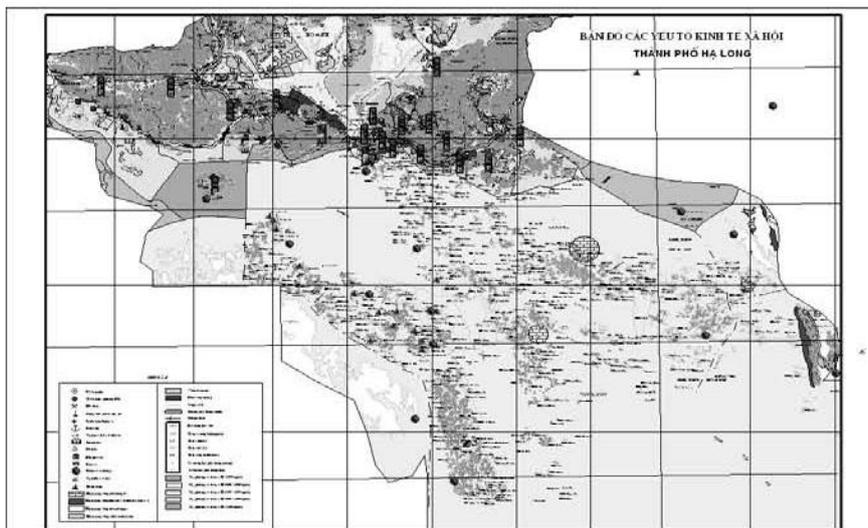
- Some pilot sites of ICM & MPAs in Nha Trang bay and Cu Lao Cham, Cat Ba, Ha Long bay, Nam Dinh, Thua Thien-Hue, Vung Tau, Da Nang were and will provide different models of management with local community-based aspect.

Các sản phẩm cốt lõi

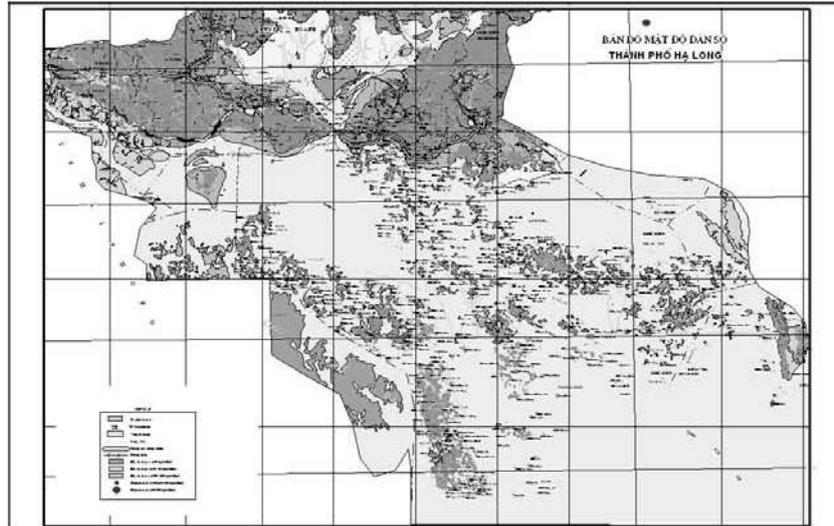
- Các tài liệu, báo cáo và phương pháp luận
- Atlas vùng biển Việt Nam, hải sản vùng biển và phân vùng chức năng...
- Khu vực hành lang QLTHVB Việt Nam
- Các kế hoạch/phương án QLTHVB ở các điểm trọng điểm
- Cẩm nang quản lý QLTHVB cho cấp tỉnh
- Quản lý nguồn nhân lực và môi trường biển QLTHVB
- Trang thiết bị, phần mềm và các công cụ cần thiết tối thiểu



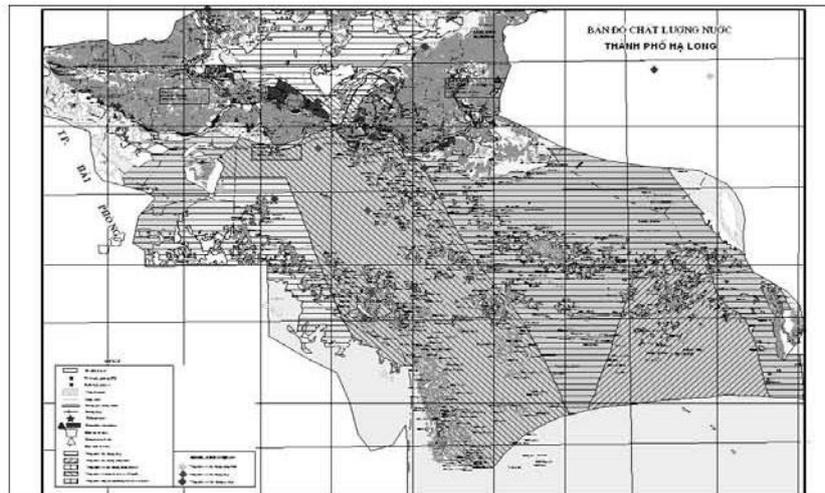
Socio-economic map



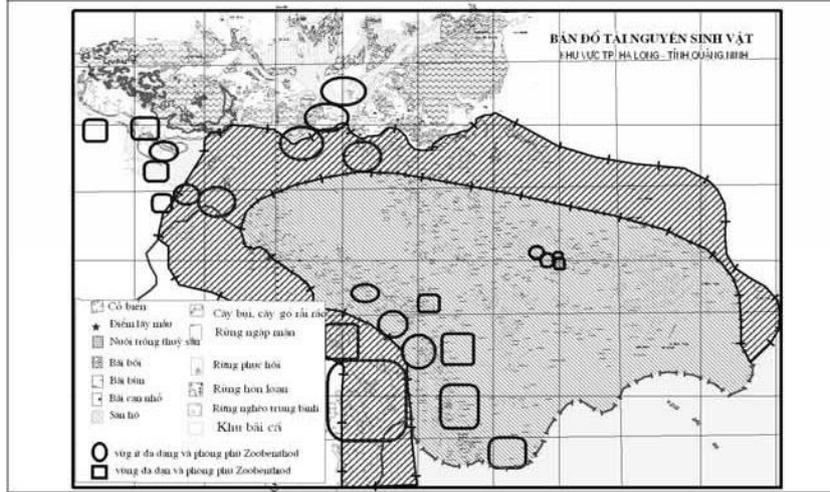
Demography Map



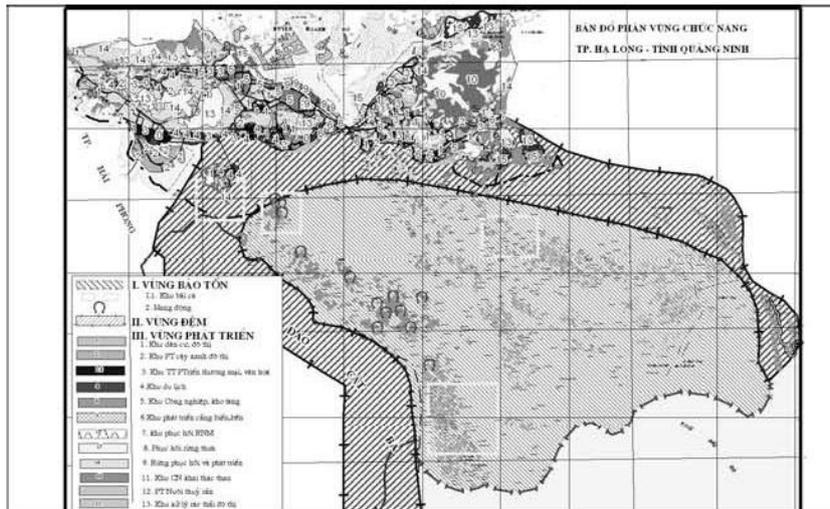
Water Quality Map



Living Resources Map



Function Zoning Map



Pilot sites of small-scale coastal fisheries co-management



- Development of Strategy on Sustainable Fisheries in Viet Nam, including sustainability indicators, Sectoral Steering Committee of SD
- Application of GAP, HACAP...in coastal aquaculture

✓ Ban hành các văn bản hướng dẫn của Chính phủ nhằm đẩy mạnh công tác quy hoạch phát triển kinh tế biển-ven biển theo ngành, vùng và làng nghề các công nhân mới trong và tổng bậc của quy trình quy hoạch.

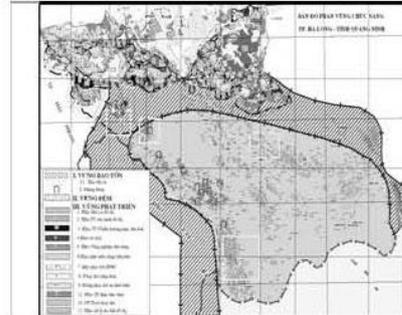
✓ Tăng cường chính sách hỗ trợ và cải thiện sinh kế các công nhân nông thôn; hợp tác chính sách phân cấp, giao quyền sở hữu, khai thác và quản lý tại ngư trường biển và ven biển, trực tiếp quản lý thu thuế ven bờ.

Future



Future...2

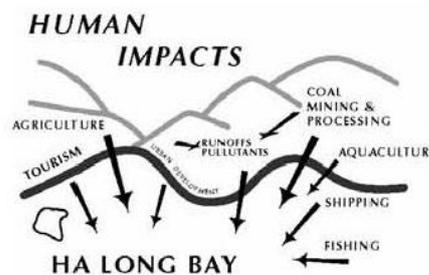
- X©y dùng vµ hµn thiÖn, tiÖn t¸i ban hµnh mét B¸ luËt vÒ c¸c v¸ng biÖn vµ v¸ng b¸ ViÖt Nam nh¸m b¸o ®¸m t¸nh ®¸ng b¸, lo'i bá sù ch¸ng ch¸o vµ tang c-¸ng c¸ ch¸ ph¸i h¸p gi-a c¸c ngµnh li¸n quan.
- Thùc hiÖn k¸ h¸ ch QLTHVB d¸ tr¸n c¸ s¸ c¸ ch¸nh s¸ch li¸n ngµnh, ®iÖu ch¸nh vµ k¸t n¸i c¸c h¸t ®¸ng ph¸t triÖn c¸a c¸c ngµnh ¸ v¸ng b¸ th¸ng qua ph-¸ng ùn ph¸n v¸ng ch¸c



Function Zoning Map

- Qu¸n lý t¸i nguy¸n v¸ng b¸ c¸ sù tham gia c¸a céng ®¸ng, tiÖn t¸i ®¸ng qu¸n lý, g¸n liÖn v¸i n¸ng cao nh¸n th¸c vÒ biÖn vµ v¸ng b¸ cho céng ®¸ng.
- ThiÖt l¸p vµ qu¸n lý hiÖu qu¸ c¸c khu b¸o t¸n vµ c¸c khu d¸ tr¸ biÖn trong khu¸n kh¸ QLTHVB. Ph¸n ®¸u ®¸n n¸m 2012 kho¸ng 7-10% diÖn t¸ch v¸ng ven b¸ ®-¸c qu¸n lý vµ b¸o t¸n hiÖu qu¸ theo Cam k¸t Johannesburg.
- T¸ng c-¸ng n¸ng l¸c qu¸n lý nh¸ n-¸c vÒ QLTHVB tr¸n c¸ s¸ thiÖt l¸p mét thiÖt ch¸ t¸e ch¸c li¸n ngµnh.

