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NEWSLETTER INTERNATIONAL

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DEC. 2013, No. 47

FOR CONSERVATION AND SUSTAINABLE USE OF TUNAS

SBT farming

Urgent need for use of stereoscopic cameras in southern bluefin tuna farming

Jiro Suzuki, Tuna Scientist

Scientists working for the CCSBT (Commission for the Conservation of Southern Bluefin Tuna) were disappointed again when the Commission could not agree on the implementation of stereoscopic cameras in tuna farming cages in the annual meeting held in October 2013. This issue could be now regarded as the most serious problem remaining unsolved while the stock condition shows a clear sign of recovery that resulted in second consecutive substantial increase of the TAC (Total Allowable Catch). Scientific Committee (SC) of the CCSBT has been frustrated for a long time over the stalemate in moving toward adoption of compulsory use of the stereoscopic cameras. The SC recommended the use of stereoscopic cameras as the best feasible method to monitor accurately the numbers and weight of tuna transferred into farming cages. This has immediate implication with the TAC management that requires accurate and transparent accountability.

Australia is only country that produces farmed southern bluefin tuna (SBT) and it uses almost all its catch quota for SBT farming. Juvenile seed fish of ages 2-3 are captured by purse seiners kept alive, transferred to towing cages and again transferred into the farming cages where the seed fish are raised for about 6 months. The measurement is done when the juveniles transferred into the farming cages. Estimation of total purse seine caught SBT has been made set by set using size/weight measurements of the total of 40 sample fish, recently increased to 100 fish. However, there remains doubt in the estimates made by this method that the catch of the purse seine caught may exceed the catch quota. This issue was actively discussed in the SC and the SC recommends to use the cameras but has not yet been settled in the Commission despite Australia has announced for several years to introduce stereoscopic cameras in the Commission meetings. Australia explains that failure to follow its announcements is due to its domestic reasons.

It is ironical that an Australian company produces and

sells many good quality stereoscopic cameras not only domestically but also internationally. The cameras are now used commonly in the tuna farming because of its accuracy and affordable price. Therefore, International Commission for the Conservation of Atlantic Tunas (ICCAT) sets a mandatory rule to use this method for improvement of accuracy of the Atlantic bluefin catch by purse seiners and amount of transferred bluefin tuna in the farm cages. I think the use of stereoscopic cameras is necessary to obtain accurate estimates of the catches not only for the fishermen involved in the farming but also responsibility of the tuna RFMOs including CCSBT, ICCAT and IATTC that deal with the tuna farming.

Delay in implementing the use of stereoscopic cameras would increase suspicion of exceeding the Australian catch quotas and continued failure of promises is disgrace of the CCSBT.



Dr. Miyake's Tuna Chat

Bluefin tuna farming and tuna stock management

Makoto Miyake

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In 1997, the first large-scale Atlantic bluefin tuna farming (in the sense of tuna fattening) started in the Mediterranean Sea, near the Spanish coast of Murcia. Although there were some small-scale tuna fattening operations for

post-spawned bluefin tuna at the Strait of Gibraltar in the late 1970s, the Murcian operation was the start of a new tuna farming era and had a very strong impact on the Atlantic bluefin tuna fisheries and its managements.



Until the Murcian operation, juvenile bluefin tuna had been caught and consumed only by the local people throughout the Mediterranean coasts. The price for fish was not that high. However, the farming converted young bluefin tuna into golden eggs. Consequently, in the late

1990s to the beginning of the 2000s, there was a sudden increase in demands for live juvenile bluefin tuna to be used as the stock for farming. This was then followed by: the soaring price of fish; new entries of many fishing boats to this fishery; and the rapid increase of catches. Naturally, such a sudden increase in catches of juvenile, as well as the spawning adult bluefin tuna in the Mediterranean Sea, had a serious adverse impact on tuna stocks.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) adopted a total allowable catch and country catch quota. However the increasing catch trends were not curtailed by the catch quota alone. One of the major reasons was that the farming provided a loophole in the tuna fisheries management measures. This problem still remains even at present, but to a lesser extent, as various supplemental regulations have been adopted since then. The fish caught are not landed but moved from a fishing net to a carrying or farming cage directly under the water. This means the accurate catch quantities are not known.

The only occasion that the fish can be seen above the water and weighed is when they are harvested (landed) for shipping to the market; a few months or sometimes, a couple of years after they were caught. The weight taken at the harvest, of course, includes a growth during the fattening process. Therefore, it is very difficult, if not impossible, to estimate the weight of fish at the time of capture backwards from its harvest weight. The key for such a backward-calculation is to have an accurate rate of growth during the farming.

