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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, Laos, Malaysia, Papua New Guinea, the Philippines, Sri Lanka, Thailand, and Viet Nam. 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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Reef Rescue : Financing Marine Conservation In The Philippines

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With a longer coastline than the United States and a multitude of islands to its name, the Philippines faces more challenges than most in protecting its marine environment. Major problems such as over-fishing currently threaten both the rich biodiversity of its seas and the livelihoods of fishermen and those who depend on coastal tourism. ➔

A summary of EEPSEA Research Report 2005-RR4, *Valuing Biodiversity Conservation in a World Heritage Site: Citizens' Non-use Values for Tubbataha Reefs National Marine Park, Philippines* by Rodelio F. Subade. Division of Social Sciences, College of Arts and Sciences, University of the Philippines in the Visayas, Miag-ao, Iloilo, 5023 Philippines (Contact : redabus@yahoo.com)

“potential income would cover...

➔ In light of this grim picture, the results of a new study, which investigates the future funding of marine conservation in the country, make interesting reading. The study looked at the willingness of people in three major cities to pay for the conservation of the Philippine's world-renowned national marine nature reserve. It found that a sizeable percentage of those surveyed would be willing to pay and that, if this potential income stream was tapped, it would more than cover the cost of protecting the reserve.

The research was carried out by Rodelio Fernandez Subade from the University of the Philippines in the Visayas. It was undertaken to find a solution to the continued failure of the Philippine's marine protected area (MPA) program. There are over 430 MPAs in the country and the

scheme is a central pillar in the country's conservation efforts, but only 20% have been fully implemented.

Subade found that lack of funding and effective institutions are the main obstacles to proper functioning of the MPAs. Non-government organizations and foreign funding agencies have tried to fill the gap, but without much success. Subade therefore decided to see what else could be done.

World Heritage in Danger

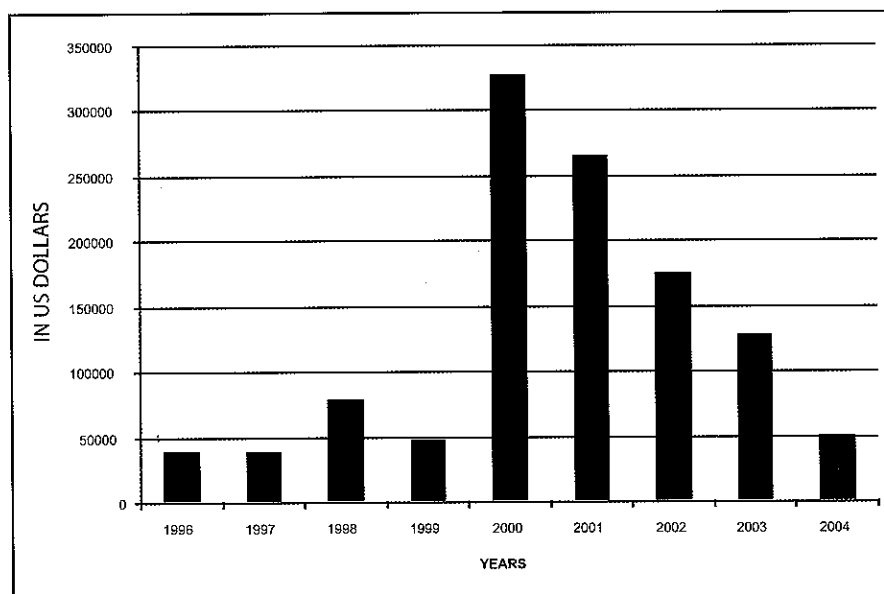
His research focused on the Tubbataha Reefs National Marine Park (TRNMP), declared a world heritage site in 1993 by UNESCO and covering 33,000 hectares of the Sulu Sea. The Reefs make up the largest coral reef atoll in the Philippines and harbor a rich

diversity of marine life that is the equal of any such area on earth. The TRNMP is well known among fishermen in the Southern Philippines and is one of the most popular dive sites in the world.

Despite having the highest level of statutory protection, the reef has suffered badly from illegal and destructive fishing. This has caused massive biodiversity loss. For example, coral cover declined from 54% in 1998 to 28% in 1999. Thanks to new laws and conservation efforts, including the GEF-funded Tubbataha Conservation Project, there was a slight recovery in coral cover to 32% in 2000. However, this is still far from 1998 levels.

As in other MPA's, conservation efforts in the marine park have been dogged by a lack of funds. In 2000, an entrance fee was implemented. This was expected to be raised up to USD 100,000 per year. However, given recent political instability, tourist numbers have been down and it is estimated that only USD 50,000 had been raised by 2004. This is far below the minimum of USD 125,000 needed to sustain current levels of conservation work. At the time of the study, there were no confirmed funding sources for 2005 and beyond.

Lack of money means that conservation patrols in the marine park are few and far between. It is clear that, should the current situation continue, any recent small conservation gains will be lost and



Funding for Management and Conservation of the Tubbataha Reefs

the cost of protecting the reserve.”

poachers and illegal fishers will return in ever-larger numbers.

