



# OPRT

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FOR CONSERVATION AND SUSTAINABLE USE OF TUNAS

### Tuna fishery management

## How to increase the economic value of tuna fishery while maintaining the spawning biomass at a target level

*An interesting and constructive study was reported by Dr. Chin-Hwa (Jenny) Sun, Professor, Institute of Applied Economics, National Taiwan Ocean University, at a Workshop held in La Jolla, California, USA, May 13-14, 2010.*

The workshop “Global Tuna Demand, Fisheries Dynamics and Fisheries Management in the Eastern Pacific Ocean,” sponsored by NOAA Pacific Islands Fisheries Science Center and South West Fisheries Science Center, was organized by Dr. Sun, Dr. Minling Pan and Dr. Dale Squires to focus on both economic and biological system research to enhance the conservation and management of highly-migratory tuna resources through incentive-based management. The workshop identified the most promising areas of inquiry and action, and addressed priorities for further research. It brought together world tuna experts from diverse fields of economics, international affairs, biology, policy, and the global tuna industry. The workshop website, <http://www.fisheriesstockassessment.com/TikiWiki/tiki-index.php?page=Global+Tuna+Demand+and+Fisheries+Dynamics>, includes background discussion papers and presentation abstracts. Dr. Sun’s study called attention of the tuna fishing industry circle when OPRT introduced it during the seminar recently held in Tokyo. The following is the abstract.

Yellowfin and bigeye tuna in the eastern Pacific Ocean (EPO) are not managed optimally with respect to their economic value. Both species are caught at sizes too small to take full advantage of their individual growth and the higher prices obtained for large fish in the sashimi market. Large bigeye and yellowfin caught in the longline fishery are utilized as sashimi, while almost all of the smaller bigeye, yellowfin, and skipjack caught in the purse-seine fisheries are canned. The economic and biological trade-offs that might be considered are evaluated to see if the purse-seine and longline fisheries could be managed in such a way that the economic value would be increased while the spawning biomasses of the two tuna species were maintained at target levels.

It is assumed that if the catches of small bigeye and yellowfin were reduced anywhere in the EPO, the gains to the biomass of those species due to growth would exceed

the losses to it due to natural mortality and that this would increase the availability of large bigeye and yellowfin to the longline fishery operating anywhere in the EPO. This would, in turn, increase the total value of catches of those species. In this case, it is further assumed that the purse-seine and longline fisheries could be managed in such a way that the spawning biomasses of the two species were maintained at a target levels.



Dr. Chin-Hwa Sun

Three analyses are conducted to evaluate the economic and biological tradeoffs of different levels of purse-seine and longline fishing effort. The first evaluates the different combinations of effort that could produce the target biomass level. The second evaluates combinations of effort that optimize equilibrium (long-term) catch and economic value. The third evaluates the dynamic (short-term) effect of different combinations of effort. The analyses are based on the stock assessment models for yellowfin and bigeye tuna in 2009 and recent average catch levels for a third species, skipjack tuna, which is rarely caught by longline gear. The total economic value of the catch is determined from the landings value for purse-seine- and longline-caught tuna of each species.

In conclusion, several possible methods of implementing management that may address the social and equity issues are also discussed. By taking into account the conflicts of interest among different countries and fishing gears

that utilize the tuna resources, it is imperative that socio-economic and ecological considerations are incorporated to establish a cooperative scheme to create incentives to purse-seine fishermen to reduce their catches of juvenile bigeye and yellowfin tuna under a tradable rights-based management scheme. The details of such a management system would have to be worked out to address the complexities of the fishery and the society that depends on it, but the potential benefits and the possibility of implementing such a system should not be ignored.

(The author is heartily thankful to Mark N. Maunder, Alexandre Aires-da-Silva, and William H. Bayliff for help in compiling the IATTC tuna stock assessment result for this study. Please contact Jenny Sun <jennysun@ucsd.edu> for further information.)

## FAO expert calls on purse-seiners to refrain from catching juvenile tunas and to cooperate with longliners

OPRT organized its second seminar for fiscal 2010 in Tokyo on June 23.

At the seminar, Dr. Makoto Miyake, an expert on tuna fishing capacity at the United Nations Food and Agriculture Organization (FAO), delivered a lecture under the theme of "Sustainable use of tuna resources and the way toward solution of over fishing capacity issue – What should be the position of purse-seiners and longliners?"

Dr. Miyake explained the trend of tuna fisheries in the world and Japan as well as the problem of expanding overcapacity and its management. Outlining the international situation of tuna fisheries in recent years and the future prospect, he said "the opinion of the international community is that it is imperative to avoid catch of juvenile tunas by purse-seine fishing."

"The public view on longline fishing, on the other hand, has been improving globally into one that it is a fishing method giving less impact on tuna resources, although it is less efficient fishing compared with purse-seining. Both purse-seining and longlining can have their own way of continuing fishing activities. I believe they can co-exist without conflict if purse-seiners refrain from catch of juvenile tunas," he noted.

