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The Economy and Environment Program for Southeast Asia (EEPSEA) was established in May 1993 to support training and research in environmental and resource economics across its 10 member countries: Cambodia, China, Indonesia, Lao PDR, Malaysia, Papua New Guinea, the Philippines, Sri Lanka, Thailand, and Vietnam. Its goal is to strengthen local capacity for the economic analysis of environmental problems so that researchers can provide sound advice to policymakers.

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Saving Tourism from Itself: Attitudes and Action in Thailand

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Tourism has helped fuel much of Thailand's rapid growth in recent years. Yet the country is in danger of killing the goose that lays this golden egg. Lack of regulation, coupled with inappropriate development, has meant that many of the country's most important tourist sites are in danger of being over-developed and despoiled.

In response to this problem, a new report has found that many Thais are not only very →

A summary of EEPSEA Research Report 2002-RR5, *An Economic Valuation of Coastal Ecosystems in Phang Nga Bay, Thailand*, by Udomsak Seenprachawong (School of Development Economics, National Institute of Development Administration, Thailand; contact: udomsak.s@nida.nida.ac.th)

Many Thais are passionately c

→ concerned about the protection of marine and coastal tourism destinations, but would be willing to pay to see such sites conserved. The report recommends that tourism itself holds many of the answers to the problem and suggests ways in which conservation measures can be financed and put into practice.

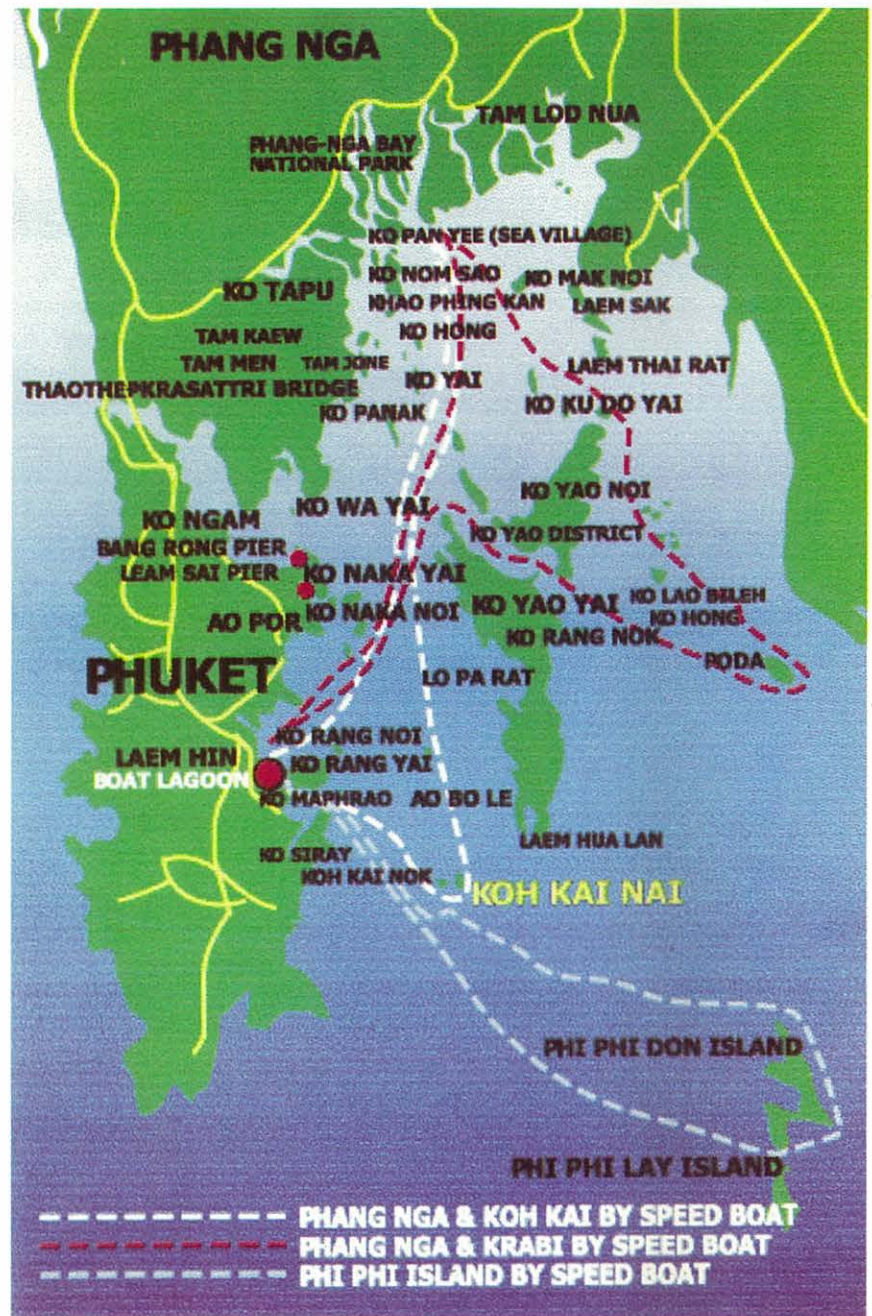
The study was done by Udomsak Seenprachawong, at the time a faculty member of Thailand's Sukhothai Thammathirat Open University. He looked at Phang Nga Bay on the country's southern seaboard. His findings mirror those of his earlier report on the islands of Phi Phi. (EEPSEA 2001-RR7). Both studies are relevant to many other marine sites in the country.

