

# Fisheries and co-management in the coastal zone of Thailand

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## Contents

1. Introduction
2. Degradation of coastal and marine resources
3. Co-management as strategy to improve resources
4. Coastal Habitats and Resources Management project (CHARM)
5. Outcomes
6. Example of a result: improvement of fishery status
7. Recommendations
8. Conclusions
9. References and PDF reports

## Summary

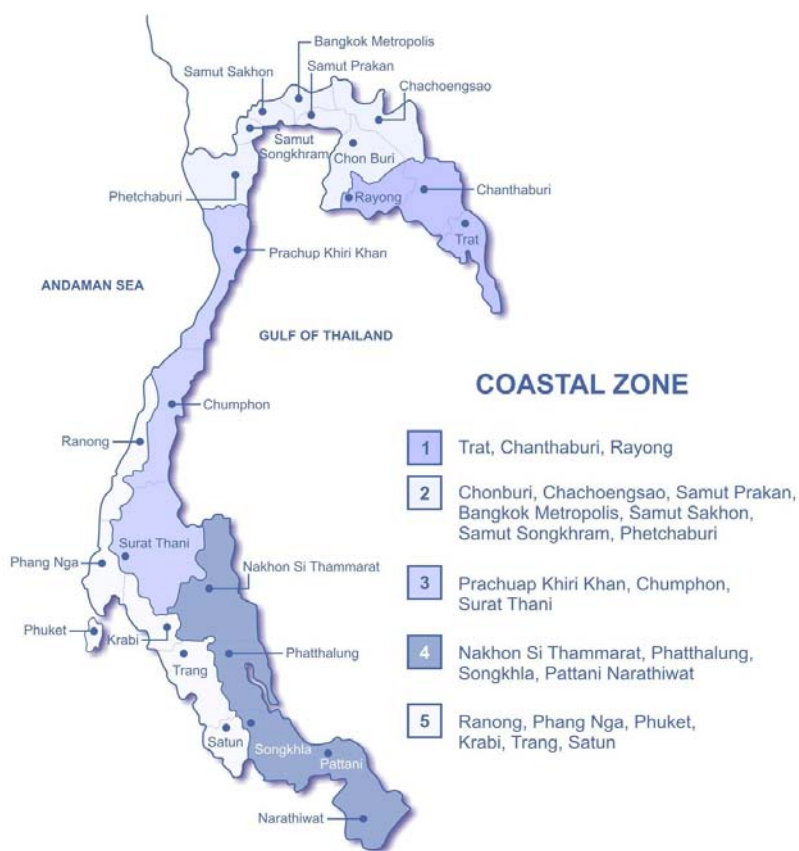
One of the main reasons for the creation of the Coastal Habitats and Resources Management CHARM project was the recognition that overfishing of the marine waters of Thailand caused negative effects on the marine fish stocks, ecosystems and the coastal fishermen. The total marine annual catch is double the estimated maximum sustainable yield. The Thai government responded, in partnership with the European Commission, by carrying out the CHARM project. This large scale project has developed its approach around five attributes of co-management: participation, partnership, capacity building, development of integrated approaches and methods, and learning and adaptation. An example of results of this co-management approach is provided in the improvement of fishery status in the Phang-Nga Bay during 1997-2005. The approach has shown that the future of coastal resources co-management for better coastal governance in Thailand lies on the one hand with skilled, self-organised community-based organisations and on the other with strong, committed and enlightened local governance, supported by the national government agencies. Changes in the behaviour all the partners becoming more responsible for local marine resources is as important as establishing proper users rights in a participatory fashion. The future fields of engagement should also be broadened to enhance community based tourism and small enterprises, using the unique richness of the Thai coastal and marine environment in a sustainable way.



