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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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Saving Fishers and Fish – An Assessment of Fishery Management Options for the Visayan Sea in the Philippines

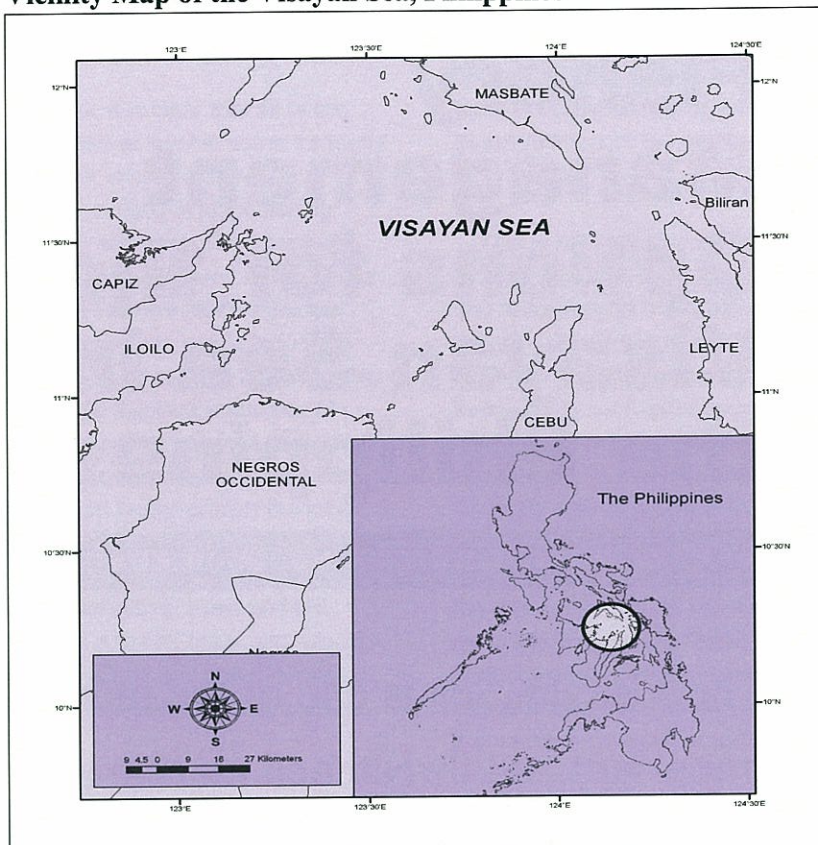
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The Visayan Sea is one of the most important and threatened marine areas in the Philippines. It is a source of income and food for thousands of people and an ecological resource of world importance. However, over exploitation means that fishing in the area is no longer sustainable and that fishing communities are losing their livelihoods. For this reason, there is an urgent need to do something to →

A summary of EEPSEA Research Report No. 2009-RR5: 'Evaluation of Fisheries Management Options for the Visayan Sea, Philippines: The Case of Northern Iloilo' by Alice Joan G. Ferrer, Division of Social Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines, Tel: 63-33-5137012/ 63-33-5090980 Email: agferrer@upv.edu.ph; aj_ferrer2005@yahoo.com

“a single management body

Vicinity Map of the Visayan Sea, Philippines



Source: Moscoso, Alan. 2008. University of the Philippines Visayas.

→ stop any further decline in the sea's environmental quality.

A new EEPSEA study, by Alice Joan G. Ferrer from the University of the Philippines Visayas, assesses a number of potential management options that could protect biodiversity in the Visayan Sea and help its fishing communities to earn a better living. The study finds that the best way forward would be to use a combination of options, including putting in place a marine protected area and implementing various fishing bans. The study also recommends that a single management body should be set up to oversee the implementation of this multi-pronged approach.

The Visayan Sea

The focus of the study are the fisheries of Northern Iloilo. These

cover almost half of the Visayan Sea. The sea itself has an area of about 10,000 km². It is bounded by the four provinces of Iloilo, Negros Occidental, Cebu, and Masbate. The sea has always been among the top three fishing grounds in the Philippines and has been described as the “center of the center” after the country was identified as the world center of marine biodiversity. The sea is divided into municipal (8460.30 km²) and commercial waters (1539.70 km²).

In the early 1990s, the first signs of resource depletion in the Visayan Sea emerged. Recent surveys find that there has been a significant drop in fish numbers: in 2003 fishery stock levels were 2.23 mt/km² and in 2007 were 2.06 mt/km². In comparison, the stock levels in 1948 were 6.03 mt/km². Such survey findings

are echoed in the perceptions of the fishing communities who live around the Visayan Sea; they feel that catches are declining, that the proportion of low-value species in their catches is rising and that the sea is facing ever increasing fishing pressures. Declining fish stocks result in low incomes for fishing communities. Local people basically fish for sustenance; while the commercial fishery in the region is now described as a “dying industry”.

The Conservation Policy Challenge

The declining fish stocks in the Visayan Sea result primarily from over fishing. Poor enforcement of the zoning regulations in the sea exacerbates the situation. The local enforcement groups (the Bantay Dagat or sea patrol) face many logistical and operational problems. What is more, the maximum penalty of PhP 2,500 (USD 52.63) for fishing violations is too low to deter law breakers or encourage compliance with regulations. Therefore, the fishery in the sea is basically open access.

The problems in the Visayan Sea show that current fishery management arrangements are not capable of solving the ecological problems the region faces. It is also clear that regulations are not responsive to the needs of local people. However, the management and conservation of the Visayan Sea is of enormous importance given that the sea is both the main source of livelihood for many local people and the main revenue source for the municipalities in the surrounding regions. The challenge facing policy makers in the area is to identify policies that will both help protect fish and help fishing communities earn a living.