Future...3



Future...4

- H'ın ch'õ vi'õc m'ẽ r'eng nu'ıi qu'ıng canh thu'ũ s'ıın ven bi'õn, khuy'õn kh'ıch, nu'ıi tr'ãn bi'õn v'ũ tri'õn khai c'ũc ti'õn b'ẽ k'ũ thu'ẽt @'Ó t'ıng n'ıng su'ẽt nu'ıi tr'ãng, gi'ıim thi'õu « nhi'õm bi'õn ven b'ẽ.
- X'õy dùng v'ũ p' d'õng c'ã hi'õu qu'ı c'ũc ti'ãu chu'ẽn m'ıi tr'ẽng theo ng'ũnh v'ũ c'ũc ch'õ s'ẽ ph'ũt tri'õn b'õn v'ıng v'ıng b'ẽ.
- Th'ùc hi'õn c'ã hi'õu qu'ı Lu'ẽt B'ııo v'õ m'ıi tr'ẽng, Lu'ẽt Thu'ũ s'ıın v'ũ c'ũc lu'ẽt ph'ũp trong n'ıc v'ũ qu'ec t'õ c'ã li'ãn quan @'õn v'ıng b'ẽ.



Thank you very much !



The Role of MPAs in Supporting the Refugia Needs of Coastal and Marine Fisheries Stocks: the Situation in Vietnam by Prof. Donald Macintosh, MPA Project, MOFI

On-site Training/National Workshop on Capacity Building for the Establishment of Fisheries Refugia and Coastal Resources Management Phu Quoc, Vietnam, 14-16 June 2006

The role of MPAs in supporting the refugia needs of coastal and marine fisheries stocks:

THE SITUATION IN VIETNAM

Donald J Macintosh

Senior Technical Adviser

Marine Protected Area Project

(Ministry of Fisheries, Vietnam)

What is the MPA Network?

The MPA Network in Vietnam is part of a global effort to build a representative network of marine and coastal protected areas worldwide by 2012 (a target from World Summit on Sustainable Development 2002), based on international recognition of the potential role and benefits of MPAs.

**Most MPAs in Vietnam are
small island sites**



Phu Quoc MPA



Benefits from MPAs (WWF 2005)

- “Well managed MPAs have been shown to have significant potential benefits for fisheries, tourism development and a wide range of other ecosystem goods and services in islands.
- MPAs can also be used to restore fish populations, thereby sustaining fish catches and protecting biodiversity and habitats...”

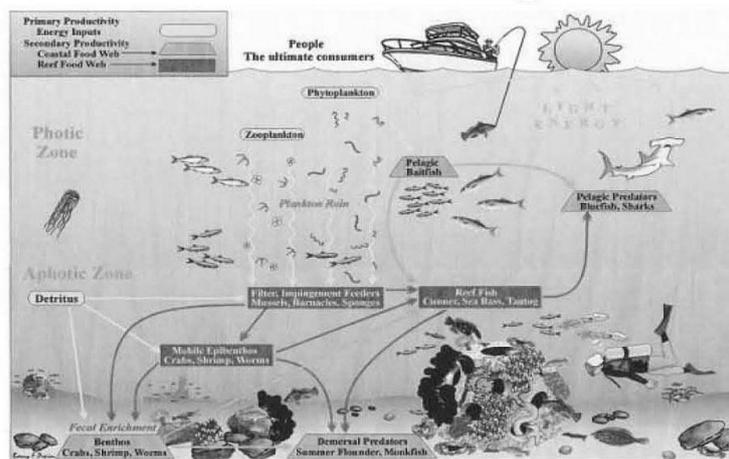
Some functions of the MPA Network

- Guidelines for MPA Establishment and Management
- MPA National Training Curriculum
- Applied research – life cycle analysis
- Guidelines for habitat management (mangroves, coral reefs, seagrass beds)

MPA sites can protect fish nursery habitats and spawning grounds

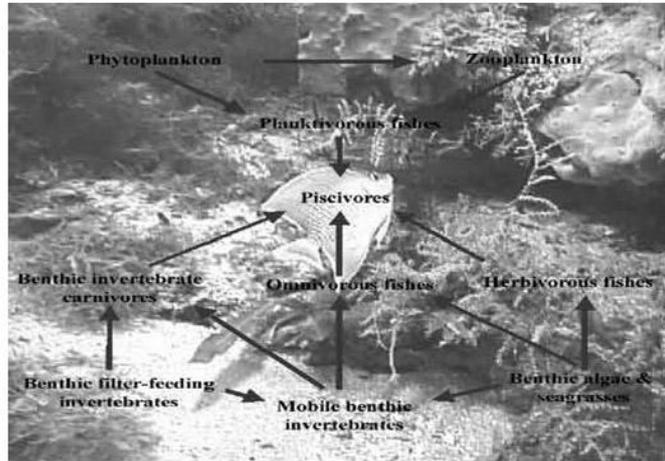


Coral reef - fish food and habitat linkages

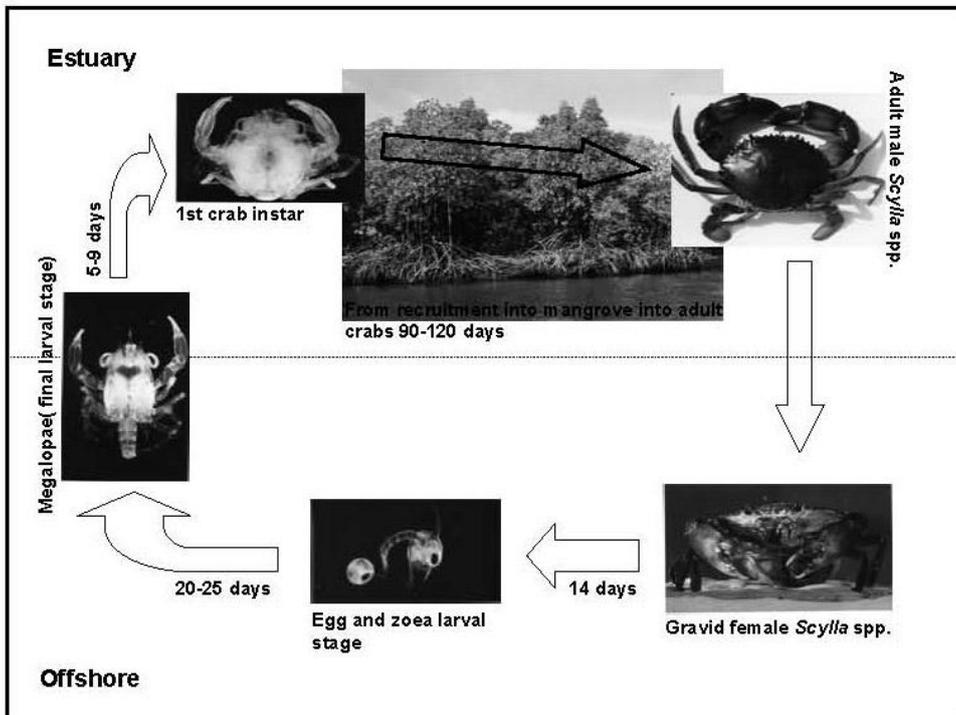
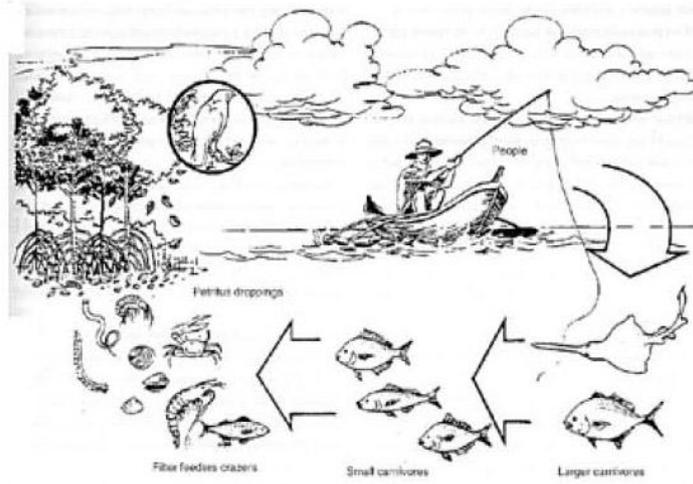


The basic components and pathways of energy transfer in a NJ reef food web.

Coral reefs provide valuable habitat diversity (niches)



Mangrove nursery grounds



Some functions of the MPA Network

- Guidelines for MPA Establishment and Management
- MPA National Training Curriculum
- Applied research – life cycle analysis
- Guidelines for habitat management (mangroves, coral reefs, seagrass beds)

PROJECT

Mainstreaming Conservation of Coastal Biodiversity through Formulation of a Code of Conduct for Sustainable Management of Mangrove Ecosystems

Don Macintosh & Thomas Nielsen
University of Aarhus, Denmark



Principles for a code of conduct for the management and sustainable use of mangrove ecosystems

PRINCIPLES FOR A CODE OF CONDUCT FOR THE
MANAGEMENT AND SUSTAINABLE USE OF
MANGROVE ECOSYSTEMS



Version: 10 March 2005

PRINCIPLE 10 FISHERIES

LEAD STATEMENT

*Mangrove associated fisheries have worldwide importance in providing subsistence food and income, as well as commercial benefits, for a wide range of stakeholders, including indigenous peoples and local fisher communities. However, lack of enforcement of existing fishery regulations, **including lack of protection of mangrove nursery sites** and habitat degradation are among the major reasons for the widespread decline in mangrove fisheries.*

PRINCIPLE 10 FISHERIES

- **States should protect mangrove nurseries and breeding habitats of fish, crustacean and molluscan species** important to subsistence and/or commercial fisheries.
- States should consider the following measures for habitat protection **(a) prohibiting fishing within clearly defined areas; and (b) giving local communities management responsibilities for specific fishery sites** under a stewardship arrangement, or similar community-based agreement, which includes appropriate fishery conservation measures.

Conclusions

- MPAs are a practical management tool potentially suitable to support refugia; such areas would be core zones of the MPA (=no take areas).
- Several smaller core areas seem to function better than a single larger area, provided they are inter-linked via life cycle migration events.