*Many faces of the sea – a tropical slug.*  
(photo: CHARM- Coastal Habitats And Resources Management project)

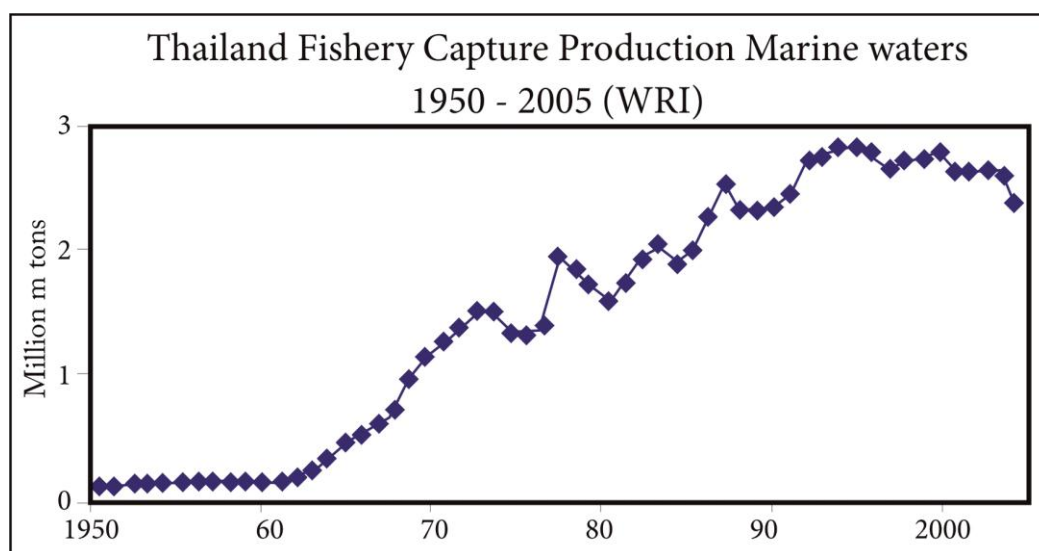
## 1. Introduction

Thailand's marine and coastal resources are abundant and unique. Its two distinct coastal areas - the Gulf of Thailand in the South and the Andaman Sea in the Southwest—have impressive natural resources, including mangrove forests, coral reefs, beaches, and wetlands. These resources play an important role in Thailand's tourism industry, trade, local livelihoods and fisheries. The Thai marine fish resources have traditionally been rich and abundant and marine fisheries contribute substantially to the country's GDP. Of the total marine fisheries, 70 percent comes from the Gulf of Thailand and the remainder from the Andaman Sea. However, the fish stocks are under increased pressure and the marine resources in Thai waters more generally are declining.



**Figure 1: The different coastal regions of Thailand**

(source: FAO – Regional Office Bangkok, Poonnachit-Korsieporn, 2000)



**Figure 2: Thai capture fishery** in marine waters in metric tons 1950 – 2005, with several interruptions, but with a gradual decline after the 1995 maximum production of 2.8 million m ton. This recognition of gradually decreasing fish production accompanied by an increased fishing fleet, was one of the reasons why the CHARM - project was created. (source: WRI, adapted by R. Misdorp)

## 2. Degradation of coastal and marine resources

Fifty years after the rapid increase in fishing, the success story of Southeast Asian has been revisited. The uncontrolled development of industrial fisheries has resulted in overcapacity and overfishing for decades. Fortunes were made, but now the Gulf of Thailand fisheries are depleted with it an increase in social conflicts among fishermen and their families. This has resulted from an overall failure in managing what was once plentiful – a seemingly limitless resource– just a few decades ago.

