THE ORGANIZATION FOR THE PROMOTION OF RESPONSIBLE TUNA FISHERIES

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OPRT Interview

Control of Fishing Capacity is the Key for Sustainable Tuna Fisheries

Mr. Russell Dunham, Secretary, Fiji Tuna Boat Owners Association

Fiji, one of the large island countries in the South Pacific, is successfully developing its tuna fishing industry over the years. OPRT interviewed Mr. Dunham in Tokyo when he participated to its General Meeting and asked the secret of its development.

Q. Will you tell me when the tuna fishing business began in Fiji and how it has developed today?
A. Fiji began tuna fishing around 1985 by long line fishing boats. It has become a center of production for exporting fresh tunas in the South Pacific with improvement of infrastructure such as fishing ports and the international airport.

Q. How many tuna fishing boats are there in Fiji at present?
A. Sixty-four long line fishing boats are licensed to conduct fishing within the 200 mile zone of Fiji to catch bigeye tuna, yellowfin tuna and albacore. There were over 100 boats 10 years ago. Our government and industry has gradually reduced the number of boats for ensuring sustainable fisheries. Purse seine fishing is prohibited.
Many of them are owned and operated by Fijian nationals and this is the difference of our tuna fisheries from other island countries in the Pacific. Many other countries conduct tuna fishing by chartering foreign fishing boats.

Q. How do you think of the stock condition nowadays?
A. I am seriously concerned with declining tunas stock. In fact, the catch rate of tunas has been getting lower every year.

Q. How do you deal with such situation?
A. Recently, The South Pacific Commission and Forum Fisheries Agency jointly reported that the appropriate number of tuna long-line boats fishing within the 200 miles zones of Fiji should be 51. Our Association is therefore asking our government to reduce the number of license to this level.

In order to ensure sustainable tuna fisheries in long term, tuna resources must be conserved. Besides, profitability of the fishing fleet should be also assured.

These conditions can be realized by control of fishing efforts. Namely, the fishing effort should commensurate with the stock condition. Excess fishing effort should be reduced.

Q. Recently, concern of the international tuna community is growing on increase of number of small scale long line fishing boats in the South Pacific. Do you have any comment?
A. Fishing efficiency of a small scale long line fishing boat has become practically equivalent to a large scale long line fishing boat. The rapid increase of small scale long line boats should be addressed, as well as the large scale purse seine boats, otherwise, the stock condition will become much worse. By catch amount of bigeye and yellowfin by small scale long line boats which target albacore can not be ignored as a factor giving damage to these species. I

also believe subsidized fishing fleets in particular those subsidized by some countries have resulted in the rapid and unsustainable increase in small scale long-liners.

Q. What do you think is necessary to prevent increase of small scale long line fishing boats?
A. The key is in hand of the Western and Central Pacific Fisheries Commission (WCPFC), I believe. No single country can effectively manage tunas because of its highly migratory nature. However, having said that every country must make an effort to effectively manage the fishing effort in its own EEZ. The Commission is responsible and competent for management of tunas in the region. If the Commission fails in this regard it is a disaster to every stake holders in the region. Reduction of the fishing efforts in the region should be urgently addressed by the Commission and individual Island Countries so that the stock condition recovers to the healthy level as recommended by the scientific committee. The unanimous decision making process is the current practice of WCPFC but this process should be revised in order to ensure speedy introduction of the appropriate management measures before the tuna recourse becomes

Tuna Management

Defending FADs is good or bad?

Ziro Suzuki
National Research Institute of Far Seas Fisheries

Recently a scientific paper was issued, entitled "Is it good or bad to fish with FADs? What are the real impacts of the use of drifting FADs on pelagic marine ecosystems?" (Laurent Dagorn, Kim N. Holland, Victor Restrepo & Gala Moreno, 2012 Blackwell Publishing Ltd, FISH and FISHERIES,25pp). FADs is the abbreviation of Fish Aggregating Devices, a kind of floating fish reefs artificially made that have been in common use among the tuna purse seiners around the world due to their high efficiency to catch massive amount of tunas easily and securely. The widespread use of the FADs by the purse seiners increased tremendously the catch of target species such as skipjack and yellowfin. But, at the same time, bycatch of juveniles of bigeye always accompanies with the target species and the juvenile bigeye catches give a substantial negative impact to the bigeye stocks, As a result, how to limit the catch of juvenile bigeye by the purse seiners has become one of the serious issues to the Regional tuna Fisheries Management Organizations (RFMOs) in the world.