Phang Nga Bay

Phang Nga Bay is a large area of amazing natural beauty in the Andaman Sea. It is internationally famous for its tourist attractions that include the beautiful beaches of Phuket and the magnificent coastal views of Phang Nga and Krabi.

One of the most important marine habitats in the area are the coral reefs along the coastline and offshore. The bay is also home to over 60,000 ha of mangroves. Local communities are highly dependent on these habitats because they protect shrimp nurseries and fishery areas. There are also a number of national parks in the area where endangered species such as sea turtles breed.

The unique beauty of Phang Nga Bay is under threat from both unregulated tourism - which has been going on since the early 1980s - and the proposed Southern



Map of Phang Nga Bay

Seaboard Development Project (SSDP). Already trees have been removed, wetlands filled in and beaches polluted by poorly treated wastewater. Surveys have shown a slow and steady decline of coral in the area because of elevated

sediment in the water. As currently planned, the SSDP will involve the construction of many new projects - such as deep-sea ports and highways - close to important and sensitive tourist sites in the Bay.

Concerned about the environment

Conservation vs Development

Given the rapid rate of destruction in the area, options for sustainable coastal management need to be urgently identified. Seenprachawong's study aimed to address the conflict between conservation and development by assessing the economic value of preserving the natural environment in the bay. This information is vital if informed decisions are to be made about the expansion of environmentally-damaging commercial activities.

This work is vital not just in Phang Nga Bay, but elsewhere in Thailand. The country's 2,705 km long coastline is under threat of degradation. Between 1961 and 1993, for example, Thailand's mangrove forests have been reduced from 367,000 ha to less than 168,676 ha.

Giving People Choices

To get the information he needed, Seenprachawong used a "choice experiment" to estimate the value that visitors and locals would place on changes in the quality of Phang Nga Bay's marine and coastal

ecosystems. A choice experiment gives respondents a number of options and asks them to choose the one they most prefer. A random sample of 300 Thais (not foreigners) was selected and four teams of surveyors conducted face-to-face interviews.

The respondents were asked to choose between three target levels - average, good or excellent - for environmental improvement. These targets related to living coral cover (a measure of flora and fauna biodiversity), income from fishery (a measure of local livelihood), flood occurrence (a measure of ecological function) and area protected (a measure of the rare and endangered species under protection). Each choice of target was linked to an income tax hike, the amount that would be required to finance successful implementation.