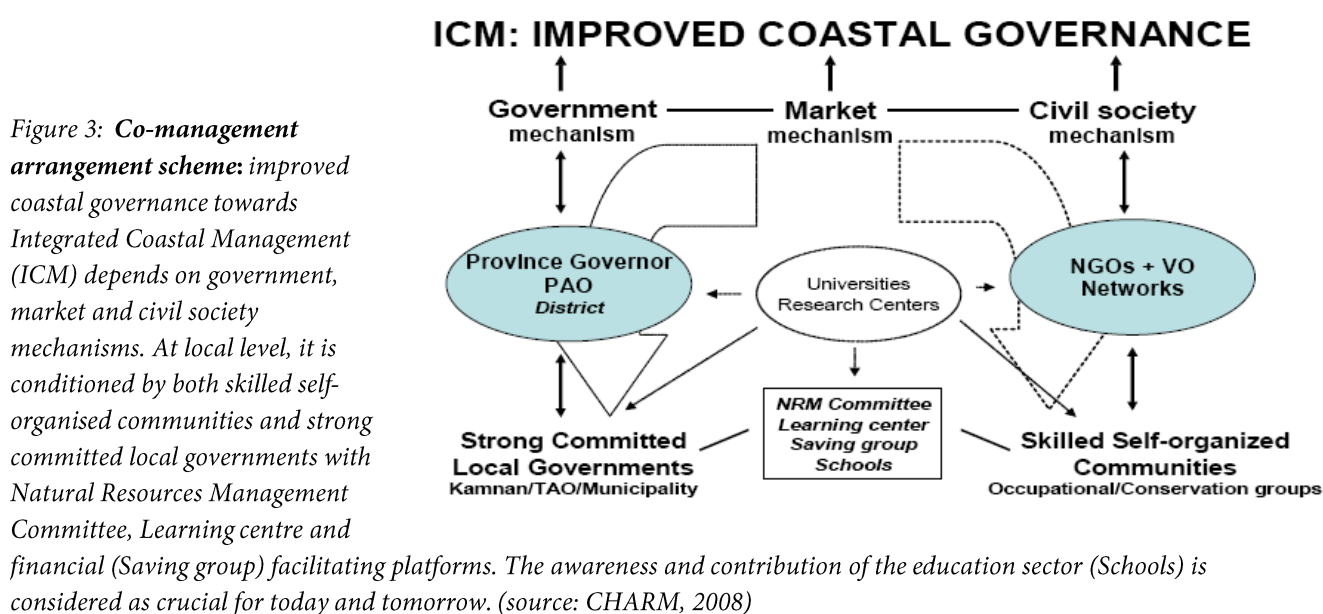
With the relative abundance of resources in inshore area (in sharp contrast to the depleted deep sea areas), trawlers and other industrial fishing operations will often and illegally encroach on areas reserved for smaller-scale fishers. This trespassing, facilitated by a lack of cost-effective MCS (Monitoring Control and Surveillance) and insignificant punishment for those arrested for violations has adverse consequences. Illegal fishing not only causes unfair and intense competition for the resources, but also destroys fragile and productive coastal habitats that play an essential role in the biological productivity of tropical waters. They also regularly damage passive fishing gear used by small-scale fishermen.

Area	Fish Category	Maximum Sustainable Yields	Actual Catch (2005) (Unit: tons)
Gulf of Thailand	Pelagic	400,000	559,502
	Demersal	750,000	1,261,185
	<b>TOTAL</b>	<b>1,150,000</b>	<b>1,820,687</b>
Andaman Sea	Pelagic	50,000	166,628
	Demersal	200,000	491,292
	<b>TOTAL</b>	<b>250,000</b>	<b>657,920</b>
TOTAL Thailand	Sub-total Pelagic	450,000	726,130
	Sub-total Demersal	950,000	1,752,477
	<b>TOTAL</b>	<b>1,400,000</b>	<b>2,478,607</b>

Table 1 - Maximum sustainable yields and actual catches in Thai waters. The table shows that the fishing operations in both sides of the Thai waters, the Andaman sea and Gulf of Thailand, are catching more than the carrying capacity of the sea. The total number of the actual catch is nearly double the maximum sustainable yields.

## 3. Co-management as strategy to improve resources

The tools to address fisheries issues and improve marine resources are fishery plans, policies, laws, taxation and enforcement as well as management. Each can offer a different way of controlling fishing activity and therefore offer different avenues of reform, which are explored more fully in the main project document (CHARM, 2007a).



Within this framework, community-based management, and later co-management of fisheries resources, became key strategies for addressing some of the imbalances. Co-management, in particular, introduced a dynamic partnership between resource users and government.

The underlying rationale of co-management is as follows: sound and equitable coastal resources management is not achievable without partnership arrangements in which community and government share the responsibility and authority for the management of natural resources. It is focused on the process: how is the work carried out. It has clear connections to participation and sustainability.

The up-scaling process operates through the provincial governance level and volunteer organisations (VO) supported by coordinated Department, provincial offices and NGO networks (Figure 3; CHARM, 2008). As a driving force, the market mechanism calls for Public-Private partnership agreements. Knowledge centres (universities, research centres) got committed in the governance process through practicing useful knowledge transfers to users and decision-makers. Co-management works at the interface between the ecosystem and the human system, seeking changes in the state of the first by bringing about changes in the behaviour of the second.