The said paper defends the use of FADs. Major points of the defending opinions are as followings: 1) There is no evidence that the use of FADs leads to overfishing of the tunas, 2) Taking juveniles tunas by FADs may not necessarily reduce the MSY if accounting the high natural mortality (M) of juveniles, 3) Bycatch in the FADs operations are much smaller compared with other fishing gears, 4) There is no unequivocal empirical evidence that the use of the FADs gives negative impacts to ecosystem and ecology of tunas, 5) Purse seine fishery is good for environment due to its low fuel consumption and low CO footprint. In addition, the paper postulates that banning the FADs is unlikely because, first, 6) it is very unlikely that industry will willingly abandon this efficient fishing tool and such a move would result in a drastic shortage of canned tuna that is the major source of affordable natural protein in the world, second, 7) banning the FADs operation could have unexpected negative consequences as any type of fishing invariably impacts an ecosystem. This paper does not defend limitless use of the FADs but proposes 8) FADs managements using satellite connected radio buoys attached to the FADs based on collected accurate real time information in use of the FADs.

While this paper is valuable one that reviews the newest information about FADs, there are several views expressed in this paper with which I do not agree or feel skeptical. I would like to express my frank view and concerns briefly about some of major points claimed in the paper. : As for 1), this paper puts too much attention to skipjack, while the more careful thoughts on the most critical bigeye stock is lacking. Although it is a fact that the bigeye stock had been reduced substantially before the current common use of the FADs by purse seiners, it is obvious from the scientific reports of the world RFMOs that the use of the FADs by purse seiners incurred additional very serious negative impacts to bigeye stocks. The paper seems to be optimistic about the future increase of the catch of skipjack but the Scientific Committee reports of the WCPFC (in responsible for managing the tuna stocks in the Western and Central Pacific) explicitly state that limiting the further increase of skipjack catch should be considered. One of the big issues that was not dealt in the paper is that the amount of bigeye catch by the purse seiners can not be accurately known. Due to difficulty in separating juvenile bigeye from yellowfin and small quantity of bigeye in the purse seine catch, bigeye catch recorded in the purse seine logbooks are likely to be underreported. To correct these biases, presently the amount of bigeye catch of the purse seine is adjusted using sampling on board of the ships and unloading sites. However, there remains possibility that the current adjusted catches of juvenile bigeye is still lower than the reality. Unfortunately, researches to improve the accuracy of juvenile bigeye catch by the purse seiners are not satisfactory. As for 2), it is demonstrated in the scientific report of the WCPFC, using higher natural mortalities on juvenile, that the bigeye MSY decreased significantly after the introduction of the FADs operations. As for 3), what I am concerned is oceanic white tip and silky sharks that are regarded as

