

Strand: Marine Education

Title: Ocean Sun Fish Festival: A Discuss on Sustainable Fishery

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ABSTRACT

Seeking balance between the right of local development and international resources conservation is always full of challenge. This paper addresses how we discuss a case study with controversies of using ocean sun fish resources by associating the conflict assessment with environmental education to link with sustainable fishery issue.

INTRODUCTION

Despite that ocean sun fish is widely distributed around the world's ocean, and is the heaviest bony fish; however, the literature about its biology, ecology and resources uses is still very limited. Presently, three distinct species are recognized within the family of Molidae which including: the common mola, *Mola mola*, the sharp-tailed mola, *Masturus lanceolatus*, and the slender mola, *Ranzania laevis*. All three species were by-caught by set nets along the coast of Hualien today (recently?).

Throughout the world, a number of other interesting common names exist for ocean sunfishes including Manbo (Japan), and Toppled car fish (Taiwan). *Mola mola* is the most common by-catch of the drift net fishery, which mainly used to catch broadbill swordfish along the coasts of California and Oregon, USA, and in the

Mediterranean side of the Gibraltar Straits (Silvani and Aguilar, 1999). But it was still claimed that until the baseline data on these fishes are established, there is no way of gauging how such capture rates affect the wild stock.

Though unpopular in Europe and the United States, molas are eaten throughout Asia. Taiwan and Japan are the two largest mola fish markets in the world. In the past, only the guts of the fish were served to eat as "Dragon Intestines". Today all parts of the fish are served as food and delicacies, which including the skin, fin muscles, backbone, testes, and gut. The by-catch number increased dramatically since the innovative set net was introduced to the coastlines where upwelling ocean current flows by. In Taiwan, the catch rate at Hualien alone is higher than 95%. Therefore, from 2002-2005, the fish was chosen to be a theme to attract tourists in increasing local economics by Hualien County. The county firstly gave it a new name 'Manbo', which means a kind of a dance. Then, restaurants were awarded by the county government due to invent new ways of cooking the fish. And the county government also held fish festivals during spring times. Unfortunately, this festival was immediately criticized as 'fish funeral' from conservationist, NGOs, and fish biologists on the newspapers in the first year. The critiques felt ashamed for the county government leader. To reduce the hurt from stigmatization, Hualien County modified the program of the sea food festival to marine leisure activities, and added 'marine culture education' as content of the new program in the next year. However, the effort was in vain, and the festival was ended in 2005.

RESEARCH METHODS

This research was conducted by a group of graduate students in the class of Conflict Management, at the Graduate Institute of Environmental Policy, National

Donghua University to explore the feasibility of resolving the conflicts resulted from the ocean sunfish festival. The data collecting methods include stakeholder interviews; and later by conflict assessment process that includes events, stakeholders analysis, power structure, spiral status of the conflict (Carpenter, and Kennedy, 2001), root causes of the conflicts, and potential opportunities for mediation (Moore, 2003). Twelve stakeholders were interviewed from 2006-2007 by students. Targets that included were: fish market retailers, small food restaurants, boat fishery, fishery museum, producers of festival and the food, scuba diving associations, set net fishery, local fishery associations, county government staffs, elementary school principles, aquaculture research institutions; professor of fisheries biology, professor of biotech, professor of business management, and professor of marine policy.

RESULTS

This paper firstly describes the results of the observations of students on the phenomena of sunfish fever from the perspectives of tourism, economic, social and education at Hualien. Secondly, it describes the root causes of the conflicts and controversies, which based on stakeholders' views.

Impact of festival

The team found that more than a hundred kinds of products, including food and cosmetic keratin, are sold in the restuarants. The price of fresh fish was dramatically raised after the fish festival. The harvest and use of this fish in this county are continuing to grow, despite that the festival was ended. Competitions between sea food restaurants and the gain of raw materials from the fish in cosmetic industry are rising. The local township, where the set nets industry is located, has been promoting itself by using sunfish as the symbol of the town and decorating the sculptures of

mola fish along its main streets and fish villages. A local historical fishery museum is planning to dig a big tank to raise captive mola fish to attract tourists. The county government was promoting scuba diving with fish in fishing set net. But this kind of activity causes high stress to ocean sunfish, and leads them to skin diseases and death, which is an animal welfare issue again. A local elementary school decorated the fish on the campus and built a classroom to display the fish specimen and developed curriculum to educate students; however, the messages they delivered were not related to conservation issues at all.

Essential controversial raised in this case study

The group of graduate students found that many contradictory views of ‘using or not using’ this fish resource were widely discussed through the mass media during the months when the festival was held in for the last three years. Developers’ voices insisted that the resources from by-catch should not be discarded and a code of conduct had been developed to prevent harvesting the young fishes. Conservationists’ voices showed that they were really worried about that the current festival approach will definitely end up with overexploitation, if the sea food culture is continuing to expand. They advocated for better marine education and precaution principles if sustainable use of this resource is a consensus in the society.

Why is it so controversial?

The student group found that there were some root causes behind the issue of using mola fish, such as: Which is more important, national image or local interest? Was the optimal yield that can sustain fisheries not clear? Did fishermen really comply with voluntary code of conduct? What is our human responsibility to this big fish? How can we kill and eat a fish after we treat it as a cute, lovely, and tender giant animal? How do county officers face the situation of being stigmatized and the

frustrating public critics and get out from it? When bias data overwhelms in the newspaper, how do we deal with people's interests for the right of development, monetary income of a poor county, etc? At last, how do we propose a conservation suggestion while this kind of wild stock is still unknown to the world; only a few research literature of this species is available; its fisheries statistic is just constructing; and that it has not yet been listed as protected species.

Potential solutions suggested

The team found that it is difficult to propose a sustainable way of using the ocean sun fish resource in the moment. However, they still suggested some helpful ways to resolve some parts of the controversial issue, which including monitoring annual yield and study fish's biology and demographic. The population estimation methods shall be accurate and discussed firstly. The results shall be released to the public and saved in the constructing fisheries statistics data. Interpretations about the uses of species shall be done by an independent and professional institution with neutral position. If it is needed, fish association shall set up precaution principles, annual quota and code of conduct for set net operators to follow. County government may need to conduct both public and tourist surveys to gain insights before making new policies, and also, they need to improve communication quality and increase frequencies to clarify misconceptions about risk of over-exploitation through public media to it's counter-interest party. The market place needs to keep balance on its printed media and infuses different advocates. Finally, all the parties involved shall stop using value to define issues and should shift their thinking to sustainability of local development and integrative alternatives that can meet interests of all parties involved.

What did student learn?

The student group found it was difficult for them to choose their own morality

standpoint between anthropocentric and eco-centric when studying the case seriously during the class. This case exemplifies a complicated issue intertwined with conservation of ocean fish, ecosystem health and animal right. The students involved in the discussions admitted that they learnt skills of issue investigation, value clarification, critical reflection through a real world moral dilemma case, and learnt skill of conducting conflict assessment through their action learning process. They also found that they needed to shift from species utilization issue to a higher level and adopted holistic healthy marine ecosystem view, and changed their thinking in order to prevent themselves from being trapped by local dominated society values.

The student group also recommended that EE approach in the formal school setting shall be added with more conservation message to balance the dominated society values and conservation paradigm, and also to replace the traditional use as seafood with value analysis and clarification techniques of instruction. In the non-formal settings, mass media campaigns shall play a role to facilitate open communications on local affairs and arouse tourists' awareness of conservation when making their own choices.

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