



OPRT

CIEL BLUE Koji-machi (4F)
3-4-3 Koji-machi, Chiyoda-ku, Tokyo 102-0083
Tel: 03-6256-9138; Fax: 03-6256-9139
Website: <http://www.oprt.or.jp>

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FOR CONSERVATION AND SUSTAINABLE USE OF TUNAS

This issue features translations of three articles featured in OPRT Japanese Newsletter No. 115.

1. Conversion of discarded fishing gear into future resources (Interview with Mr. Kodai Kato, representative of AMU Inc.)

Mr. Kodai Kato, the representative of AMU Inc., is trying to recycle tuna long line fishing gear that would otherwise be discarded. He succeeded in tailoring jackets using fabrics made of recycled nylon monofilaments that were used for the main lines of long line fishing gear. Mr. Kato is now based in the City of Kesen-numa, which is one of the most important bases for tuna long line fishing vessels in Japan. The following is an interview with him on how he has been trying to achieve a recycling-oriented business model, namely, the realization of a sustainable society through the recycling of discarded fishing gear.

Interviewer: I heard that you are not originally from Kesen-numa.

Mr. Kato: I was born in Kanagawa Prefecture. When I was a student at a university in Tokyo in 2015, I visited Kesen-numa as a volunteer to help with the recovery from the Great East Japan Earthquake. I was inspired by local people who wanted to live with the sea and volunteers who had visited before me to try to establish new businesses. From then, I started going back and forth between Tokyo and Kesen-numa. After quitting school, I started working for a major IT company, but could not forget my days in Kesen-numa. I decided to move here in 2019 to start a new business.

Interviewer: Why did you pick up recycling discarded fishing gear?

Mr. Kato: Honestly speaking, I moved here without any business plan. Nevertheless, I was asking myself, "What can I do here? It would be meaningless if I do business that I can do in Tokyo." I turned my eyes on fisheries,

which is the main industry in Kesen-numa. I thought it wasteful to discard fishing gear, which support this fishing port town. Then, I heard news that sneakers had been made from discarded fishing gear and marine plastics, which gave me a hint for potentially creating a new business. As I investigated the possibility of this, I found and contacted a company that had established a technology to reuse used fishing nets as a source of recycled plastics.

Interviewer: Is it possible to reuse long lines?

Mr. Kato: A nylon monofilament used for a long line is very strong and has anti-wrinkling qualities, as well as excellent tensile strength and anti-abrasion qualities, since long lines must be able to handle strong tugs by tuna. Such properties made it possible to produce fabrics which are very strong but soft, glossy and anti-wrinkling.

Interviewer: Why did you decide to make jackets from these fabrics.

Mr. Kato: The recycled filament is thick and good for fabrics used for clothes, but the cost for recycled fabrics is not so cheap, which forced me to produce something relatively expensive. Then, I realized that an adult usually has at least one jacket, even if it is more expensive than other clothes. Another reason was the high durability of the material. People tend to wear jackets for a long time. Considering Goal 12 of SDGs "Responsible consumption and production," I added the concept "Sharing limited resources while thinking about the world in 100 years" and finally decided on jackets. The first prototype jacket was so warm and soft that you could not imagine that it was made from fishing gear.

Interviewer: What were the responses from fishermen?

Mr. Kato: Long lines which are damaged and

replaced cannot be disposed of during the voyage and are brought back to Japan. Since they are regarded as industrial waste, the disposal of which incurs a cost, the owners of long line fishing vessels had trouble dealing with them. They told me that they had a plenty of long lines in their warehouse. Last November, I was given a chance to make a presentation on the project at a council meeting of Miyagi Prefecture Northern Tuna Fisheries Association, to which long line fishing vessels in Kesen-numa belong. The council decided by consensus that all the vessels belonging to the Association would cooperate with the project. This opened a way for me to obtain the lines and nets that had piled up at their warehouses.

Interviewer: What amount do you expect to get?

Mr. Kato: I collected and sent about eight metric tons of nylon lines and nets to the recycling company last February. Two tons were added last July. If the project becomes well-known and other fisheries such as the large-mesh driftnet fishery cooperate with it, it may be possible to get about 30 metric tons per year. Fisheries being the main industry in Kesen-numa enables me to collect such a big amount of discarded fishing gear from only one city.

Interviewer: Can the project reduce the burden of fishermen?