#### **4. Coastal Habitats and Resources Management project (CHARM)**

In parallel with some measures for the decentralisation of management authorities, innovative approaches such as community-based and rights-based fisheries gained momentum as in Southeast Asia in general. Pilot projects initiated by government agencies or NGOs were an effective way to begin. For this reason the Thai government, in partnership with the European Commission, carried out a large-scale project focusing on Coastal Habitats and Resources Management (CHARM) between 2002 and 2007. CHARM specific objectives were: to design and establish the coastal habitats co-management framework and procedures in two Southern Thailand areas that can serve as models to be replicated elsewhere in the country.

Operating under the Department of Fisheries, supervised by a Project Steering Committee composed of sixteen public Departments and two national private associations, and covering five provinces, the CHARM project was a national project designed to produce positive and sustainable local and national coastal-related policies.



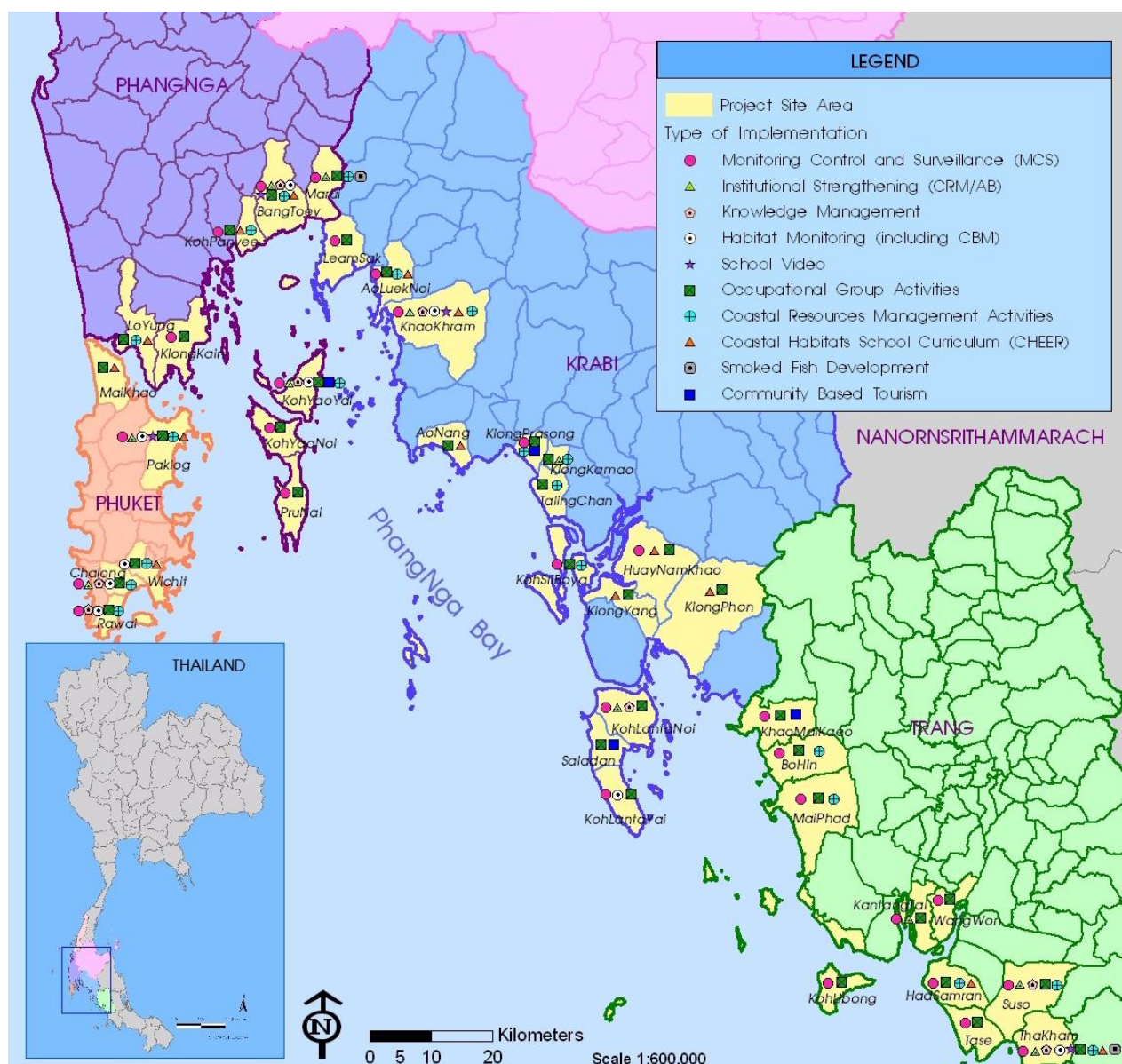


Figure 4: **CHARM Project areas in coastal region # 5 – Phang Nga Bay**: the co-management approach as spreading across the coastal provinces of Thailand. (source: CHARMS 2005 Annual Booklet)