Is Conservation Worth Paying For?

Subade's study aimed to provide information on how citizens value the Tubbataha Reefs by finding out their willingness to pay for its conservation. The contingent

research: Quezon City, Cebu City, and Puerto Princesa. In each, 40 barangays (or residential districts) were randomly selected. In half of these, face-to-face interviews were used to complete the questionnaires; in the other half, self-administered questionnaires were dropped off and picked up.

help restore the marine park's animal and plant biodiversity.

Yes – for Future Generations

It was found that, out of a total of 2,591 respondents, 41% were willing to pay towards a trust fund for biodiversity conservation in the TRNMP. The average amount people would be willing to contribute was

Social Willingness to Pay for TRNMP Conservation in PHP

Study Site / City	Number of Households (2000 Census) (a)	Turnbull WTP		Social WTP	
		SA (b)	PI (c)	SA (a) x (b)	PI (a) x (c)
Quezon City	480,624	233	437	111,985,392	210,167,263
Cebu City	147,600	135.22	285	19,958,472	42,117,660
Puerto Princesa City	33,306	278.66	496	9,281,049	16,530,767
Social WTP or Social Benefits of Conserving TRNMP				141,224,914	268,815,689

valuation method (CVM) was used to get the information required. CVM is a "stated preference" approach that asks people, under carefully controlled conditions, how much they would be willing to pay for goods such as wildlife or clean air that are not sold in markets and thus do not have observable prices.

To develop the necessary questionnaires for this project, focus group discussions and pre-tests were conducted to find out what people thought about biodiversity conservation and its funding. Three sites were selected for the actual

All respondents were given background information about the importance of biodiversity conservation and asked about their willingness to pay for biodiversity conservation in both the Tubbataha Reefs and also in the Sulu Sea that surrounds them. They were asked to say whether they would be willing to pay a randomly selected figure as a yearly contribution to a conservation trust fund. They were told that this fund would be jointly managed by WWF-Philippines and the Tubbataha Reefs Marine Park Management Board, and that it would be used to

significantly different, depending on which data-gathering technique had been used. The figures for those who have been given self-administered questionnaires were: PHP 233 for Quezon City, PHP 135 for Cebu City, and PHP 278 for Puerto Princesa City. These were lower than the values obtained from people who had personal interviews. Here the figures were: PHP 437 for Quezon City, PHP 285 for Cebu City, and PHP 496 for Puerto Princesa City. These higher WTP estimates could be the result of respondents trying to please the interviewer or because

those who filled out the questionnaires themselves had more time to think.

People were most willing to pay because they thought that it was important to conserve the marine park for future generations. The rights of marine plants and animals to exist and the pleasure of knowing that the Tubbataha Reefs were in good health were also cited as key reasons for respondents saying "yes".

The main reasons for people saying that they were not willing to pay were: limited income, the belief that conservation would take place anyway, and mistrust of the institutions that would be handling the conservation funds.

The total willingness to pay - which can be viewed as part of the social benefit of conserving biodiversity in the TRNMP - was calculated by taking the average WTP of each city, multiplying that by the total number of households in that city, and adding the total WTP of the three cities. Using the average WTP per household generated by the self-administered questionnaire method gave a total WTP of PHP 141 million (or USD 2.5 million) per year. Using the figure derived from in-person

interviews yielded a total WTP of PHP 269 million. Despite the difference between these two figures, either would dwarf the required cost of conserving the TRNMP. This currently runs at about PHP 10 million for core costs.

How to Save the Reefs

In light of these findings, Subade concluded that tapping just a portion of this potential revenue would provide a good source of funding for the TRNMP. He therefore made a number of suggestions for appropriate policy instruments that could be used to collect this vital revenue stream. These were: (a) a tax related to property value, (b) a tax attached to utility bills, or (c) voluntary contributions.

Subade calculated that if the government used either of the taxation options, the per capita annual tax bill would amount to only PHP 9.40. This would translate into, for example, a surcharge of less than a peso per month on utility bills. If such a tax were paid by only 40% of the population (ie. roughly the percentage that had shown itself willing to pay for marine conservation), about PHP 56.4

million would be raised - again, more than enough to cover conservation costs in the TRNMP.

The author also suggests that the government should set up a marine conservation information campaign as a way of encouraging people to make voluntary contributions. He proposed distributing Tubbataha stickers, posters or T-shirts in exchange for donations and also suggested that a system of annual pledge cards should be introduced.

Given his research findings, Subade concludes that fund-raising drives should emphasize the present generation's obligation to protect the Tubbataha Reefs as a legacy for the future. He suggests marine conservation themes similar to WWF's "Let's leave our children a living planet". Given the perilous situation facing the marine environment in the Philippines, it is hoped that, if such a campaign is launched, it will have as positive a reception as Subade's research suggests it should.

55 PHP = 1 USD (March 2005)

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