Conclusions (continued)

- Vietnam's MPA Network is not a biological network, only a representative one, and the majority of MPAs are small island sites (5,000 to 10,000 Ha).
- Vietnam needs larger and more coastal MPAs to better support the refugia needs of commercial fishery species.
- Life cycle research is an important aspect of the selection process for refugia and MPAs can play a valuable role in this research field.

Mainstreaming Conservation of Coastal Biodiversity through Formulation of a Code of Conduct for Sustainable Management of Mangrove Ecosystems
by Dr. Thomas Nielsen, University of Aarhus, Denmark

PROJECT
Mainstreaming Conservation of Coastal Biodiversity through Formulation of a Code of Conduct for Sustainable Management of Mangrove Ecosystems

Thomas Nielsen & Don Macintosh
University of Aarhus, Denmark



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Content

- Brief History
- Methodology
- Current Status
- Current Activities



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Brief History

- A desk review was undertaken in January-February 2001 on mangrove biodiversity and conservation to formulate information and guidance materials as the basis for developing a Code of Conduct for Sustainable Mangrove Forest Management (the Code) for World Bank staff, development partners, and clients.



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Brief History

- A draft review was submitted to the World Bank in March 2001.
- The review was supported by model country case studies from Malaysia and Thailand and later, the Philippines.
- The country case studies were based on a structured template and were prepared by national experts assisted by the consultants.
- Originally intended as a field tool, it was then decided to expand this work into a broader, practical Code of Conduct for use by all mangrove managers.

Citation: Macintosh DJ and Ashton EC (2002). A Review of Mangrove Biodiversity Conservation and Management. Centre for Tropical Ecosystems Research, University of Aarhus, Denmark (PDF File)

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Program of Activities to prepare the Draft Code of Conduct

- The work was undertaken by consultants from ISME (International Society for Mangrove Ecosystems, based in Okinawa Japan) in association with cenTER Aarhus (Centre for Tropical Ecosystems Research, University of Aarhus, Denmark).
- ISME operates four regional centres in Brazil, Fiji, Ghana, and India, while cenTER Aarhus has offices in Stirling (Scotland), Bangkok (Thailand), Hanoi (Vietnam) and Cantho (Vietnam).

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

WORKPLAN

Four Tasks (Activities) are specified:

- **ACTIVITY 1**
 - Complete Case Studies for 11 more countries (total 14)
- **ACTIVITY 2**
 - Consult policy makers, managers and mangrove experts to prioritize topics for a draft Code of Conduct.
- **ACTIVITY 3**
 - Undertake 3 regional workshops for South and Southeast Asia, Africa and Central and South America
- **ACTIVITY 4**
 - Formulate a draft Code of Conduct for consideration by WB, other agencies and governments

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

14 Country Case Studies were proposed

(i.e 3 from the review phase, plus 11 additional countries)

South and Southeast Asia

- Bangladesh
 - India
 - Malaysia
 - Philippines
 - Thailand
 - **Vietnam**
-
- an Australian Case Study was finalized January 2006



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Country Case Studies

Africa

- Benin
- Ghana
- Kenya
- Mozambique
- Senegal



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Country Case Studies

Central and South America

- Brazil
- Colombia
- Ecuador
- Nicaragua (not started)



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Conducted 3 Regional Consultation Workshops

- Ghana, Brazil, Thailand
- Each regional workshop brought together 8-10 national representatives and mangrove experts from the three regions, in order to combine knowledge of the legal framework for mangroves in each country with practical experiences from mangrove ecosystem management.

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Report on the S and SE Asian Regional Workshop on the Sustainable Management of Mangrove Forest Ecosystems

ISME/cenTER Aarhus
Report on the South and Southeast Asia Regional Workshop
on
the Sustainable Management of Mangrove Forest Ecosystems



Asian Institute of Technology, Bangkok, 21-23 October 2002
Donald J. Macintosh and Elizabeth C. Ashton
Funded by The World Bank



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Report on the Africa Regional Workshop on the Sustainable Management of Mangrove Forest Ecosystems

ISME/cenTER/CAW
Report on the
Africa Regional Workshop
on
the Sustainable Management of Mangrove Forest Ecosystems



Centre for African Wetlands, University of Ghana, Legon, Accra, Ghana
February 17-19th 2003

Edited by
Donald J. Macintosh and Elizabeth C. Ashton
Funded by The World Bank



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

ISME/cenTER/CAW
Report on the
Central and South America Regional Workshop
on
the Sustainable Management of Mangrove Forest Ecosystems



Universidade Federal do Ceará, Instituto de Ciência do Mar (LABOMAR)
Fortaleza, Ceará, Brazil, March 17-20th 2003

Edited by
Macintosh, D. J. and Ashton, E. C.
Funded by The World Bank



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Present Status

- Based on the work-plan, plus follow-up consultations with participants from the 3 Regional Workshops, the Draft Code of Conduct developed into a document with 15 major Articles, plus introductory sections, a glossary of terminology used in mangrove management, and a reference list.
- This draft document was then reviewed during a final workshop in Washington DC, 16-17 September 2003.
- The Washington workshop recommended that the consultation process should continue and be diversified (e.g. to more actively include NGO's as well as inputs from additional regions)

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Draft Code of Conduct

Prepared by Macintosh D. J. and Ashton E. C.

Table of Contents

- Preface
- Introduction
- Article 1: Mangrove Management Objectives
- Article 2: Precautionary Approach to management
- Article 3: Legal Framework
- Article 4: Implementation
- Article 5: Mangrove Inventory for management
- Article 6: Socio-Economic Considerations
- Article 7: Cultural and community Issues
- Article 8: Capacity Development
- Article 9: Forestry/Silviculture management
- Article 10: Fisheries and Aquaculture
- Article 11: Agriculture, Salt production and mining
- Article 12: Tourism, Recreation and Education
- Article 13: Mangrove Products and Responsible Trade
- Article 14 Mangrove Research and information exchange
- Article 15: Integration of Mangrove Management into Coastal Area Management
- Glossary
- References

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Current Objectives

1. Continue to develop additional or alternative practical examples of mangrove management to illustrate the Principles.
2. Develop mechanisms to ensure that the Principles are widely accepted and used to support sustainable management of mangrove ecosystems.
3. Support the adaptation and use of the Code of Conduct as a tool, particularly at the national to local community levels.
4. Formal recognition and /or adoption of the Principles by International organizations (e.g. Ramsar, FAO, WWF, IUCN)



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Field testing of the Principles in Vietnam and Brazil



Women collecting oysters in the Mangrove in Brazil

Replanted Mangrove, Red River Delta, Vietnam



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Field testing of the Principles in Vietnam and Brazil

- It is intended that the Principles will be adapted for use by each country



Field testing of the Principles is on-going in Vietnam and Brazil

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Field testing of the Principles in Vietnam and Brazil

VIETNAM

- Translation and adaptation of the Principles for Vietnam
- Stakeholder workshop and presentation of the Principles in northern Vietnam, October 2005
- Field testing by selected stakeholders, managers in 4 coastal communes in Thai Binh a
- Collation of feedback

BRAZIL

- A discussion and adoption process has been initiated with key Brazilian NGO's to develop a fully participatory CODE of CONDUCT



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

To Download DRAFT CODE and Regional Workshop Reports as well as comments from other International Organizations go to:

http://mit.biology.au.dk/cenTER/MCB_2004.htm

Comments to:

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All e-mails to be copied to:
World Bank Task Team Manager – Ron Zweig E-mail: Rzweig@worldbank.org

Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

Do Not Cut the Mangrove!



Principles for a Code of Conduct - Phu Quoc 2006, TN & DJM

**Status of Anchovy Fishing in Kien Giang Province
by Kien Giang Fisheries Department**

1. Specifications of fishing ground in Kien Giang

- Coastal line of 200 Km with more than 140 big and small islands.
- The fishing area of Kien Giang and Ca Mau is about 63.290 Km² with stock capacity of 464.660 tons. In which the pelagic stock is 239.280 tons, demersal fish is 225.380 tons.
- Marine resources in Kien Giang is diversified and abundant. There are 273 species, 139 seed and 71 families. Besides marine fisheries resources, Kien Giang has its resources of shrimp, squid, pearl oyster, blood cockles, sß lƔng, ngh^u lƔa, sea cucumber, sea turtle, dugong, dolphin. Especially there are three sound ecosystems: mangrove, 12.000 ha of seagrass, 240 ha of coral reef with diversification of species and genus.

2. Fishing capacity

- Total Fishing vessels (up to December 2005): 7.400 units. The total capacity: 1.117.000 cv with average of 151 cv/unit.
 - Offshore fishing vessels: from 90 CV up: 2.693 units.
 - Coastal fishing vessels: from 90 cv down: 4.707 units.
 - Trawling: 3.821 units.
 - Grill net: 1.819 units
 - Long line: 709 units.
 - Pures seine: 312 units.
 - Other fishing gears: 739 units.
- Exploitation production in 2005 reached 305.565 tons
- Total fishing labor: 51.800 people.

3. Fishing gears in Kien Giang

- *Traditional Anchovy Pures Seine*
 - This gear was formulated before the years 80s.
 - It is concentrated in 2 District islands: Phu Quoc and Kien Hai.
 - 2001: 70 units with total capacity of 17.514 cv
 - 2002: 72 units with total capacity of 18.232 cv
 - 2003: 70 units with total capacity of 17.952 cv

2004: 69 units with total capacity of 7.647 cv

2005: 62 units with total capacity of 16.186 cv

- Fishing seasons: during the year, however the best seasons are from September to November. Fishing takes place during the night and day, but more often at night.
- Fishing Ground: Kien Giang Sea
- Discovering the fish group through the light coming from the group in the water surface. Fishing finder is also used to find the fish group.
- Main target is anchovy, occupied 90-95 %.
- Number of fishing vessels, exploitation production and capacity have been decreasing.

➤ ***Purse seine attached with light:***

- This was born in 1999, some fishermen in the Centre Area immigrated in Kien Giang Fishing ground with the anchovy catching by light.

- This is concentrated in Phu Quoc Island.

2001: 34 units with total capacity of 2.479 cv

2002: 31 units with total capacity of 1.250 cv

2003: 38 units with total capacity of 1.813 cv

2004: 37 units with total capacity of 1.728 cv

2005: 44 units with total capacity of 3.355 cv

- Fishing ground: Kien Giang Sea.
- Main Fishing seasons: During the year
- The fishing vessels are not equipped with light to attract the fish but coracles. Each light coracle has its capacity of from 30 -90 cv which is equipped from 8 to 12 lamps. Each lamp has its capacity from 300 to 1.000 w. The lamps are used to attract fish and contact with the vessel when much fish appear.
- The catching production and capacity is much higher than the traditional fishing type. However the rate of discard fish still occupies 30 to 40%.
- Anchovy is used as raw material to make fish source, and feed for fisheries aquaculture and husbandry.
- The trend of conversion and development in to this gear type has been increasing.