## 5. Outcomes

For the benefit of the project first beneficiaries, i.e. the coastal communities, CHARM developed its approach around the five attributes of co-management, which are participation, partnership, capacity building, development of integrated approaches and methods, and learning and adaptation (see CHARM, 2008). The outcomes of the CHARM project under these five co-management attributes have the following outcomes:

### Participation

At the end of 2006, a total of 479 projects in 50 of the existing 99 coastal Tambons (subdistricts) were carried out, of which 226 were CHARM led projects (funded by EU and Royal Thai Government - RTG). The other projects were “Cooperatives Promotion Department-led” projects and “Tsunami Funds” projects. Totally, the projects had the participation of 14,022 people. These efforts represented a combination of various community initiatives and innovations, including those built on the traditional – but effective – developments.



**Participation** (source: CHARMS 2005 Annual Booklet)

### **Partnership**

CHARM has enjoyed the participation of governmental departments, local government agencies, local community organisations and local stakeholders, as partners of the CHARM project. It maintained a special tie up with several Non-Governmental Organisations (NGOs) and have benefited from the roles they have played. In our analysis, the roles in bridging various development gaps that several local NGOs played, were essential in the fast evolving situation and in relation to unexpected events, such as the 2004 Tsunami disaster.

### **Integrated approaches and methods**

Various tools are necessary for groups of stakeholders with mutual interests to work efficiently together. In the early stages CHARM contributed an effective tool for scoping a coastal area plan by producing Vulnerability Maps of the project areas. With the help of an EU expert, we documented an environmental profile and improved the vulnerability mapping of Chalong Bay in Phuket.

In addition, a number of mutually interested groups signed partnership agreements . The “Trang Sea Coastal Management Group” has signed an agreement on Monitoring, Control and Surveillance (MCS) of Trans Sea in an effort to control persistent illegal fishing. The MCS network in the entire Phang Nga Bay will also help the Trang Sea group to provide a stronger deterrent to inter-provincial fishing fleets.

### **Learning and adaptation**

Learning and adaptation are central to any co-management modules. The various stakeholders gather new, sometimes unexpected experiences and knowledge from the joint implementation of agreed activities. Among the field projects supported by CHARM, communities have learnt the value of working in a group. Their combined experience can help secure the desired outcome in relation to a specific issue.

The NGOs working for the CHARM-supported projects have also learnt from the field experience. They now understand development on a wider scale, favouring the ‘ecological unit’ approach rather than their traditional ‘community based’ frame of development.





*Learning, discussing and adapting to a changing fishery culture. (photo: CHARM Annual Booklet, 2005)*

### **Building capacity**

Different methods are needed for in order to strengthen the development capacity of each stakeholder as they each have different characteristics and needs. The weakest communities and local governments need urgent help.

Income generation pursued by community organisations is one way to strengthen this stakeholder group and bail them out of the tenacious grip of poverty. CHARM has not only encouraged them to work as “an occupational group”, but also insisted that they derive lessons to inform future development from self-assessment.

### **6. Example of a result: improvement of fishery status**

The CHARM project does not operate as a separate entity in the overall system. It aims to help the Department of Fisheries and its immediate topic-related agencies. It is therefore realistic to expect that CHARM will make a difference that is incremental and cumulative in relation to other initiatives that have considered by the project for collaborative development.

One of the most obvious results is the improvement of the fisheries status in Phang Nga Bay (ASFRDC, 2007). Figure 4a shows that after the expansion of the prohibited area for trawlers and push netters in 1998, the production of marine produce in Phang-Nga Bay has slowly increased over the 1997-2005 period, although not always smoothly. This was the assumption behind the progressive removal of destructive fishing gear from the area. While push netters and pair trawlers were effectively removed in 1998, beam trawlers catching shrimps and operating inshore were given an extra five years to operate in the bay. The production from beam trawlers (Figure 4 : light yellow colour) shows an upward trend until 2003. The decline occurred by 2004, as they were effectively banned from the main part of the bay. The value of marine products rose within the same period (Figure 4b) also due to an increase in shrimp catches and higher quality products.