In this way the survey investigated the importance respondents placed on the recreational use, consumptive use and indirect and non-use value of Phang Nga Bay's ecosystems. The questionnaire and the attributes used in the choice experiment were developed in cooperation with researchers specialized in marine

ecosystems from Marine Science Institute of University of the Philippines.

Along with the choice experiment, the questionnaire also investigated attitudes towards the environment, current uses of the mangroves and coral reefs, and the socioeconomic characteristics of the respondents. Throughout, the study emphasized both mangroves and coral reefs since they are often found together and their benefits are closely linked.

And the Result is?

Seenprachawong found that many Thais are passionately concerned about environmental protection. Indeed, over 35 % of the respondents considered protecting natural habitats and wildlife to be the most important issue for Thailand. Nearly half strongly agreed with the statement "We have a duty to protect the environment from development regardless of the cost". A very high percentage of the respondents (80%) believed that natural resources are of value because of the benefits they can provide to future generations and 88% agreed that mangroves and coral reefs should be conserved

Choice set from Phang Nga Bay Questionnaire

YOUR CHOICE ⇒			
	Status quo	Plan A	Plan B
Increased living coral cover	No change	25 %	No change
Increased income from fishery	No change	No change	60 %
Flood occurrence	Every year	Every 2 years	Every 4 years
Increased area protected	No change	20 %	50 %
Your increased income tax in 2002 (Baht)	0	200	700

Note: 40 Baht = 1 USD

because of the wildlife they support.

Among other attitudes that supported the contention that Thais care for the environment was the finding that nearly 57 % of the respondents agreed with the statement "I should pay for the protection of parks and nature reserves even if I do not visit them".

How Much is Protection Worth?

When it came to putting a figure on how much people value environmental concerns, Seenprachawong found that, on average, his respondents would each be willing to pay 2,263 Baht (USD 57) for a 35% to 65% increase in environmental quality. Taking into account the number of people who might benefit from such improvements, Seenprachawong calculated that the total annual value of such an increase would be worth 5,784 million Baht (USD 144.6 million), equivalent to 8% of gross provincial products of Phuket, Phang Nga, and Krabi provinces combined. From his questionnaire, Seenprachawong found that the protection of a diversity of flora and fauna, which provides recreational and tourism benefits, is perceived as

being the most important attribute of Phang Nga Bay. He found that individuals would be willing to pay 1,133 Baht (USD 28) per year for improvements in this area.

How to Save the Bay

In light of these findings, Seenprachawong drew on international research to propose recommendations on how Phang Nga Bay's environment should be protected. He proposed that the government should impose an official moratorium on all new hotels and related tourist accommodation developments. He also suggested that all major development proposals must be accompanied by a thorough environmental impact study and that the operation of jet skis and similar high-powered marine craft should be prohibited in the environmentally sensitive areas.

To raise money for conservation work, Seenprachawong recommended that the government introduce a two-tiered basic entrance fee for marine parks in Phang Nga Bay, with different rates for residents and foreigners. Thais should pay an entrance fee of 40 Baht (USD 1) while foreigners should pay 400 Baht (USD 10). He also suggested that

supplementary user fees should also be levied when visitors use specific recreational sites in the bay and that a hotel room tax of 40 Baht/ USD 1 per night also be implemented for non-Thais. He proposed that money could be raised in a number of other ways at the site. For example, park managers could implement a "Friends of the Sea Turtle" program. An "adoption program" could be used to generate revenue for a specific site.

Seenprachawong also recommended that his findings be incorporated into an extended cost benefit analysis of the SSDP. This is vital since the economic losses the scheme would inflict by damaging tourism, coastal protection and fisheries may well outweigh its economic benefits.

Overall, Seenprachawong advised that, properly regulated and controlled, tourism in Phang Nga Bay offers a way to combine environmental conservation with economic development. This is an appealing prospect, particularly in Thailand, where economic development alternatives in rural areas are limited and money for conservation is scarce.

40 Baht = 1 USD (November, 2002)

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