- Light coracle has been dramatically increasing in quantity.
- Using the light with capacity higher than permitted. The density of light is higher and the mesh side is smaller than regulated.

➤ **Exploitation production of anchovy by pures seine from 2001 -2005.**

2001: 15.697 tons, in which Phu Quoc: 11.300

2002:13.680 tons in which Phu Quoc : 9.750

2003: 18.072 tons, in which Phu Quoc: 15.033

2004: 19.653tons, in which Phu Quoc : 15.112

2005: 13.710tons, in which Phu Quoc : 11.795

➤ **Products made from anchovy (2001-2005)**

Lists	2001	2002	2003	2004	2005
Fish source (1.000 liter)	25.400	26.500	28.800	29.000	35.000
-Phó Quèc only	6.800	6.500	7.100	7.540	7.540
Fish source export (1.000 liter)	330	352	436	544	464
Turnover (1.000USD)	326	236	382	548	459
Dried anchovy (Tons)	2.300	2.123	1.330	800	900
-Exported production (tons)	841	1.466	0	382	304
-Exported turnover (1.000USD)	2.035	3.545	342	858	433
-Exported turnover (1.000USD)			766		

➤ **“Trawler”:**

- In 1999 the fishermen in Kien Giang imported "Trawler"
- There are 816 units with total capacity of 165.750 cv.
- The exploited targets are demersal fish and pelagic.
- The speed is about 3 – 3.3 nautical mile which is faster than the traditional type.
- The mesh side in wing (2,4-5 m) and bid body .

- The fishing production and capacity has been decreasing. It is estimated that the total production of "trawler" in 2005 is about 65.000 tons, in which anchovy occupied about 20.000 tons.
- Exploited fish is used for husbandry, cage culture and pond culture.
- Operating in coastal area which damages fisheries resources and ecosystems in coastal areas.
- This gear type is more advanced than the traditional trawling if it is operated in a suitable ground.

4. Difficulties and obstacles.

- There is limitation in finance and no database on coastal fisheries resources, especially the database of pelagic, which is used as the reliable scientific basic for planning in coastal areas, anchovy catching as well as providing financial and technical support for fishermen to convert their careers.
- The Monitoring, surveillance and patrol sources are not strong enough, while the area is too large, which can not meet the required demand.
- Utilisation of light and mesh violate the regulations of the Ministry of Fisheries.

The Circular 02/2006/TT-BTS regulated that nets mesh used for anchovy must not under 10mm and the total light capacity must not over 5.000 w, while the total light capacity of coracle is about 6.000 to 10.000 w and mesh is about 4,2 mm.

- Conflicts between traditional anchovy catching and anchovy catching with light, conflicts between people who buy anchovy for fish source making and for aquaculture feed.
- There is no trade mark of Phu Quoc Fish source
- Petrol price increases too much but the price of anchovy does not increase, which greatly affected the effectiveness of fisheries resources exploitation in general and traditional anchovy catching in particular.

5. Recommendation for sustainable catching of anchovy.

It is proposed that the Ministry of Fisheries and International Organisations to support Kien Giang:

- Re-planning exploitation activities to be suitable with the coastal fisheries resources.

- Assessment of Fisheries resources, prohibited and limited fishing grounds, closed seasons, number of fishing vessels and fishing gear types.
 - Provide the right of management and utilisation of fisheries resources for local communities in coastal areas under the supervision of authorized agencies.
 - Defining the methods of equipping light in order to reduce the cost at the minimum level for fishing vessels. It should consider the regulations for catching anchovy in particular after the project on anchovy resources research in Kiengiang is completed.
- Establishment of MPA in order to protect ecosystem: coral reef: seagrass, and valuable marine mammals.
 - Apply the advanced technique such as artificial reef releasing to protect and develop of fisheries resources..
 - HRD for coastal fisheries management.
 - Stabilizing markets price pf petrol and exploited products.

6. Some picture of anchovy catching and anchovy products

Picture 1. Anchovy fishing vessels

Picture 2. Light coracle to attract fish

Picture 3. Fish Source Processing Plant

Picture 4. bottled

Picture 5. Fish source

Picture 6. Drying anchovy

Picture 7. Dried Anchovy

Assessment of Anchovy Resource and Fishery in Phu Quoc, Kien Giang Area

- 1. Objective** (The anchovy resources are exploited in sustainable manner based on the robust scientific knowledge)
- 2. Activities**
 - a. To collect data and writing report history of anchovy exploitation and the role of anchovy fishery to the whole fishery sector in Kien giang province. The knowledge of the fishermen on the resource and fishery. management issues)
 - b. Anchovy fishery assessment: establishment of the catch and effort data collection including information on the fishing ground and economic data
 - c. Research on biology: (Anchovy biology:monthly data collcetion on the species composition, length frequency, length-weight, otolith, feeding and reproduction...)
 - d. Research on spatial and temporal distribution of the anchovy eggs and larvae and related environmental factors
 - e. Assessment of the anchovy resources and recommendations on the exploitation and protection of the resource)
 - f. To implement the controlling and surveillance activities for anchovy exploitation . (Implementation of the recommendations suggested in 2.5)
- 3. Duration:** 2007-2008
- 4. Budget:** 6 bil. VND)



**quản lý và bảo tồn các loại bèo biển do sự
mất mát các loại hải sản cá gi, tráp th-ung m'ì
quan trọng ở
vịnh biển ở Phú Quốc**

TS. Ngô Minh Sơn
Viện Nghiên cứu Hải Sản

Mở đầu

Hoạt động kinh tế, xã hội của con người bùng phát và thiếu kế hoạch nên nhiều nguồn tài nguyên thiên nhiên bị khai thác quá mức dẫn đến suy thoái; môi trường và một số hệ sinh thái bị xuống cấp nghiêm trọng, đặc biệt trong nghề khai thác thủy hải sản (sử dụng ngư cụ, phương pháp đánh bắt có tính hủy diệt như chất nổ, hoá chất độc - Cyanua, xung điện, te, xiệp, dăng, dáy v.v...).

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

Ngày 16 tháng 7 năm 2004, Thủ tướng Chính phủ ra quyết định số: 131/2004/QĐ -TTg phê duyệt **Chương trình bảo vệ và Phát triển**

nguồn lợi thủy sản đến năm 2010

a/ Mục tiêu

- Bảo vệ, bảo tồn đa dạng thủy sinh, đặc biệt là các loài quý, hiếm, có giá trị khoa học/kinh tế; giữ gìn tính độc đáo của các hệ ST.
- Phục hồi nguồn lợi thủy sản vùng biển ven bờ, các sông, hồ và các vùng đất ngập nước nhằm phát triển thủy sản bền vững.
- Nâng cao nhận thức cộng đồng về tầm quan trọng, giá trị các nguồn tài nguyên thiên nhiên và đa dạng sinh học, đồng thời xác định rõ vai trò, trách nhiệm của ngư dân trong việc tham gia bảo vệ nguồn lợi thủy sản.
- Tăng cường năng lực quản lý nhà nước về bảo vệ & phát triển nguồn lợi TS của các cơ quan chức năng và chính quyền các cấp.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

b/ Nguyên tắc chỉ đạo

- Phát triển kinh tế phải hài hoà với bảo vệ tài nguyên, môi trường, hài hoà lợi ích của các ngành và các địa phương.
- Bảo vệ và phát triển nguồn lợi thủy sản đi đôi với tăng cường kiểm soát khai thác nguồn lợi thủy sản tự nhiên và kiểm soát môi trường.
- Bảo vệ nguồn lợi thủy sản là yêu cầu cấp thiết trước mắt và lâu dài, là trách nhiệm của toàn xã hội, trong đó có cộng đồng ngư dân. Do vậy, phải thực hiện tốt chính sách xã hội hoá để bảo vệ và phát triển nguồn lợi TS.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

c/ Nội dung chương trình (5 nội dung chính)

Nội dung 1: Phục hồi, tái tạo và phát triển nguồn lợi thủy sản

Điều chỉnh cường lực khai thác kết hợp với sản xuất giống nhân tạo thả bổ sung vào môi trường tự nhiên nhằm khôi phục và tái tạo các giống loài thủy sản đã bị khai thác cạn kiệt, lấy lại cân bằng sinh thái. Các đối tượng ưu tiên bao gồm :

- + Nguồn lợi tôm biển: Họ tôm he, đặc biệt là tôm sú và tôm hùm.
- + Nhuyễn thể: điệp, sò, nghêu, trai ngọc ở Đông Tây Nam Bộ.
- + Cá nổi nhỏ: cá trích, nục, com, ba thú... vùng biển từ Thanh Hoá đến Kiên Giang và quanh một số đảo ngoài khơi.
- + Cá nước ngọt: tại các sông, hồ chứa lớn, vùng thường xuyên bị lũ lụt ở đồng bằng Nam Bộ và một số khu vực đất ngập nước phía Bắc.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

Nội dung 2: Bảo vệ, bảo tồn đa dạng thủy sinh vật

- + Kiểm soát hoạt động khai thác các loài thủy sản quý hiếm, có giá trị về khoa học và kinh tế cao đang có nguy cơ bị tuyệt chủng.
- + Đẩy mạnh công tác bảo tồn nội vi thông qua thiết lập hệ thống khu bảo tồn biển, khu bảo tồn nội địa.
- + Khôi phục sinh cảnh, môi trường sống của các loài thủy sinh, đặc biệt là các bãi sinh sản, nơi sinh cư của các loài sinh vật còn non, quý hiếm, có giá trị khoa học và kinh tế cao. Tái tạo, khôi phục hệ sinh thái rạn san hô, thảm cỏ biển, đầm phá, các cửa sông và thả rạn nhân tạo.
- + Đánh giá tác động của việc sử dụng phân bón, thuốc bảo vệ thực vật, thuốc thú y thủy sản, các chất xử lý môi trường nước đến sự sống của các loài thủy sinh vật trong môi trường tự nhiên.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

Nội dung 3: Tổ chức quản lý khai thác nguồn lợi thủy sản vùng biển ven bờ

+ Điều chỉnh cơ cấu nghề cho phù hợp với khả năng nguồn lợi thủy sản. Kiểm soát chặt chẽ các phương thức khai thác mang tính hủy diệt, đồng thời giảm dần các nghề khai thác thiếu lựa chọn, đánh bắt tôm cá con ở vùng nước ven bờ.

+ Xây dựng hệ thống dự báo ngư trường hướng dẫn khai thác, trước hết tại các ngư trường trọng điểm, nơi tập trung tàu thuyền hoạt động.

+ Tăng cường năng lực cho tổ chức bảo vệ nguồn lợi thủy sản kiểm soát hoạt động khai thác, đặc biệt vùng biển vịnh Bắc Bộ, Đông Tây Nam Bộ, các khu vực cấm, hạn chế khai thác và các bãi đẻ.

