



Policy Briefs

Putting a Price on Paradise: Economic Policies to Preserve Thailand's Coral Reefs

by *Udomsak Seenprachawong*

A summary of EEPSEA Research Report 2001-RR7, *An Economic Analysis of Coral Reefs in the Andaman Sea of Thailand*, by Udomsak Seenprachawong (School of Economics, Sukhothai Thammathirat Open University, Thailand; contact: ecassudo@samsorn.stou.ac.th)

Millions of people have read about "The Beach" and or seen it in the Leonardo de Caprio film, while many others have visited it, or similar ones, in Thailand's Andaman sea. And there lies the rub: The famous 'paradise' islands of Phi Phi are so popular that they are in danger of being loved to death. Tourists from all over the world are putting increasing pressure on this fragile ecosystem. In response to this problem, a new study has found justification to introduce a system of charges to reduce the pressure on the islands' coral reefs and provide money for their conservation.

The study, by Udomsak Seenprachawong, from the School of Economics at Thailand's Sukhothai Thammathirat Open University, is not only important for its implications for the islands of Phi Phi. As the first study of its kind in Thailand, it is also relevant to many other marine sites in the country.

To investigate what options might be available for improved marine conservation and management in Phi Phi, Seenprachawong used a number of valuation methods to work out the economic value of the coral reefs around the islands. He found that the annual value of the area to visitors was over 8,200 million baht (US\$205 million). He also found that the use and non-use values of Phi Phi coral reefs represented an annual value of some 19,900 million baht (US\$497 million). Based on his results, Seenprachawong recommended that the local and national government of Thailand should allocate a larger percentage of their annual budgets to managing coastal resources and that tourists should be charged an admission fee of 40 baht (USD 1) alongside other payments for using the island's resources.

The Study Site

Located about 45 km. east of Phuket in the Andaman Sea, Phi Phi comprises four main islands. These include Phi Phi Don and Phi Phi Lae, part of the Had Nopparat Thara-Phi Phi Islands National Park. The Phi Phi area is of great environmental significance as it marks the boundary between two of the region's major oceans, the Pacific and the Indian, and includes extensive

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coral reefs and mangrove forest - home to a wide variety of marine and terrestrial flora and fauna.

Phi Phi offers the tourist amazing recreational possibilities, including a wide range of diving opportunities and exquisite beaches. Over the past few years, the islands have grown into one of the busiest tourist destinations in Thailand. In 1998, over 150,000 tourists visited the islands, 85% of them foreign. Sadly, this has led to degradation of the reefs as marine traffic and other destructive activities have increased along with the tourist trade.

Valuing the Reef

It was clear to Seenprachawong that Phi Phi requires a better management plan - one that maximises the positive and minimizes the negative impacts of tourism. To provide information for such a plan, he set out to calculate the recreational and tourism value of Phi Phi's reefs. To do this, Seenprachawong used two methods: travel cost (TCM) and the contingent valuation (CVM).

TCM is based on the idea that, although the actual value of the recreational experience does not have a price tag, the costs incurred by individuals in travelling to the site are an indication of their willingness to pay for the experience be used as surrogate prices. From this and other data, it is possible to estimate the area's consumer surplus - a measure of its value to users as a recreational resource.

Seenprachawong's survey approach collected information about visitors' trips, as well as their age, income, sex and other socio-economic factors. 850 questionnaires were distributed; 630 domestic visitors and 128 international visitors returned completed forms.

The survey found that the total benefits of the recreational services offered by Phi Phi were about 69.9 million baht (USD 1.75 million) a year for domestic visitors and 8,146.4 million baht (USD 203.66 million) a year for international visitors. Adding these two numbers up gives a figure of 8,216.4 million baht (USD 205.41 million) a year for the total recreational benefit Phi Phi provides.

Targeting the Tourists

Seenprachawong used CVM to see how much people would be willing to pay for the conservation of Phi Phi's coral reefs. Over 400 domestic visitors and 128 international visitors were interviewed. The people questioned were given information about the current conservation situation in Phi Phi. They were told that the reef at Phi Phi island is about one quarter degraded and that if nothing is done, scientists estimate that it will become 40% degraded in about 20 years. Respondents were asked whether they would be willing to pay a pre-determined amount to a trust fund to totally restore the coral reefs at Phi Phi island. This ranged from 50 to 2,000 baht a year for domestic tourists and from USD 1 to USD 50 a year for international visitors. The amount suggested was varied randomly among respondents to reduce the possibility of people's answers being biased by the question itself.

Seenprachawong found that the mean maximum willingness to pay for domestic visitors was 287 baht (USD 7.17). For international visitors the figure was 286 baht (USD 7.15). From this he calculated that the total value of Phi Phi's coral reefs were 5.89 million baht (USD .147 million)

a year for domestic visitors and 49.6 million baht (USD 1.24 million) a year for international visitors. Seenprachawong also used his results to calculate the mean willingness to pay of domestic vicarious users - 634 baht (USD 15.85) - and from this the total economic value (use and non-use) of the reefs. This he estimated to be 19,895 million baht (USD 497.38 million) a year.

Charging for Conservation

From Seenprachawong's findings, it is clear that Phi Phi can generate large economic returns from recreation. It is also clear that people are willing to pay for conservation measures - vital if development pressure is not to kill the goose that lays this golden egg.

To allow Phi Phi to realise its potential as an eco-tourism destination, Seenprachawong suggests that entrance and user fees be introduced to reduce visitor numbers at peak times and spread tourist traffic. Based on his calculated value for 'willingness to pay', he recommends a basic entrance fee of 40 baht (USD 1) per person per visit - twice the current rate. This he feels, should be supplemented by an additional fee of 150 baht (USD 3.75) for visits to specific particularly sensitive coral reef areas. Because he found that foreign visitors were not willing to pay significantly more than locals for visiting the park and in order to prevent animosity among foreign tourists, Seenprachawong counsels against a larger fee for foreigners. Instead, he suggests a voluntary hotel fee of 40 baht (USD 1) per bed night. He suggests a voluntary fee to reduce opposition from hoteliers and recommends that information leaflets be provided to tourists to explain to them what the money is for and how it will be spent.

A Way Forward for Thailand?

Seenprachawong also makes a strong case for local and national governments to increase their expenditures for managing the resource - especially since much of the economic benefit from coastal resource management in Phi Phi goes to the local economy.

Many other areas along Thailand's coast have similar coral resources to Phi Phi. The conservation and management model suggested by Seenprachawong could be adapted to many of them, making marine conservation an integral part of the country's economic development strategy.

40 bahts = 1 USD (July/01)

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