Dr. Miyake further pointed out that purse-seine fishing effort has seen a rapid increase throughout the world from early 1970s, exceeding the catch volume by longlining.

If, however, fishing capacity is controlled at an appropriate level, it would facilitate agreement on resource management among various stakeholders and enable smooth compliance with necessary fishing regulations. It would also make it possible for fishers to restrain costs while maintaining their catch volume at the same level.

In order to implement the control of fishing capacity, Dr. Miyake stressed that it is crucial to first establish the respective fishing rights and then realize global



registration of the current fishing capacity. After fulfilling these requirements, it would be possible to carry out necessary measures to control fishing capacity.

In the last analysis, however, there would arise an issue of allocation of the resources and capacity. How to allocate resources and capacity would become a tough issue amid the current confrontations between purse-seiners and longliners, between sashimi producers and canned tuna producers, and between developing fishing nations and advanced nations.

As a concrete proposal for considering the solution of this issue, Dr. Miyake introduced to the audience the study by Dr. Chin-Hwa Sun, presented above.

### RFMO Workshop

## Japan proposes 20% cutback in the number of purse-seiners in the Western and Central Pacific

The International Workshop on RFMO Management of Tuna Fisheries was held in Brisbane, Australia, from 29 June to 1 July to discuss the issue of tuna fishery management. The objectives of the workshop were to recommend measures to ensure the long-term sustainability of the world's tuna fisheries and focus on future management options and initiative.

At the meeting, Japan presented a proposal on a reduction in the capacity of the purse-seine fleets of seven distant water fishing nations (DWFN), including Japan, currently fishing under the framework of the Western and Central Pacific Fisheries Commission (WCPFC). The target level of reduction was 20% by vessel number in all seven DWFN fleets by 2013 or, if appropriate, an equivalent reduction in fishing capacity in these fleets operating in WCPFC.

The reduction proposal is based on the fact that purse seine catch in the WCPFC area has been expanding drastically for the last 30 years; reported catch was only

120 thousand MT in 1980, and then, in 1991, the catch reached 1 million MT. In 2007, the purse seine fishery harvested 1.74 million MT, which accounted for 65% of the global purse seine catch.

Japan's presentation attracted a wide-ranging attention of the participants, but South Pacific island nations posed a question over whether Japan's proposal could hamper the development of fisheries in developing countries. Also, there were other fishing countries that expressed opposition. Therefore, Japan's initiative was not accepted as it was tabled.

However, progress was observed in that the countries shared their views on the serious issue of purse-seine fishing vessels in the Central and Western Pacific,

It seems rather sure that understanding spread among the participants that the present situation is not for increasing the number of purse-seine fishing vessels, and reduction may have to be implemented when appropriate.

The participants also confirmed that they will continue to discuss concrete measures for the solution of overfishing issue at each of fisheries management organizations.

## OPRT News

### OPRT urges RFMOs to limit mass-harvest of juvenile tunas by purse-seine fishing vessels

OPRT dispatched its representative, Ms Eiko Ozaki, to the International Workshop on RFMO Management of Tuna Fisheries, held in Brisbane, 29 June-1 July, to make presentation, on behalf of the international tuna longline fishing industry, regarding the efforts OPRT has promoted to date, in cooperation with its members, to restrain fishing capacity of tunas.

Ozaki explained the results of OPRT's fishing vessel scrapping program that set into motion the elimination of illegal, unreported and unregulated (IUU) large-scale tuna longline fishing vessels which had previously numbered

about 250 throughout the world.

She also told the participants that the commitment not to increase large-scale tuna longline fishing vessels is the condition for OPRT membership and has been complied with by all members. At present, over 90% of large-scale tuna longline fishing vessels in the world are registered with OPRT.

Ozaki concluded her presentation by touching upon the issue of massive catch of juvenile tunas by fishing operations with Fish Aggregating Devices (FADs).

"Our member fishermen complained that their catches are decreasing due to growing FADs operations in many oceans. On behalf of its members, OPRT sincerely hopes that measures to restrain catch of juvenile tunas should be introduced by all RFMOs immediately," she said.