Much research has been conducted on this subject but the results vary from 15% to 150% increase in weight of fish. These variations are related to the period of farming, density of fish in the cage, water temperature, forage, environment, size of the fish and many other factors. The best option is to estimate the number and weight of fish when they are being transferred from the fishing nets to the cages underwater. A stereo-underwater video camera has been developed for this purpose and known to be useful but there still appears to be some difficulty in implementing it fully.

A further difficulty is that fish from various sources (often from different countries) are mixed through a selection process during farming. The selections are made according to the size of fish in order to keep the similar-sized fish in the same cage. As is well known, if fish of different sizes are kept in the same cage, small fish can not compete with big fish and therefore these small fish show very slow or no growth. This mixing of fish from different sources makes it impossible to identify which fish are caught by which vessels or flag countries. Recent management regulation prohibits mixing of fish from different sources in one cage but the complete implementation of this measure is sometimes difficult. Therefore, even now, there are many uncertainties when estimating catch in weight of each vessel, once the fish are transferred into the farming cage. Having said this, great efforts have been made to close these loopholes (e.g. catch document system or observer system at the farming ground) of management in order to ensure a greatly improved compliance. Further research and advancement in technology would eventually solve the remaining problems

Tuna RFMOs

WCPFC steps forward to tackle PS over fishing capacity

Nowadays, catch by purse-seiners (PS) are increasing rapidly along with ever increasing fishing capacity and they currently catch 60% of the world Tuna and Skipjack. Purse-seiners in the Western and Central Pacific Ocean caught 993,000 tons in 1991, and it had grown to 1,543,000 tons in 2011, according to data released by the Western & Central Pacific Fisheries Commission (WCPFC). Purse-seine fishery with FADs brings serious impacts on fish stocks, especially on juveniles. Therefore, strengthening FADs regulations becomes also an important issue on tuna resources management. (The catch by longline was 154,900 tons and 266,900 tons in the same year, respectively. The number of large scale longliners is not increased by OPRT members' voluntary joint efforts.)

In fact, the scientific committee of the WCPFC has determined that bigeye stock is subject to overfishing and that yellowfin stocks are currently being fished at capacity and adoption of limits on fishing skipjack should be considered.

To sustainably utilize tuna stock, the international community has asked for addressing excessive fishing capacity, especially of purse-seiners for a long time. However, countermeasures are making slow progress. There was once an international agreement to freeze the capacity of large-scale purse-seiners of developed countries at the joint tuna RFMOs meeting held in 2011,

but no effective countermeasure have been implemented. Rather, the capacity is reported to keep increasing further along with new vessel constructions.

Amid such circumstances, in addition to the management measures for bigeye, yellowfin and skipjack tuna for 2014-2017, the WCPFC adopted a remarkable measure to forthrightly tackle the issue at its 10th regular meeting closed on Dec. 6th in Cairns, Australia. Namely, “developed countries shall jointly develop a scheme to jointly reduce the capacity of large scale purse seine vessels to the level of 31 December 2012 and submit to the next regular meeting.” Moreover, they also agreed on a principle to decrease the number of their vessels when the number in developing island countries increases,” a participant of the WCPFC meeting reported.

Obviously, developed countries have a key to see whether or not such a scheme can become effective. All developed countries should tolerate pains and stop increasing the number and reduce their fishing capacities. If they succeed in this effort, the international community will be able to see some improvements on its long-standing issue.

In addition, the achievement at the WCPFC can affect other regional tuna fishery management organizations. Much is expected for the next regular meeting of the WCPFC.

ICCAT maintains Atlantic bluefin tuna quota

The 23rd annual meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT), held in Cape Town, South Africa, during 18-25th November, decided to maintain bluefin tuna quotas in both East and West Atlantic for next year, following advice of the scientific committee. The committee could not give robust advice that would support a sustainable change in the quotas because of uncertainties of available data despite the fact that there were evidences of the stock recovery.

Many countries expressed their expectation for increasing



the quotas next year. The quota in the East Atlantic for next year is 13,400 tons while that for the West Atlantic set at 1,750 tons. More than 500 delegates including non-governmental organizations participated in the meeting.