+ Xây dựng mô hình tổ chức **đồng** quản lý phù hợp với tập quán, truyền thống của ngư dân địa phương.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

Nội dung 4: Xây dựng hệ thống cơ sở dữ liệu nguồn lợi thủy sản

Bao gồm:

- + Xây dựng Trung tâm dữ liệu quốc gia về thủy sinh vật.
- + Xây dựng bảo tàng lưu giữ trưng bày các loài thủy sinh.
- + Xây dựng mạng thông tin, kết nối Trung tâm dữ liệu quốc gia với các cơ quan nghiên cứu, quản lý và các địa phương.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

Nội dung 5: Giáo dục nâng cao nhận thức về bảo vệ nguồn lợi thủy sản

- + Tổ chức các lớp tập huấn nâng cao nhận thức cho cán bộ cấp huyện, xã và ngư dân về pháp luật trong lĩnh vực thủy sản, lợi ích của việc bảo vệ nguồn lợi và môi trường sống của các loài thủy sản đối với chính cộng đồng ngư dân cũng như toàn xã hội.
- + Xây dựng các chương trình truyền thông về bảo vệ và phát triển nguồn lợi thủy sản trên các phương tiện thông tin đại chúng.
- + In ấn, phát hành tranh ảnh và áp phích cổ động tuyên truyền về bảo vệ nguồn lợi thủy sản.
- + Xây dựng nội dung giáo dục về bảo vệ nguồn lợi và môi trường sống của các loài thủy sản ở các bậc học thích hợp.

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

d/ Các dự án ưu tiên thuộc Chương trình Bảo vệ và Phát triển nguồn lợi thủy sản đến năm 2010

- 1) Phục hồi, tái tạo và phát triển nguồn lợi thủy sản; bảo tồn các loài thủy sản quý, hiếm có giá trị kinh tế và khoa học đang bị đe dọa, có nguy cơ tuyệt chủng : **82,0 tỷ đồng (RIMF)**.
- 2) Xây dựng mô hình chuyển đổi nghề nghiệp khai thác nguồn lợi thủy sản vùng biển ven bờ sang các ngành nghề thích hợp khác ở một số vùng ven biển: **29,2 tỷ đồng (Vụ Kinh tế Tập thể và Kinh tế Tư nhân)**.
- 3) Quy hoạch và tổ chức thực hiện việc quản lý các khu bảo tồn biển, bảo tồn thủy sản nội địa, vùng cấm và hạn chế khai thác thủy sản: **115 tỷ đồng (NADAREP)**.
- 4) Xây dựng các mô hình quản lý nguồn lợi thủy sản với sự tham gia của cộng đồng: **11,3 tỷ đồng (VIFEP)**.
- 5) Xây dựng và quản lý hệ thống thông tin dữ liệu về nguồn lợi và môi trường sống của các loài thủy sản: **25,5 tỷ đồng (FICEN)**.
- 6) Xây dựng và triển khai kế hoạch hành động quốc gia truyền thông về công tác bảo vệ và phát triển nguồn lợi thủy sản: **270,5 tỷ đồng (NADAREP)**.

Tổng cộng: 270,5 tỷ đồng

1. Chương trình bảo vệ và phát triển nguồn lợi thủy sản đến năm 2010 (Chương trình 131)

e/ Một số giải pháp chủ yếu

- Khuyến khích đầu tư vào các hoạt động bảo vệ và phát triển nguồn lợi TS.
- Giảm dần và chuyển đổi các nghề khai thác nguồn lợi TS vùng biển ven bờ.
- Tăng cường phân cấp quản lý, huy động sự tham gia của nhân dân trong việc bảo vệ nguồn lợi và môi trường sống của các loài thủy sản.
- Ứng dụng công nghệ tiên tiến vào các hoạt động bảo vệ và phát triển nguồn lợi thủy sản.
- Về tài chính: Ngân sách Trung ương, địa phương và các nguồn tài trợ khác.

2. Một số chương trình, dự án liên quan đến công tác quản lý, bảo vệ và bảo tồn nguồn lợi, môi trường sinh thái ở vùng biển đảo Phú Quốc

❖ Dự án UNEP/GEF/SCS và SEAFDEC – SIDA:

- + Điểm trình diễn về san hô và cá biển: triển khai năm 2006.
- + Khu bảo tồn cá biển: Đang trong quá trình thảo luận và lựa chọn.

❖ WWF và các tổ chức quốc tế khác:

- + Kế hoạch hành động bảo tồn cá biển và Dugong do WWF hỗ trợ.
- + Hồ sơ thiết lập khu bảo tồn biển đảo Phú Quốc do DANIDA tài trợ.
- + Hồ sơ thiết lập khu dự trữ sinh quyển do MAB-UNESCO hỗ trợ.

2. Một số chương trình, dự án liên quan đến công tác quản lý, bảo vệ và bảo tồn nguồn lợi, môi trường sinh thái ở vùng biển đảo Phú Quốc

❖ Bộ Thủy sản:

- + Chương trình 131 “Bảo vệ và phát triển nguồn lợi thủy sản - 2010”
 - . Dự án chuyển đổi cơ cấu nghề nghiệp
 - . Mô hình quản lý cộng đồng
 - . Kế hoạch hành động quốc gia về truyền thông đại chúng...
- + Quy hoạch mạng lưới các khu bảo tồn biển Việt Nam
- + Đề tài **Đánh giá nguồn lợi cá com ở vùng biển Tây Nam Bộ, đề xuất giải pháp bảo vệ, khai thác hợp lý** (RIMF, 2005 – 2006).

❖ Chính quyền địa phương:

- + Kế hoạch quản lý nguồn lợi ven bờ tỉnh Kiên Giang
- + Một số quy định về công tác bảo vệ nguồn lợi, môi trường biển ...

2. Một số chương trình, dự án liên quan đến công tác quản lý, bảo vệ và bảo tồn nguồn lợi, môi trường sinh thái ở vùng biển đảo Phú Quốc

❖ Hợp phần Thủy sản, Dự án Biển Đông:

TT	Tên Dự án	Dự toán kinh phí (triệu đ)	Cơ quan chủ trì	Thời gian thực hiện
1	Nghiên cứu đặc trưng môi trường, nguồn lợi tôm cá giống tại một số bãi đẻ.	1.800	RIMF	2006 - 2008
2	Nghiên cứu đặc điểm sinh học, tập tính di cư và môi trường sống của cá ba thu, cá mực sỏ, cá com ... ở vùng biển Tây Nam Bộ.	1.500	RIMF	2005 - 2007
3	Nghiên cứu tình hình KT-XH của cộng đồng ngư dân khai thác hải sản ven bờ và một số giải pháp chuyển đổi nghề nghiệp.	1.000	VIFEP	2006 - 2007
4	Thiết lập một số rạn nhân tạo và thả tôm, cá giống ra biển phục hồi, tái tạo nguồn lợi.	5.000	RIMF	2008 - 2010
5	Tăng cường năng lực quản lý tàu cá.	20.000	NADA	2004 - 2008
6	Nâng cao nhận thức cộng đồng và giáo dục ý thức bảo vệ nguồn lợi, môi trường sinh thái trong mọi tầng lớp xã hội.	1.200	NADA REP	2006 - 2009

3. Các loài bị đe dọa và một số loài hải sản có giá trị thương mại quan trọng ở vùng biển đảo Phú Quốc cần được quản lý, bảo vệ và bảo tồn

❖ **Các loài bị đe dọa:**



**Hình 1. Nàng tiên cá/ bò biển
(*Dugong dugon*)**



**Hình 2. Cá heo (Common
Dolphin)**

**Thống kê số lượng Dugong bị bắt
và chết trong thời gian qua**

- Từ 1999 - 2001: Số lượng bị bắt 9 Dugong
- Năm 2002: + Trữ Văn Lâm bắt 1 Dugong (300kg)
+ T- Bình bắt 2 Dugong (500 kg và 100kg)
- Tháng 6/ 2003: + 1 Dugong bị xử tử tại Phú Quốc (500kg)
+ 1 Dugong bị xử tử tại Hòn Trẹn (250kg)
- Ngày 23/12/03: Lữ Văn Trền bắt 1 Dugong dài 2,75 m,
400kg
(Mẫu trưng bày tại Viện Nghiên cứu Hải dương học Nha Trang)
- Ngày 16/7/ 2004: 2 Dugong bị xử tử tại Hòn Trẹn
- Năm 2004: + 1 Dugong bị xử tử tại Hòn Ninh (Phú Quốc)
+ 1 Dugong bị chết ở Kinh 2, Hòn Nộn
(gần biển
gần VN – CPC)
- Năm 2005 & 2006: 222

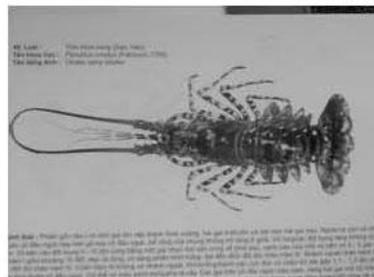
- Các loài bị đe dọa:



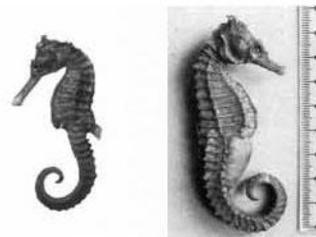
Hình 3. Đồi mồi
(*Eretmochelys imbricata*)



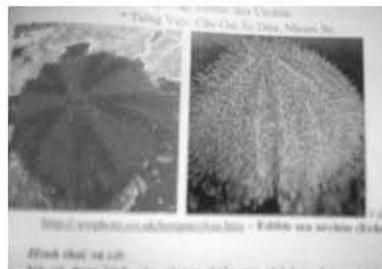
Hình 4. Vích (*Chelonia mydas*)
đang được thả ra biển



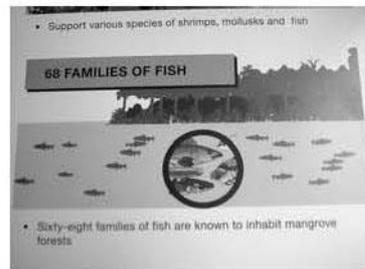
Hình 5. Tôm hùm bông
(*Panilurus ornatus*)



Hình 6. Cá ngựa đen
(*Hippocampus kuda*)



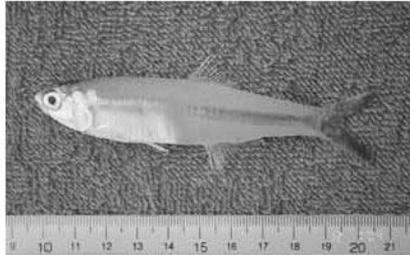
Hình 7. Cầu gai Sọ dừa
(*Tripneustes gratilla*)



