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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 9 member countries: Cambodia, China, Indonesia, Laos, Malaysia, Papua New Guinea, the Philippines, 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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Tourism and Rice Terraces – An Assessment of Funding Options from the Philippines

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The Ifugao Rice Terraces in the Philippines are one the world's great cultural and environmental treasures and they have been designated a UNESCO World Heritage Site since 1995. However the terraces are threatened by a number of significant challenges. These include tourist pressure, a declining water supply and a lack of conservation planning, funds and resources. Another key →

A summary of EEPSEA research report 2008-RR10, 'Towards the Development of a Sustainable Financing Mechanism for the Conservation of the Ifugao Rice Terraces in the Philippines' by Margaret M. Calderon, Josefina T. Dizon, Asa Jose U. Sajise, Rogelio T. Andrada II, Nathaniel C. Bantayan, and Myranel G. Salvador, Institute of Renewable Natural Resources, College of Forestry and Natural Resources, University of the Philippines Los Baños, College, Laguna 4031, The Philippines.
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“Tourism could fund a significant

Local Tourists		Foreign Tourists	
Bid/ Entry Fee (P/person)	Total Expected Gross Revenues (million P)	Bid/ Entry Fee (USD/person)	Total Expected Gross Revenues (million USD)
10	0.18	0.23	0.07
30	0.54	10	3.04
50	0.88	20	5.77
100	1.68	50	12.14
200	3.01	100	16.67
500	4.93	200	2.90
1000	1.19		

Bid-revenue schedules for local and foreign tourists

➔ problem is the fact that many Ifugao people have stopped farming and working on the upkeep of the rice terraces to take up jobs in the tourist industry or elsewhere.

To try and find solutions to these problems, a new EEPSEA study has looked at whether tourism can be used to generate funds for the conservation and protection of the rice terraces. The study also assesses whether the key problems facing the terraces can be solved. The study is the work of a research team led by Dr. Margaret Calderon from the University of the Philippines Los Banos. It finds that capturing tourists' willingness-to-pay for the conservation of the rice terraces could generate revenues of P 6.65 million or more a year and that tourism could therefore fund a significant part of the restoration and preservation work that is needed to save the rice terraces. The study also finds that the water supply problems in the terraces would be reduced if deforestation was tackled and irrigation systems and damaged terrace walls were repaired. The study recommends that a labor subsidy payment should be introduced for Ifugao farmers. This would help them to continue to farm

the terraces and would also help finance costly maintenance and terrace repair work.

The Challenge Facing the Terraces

For many Filipinos, the Ifugao Rice Terraces are the 8th Wonder of the World. While there are similar terraces in other parts of the Asia-Pacific Region, those in Ifugao province reach the highest altitude (1,600 m) and are considered to be the best built and most extensive. Ifugao itself is a landlocked province under the Cordillera Administrative Region in Northern Luzon. Despite the importance and fame of the Ifugao Rice Terraces, they have deteriorated over the years, and those that are on the World Heritage List were classified as 'in danger' by UNESCO in 2001. Ironically, tourism (driven in part by the World Heritage designation) is one of the factors that has led to the deterioration of the terraces – instead of tending the terraces, some local people have taken jobs carving souvenirs out of wood or serving as tourist guides. Tourism has also led to an increase in unplanned development, increased water use and unsustainable tree felling that has caused soil erosion

and adversely affected water supply. It is also felt that some aspects of Ifugao culture have been compromised by tourism – as some of the region's traditional rituals have lost their solemnity and significance.

The Ifugao Rice Terraces face a number of other key challenges, not least uncertainty about funding and poor long-term site management and planning. A number of long-term management plans have been drawn up to try and preserve the terraces, however, these have been under-financed and their implementation delayed. It is clear that there is a need for more coordinated, long-term funding and planning.

Looking at Challenges and Funding

Because the Ifugao Rice Terraces are facing a broad range of challenges, the study takes a two-pronged approach to finding solutions. It first assesses two of the key factors that have contributed to the deterioration of the terraces (namely water supply and labour problems) and looks at whether these issues can be resolved. It also looks at how a sustainable financing mechanism for

... part of the restoration work.”

the conservation of the Ifugao Rice Terraces could be developed. While there are several possible sources of conservation funds, the study concentrates on entrance fees from tourists. This focus was chosen because it has been ignored or sidelined in other research and policy development work.