heavily overfished. Although the catch of those sharks by the FADs is smaller than longline case, the FADs operation areas are roughly overlapped with hot spot of nursery grounds of those species. It is not possible to ignore the FADs operation, along with the longliners, give additional detrimental impact to the decline of stock size for those two species In addition, the bycatch information on sharks are not good. Referring to 5) it is rather pointless to stress one or two good points for some specific gears as every fishing gears have merits and demerits more or less. As for 6), the paper seems to be overly reacting to the total ban of the FADs. Extension of FADs closure or other sensible ways could resolve the problems. For example, extension of FADs closure would not result in drastic decline of the tuna catch in the WCPFC area. Due to introduction of the FAD closure (3 months), some purse seine fleet like Japanese fleet that used to be heavily reliant of the FADs operation shifted to the operation mostly on the free swimming schools without decreasing the catch. Recognizing the reality that no practically applicable mitigation measures that do not reduce skipjack catch but selectively reduce bigeye catch are available now, it would be more sensible way to urge purse seine fleets still heavily depend on the FADs operations to shift from the FADs to the free swimming school operations. As for 7) the shift of operation mode from the FADs to free swimming schools would increase yellowfin catch. But, we have to identify urgency to be addressed and prioritize the problems to be resolved. I would consider the bigeye stock status has higher priority to be solved and ways to resolve yellowfin problem must be looked for per se. As yellowfin in the free swimming schools are mainly composed of large adults without bigeye and easily recognized the composition of the school before the setting nets, it is possible to avoid catching such schools if necessarily. Finally for 8), the WCPFC has regulatory measures to monitor, report and manage the FADs operation. However, it seems that no appreciable compliances to the measures have been made probably due to the complicated nature of the measures . The paper's proposal would not be practical at this moment because the relevant information has high degree of confidentiality and not available in public so that it will take more time to become feasible as management measure .

Start of the FADs operation that lead to the current activities occurred in the mid-1970s in the Western equatorial Pacific by Japanese fishermen with a modest operation only relied on natural floating objects like drifting logs. Amazing increase of fishing efficiency of the FADs afterword is well documented in this paper. Although this high efficiency of catching all size of tunas is the largest merit of the purse seine fishing, due to its tremendous fishing power, much more strict control with higher transparency than other fisheries is required for this fishery to conserve and manage successfully the stock. Unfortunately, there is no progress in reduction of overcapacity of purse seine fishery. It should be noted that the use of modern FADs increased fishing capacity greatly. After reading the paper, I am rather convinced with the urgent need to control FADs operation more effectively.

Dr. Miyake's Column

Longline abundance index

Dr. Makoto Miyake,
Visiting Researcher at the National Research Institute of Far Seas Fisheries

In stock assessments, catch per unit of effort (CPUE) is considered to reflect the abundance of a fish stock. For example, if you caught 10 tons of tuna per fishing day, the abundance of that tuna stock was about twice as high as the stock from which only 5 tons were caught per fishing day. Of course, if there is some difference in fishing procedure (e.g. depth of gear, target species, area, time) between these two cases, they can not be directly compared and hence need to be adjusted to account for such differences. This adjustment is called, 'standardization' and CPUE modified for various factors is called standardized CPUE (index). In the case of longline, number of fish caught per 1000 hooks is widely used and considered to reflect the abundance of stocks well.

For purse seine, catch (in weight) per purse seine fishing day (including searching day without catch) is generally accepted as an abundance index. However, purse seine fishery is relatively selective. For example, if there are schools of big yellowfin and those of small skipjack, the fishing vessels will only set the net on yellowfin schools, skipping the skipjack schools. In other words, longline is a passive and more random fishing method, whilst purse seine is an active and more selective fishing method. For this reason, the standardized CPUE for purse seine is not as indicative of stocks as longline CPUE.

In the case of purse seine fishery on schools associated with FAD (fish aggregating device), the situation is worse. For example, even whilst stock size keeps declining, FADs still attract fish and the catch level may be maintained. Therefore the amount of fish under FAD may not reflect the abundance of total stocks.

Consequently, in stock assessment work, longline abundance indices are often given high weight compared to other indices, either deliberately by researchers or automatically within assessment models. Therefore, the results of analysis appear to be influenced more directly by the tendencies shown in the longline indices. This close dependency on longline indices had been initially accepted when the longline catch contributed a major part of the tuna catches. However, in more recent years, an overwhelmingly large part of the total tuna catches is made by purse seine. Besides, purse seine catches much smaller (younger) fish than longline. This leads us naturally to doubt whether we can continue assessment methods so heavily dependent on longline indices.

The abundance of large fish is the residuals of population after the accumulative mortality of fish through younger ages. In that sense, it is more indicative of the stock status than the small fish indices. However, when the abundance of large fish of a species gets reduced, the longline has changed its behaviour (e.g. targets on another species of tuna) and the representation of index

of the stock status would be also reduced. This has been pointed out for many years in the past. Unfortunately, no good index for purse seine has been developed. It should be the duty of scientists, who work with purse seine data, to give some serious effort to solve this problem.