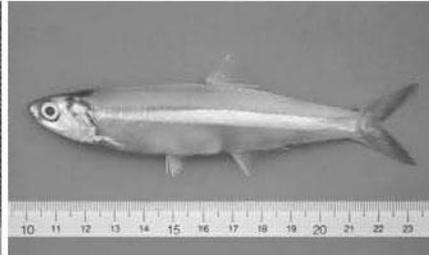
Hình 8. Rừng ngập mặn
(Mangrove)

3. Các loài bị đe dọa và một số loài hải sản có giá trị thương mại quan trọng ở vùng biển đảo Phú Quốc cần được quản lý, bảo vệ và bảo tồn

❖ Một số loài hải sản có giá trị thương mại quan trọng:



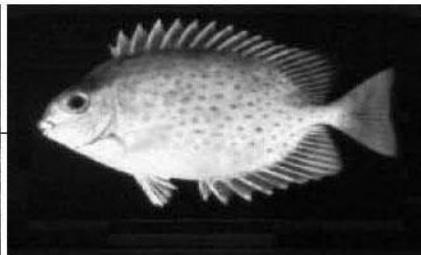
Hình 9. Cá com (*Stolephorus commersonii*)



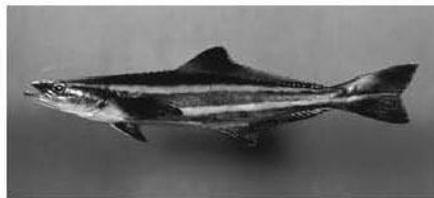
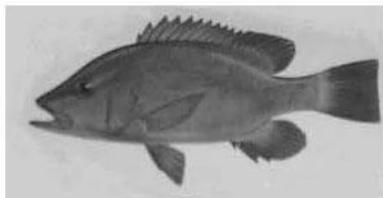
Hình 10. Cá com Ấn Độ (*Stolephorus indicus*)



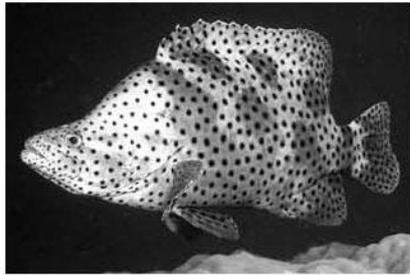
Hình 11. Cá đĩa chấm (*Siganus guttatus*)



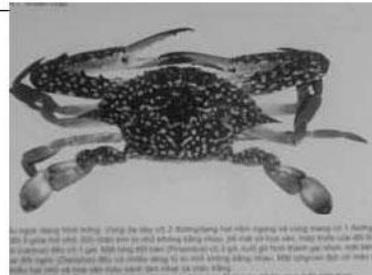
Hình 12. Cá hồng (*Lutjanus sanguineus*)



Hình 13. Cá giò (*Rachycentron canadum*)



Hình 14. Cá mú đẹt
(*Cromileptes altivelis*)



Hình 15. Ghẹ xanh
(*Portunus pelagicus*)

Cám ơn quý vị đại biểu
Thank you

**Management and Conservation Program on Endangered Species and
Commercially Important Species in Phu Quoc
by Dr. Dao Manh Son -Vice Director, Research Institute for Marine Fisheries**

Due to the unplanned socio – economic human activities in the recent years, natural resources have been over exploited leading to the degradation of environment and ecosystems, especially in the fisheries sector (use of destructive fishing gears and methods such as dynamite, toxic chemicals – cyanide, electronic, etc.)

1. Programme on protection and development of aquatic resources toward 2010
(Programme 131)

Programme on fisheries protection and development toward 2010 was approved by the Prime Minister at Decision no. 131/2004/QD-TTg dated 16/7/2004. Objectives and contents of the programme 131 include:

a) Objectives:

- Protecting, conserving aquatic biodiversity, especially rare and valuable species; conserving the diversity and unique of ecosystems.
- Rehabilitating the fisheries resources of coastal areas, rivers, reservoirs and wetland areas for sustainable development.
- Raising awareness on the importance and values of natural resources and biodiversity; defining clearly roles and responsibilities of fishermen in the fisheries resources protection.
- Building state management capacity on protection and development of fisheries resources of authorities and government agencies at all levels.

b) Directive principles:

- Economic development must be harmonized with protection of natural resources and environment as well as with benefits of relevant sectors and local communities.
- Protection and development of fisheries resources should be together with strengthening the control of natural aquatic resources exploitation and environment.
- Protection of fisheries resources is an immediate and long-term requirement, and is responsibility of the whole society including fishermen communities. Therefore, socialization should be soundly performed in order to protect and develop fisheries resources.

c) Content of the programme

- Recovering, rehabilitation and development of fisheries resources
Adjusting fishing capacity to combine with producing artificial seed for additional disposing to natural resources in order to recover and rehabilitate fisheries genes which have been over harvested and recuperate the ecological balance. The followings are prioritized:

- + Marine shrimp
- + Mollusc

- Protection and conservation of aquatic biodiversity
- + Controlling the exploitation of rare and valuable aquatic species which have risk of extinction.
- + Promoting in-situ conservation activities through the establishment of marine protected areas system and inland protected areas and ex-situ conservation activities.
- + Rehabilitating habitat and living ground of aquatic resources, especially nursing ground, refugia of young and valuable species. Recovering and rehabilitating coral ecosystem, sea grass beds, lagoons, ... and creating artificial reefs.
- + Assessing the impacts of using fertilizers, pesticides, aquatic ..., water treatment chemicals on life of aquatic species in the natural environment.
- Managing the onshore fishing activities
- + Adjusting fishing .. in compliance with fisheries resources capability. Strictly controlling destructive fishing activities and reducing the fishing .. without careful selection, onshore harvesting young species.
- + Developing the fishing ground forecast system for fishing instruction, prioritizing in the key fishing ground where
- + Strengthening capacity for fisheries protection agencies on controlling fishing activities, especially in the northern, west-east southern marine areas, limited and banned fishing areas and breeding grounds.
- + Developing a co-management model in compliance with local habits and tradition.

- Developing a fisheries resources database system
An aquatic resources information system should be developed to meet with the need of providing information for management and selection of investment solution. It includes:
 - + Building a National Databases Center on aquatic ...
 - + Building one or two museum for storing and exhibition of aquatic species.
 - + Developing a network which link the national databases center with institutes, management agencies and provinces.

- Raising awareness on fisheries protection
Developing and performing the national action plan on communication for propagandizing, education and raising awareness on protection of fisheries resources and fisheries living ground. It includes:
 - + Conducting training courses for authority's staff at district and commune levels and fishermen on legal issues related to fisheries, benefits of natural resources protection to them as well as to the whole society.
 - + Developing communication programmes on protection and development of fisheries resources via public communication...
 - + Printing and publishing pictures and posters propagandizing on fisheries protection.
 - + Develop education curriculum on protection of natural resources and living environment of aquatic species at suitable grades.

- d) Priority project under Programme on Protection and Development of Aquatic resources toward 2010.

At the official letter no. 1030TS – KHTC dated 12/01/2006, Ministry of Fisheries has entrusted the implementation of priority projects as follows:

- 1) Rehabilitation, regeneration and development of fisheries resources; protection of rare, valuable and threatened species which have economic and scientific values or risk of extinction (Implementing agency: Research Institute for Marine Fisheries)
- 2) Development of an alternative model from traditional inshore fishing activities into other comprehensive income means (Implementing agency: Department of Public and Private Economic)
- 3) Planning and implementation of management of marine protected areas, inland protected areas, prohibited and restricted exploitation areas (National Directorate of Aquatic Resources Exploitation and Protection NADAREP)
- 4) Development of a community participatory model for management of fisheries resources (Vietnam Institute of Fisheries Resources and Planning)
- 5) Development and management of databases system on fisheries resources and living environment of fisheries species (FICEN)
- 6) Development and implementation of national communication action plan on protection and development of fisheries resources (NADAREP)

c) Some key solutions

- Encouraging investment on protection and development of fisheries resources
National and international organizations and individuals are permitted for investment on scientific research, technology transferring in protection and development of fisheries resources, establishment and management of marine protected areas, inland protected areas.

- Reducing and conversing the traditional onshore fishing activities.
- Promoting the decentralization and encouraging the involvement of communities in the protection of resources and living ground of fisheries species.
- Applying modern technology in protection and development of fisheries resources.
- Finance: state budget, provincial budget and other sources.

2. Some programmes and project relevant to management and protection of fisheries resources and ecological environment in Phu Quoc

- Project UNEP/GEF/SCS and SEAFDEC – SIDA
- + Corals and sea grasses demonstration site: implementing in 2006
- + Marine fish protected area: in process of discussion and selection

- WWF and other NGOs:
 - + Action plan for protection of sea grasses and dugong funded by WWF
 - + Profile for establishment of Phu Quoc – An Thoi marine protected area funded by DANIDA
 - + Profile for establishment of bio reserved area funded by MAB – UNESCO

- Ministry of Fisheries:
 - + Programme 131 on protection and development of fisheries resources
 - Traditional ... conversion project
 - Community management model
 - National action plan on communication, etc.

- Local government
- + Management plan of inshore resources in Kien giang province
- + Some regulations on protection and development of marine resources and environment, etc.

- Fisheries Component, southern sea project

Summary of projects and its budget

No.	Project name	Estimated budget (mil. USD)	Implementing agency	Time
1	Study on environmental feature and resources of shrimp and fish seeds at some breeding grounds	1,800	RIMF	2006-2008
2	Study on biological characteristic, ... and living environment of	1,500	RIMF	2005-2007
3	Study on the socio-economic status of inshore fishing communities and some solutions for their job conversion	1,000	VIFEP	2006-2007
4	Establish some artificial coral reefs and dispose shrimp and fish seed into the sea for rehabilitation of resources	5,000	RIMF	2008-2010
5	Strengthen capacity of managing fishing vessels	20,000	NADA	2004-2008
6	Raising awareness and educate the conscientious of environmental and natural resources protection at all levels	1,200	NADAREP	2006-2009

Introduction of Fisheries Refugia based on SEAFDEC-UNEP/GEF/SCS and IUCN Experience by Ms. Bui Thi Thu Hien, IUCN-Vietnam



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Fish Refugia

Giới thiệu về Khu cư trú và bảo vệ thủy sản







Bùi Thị Thu Hiền
IUCN Viet Nam

Viet Nam Country Office

June 2006



Khái niệm

Theo định nghĩa của SEAFDEC về *Khu cư trú bảo vệ thủy sản*:

“Không gian và địa lý được xác định của khu vực biển hay bờ biển được áp dụng phương pháp quản lý đặc biệt để duy trì những loài quan trọng (nguồn lợi thủy sản) trong những giai đoạn quan trọng của chu trình sống của chúng cho việc sử dụng bền vững”

Khu bảo tồn biển (IUCN, 1988):

“Khu bảo tồn biển là vùng biển được dành riêng cho việc bảo vệ và giữ gìn tính đa dạng sinh học, tài nguyên thiên nhiên và các giá trị văn hoá, lịch sử đi kèm, được quản lý bằng các biện pháp pháp lý hoặc các biện pháp hiệu quả khác”

Các KBTB được thừa nhận là một phương thức hiệu quả, ít tốn kém để duy trì và quản lý nguồn lợi thủy sản, bảo vệ đa dạng sinh học và đáp ứng những mục tiêu bảo tồn khác, cũng như nhu cầu sinh kế của con người.