Mr. Kato: Although fishermen must separate out the non-nylon parts, there is almost no collection fee now. However, the project requires labor and transportation costs. I am planning to utilize subsidies and investment to secure the necessary budget. To make more people aware of this project and seek like-minded people that I can share ideas with, I started crowd-funding for a project to collect nylon long lines from long line fishing vessels that will come back to the port of Kesen-numa this fiscal year and convert them into resources.

Interviewer: What was the result?

Mr. Kato: The crowd-funding started on May 11 and its target (1 million yen and 100 supporters) was achieved in only 13 days. I was surprised with the result since I was not confident that I would find 100 supporters

without offering any reward for making a donation. People around me said, “You can do more!” and I wanted to also collect used fishing gear from Ishigaki Island in Okinawa Prefecture, which supported the project. Then, on June 6, I started the second crowd-funding project with the goal of 5 million yen and 600 supporters. This resulted in 2,329,000 yen and 235 supporters at the end of the funding period, July 1. Although the second goal was not achieved, I was pleased that more people came to know about this project thanks to it being shared on social media and being re-tweeted.

Interviewer: I saw a good response from general public.

Mr. Kato: Yes, many people supported the project. The Ministry of Environment reported that discarded fishing gear accounts for a large part of marine litter. Discarded fishing gear is constantly killing marine life, which is called “ghost fishing,” and is an environmental problem faced all over the world. I hear that used fishing gear is sometimes piled up on beaches or discarded into the sea due to the high cost of disposal. I believe that giving discarded fishing gear another role can be part of the solution to these problems.

Interviewer: Isn't it a good chance for fishermen involved in the project to draw attention to their efforts to conserve marine environment?

Mr. Kato: Yes, and I expect them to keep on doing so. It is fishermen who bring lines and nets back to ports. I keep hearing more people say, “I want to cooperate with the project.” I am firmly committed to continuing to support fishermen. I want to repay their goodwill by establishing a business model in Kesen-numa whereby discarded fishing gear is recycled, which benefits fishermen.

2. Panama and 14 other Parties submit a proposal to CITES COP19 to list shark species including blue shark in Appendix II

The 19th Conference of Parties (COP19) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora

(CITES) will be held in Panama from November 14 to 25 this year. A proposal to list 60 species of shark including blue shark in Appendix II was submitted. The proponents are Bangladesh, Colombia, Dominican Republic, Ecuador, El Salvador, European Union, Gabon, Israel, Maldives, Panama, Senegal, Seychelles, Sri Lanka, Syrian Arab Republic, and the United Kingdom of Great Britain and Northern Ireland. It is considered, however, to have been done at the initiative of Panama. The proposal is mainly aimed at protecting 19 coastal shark species included in the family Carcharhinidae, but it also contains all the other shark species under the family, including blue shark as a look-alike species.

Many shark species have been already listed in CITES Appendix II: whale shark and basking shark at COP12 in 2002; great white shark at COP13 in 2004; oceanic whitetip shark, hammerhead sharks and porbeagle shark at COP16 in 2013; thresher sharks and silky shark at COP17 in 2016; and mako sharks at COP18 in 2019. These species were proposed for listing based on the concern that the stock was over-exploited and the species was likely to be threatened with extinction in the near future unless its trade was regulated. This time the proposal proposes to list 19 species in Appendix II on the same concern, but there is a big difference in that it also proposes to list as many as 41 species as look-alike species even though there is no concern about their stock status. The look-alike provision entails that, in order to effectively regulate trade of species that may be threatened with extinction without proper trade control, other species which resemble the species of concern should also be regulated. In short, there are species whose product looks like that of the concerned species when traded, which poses a risk that the concerned species is disguised as the look-alike species and traded freely, and thus trade of these species should be regulated together.

Blue shark is the most utilized shark species in the world and caught mainly by long line fisheries. According to FAO statistics (FishStat), the global annual average catch of blue shark between 2016 and 2020 amounts to more than 100 thousand tons, which is on a

different order from those of the shark species already listed in Appendix II. The stock status of blue shark is at a sustainable level in most oceans. As to the north Atlantic stock, the International Commission for the Conservation of Atlantic Tunas (ICCAT) is properly managing it through the establishment of a total allowable catch and national allocations. No measure has been introduced in other areas because there is no concern on the stock status.