What follows is a gist of Ms.Ozaki's Presentation

1. OPRT has registered more than 90% of large scale tuna longline fishing vessels with more than 24 meters in length in the world. Vessels registered with OPRT are equipped with an ultra low temperature (minus 60 degrees C.) cold storage for supplying high grade frozen tunas to sashimi market.
2. The vessels belong to OPRT members-tuna fisheries organizations in Japan, Taiwan, Korea, Philippines, Indonesia, China, Ecuador, Seychelles, Vanuatu and Fiji. In addition, recently, organizations of Federated States of Micronesia and Malaysia, the coastal developing countries, newly joined OPRT, with an intention to develop their large scale tuna longline fishing industry.
3. The current major international tuna longline fishing industry is more or less stable. But since 2004, the number of vessels has been actually declining. As of March this year, the total number of large scale tuna longline fishing vessels registered with OPRT is 1,067. In 2004, there were 1,454 vessels registered with OPRT. In particular, Japan has reduced its fleet size to 275 from 473 in 2004, while Taiwan reduced its fleet size to 359 from 597 in 2004.
4. One of main causes of reduction is introduction of strict fishing regulations and reduction of catch quota of major species, such as Atlantic bluefin tuna, southern bluefin tuna, bigeye tuna in the Western Central Pacific Ocean. Accordingly Japanese government scrapped 87 Japan's tuna longline fishing vessels last year for ensuring their compliance with regulations of reduced catch quota. Taiwan scrapped its 160 tuna longline fishing vessels in 2007 in compliance with the recommendation by ICCAT to reduce the number of vessels to meet the fishing regulations.
5. The most serious concern of the international tuna longline industry for its future is the stock



status of main tuna species. Without sustainable tuna stocks, no fishing business may continue. We are, therefore, seriously concerned with expanding fishing capacity on tuna stocks. And we have committed ourselves to address the issue of over fishing capacity.

- OPRT has been working hard to address the problem of overcapacity. Firstly, OPRT has been working on to eliminate IUU large scale tuna longline fishing vessels. 43 flag of convenience vessels registered to non-parties to regional tuna fisheries management organizations were scrapped under the initiative of OPRT, with financial support from the Japanese Government. With this impetus, in our view, the positive list scheme has been introduced by all RFMOs and the rigorous implementation of the fisheries authorities, especially Japanese government, enabled a reduction of the IUU vessels from about 250 recorded in the year of 2000 to almost none at present. Secondly, OPRT has concluded an agreement with each member as a condition to become OPRT members not to increase number of

their large scale tuna longline fishing vessels. it is a concrete measure to address fishing capacity by tuna longline industry. It has been maintained as of today.

### A 445 kilo jumbo bluefin traded at Tsukiji Market

A bluefin tuna caught by set net off Tsushima Island in the Sea of Japan was auctioned at Tsukiji fish market in Tokyo on July 16. Its weight (gilled and gutted) was 443 kilos, with length of about 2.5 meters. An expert said its live weight should have been over 500 kilos. It is the second largest bluefin tuna sold at Tsukiji in the past 30 years. (The biggest one caught in 1986 weighed 495 kilos.) Because of its high quality with lots of Toro (fatty part), it fetched Y7,200/kilo, with the total value amounting to Y3.2 million. A dealer said that over 13,000 pieces of sushi can be prepared from the fish.

## Editorial

# No progress toward solution of the issue of overcapacity -- how long will it take?

Managers of tuna fisheries around the world are well aware of the fact that tuna fishing capacity is excessive on a global scale. However, no international agreement has been developed even for freezing the fishing capacity at the present level so that the capacity may not further increase.

The sustainable use of tuna resources is an established goal supported by the international community—a goal no country argues against. Nonetheless, although the presence of the barriers that prevent the attainment of this goal is clearly recognized, no concrete steps have been taken to remove such barriers. There was no agreement on Japan's concrete proposal to reduce the number of tuna purse-seine fishing vessels operating in the Western and Central Pacific by 20% by 2013, presented at the recent International Workshop on RFMO Management of Tuna Fisheries in Brisbane. This clearly reflects the stagnant situation now stifling the issue of overcapacity.

Admittedly, it is no easy task to strike an agreement on such a proposal because the implementation of concrete measures to reduce fishing capacity no doubt will cause pain on the part of fishing countries. But the issue will remain unresolved for all the time if ways are not found to overcome the conflict of interests between countries, fishers and other stakeholders. Moreover, there are countries which further complicate the issue by freely expanding their fleet capacity while there is no international agreement. The present increase in the

number of large-scale tuna purse-seine fishing vessels in the Western and Central Pacific is a blatant instance of such a development.

If parties concerned are unable to resolve this predicament, it seems certain that regional tuna fisheries management organizations (RFMOs) will lose their credibility in the international community. In March this year, some conservationist groups vociferously accused the inability of the RFMOs in coping with the issue of overcapacity. Unless the RFMOs can show their concrete and practicable solution, they are doomed to be subjected to such criticisms again. As far as the swiftness in solving the issue is concerned, it seems difficult for RFMOs to evade such accusations.

In this context, it should be emphasized that the presence of overcapacity constitutes a cause of illegal, unreported and unregulated (IUU) fishing activities. The bluefin tuna farming in the Mediterranean patently attested to this fact. The solution of the issue of overcapacity should be expedited to ensure the prevention of IUU fishing.

At any rate, what is necessary is not only to have repeated consultations but to exercise certain wisdom among stakeholders toward the real solution. In this respect, the paper by Dr. Sun, introduced in this issue of OPRT Newsletter International, presented such wisdom. It is the sincere hope of OPRT that all parties concerned will further deepen their debate regarding the prudent proposal set out in the paper.