OPRT Seminar

Current Situation of China's Tuna Fisheries

OPRT held its second seminar in Tokyo on Nov.15, reporting the result of the study mission dispatched to China, last August, by OPRT. Professor Lou Xiabo, Tokyo University of Marine Science and Technology, who participated in the mission, reported that the current demand of the sashimi-grade tuna market is about 12 thousand tons which include about 3 thousand tons of high quality tunas such as southern bluefin tuna, maintaining the same level for recent years.



Prof. Lou

He explained the main reasons why the demand has not increased as was expected, as follows: ① competition with fresh salmon and Chinese consumers prefer salmon because of price, tastes, etc. ② less promotion advertisement than for salmon ③ suitable cold chains for distributing tunas in fresh have not been yet well developed ④ prohibition of tuna processed by using CO gas, causing business risk of distributors ⑤ shrunk expenditures of entertainment by the government's order.



OPRT Managing Director Nagahata

He also reported that China's tuna fishing industry is suffering from increase of costs (labor costs, fuel and baits) and decrease of income because of

decreasing catch, low fish price and unfavorable exchange rate).

Mr. Daishiro Nagahata, Managing Director of OPRT, as a member of the mission, reported, in response to his concerns about recently expanded China's tuna longline fleet operating in the WCPO, the Chinese side had responded that "the said longliners are targeting albacore and do not have deep-freezing capacity, and, therefore, it will not bring adverse impacts on the Japanese sashimi tuna market". Nagahata added that the number of newly built vessels of that fleet had further increased since the mission's visit to China and the OPRT Secretariat would continue careful watch on this fleet, in particular, in relation to the sashimi tuna market.



Tuna Day

Oct.10th is Tuna Day. Children enjoy "tuna class".

Japan Tuna Fisheries Cooperative Association (JT) held a "tuna class" at an elementary school in Tokyo on Oct. 29th as one of the events to promote Tuna Day. JT staff visited the school and explained 92 school children about tuna fisheries, such as biology of tunas, fishing grounds, fishing gears and so on, also showing a film of fishing operations. They zealously attended the lecture, asking many questions.

OPRT, with support of its members, has also carried out the nationwide campaign to promote Tuna Day from Oct.1st to 10th, appealing the need of responsible tuna fisheries as well as support by consumers for OPRT's mission to ensure sustainable use of tunas.

Editorial

On-Board Observers Can Be Robotized?

The Regional Fisheries Management Organizations (RFMOs) require tuna fishing vessels to carry observers on-board to watch their fishing operations. In September, the Association of Professional Observers

(APO, headquartered in the U.S.A.) and an environmental conservation group jointly called on the Western and Central Pacific Fisheries Commission (WCPFC), urging to take the measures to improve working conditions and to secure safety of observers.

"Fisheries observers play a critical role in ensuring the sustainability of fisheries resources for the future generations through the extensive information they collect on the harvest of fish stocks, including impacts on marine habitat and sensitive bycatch species," the APO said.

The APO further stated as a concrete example that "they also perform an extremely important monitoring function that helps deter and prosecute IUU fishing. Six tuna purse-seiners operated in the Pacific Ocean were charged for violation of regulations imposed by the WCPFC. The evidence provided by the observers was the decisive factor that helped to conclude the final judgments and heavy fines against the vessel owners, and the fishing masters of the vessels were imposed."

"The observers involved in the recent prosecution should be commended for their courage and commitment to the resource. However, coming forward to testify against the IUU fishing vessels they were working on could have been a great personal risk," APO said. "Faced with deployments on board of fishing vessels that last weeks or even months, these observers are potentially subject to bribes, harassment, threats, intimidation, and even injury or death at the hands of captains and crew who fail to appreciate and to respect the observers monitoring and oversight role."

To utilize finite resource sustainably, it is necessary for fishing managers to properly control the fishery and to work to prevent illegal fishing activities. It also highlights the necessity of monitoring by observers. Along with it, it may be unavoidable to increase the costs. However, conflicts and emotional entanglement between crews and observers would be unavoidable because an observer is also a human being.

Is it appropriate to keep depending on observers for monitoring? We may have to start developing new technology to robotize monitoring operations instead of by human being. Such thoughts came up in reading about the earnest request forwarded by the APO.

Actually, new technology is being developed for a vehicle to travel to destinations by itself without any human touch. It should also be possible to develop a robot observer. In addition, the monitoring function of the robot observers, even if limited, combining its limited function to the catch reports which each vessel is required to submit, effectiveness of monitoring can actually be more improved.

(This is a translation from Minato Fisheries Daily of Japan.)