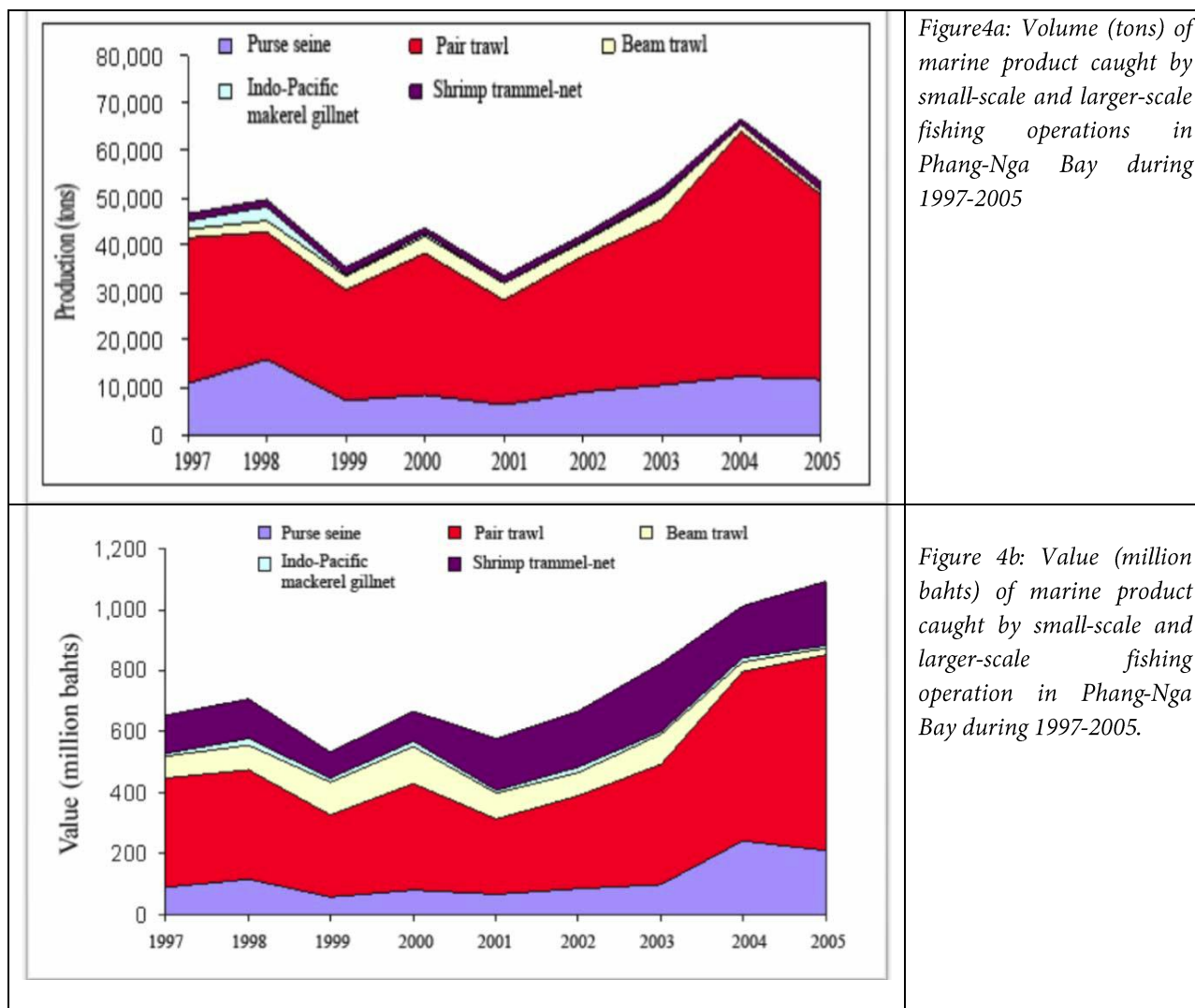


Figure 4: **Improvement of fishery status in Phang Nga Bay during 1997-2005.** (source: Compiled from Technical Report on Aquatic Resource Conservation, Andaman Sea Fisheries Research and Development Centre, Department of Fisheries, 2007)

## 7. Recommendations

These recommendations are made within the development framework based on the two principles of co-operative management and coastal governance. They provide valuable insights in their own right and in the context of their contribution to the integrated vision described above.