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Khu cư trú bảo vệ thủy sản

- Khu cư trú bảo vệ thủy sản có thể được tiếp cận theo hai hướng cả về không gian và thời gian (ví dụ: xác định vùng địa lý hoặc mùa vụ để ngừng các hoạt động đánh bắt thủy sản (ngư cụ và năng lực khai thác);
- Khu cư trú bảo vệ thủy sản tự nhiên quan trọng bao gồm: khu vực sinh sản, sinh trưởng (cá thể non) và đường di cư;
- Khu cư trú bảo vệ thủy sản có thể góp phần vào việc duy trì quần thể và các đàn cá bố mẹ, do vậy có thể duy trì được các hoạt động nghề cá, tăng cường sự liên kết giữa các quần thể, tăng sức đề kháng và phục hồi của quần thể (ví dụ: đánh bắt quá mức, mất nơi sinh cư, hoặc thay đổi khí hậu...) và cũng góp phần vào việc bảo vệ đa dạng sinh học.

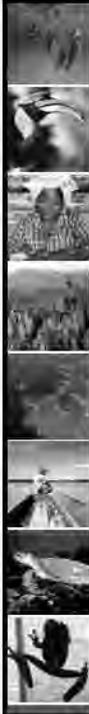
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Khu cư trú bảo vệ thủy sản

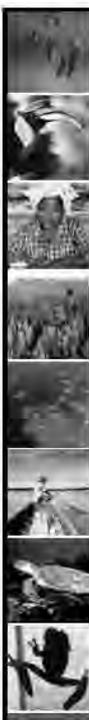
- KBTB có thể có vai trò như một Khu cư trú bảo vệ thủy sản, nhưng khái niệm này không được nêu ra trong những mục tiêu của KBTB và trong quá trình thành lập KBTB (ngoài việc bảo vệ nơi cư trú và bảo tồn đa dạng các loài thủy sản);
- Các cơ sở luật pháp về Khu cư trú bảo vệ thủy sản phải được công nhận, và việc thành lập có thể dưới dạng khác nhau với tên gọi khác nhau, ví dụ khu vực quản lý các hoạt động thủy sản;
- Quyền lực thi hành cho việc quản lý Khu cư trú bảo vệ thủy sản có thể khác nhau (ví dụ dựa theo các luật/quy định của khu vực được công nhận);

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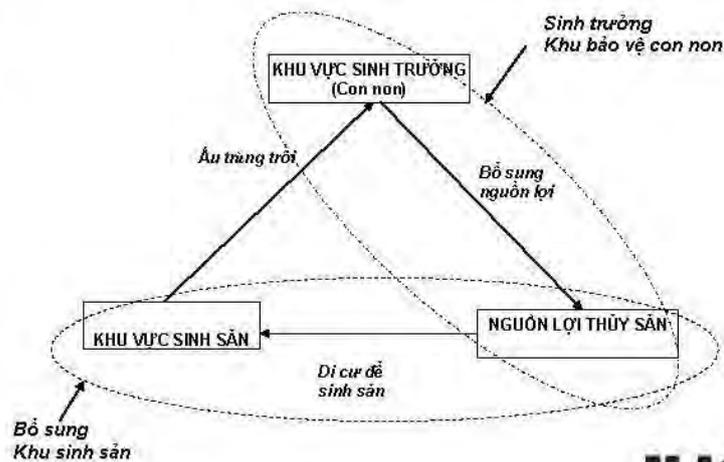


Khu cư trú bảo vệ thủy sản

- Cơ chế quản lý/bảo vệ của mỗi vùng khác nhau của cùng mỗi quốc gia có thể thuộc những cơ quan quản lý, bộ, ban ngành khác nhau. Sự phối hợp không đầy đủ giữa các bên liên quan dẫn đến trách nhiệm và quyền hạn sẽ bị chồng chéo;
- Những khó khăn gặp phải lớn nhất khi thành lập Khu cư trú bảo vệ thủy sản là thiếu dữ liệu, thông tin (ví dụ: thông tin và số liệu về khu vực sinh sản, sinh trưởng, di chuyển của ấu trùng và sự liên kết..)



Kiểu loại khu cư trú và bảo vệ thủy sản



Hình này dựa theo SEAFDEC

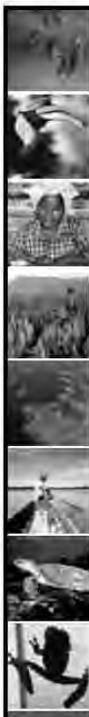




Các hoạt động của IUCN trong khu vực

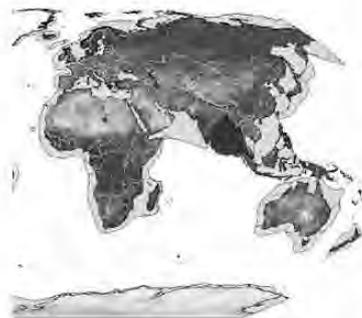
- IUCN tham gia và việc quản lý Vịnh Bengal (LME) Hệ sinh thái biển khu vực rộng lớn. IUCN cung cấp các hỗ trợ kỹ thuật và xây dựng các đề cương hoạt động cho việc thành lập và thực hiện hợp phần *Fish Refugia* (Khu cư trú bảo vệ thủy sản)
- Có nhiều nỗ lực trong lĩnh vực bảo tồn biển và QLTH vùng bờ của IUCN trong khu vực: Mạng lưới KBTB ở Sri Lanka, GEF/WB/Danida dự án thí điểm KBTB Hòn Mun (Vịnh Nha Trang); Kế hoạch hành động vùng châu Á về Tăng cường hiệu quả quản lý mạng lưới KBTB khu vực Đông Nam á giai đoạn 2002 - 2012

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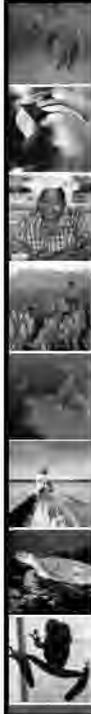


Fish refugia – Khu cư trú bảo vệ thủy sản - Vịnh Bengal

Bao bọc xung quanh bởi Bangladesh, Ấn độ, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thai Land, Vịnh Bengal là một trong 60 vịnh trên thế giới thuộc khu hệ sinh thái biển rộng lớn. Với trên hai triệu người sống nhờ vào các hoạt động đánh bắt ở vùng bờ của khu vực này



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Khu cư trú bảo vệ thủy sản vịnh Bengal

Trong hợp phần *Khu cư trú bảo vệ thủy sản*, các hoạt động
chủ yếu:

Chuẩn bị 6 báo cáo khu vực theo các chủ đề:

1. Hiện trạng nguồn lợi chung và đánh giá về năng suất của nguồn lợi;
2. Xác định các nguồn ô nhiễm từ đất liền;
3. Các hệ sinh thái quan trọng (đặc biệt là rạn san hô, thảm cỏ biển, rừng ngập mặn);
4. Sinh kế bền vững cho cộng đồng ven biển;
5. Cơ chế luật pháp và tuân tra cưỡng chế;
6. Hợp tác khu vực và cơ chế thực hiện

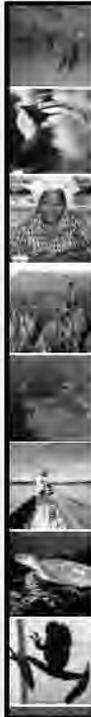
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(tiếp theo)

- (i) Hội thảo tập huấn kỹ thuật của khu vực; (Đánh giá 8 báo cáo của từng quốc gia;
- (ii) Điều tra, phân loại và sử dụng các công cụ bản đồ GIS (Hệ thống thông tin địa lý), các tài liệu và các hướng dẫn về Khu cư trú bảo vệ thủy sản, Khu bảo tồn biển trong khu vực;
- (iii) Các nghiên cứu thực địa về Khu cư trú bảo vệ thủy sản và KBTB, xác định phạm vi, quy mô của khu vực này và chức năng như thế nào (ví dụ như: bảo vệ các khu cư trú quan trọng, khu vực sinh sản, ương nuôi ... vv), và xác định trong phạm vi, quy mô nào có thể hình thành mạng lưới/hệ thống (như những dự án thí điểm về sự liên kết giữa các quần thể và một số loài thủy sản chủ chốt;

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(tiếp theo)

- (iv) Thiết lập dữ liệu cần thiết chung cho khu vực và những điều khoản để xúc tiến hỗ trợ nỗ lực quốc gia về việc thành lập Khu cư trú bảo vệ thủy sản.
- (v) Xác định/thiết lập cơ chế tổ chức cho khu vực để tiếp cận cách quản lý Khu cư trú bảo vệ thủy sản;
- (vi) Xây dựng kế hoạch hành động của khu vực về Khu cư trú bảo vệ thủy sản (bao gồm các nhu cầu, ưu tiên phát triển, các phương pháp, hợp tác, khu vực tiềm năng..vv) dựa vào những kết quả từ những hoạt động khác dưới đây, và như là cơ sở cho các hoạt động không nằm trong phạm vi của Vịnh Bengal.
- (vii) Các hoạt động đào tạo và nâng cao năng lực;

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(tiếp theo)

- (viii) Các hoạt động về giáo dục, nâng cao nhận thức tăng cường hiểu biết và chấp nhận Khu cư trú bảo vệ , thủy sản, các chức năng và lợi ích với các bên liên quan, bao gồm ngư dân;
- (ix) Hỗ trợ việc thành lập khu cư trú bảo vệ thủy sản qua việc kết hợp phương pháp quản lý đặc biệt cho khu cư trú bảo vệ thủy sản thông qua việc soạn thảo kế hoạch quản lý nghề cá vùng và tiểu vùng

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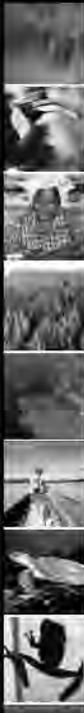


(tiếp theo)

(x) Hỗ trợ các nghiên cứu:

- Đánh giá những “kinh nghiệm tốt nhất” và “các bài học kinh nghiệm” có liên quan đến Khu cư trú bảo vệ thủy sản
- Phân tích những nhu cầu/khó khăn khi thiết lập khu cư trú bảo vệ thủy sản trong khu vực;
- Xác định các nguồn lợi thủy sản trong khu vực, điều chỉnh sự thành lập mạng lưới Khu cư trú bảo vệ thủy sản đa quốc gia như là một công cụ quản lý.
- Các nghiên cứu, đánh giá kinh tế-xã hội trong khu vực bao gồm các phân tích kinh tế của khu cư trú bảo vệ thủy sản, chi phí và các lợi nhuận đối với các nhóm hưởng lợi chính..vv