If blue shark is listed in Appendix II, various problems may occur. First, when a fishing vessel catches blue shark on the high seas and lands them at foreign ports, this is regarded as export, which requires an export permit issued by the flag State of the vessel. In order to issue an export permit, the flag State must demonstrate that such export will not be detrimental to the survival of that species (non-detrimental finding: NDF) and confirm that the specimen was not obtained in contravention of the laws of the flag State. In reality, it may be very difficult for the flag State to do all these things every time its fishing vessel tries to land blue shark at foreign ports. This means that landing blue shark, which poses no concern to the stock's status, at foreign ports may become impossible. When a fishing vessel catches blue shark on the high seas and brings them back to their home (introduction from the sea), the flag State must issue a certificate based on NDF prior to the landing. This means that although there is no concern on the stock status, fishermen have to request the certificate and the administration must issue it, which is cumbersome. The most unreasonable point is that even though the reason for listing blue shark in Appendix II is not the stock concern, NDF is still required for export and introduction from the sea. In theory, certifying that the product subject to export or introduction from the sea is blue shark should be enough, but NDF is required by CITES.

One of the problems of CITES is that there is not good communication between the CITES authorities and the fisheries authorities of the same Party. There are many cases in which the CITES authority submits a listing proposal or becomes a co-proponent of a proposal

submitted by others without consultation with the fisheries authority, which is probably the case this time again. For example, among the proponents, those Parties whose blue shark catch is relatively large in 2020 are: the EU (52,401 t); Ecuador (3,271 t); Seychelles (660 t); and Sri Lanka (231 t). It is doubtful that the fisheries authorities of these Parties received detailed briefing in advance by their CITES authorities for becoming a co-proponent and gave their consent thereto.

One of the co-proponents of the proposal is the EU, which has 27 votes in CITES. Based on past record, the proposal is highly likely to be adopted. In that case, as the EU catches the largest amount of blue shark in the world, how the EU will implement the CITES requirements will draw much attention. If the implementation is not satisfactory, this may open discussion on the appropriateness of listing a species like blue shark, which is traded in great amounts, even though it is listed as a look-alike species.

3. Antioxidation effects of selenoneine in tunas on human beings confirmed

It is known that tunas contain a relatively large volume of selenoneine. A research team in Kanagawa Prefecture and others conducting a clinical test of selenoneine contained in tuna confirmed that continuous eating of tunas enhances antioxidation effects in human bodies. Although the results are still preliminary, the dark-colored meat of tunas, which contains more selenoneine than the red meat, produces greater effects. After people ate 120 grams of the dark-colored meat of tunas three times a week for three weeks, their amount of a sirtuin gene, which is also called “a longevity gene,” increased by 70%.

The test has been conducted jointly by Kanagawa Prefecture, the Japan Fisheries Research and Education Agency and St. Marianna University since October last year. People ate 80/120 grams of the red meat and dark-colored meat of tunas three times a week for three weeks and the amount of selenoneine in their blood was measured. The test also measured the activity of the sirtuin gene, which is said to play an important role in controlling aging and longevity, as well as the

degree of stress.

The first test, conducted on a group of 53 people, demonstrated that while eating red meat did not result in much accumulation of selenoneine in the blood, eating dark-colored meat, which contains 40 times as much selenoneine as red meat, caused much accumulation. The amount of the sirtuin gene increased in proportion to the amount of meat: by 30% in the case of eating 80 grams a day and 70% in the case of 120 grams. BAP tests and OXY tests, which check the direct effects on human beings, indicated that oxidative stress in the blood decreased drastically. In particular, the OXY tests indicated that almost all people, whose stress ranged from light to heavy, ended up at normal levels.

Selenoneine is a substance with antioxidation effects that the Japan Fisheries Research and Education Agency found in 2010. The research team proved, for the first time, its effects on human beings. One function of selenoneine is to prevent the production of and eliminate active oxygen, which could be a factor causing lifestyle-related diseases. A test using mice had already indicated that selenoneine could accumulate in the blood, but would disappear in two weeks, and that it is necessary to keep taking selenoneine to maintain its effects.

Although eating dark-colored meat proved to produce antioxidation effects in human beings, Mr. Kazushige Usui of the Kanagawa Prefecture Fisheries Technology Center, the coordinator of the joint research, said, “Dark-colored meat can quickly deteriorate due to oxidation and the meat has the opposite effect if it is low-quality. We will conduct research, here in the City of Misaki, which is the main base for tuna fisheries, on ways to process dark-colored meat and recipes for cooking dark-colored meat that can keep the antioxidation ability of selenoneine. I hope that this can lead to the promotion of tuna-related industries and tourism in Kanagawa Prefecture.

The clinical test covers 100 subjects. Currently, there remain 47 people who are being tested. It is expected that all the results, including the results of the analysis and responses to additional questionnaires, will be published in autumn next year.