OPRT Activities

OPRT collects data from SBT tags

In Tsukiji fish market, OPRT collects data from the tags attached to each southern bluefin tuna (SBT) in order to monitor the market distribution of SBT in Japan. Data are submitted to the Fisheries Agency of the Japanese government (FAJ) to be analyzed by experts. Data collection is entrusted to OPRT by the FAJ. (Please visit "OPRT Activities through Photos" on our website, which are updated from time to time.)

OPRT staff collecting data from the tags of Southern Bluefin Tuna

Editorial

Countermeasure to Confine PS Fleet Increase

The world tunas catch is 4.4 million tons, of which 2.9 million tons or 65% were caught by purse-seiners according to the statistic as of 2009. Since 1980's, the catch has been rapidly increasing till now as the purse-seine fleets are becoming larger and their fishing efficiency has been improved. Unlimited increase of the purse-seiners' catch and by-catch of juvenile tunas would cause harm to sustainability of other tuna fisheries unless some immediate measures should be implemented. This concern is rapidly intensifying among the international community.

On Jun. 8th, International Seafood Sustainability Foundation (ISSF) released the measures as the resolution aimed to address excess fishing by the global large-scale tuna purse seine fleets. According to the release, there is a clear necessity to reduce excessive number of tuna purse seiners which cause negative impact over tuna resources, but the first step is to prevent additional new vessels from being introduced into the already over-crowded tuna fisheries. In details, by Jan. 1st 2013, all processors, traders, importers, transporters and others involved in the seafood industry must refrain from transactions in skipjack, bigyeye, and yellowfin tunas caught by large scale purse seiners that are not actively fishing for tuna December 31, 2012. This is not applicable for newly constructed vessels as replacement of older existing vessels and for those vessels under contract for construction.

The main members of ISSF are from the U.S. canned tuna industry, thus this boycott measure would have effects if they actually take action. The fishing industry would not be able to survive if they lose the market. This boycott has high potentials to prevent additional new large purse-seiners. In fact, Japan has already proved the efficacy of this boycott measure.

A total of 250 flag of convenience (FOC) large scale tuna long-liners, who operated fishery free of obligation from international resource management, were driven to withdraw because of the international embargo of FOC tunas which was supported by the Tuna Regional Fisheries Management Organizations (RFMOs). Tunas caught by FOC fleets had been concentrated into Japanese market, but the product was shut out when the measures to prohibit the international transaction of such tunas were strictly conducted. As a result, the FOC tuna long-liners were eliminated.

There have been some calls for preventing increase of large scale purse-seiners, but no one could actually stop the increase of the number. We expect that the measures ISSF resolved have their actual efficiency, if implemented globally. However, since there are markets for canned tunas worldwide such as the U.S.A., Europe, Central and South America, and so on, it would be not easy to elicit cooperation for the boycott measure from all relevant parties in the world who supply canned tunas.

We are afraid that the effect would end up less effectively if the boycott was activated only in a specific market. As for the FOC tunas, only Japan should have strong attitude because Japanese Sashimi market was the de facto only market in the world for them. From this perspective, to promote global boycott for the canned tuna should encounter many difficulties beyond any imagination.

In addition, developing countries possibly introduce large scale purse-seiners as their tuna fisheries develop. The development of tuna fisheries in those countries is respected as a legitimate right, and therefore it would be not easy to take boycott action by denying their development. The idea has been discussing to allow the developing countries to increase the purse-seine vessels by reducing number of large scale purse-seine vessels owned by the developed countries. However, no international agreement has been concluded yet in order to carry the idea into effect. Without the international agreement, it seems difficult to stop increase of new large-scale purse seine fleet in the developing countries.

There are many difficulties of the task ahead in order to make the ISSF's resolution effective not as being just propaganda. We hope it continues its efforts for the greater cause, sustainable tuna fisheries in the world. (This article is a translation from the Minato, fisheries daily in Japan.)

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