To look at the main challenges facing the rice terraces, the researchers undertook focus group discussions, interviews with key informants, a farmer survey (which talked to 150 respondents), and a high school student survey (which took in 100 respondents). Data was also gathered on water availability, problems regarding the water supply and other water and irrigation issues.

To assess how much money tourism could generate, the researchers conducted a contingent

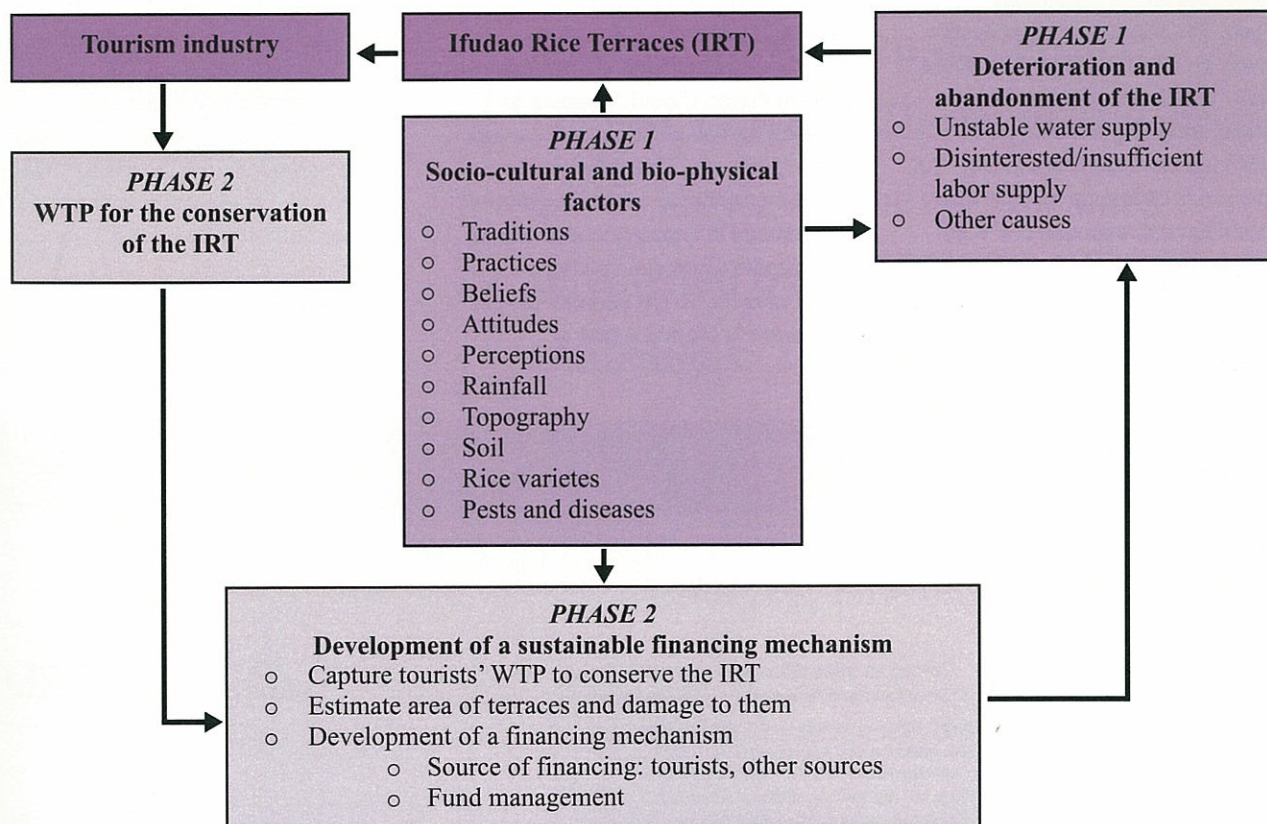
valuation survey among local and foreign tourists to estimate their willingness to pay for the conservation of the terraces. This study presented people with a given entrance fee level and they were asked if they would be willing to pay this amount. There were 5 and 6 entrance fee levels randomly assigned to foreign and local tourists, respectively. In all, 550 people were interviewed. This research was used to estimate the potential revenues that could be collected. The researchers also used remote sensing and data from various other sources to produce maps showing what percentage of the rice terraces was damaged. The information generated from these activities was used to estimate the cost of repairing and restoring the terraces.