... should be set up."

Ferrer's study aims to provide the information and advice policy makers need to achieve these goals.

Finding Out About the Fishers

A number of different methods were used to collect information for this analysis. These included focus group discussions (FGDs). Twenty seven FGDs were carried out in three municipalities. These involved a total of 166 participants. In each location, separate discussions were held with fishing boat owners (36 participants), boat captains and machinists (38 participants) and crew members (92 participants). The information gathered included a description of fishing operations and people's perception of the state of the study area's fishery resources.

A list of management options were presented to the survey participants who were asked to rank the options (using score cards) to show their preferences. The management options were short-listed using

information from various sources, including newspapers, previous studies and through consultation with commercial fishers, fishery managers and marine biologists. The options were: no change (the status quo), a ban of commercial fishing, a ban of commercial fishing with safety nets, a marine protected area (MPA), a closed season, a reduction in the number of commercial and municipal fishers, localization (giving preferential access to local fishers), a rotational fishing regime and output controls (quota), and the creation of a special management unit. People were asked on what they thought would be the likely impacts of the different management options on fishing activities, fishery resources and the larger community.

Information for the study was also gathered using key informant interviews, secondary data collection and observations. The purpose of the key informant interviews was to get information on fishery manage-

ment and alternative fishing grounds for commercial fishers. These interviews also investigated enforcement and monitoring capabilities and collected other information relating to the jobs and livelihoods of the fishing communities in the study area.

Which Management Option is Best?

Ferrer's evaluation focused on the likely effects of the ten different fishery management options on fish stocks and on local fishing communities. The evaluation procedure involved two stages. In stage one, the goal was to rule out options that would have little impact on fish stocks. The basis of this evaluation was the number of years that it would take for an option to increase fish stocks. An option was rated highly if fish stocks would improve within two years of implementation, moderate if this would take three to five years and low if it would take longer than five years.

Management options that passed stage one, were advanced on to a second round of assessment. Here each option was evaluated against a set of criteria that included the impact they would have on fishers, their impact on resources, their feasibility, their cost to the national government and their impact on the local fishing community.

Tradeoffs Unavoidable Whichever Option is Chosen

Six options made it through to stage two of the assessment. Of these, the MPA was considered to be the best – the only area where it scored badly was with regards to its implementation costs, where it ranked as

Summary Evaluation Matrix of the Six Options.

Option	Impact on resources	Impact on fishers ^a	Enforceability	Cost of implementation	Impact on the community ^a
Establish marine protected area	High	High	High	Moderate	High
Reduce the number of municipal and commercial fishers	High	Moderate	Low	High	Low
Create a special management unit	Moderate to high	High	Moderate	High	High
Ban commercial fishing for five years with safety nets	High	Moderate	Moderate	High	High
Implement localization	Low to moderate	Moderate	Moderate	High	Low
Ban commercial fishing for five years	High	Low	Low	High	Low

^ahigh means good

'moderately costly'. At the other end of the effectiveness spectrum was the option to ban commercial fishing. This only met the goal of protecting the sea's fishery resources but failed in respect to all of the other assessment criteria.

Overall, it is clear that all of the options would involve some tradeoffs if they are implemented. For instance, putting in place fishing reduction schemes, like banning commercial fishing and reducing the number of fishers (both municipal and commercial), would help the stocks recover quickly; however they would also displace a number of fishers, resulting in a loss of income to local communities. In contrast, localization would protect the local fishers but, when compared to a fishing ban, it would take longer to become effective. Even an MPA, when not properly managed, would not bring about any improvement in the condition of the habitat and fish stocks.

A Mix of Options the Best Bet

The presence of tradeoffs suggests that a mix of options should be used rather than a single approach. Ferrer's findings show that these options could include a Marine Protected Area and steps to limit fishing through fishing bans and localization.

Such a multi-pronged approach would allow the weakness of any

one option to be offset by the strength of another. What is more, the use of a mix of options is appropriate, given that the current status of the Visayan Sea fisheries requires a wide array of interventions. However, even if a mix of options is implemented, work will still have to be carried out to reduce the negative impact they might have on local people.

This is particularly true for fishing reduction schemes (like fishing bans and reductions in the number of fishers). Opposition to such schemes is likely because they will threaten the survival of many fishing households and commercial fishing enterprises. To most fisher people, fishing is their only option for getting food and income. A safety net project must therefore accompany the implementation of any fishing reduction programme. Such a project should be responsive to the needs of fisher people and leave them with same level of welfare (or improve it) as they enjoyed before any action was taken. Short-term support to the fisher people could be in the form of income loss compensation, credit assistance, or boat buy-back schemes.

Any income support, however, may encourage fisher people to delay their return to fishing, thus perpetuating a cycle of aid dependency. If this is likely to happen, steps must be taken to stop such a cycle being established. Long-term

solutions that deal with community issues, such as education to expand employment opportunities, should therefore be considered.

Set Up a Pilot Programme to Spur Action

It is clear that the current state of the Visayan Sea calls for immediate intervention to arrest further decline in the quality of the marine resource. The future of the sea's ecological health rests on making fishing in the region sustainable. The sea is vital to the livelihoods of thousands of people. Any delay in addressing the problems the sea faces will simply worsen the difficult situation many fishers currently face. If action is delayed until the fishery resource in the sea totally collapses then a major social crisis will take place.

As highlighted above, the best approach for conserving the Visayan Sea – and meeting the needs of the people who rely on it for fishing – is to use a combination of options, rather than a single one. Ferrer recommends that a single management body should be set up to implement any multi-pronged action programme. She also recommends that a pilot program in northern Iloilo should be considered as a first step to rolling out a region-wide conservation effort.

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