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Thiết lập Khu cư trú bảo vệ thủy sản

- Cần phải chú ý những ưu tiên sau đây khi thiết lập Khu cư trú bảo vệ thủy sản
 - Xác định các dữ liệu cần thiết để hỗ trợ cho các nghiên cứu (luật pháp, bài học kinh nghiệm tốt nhất, định giá kinh tế, các vấn đề kinh tế xã hội, và các thông tin về đường di cư có liên quan đến việc thành lập Khu cư trú bảo vệ thủy sản)
 - Xây dựng nghị định để hỗ trợ các quốc gia thành lập Khu cư trú bảo vệ thủy sản;
 - Xây dựng kế hoạch hành động của vùng và tiểu vùng
 - Tổ chức các khóa đào tạo, nâng cao năng lực, nâng cao nhận thức

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Thiết lập khu cư trú bảo vệ thủy sản (tiếp theo)

- Các bên liên quan cần được xác định sớm trong quá trình thành lập Khu cư trú bảo vệ thủy sản;
- Giáo dục, nâng cao nhận thức cần được tăng cường nên được đưa ra trong quá trình thiết kế và thực hiện;
- Quy hoạch nên xem xét những nhu cầu và mối quan tâm, nguồn lực có thể, các cơ hội hợp tác giữa các địa phương, quốc gia, khu vực khi tiến hành các hoạt động tuần tra cường chế;

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Thiết lập khu cư trú bảo vệ thủy sản (tiếp theo)

Những vấn đề cần phải quan tâm, cần nhắc khi tiến hành thiết lập *khu cư trú bảo vệ thủy sản*

1. Mục tiêu rõ ràng cho mọi khu đề xuất, một số câu hỏi cần được đặt ra, ví dụ: *Lý do chính xác vì sao phải thiết lập Khu cư trú bảo vệ thủy sản? Những lợi ích mong chờ là gì?*
2. Phân tích những tác động (kinh tế, xã hội..)
3. Xây dựng cơ chế tuần tra có thể thực hiện được; và xác định nguồn tài chính thích hợp để có thể tăng cường công tác cho các khu cần bảo vệ;
4. Thu thập thông tin, số liệu sinh học và xây dựng chương trình quan trắc sẽ được tiếp tục sau khi khu cư trú bảo vệ thủy sản được thiết lập.
5. Các công cụ quản lý khác cũng được sử dụng (ví dụ: giới hạn vùng đánh bắt, ngừng đánh bắt theo mùa vụ/khu vực;
6. Các tác động từ bên ngoài khác...

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Gulf of Thailand

- Three neighboring countries: Cambodia, Thailand and Viet Nam, are in an almost sequential state of MPA development. The coastal and marine areas of Viet Nam, Cambodia and Thailand represent a major section of South China Sea, and host significant populations of rare and endangered marine species.
- Cambodia:
 - Little scientific information is available about marine biodiversity and island ecosystems, either within or outside MPAs. National and institutional capacities in marine sciences and MPA development are generally weak.

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Gulf of Thailand

Viet Nam:

Better equipped for MPA development, with core team of marine researchers from several long standing oceanographic marine resources institutes. Ministry of Fisheries are preparing the Regulation and Planning for the system of 15 MPAs

Thailand:

The establishment of fish sanctuaries and national park has a long history, Thailand is also one of more advance countries in Southeast Asia in the field of marine sciences and MPA.

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IUCN's collaboration

- IUCN is a resource base for technical support on a broad range of issues marine as well as terrestrial, and has expertise on biodiversity, economics, protected areas, law, policy, outreach, etc etc... As such
- IUCN can lead the implementation of projects, provide technical backstopping, undertake reviews and evaluations and abroad range of capacity building activities.
- IUCN also has a presence in several countries as well as the regional programmes, and the commissions are an unrivalled resource.



IUCN's collaboration

- IUCN organizations and it's structure in Asia
 - The existing profile and structure of IUCN in the region, which include Asia Regional Office in Bangkok, 8 Regional Thematic Programmes and 6 Country Offices
 - The Global structure of IUCN allows for effective linkage with other 41 Regional and Country Officers, 11 global programmes and 6 commissions of experts, all of them working on issues related to this regional project, thus providing the opportunities to link regional and global activities.



**Plan for Establishment of Fisheries Refugia in Cambodia
by Mr. Ouk Vibol**

On-site Training/National Workshop on Capacity Building for the
Establishment of Fisheries Refugia and Coastal Resources Management
Phu Quoc, Vietnam, 14-16 June 2006.

**PLAN FOR ESTABLISHMENT OF
FISHERIES REFUGIA IN CAMBODIA**

**OUTCOME OF WORKSHOP ON HUMAN RESOURCE DEVELOPMENT FOR
ESTABLISHMENT OF FISHERIES REFUGIA AND COASTAL RESOURCE MANGEMENT**

Koh Kong Province 27-30 March 2006

OBJECTIVE

- To investigate the concepts and requirements (particularly supporting capacity building) for establishment of “Fisheries Refugia” near/in the Cambodia-Vietnam and Cambodia-Thailand border and to promote human capacity building for coastal resources management by mobilizing the lessons learned from projects/initiatives based on the experiences in Koh Kong and others related provinces/projects.

SPECIFIC OBJECTIVES

- Develop a plan to further address and implement a process to for establishment of fishery refugia integrated with locally based management based on the experiences in Koh Kong Province;
- To review concepts and basic design for establishment of "fisheries refugia";
- To clarify linkage of "fisheries refugia" in the context of locally based coastal resources management;
- To clarify the role of fisheries refugia in the management of fishing capacity,
- To identify capacity building needs and activities including HRD materials in support of the establishment of fisheries refugia;
- Outline of a training package HRD on the management of fisheries refugia and locally-based coastal fisheries management in Cambodia; and
- To discuss potential collaborative mechanisms between Vietnam, Cambodia and Thailand in the implementation of fisheries refugia.

RESULT AND PLAN

- **Establishment of fisheries refugia**
 - **Suitable place for refugia establishment**
 - mangrove and seagrass beds
 - in community fisheries area (well manage)
 - suitable site (water depth, water quality)
 - spawning and nursing ground of endangered, rare and valuable species
 - outside the core zone
 - **Why need to establish fisheries refugia**
 - Increase natural stock
 - prevent illegal fishing
 - protect and conserve endangered, rare and valuable species (dugong, dolphin, seagrass, coral reef, reef etc.
 - reduce over fishing
 - sustain the use of resources

RESULT AND PLAN (cont.)

- **Establishment of fisheries refugia**
 - **Process of selection and preparation of refugia**
 - evaluation of resources and collection of relevant information
 - ↓
 - identification of resources and location (mapping)
 - ↓
 - arrange consultation meeting
 - ↓
 - seek coordination and support
 - ↓
 - make proposal to establish refugia
 - ↓
 - establish fisheries refugia

RESULT AND PLAN (cont.)

- **Management of fisheries refugia**
 - Clearly demarcate boundary of refugia
 - Create management committee
 - Prepare management plan
 - Improve public awareness on importance of refugia to local people
 - Create regulations (fishing gear, fishing season...)
 - Establish signed board
 - Increase involvement of local community in managing refugia
 - Build capacity on management of refugia to relevant institutions
 - Seek funding and technical support
 - Create patrolled group
 - Propose to all government in all level as need to recognize the established fisheries refugia

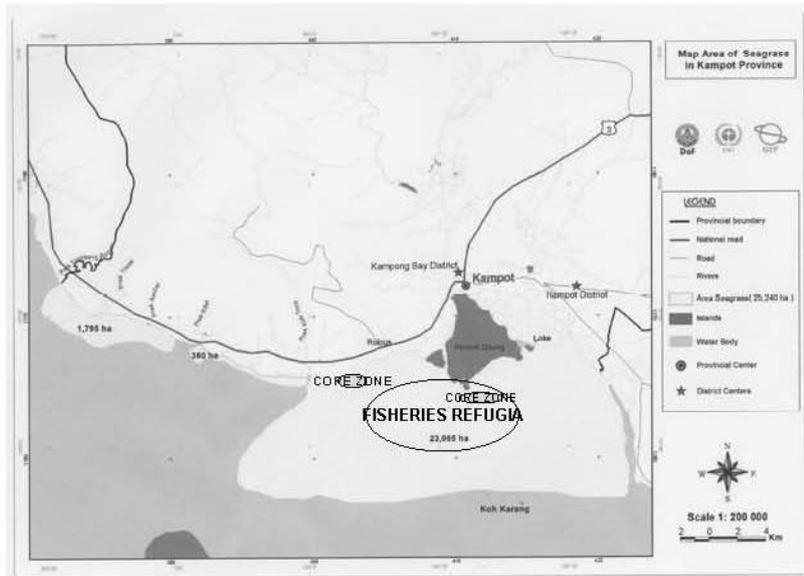
**POSSIBLE COLABORATION WITH NEIGHBORING
COUNTRIES ON ESTABLISHMENT AND MANAGEMENT
OF FISHERIES REFUGIA**

- With Thailand
 - Need agreement between the two governments
 - Create technical advisory group to work on:
 - preparation of legal and administration framework
 - human resource development
 - fishing activities (fishing gear, fishing season..)
 - alternative livelihood option (Aquaculture, processing....)
 - Information exchange
 - Select site for fisheries refugia
 - within country
 - overlap area between the two countries

**POSSIBLE COLABORATION WITH NEIGHBORING
COUNTRIES ON ESTABLISHMENT AND MANAGEMENT
OF FISHERIES REFUGIA**

- With Vietnam
 - Research together to identify the migratory species (dugong, dolphin, turtle.....)
 - Study on possibility to establish fisheries refugia between the two countries
 - Create management structure
 - Management board (chaired by governor of Kien Giang and Kampot Province) to work on management aspect
 - Technical Advisory Group (chaired by the Department of Fisheries) to work on technical aspect

MAP OF PROPOSED FISHERIES REFUGIA ESTABLISHMENT



COLLABORATION BETWEEN KAMPOT AND PHU QUOC ON CORAL REEF AND SEAGRASS MANAGEMENT Phu Quoc, Vietnam, 29-31 May 2006



Outcome of discussion as agreed from both sides

- Stop illegal trade (dugong, turtle, coral reef and seagrass)
- Reduce or stop completely the use of illegal fishing activities within the demo-site
- Joint meeting both PMB/MAG
- Development of policy and cooperation framework for project area
- Development of guideline for resource assessment and monitoring
- Development of joint GIS database
- Training