that farmers are abandoning their terraces (or are thinking of doing so) is poor irrigation. The main sources of water for irrigation are creeks and rivers, and water is brought to the terraces through irrigation systems that were built by the Ifugaos' ancestors. However, many of the irrigation systems have deteriorated. As a result, irrigation water does not reach some terraces in the irrigation network. This implies that an investment in the repair and restoration of the irrigation system would greatly reduce abandonment. The majority of farmers also indicated that they would like a labour subsidy for terrace repair and maintenance. This work is the costliest of the different terrace farming activities that they have to carry out.

Water and Labour Problems are Linked

It is clear that one of the main reasons

Meanwhile, the survey of high school students revealed that only about one-fourth of the students were



Conceptual Framework

likely be involved in agriculture or farming in the future, and that the majority would most likely be engaged in non-agricultural occupations. This implies that there is a need to do something to get young Ifugao people interested in preserving the rice terraces which forms part of their cultural heritage.

Tourism Can Support the Terraces

When tourists' willingness to pay was assessed, it was found that the average willingness to pay (WTP) values for local and foreign tourists are P 440 (about USD 9) and USD 71, respectively. These fees are significantly higher than the fees that are currently being collected, which range from P10 to P30 per visitor. The study does not recommend a drastic increase in the rates (e.g. from P10 to P 440 for local tourists). However, it is clear that the present rates are too low, and that they represent a missed opportunity to make more money for terrace restoration and protection. It is also clear that the best way to optimize revenue is to charge foreign tourists more than locals, rather than the uniform fee that is currently charged. The study notes that even a relatively small increase in fees would produce significant revenue. For example, collecting a P 50-fee per person from local tourists and USD 20 per person from foreign tourists would generate annual revenues of P 6.65 million per year.

The total area of rice terraces in the

heritage sites is estimated to be 10,324 ha; while the estimated area of damaged terraces is between 4.1 ha (low estimate) and 457 ha (high estimate), or 0.04% to 4.4% of the total area (the range of damage estimates is wide due to the lack of sufficient survey data on the extent of damage). This means that the total restoration costs will be between P 10.021 million and P 1.122 billion. Over a ten-year period, at an interest rate of 10% (corresponding to a ten-year implementation of the current master plan for the region), this will result in an annualized cost of about P 1.600 million to P 184.243 million. Thus, revenues from tourists have the potential to finance a significant part of the restoration cost of the terraces.

Helping Farmers and Helping the Terraces

In light of these findings, the study recommends that the irrigation systems in the Ifugao Rice Terraces should be repaired to reduce the possibility of farmers abandoning their terraces. Farmers should also be given support for the repair and maintenance of terrace walls to supplement their incomes from farming. Furthermore, the study recommends that local government units in Ifugao should endeavor to develop tree plantations for the wood carving industry. This will ease the pressure on the woodlots that support watersheds in Ifugao and also ensure sustainable wood sources for wood-carvers. To get younger people interested in playing a part in

preserving the rice terraces, the study recommends that the value of the terraces should be highlighted in the Ifugao elementary and high school curricula. Furthermore, it is suggested that relevant agricultural scholarships and jobs may rekindle the interest of young people in agriculture and forestry.

Three of the municipalities covering the Ifugao Rice Terraces heritage area already have ordinances allowing the collection of fees from tourists, while one has a draft ordinance. The researchers have already recommended that these Local Government Units review the fees they are collecting from tourists, and consider the possibility of increasing them and collecting different fees from local and foreign tourists. The same rates for local and foreign tourists should apply across municipalities. It is further recommended that the revenues generated from tourists should be placed in a trust fund to be managed by a council that is not controlled by politicians. The fund should be used mainly to support the activities of farmers, such as the repair and maintenance of terrace walls and irrigation canals. Finally it is recommended that support for farmers should be formalized through a memorandum of agreement (MOA) between an organized and functional farmers' organization and a multi-sectoral council in each municipality.

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