- *Develop a vision encompassing all elements of coastal governance*  
The vision should encompass all the elements that affect the management of sea fisheries. These range from the nation as a whole and include all levels of governance. It should also recognise the dynamic interplay and the flow of information and resources between the different layers of government, the economy and the social fabric of the regions.
- *Strengthen and expand co-management arrangements at local and provincial level*  
The governmental levels and units involved are the village (through occupational group strengthening and networking), the Sub-district (through the setting up of Natural Resources Management Committees, Information and Learning Centres, Saving groups and school network), the Province (through issue-related agreements and planning support) and the seascape management units such as Chalong Bay, Phang Nga Bay or Ban Don Bay.



- *Find a way to relate to each other's stories*  
Project leaders need to be able to find a way to learn from each other's experiences. Although each local or regional project has a different starting context, and a different focus, they all involve the same system of actors, institutions, processes and interactions.
- *Strengthen occupational group networks*  
A strong focus on the development of sustainable livelihoods facilitates marine conservation initiatives. Initial field projects focused on single village occupational group development. This has evolved over the years to multiple village occupational groups and more recently to occupational group networks recognised as legally based *community enterprises* and *community network enterprises* under the support of the Agriculture Extension Department.
- *Support the further development of coastal Community-based tourism in Thailand* as an income-generating and conservation awareness activity.
- *Seek and encourage the engagement of the private sector*  
CHARM worked with the diving industry in Phang Nga Bay and some tourist operators. However, the project did not (or could not) include the important private sector stakeholders such as shrimp farmers and commercial fisheries in its co-management activities.. They were engaged to a small extent in the last fisheries conflict resolution study.
- *Support coastal resources and marine spatial planning at provincial level*
- *Create the enabling conditions for a more coordinated approach between government agencies*
- *Seek and encourage the networking of NGOs at provincial level*  
CHARM has established working partnerships with various NGOs to implement key elements of the project. This strategy came into it's own after the Tsunami, with many Bangkok and Chiang Mai based NGOs moving south to assist local communities. These larger NGOs have been very effective in networking primarily as Save Andaman Network immediately after the disaster.
- *Enhance and integrate Thailand's coastal-management research*  
There are many universities, institutes, and other organisations involved in coastal resources management related research in Thailand but the focus is more on the condition of coastal resources than on management itself. On the model of the Thailand Research Fund, a Sea Grant Programme could facilitate formulating a national vision, mission, and priorities for integrated coastal management research.

The Marine and Coastal Resources Policy Green Paper (Henocque & Tandavanitj, 2008) provides more information on recommendations towards Sustainable Coastal Development in Thailand, dealing with formulating: a National Vision collectively helping conserve the natural resources and enhance environmental quality for the society, six Principles for Coastal Management and collating feedbacks for further development of the Thai coastal policy.

## 8. Conclusions

The achievements of fishers' institutions studied in Southern Thailand highlight the validity of *co-management* in addressing conflicts and gaps in fishery management. Although this approach is typically geographically isolated and cut off from the mainstream management system, *co-management* and *rights-based fisheries* offers much more in terms of establishing a working decentralised system, which can be sustained and implemented on a national scale.

Progressive decentralisation of management functions to the provincial level should be supported. This should include provision for provincial management bodies to support local fishery institutions. Thereafter, the province could

decentralise some management rights to local fishery institutions, with an appropriate legal status. This would establish them as partners of the government in management, together with the granting of group user rights. The establishment of such rights would ensure a proper understanding of the current fishing capacity in Thai waters, especially including small-scale and non-registered boats/gear. It also allows for the establishment of *mechanisms for the control of fishing effort*. By ensuring regulations are properly enforced, and with collective action taking place in coastal communities, the behaviour of fishermen will change toward *more responsibility for marine resources*.

Self-organisation and collective action do not always come easily to fishermen, which often depend on local tradition. Therefore capacity building by government agencies will be a prerequisite to ensure the involvement of most communities in local fisheries management, including solving fishery conflict. Institutional capacity building, begins at the national level, must include provincial management bodies and eventually fishing communities. This is a *long term process* that will take years and require lasting political will and endeavour.

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