Michael Clark, a Fishery Management Specialist at the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service, participated in the Mike Mansfield Fellowship Program from 2008-2010. During his Fellowship year in Japan, he served in full-time placements in Japan’s Fisheries Agency, Fisheries Research Agency, Japanese Diet (legislative branch), a seafood trading company, and with a fisheries economist at Tokyo University. Mr. Clark’s expertise and experience in Japan gave him a unique perspective on Japan’s fisheries industry and the impact of the Tohoku-Pacific earthquake on that industry. In the following commentary, he shares his thoughts on the challenges of rebuilding the fishing industry in Tohoku, a region critical to Japan’s domestic seafood production.

The tsunami that occurred after one of the most powerful earthquakes ever recorded near the Tohoku region of northern Japan on March 11 wiped entire towns and villages from the shoreline. In many of these towns, fishing and aquaculture had been the primary industries and source of livelihood for local residents. Many fishermen not only lost their vessels, but also lost the infrastructure to ensure a quality product gets to market. Colleagues with whom I worked during my 2010 placement at the Fisheries Agency in Japan have confirmed that 19,000 vessels were damaged or destroyed and they estimate that the economic impact to the fishing industry alone will likely equate to $1 trillion. The fact that over 40 percent of fishermen in Japan are already at retirement age exacerbates the difficulties in determining the next steps for rebuilding coastal communities and the future of Tohoku.

Tohoku Region Fisheries Production

Fishing ports such as Minamisanriku, Miyagi; Rikuzentakata, Iwate; Onagawa, Miyagi; Hachinohe, Aomori—are all locally famous for a variety of wild-caught and farmed seafood including flatfish, salmon, scallops, tunas, oysters, sardine, and Pacific saury. These ports were heavily damaged on March 11. Offshore of the Tohoku region, warm and cool ocean currents converge. These oceanographic conditions translate to some of the most productive fishing grounds on the planet,
conveniently located adjacent to a country of 130 million people that are willing to spend a larger proportion of their income on high quality seafood. Fisheries production from the Tohoku region is a big part of how a country like Japan is able to produce 60 percent of the seafood they consume, a figure that the Fisheries Agency in Japan is interested in increasing to promote domestic production and reduce reliance on imports. The remaining 40 percent come from imports, which have been increasing for a variety of reasons, including reduced access to global fishing grounds for Japanese fishing vessels, overfishing, habitat degradation, low import tariffs on seafood, reduced labor costs in developing countries, and shifts in demand for seafood products among Japanese.

Nuclear Concerns

Several weeks after the earthquake and tsunami, the Japanese government authorized the dumping of 10,000 tons of low-level radioactive water into the coastal waters of Tohoku to increase storage tank capacity at the Fukushima Daiichi nuclear plant. Testing confirmed that radioactive cesium and iodine levels in sand lance caught off of Ibaraki Prefecture were higher than the allowable standards. As a result, people are refusing to buy fish caught in the Tohoku region, even in areas where fishing vessels and infrastructure remain. This will further drive demand for imported seafood for the foreseeable future. For example, prices for sardines have fallen from $0.48 per kilogram to $0.18 per kilogram. Alfonsin (kinmedai) is one of the most delicious types of fish I sampled during my tenure in Japan, and recently prices have fallen regionally from $26 per kilogram to $14 per kilogram. Decreasing prices have resulted in eleven major fisheries cooperatives stopping all fishing operations off of Ibaraki Prefecture because buyers will not purchase fish that contain any radioactive cesium and iodine, even when it is within acceptable limits. This illustrates a very important difference between the eating habits of Japanese and Americans. In the United States, even when e coli-tainted beef or salmonella-laden eggs have been confirmed as directly leading to deaths, our demand is rarely impacted, and typically only in the short-term. In contrast, when slightly elevated levels in one species of coastal, bottom dwelling fish are detected in Japan, prices plummet for two different species of fish that inhabit completely different, offshore ecosystems. Once the situation with the Fukushima Daiichi nuclear plant is addressed and there is no more risk of radioactive water being dumped into the ocean, it could then be several more years before Japanese consumers are willing to eat Tohoku seafood in the same quantity as before the disaster.

Role and Demands of Cooperatives

Another aspect of Japanese fisheries that may complicate rebuilding of the fishing industry in Tohoku is the fisheries cooperative associations, or FCAs. Essentially all fisheries in Japan are managed by cooperatives. There are over 1,000 of them throughout Japan. If you want to fish, you have to be an active member of the cooperative. These cooperatives are the heart and soul of the fishing community. They often have an incredible amount of autonomy in establishing fishing regulations by consensus and typically provide their members with a host of services related to
fishing activities, including insurance, banking services, gear, bait, and ice. For the most part, fishermen police themselves, and since they agree to the regulations there is less incentive to break the rules. All seafood caught by Japanese fishermen is sold at an auction that is run by the cooperative and a percentage of the selling price goes back to the cooperative. The challenge of attracting new, younger members from non-fishing families (or from other prefectures) will likely be confounded by some of the bureaucracy and red tape involved with the cooperatives. The government of Japan had already been trying to find ways to reduce the number of cooperatives in order to improve the FCAs’ financial well-being and allow them to capture an economy of scale for the services they provide and to minimize the number of stakeholder groups.

In the short term, the FCAs will likely seek the maximum amount of compensation for the losses incurred by fishermen. Because of their political clout (in general, rural areas have more political clout in Japan and fishermen are well organized) and because of the low approval ratings for the current prime minister and his cabinet (only 28 percent but up from 19 percent pre-tsunami), they will likely be compensated. Compensation is important and warranted, as these cooperatives are likely responsible for keeping victims alive in the aftermath of the disaster. However, some thought should be given to finding ways to provide incentives for young participants to enter the fishing industry and not just compensating those that have experienced losses. There is a real possibility that the majority of older fishermen will likely not want to remain in the fishery and the cooperatives should consider partitioning compensation funds between losses already incurred and financial incentives to attract new entrants.

**Japan’s Economic Situation**

The present economic situation in Japan presents significant challenges to rebuilding the fishing industry in Tohoku. The Nikkei peaked in 1989 and has dropped approximately 77 percent since that time. Japan’s debt to GDP ratio is over 200 percent. If it is going to cost $1 trillion just to rebuild the fishing industry, what about other industries? How much assistance can the government be expected to provide and how should they prioritize? In the fisheries sector, there is a strong tradition of the government providing compensation without reform. In this instance, the scope and costs of this disaster are simply far too excessive for the government to simply cut a check to all affected industries. The government should be aware of the fact that simply providing compensation to existing fishermen based on what they can’t catch this year is a proximate solution to an ultimate problem of demographics in fishing communities. Compensation could be linked to training new entrants, finding innovative ways to reduce costs, and implementing more stringent regulations that allow coastal fish stocks to rebuild to levels consistent with the biological maximum sustainable yield in the long-term.

**Seafood in Japanese Society**
Having fresh, local seafood that changes with the seasons is sacred to the Japanese, and is part of the concept of “shun”. “Shun” refers to seasonally available foods (fruits, vegetables, and seafood) enjoyed in Japan. Like many Japanese words or concepts, we don’t really have a comparable term in English and frequently some of the meaning is lost in translation if it takes more than one word to describe. The men and women engaged in producing seafood maintain a special place in Japanese society. Fishing is not like other industries. Fishermen start each day in debt for supplies, bait, ice, and fuel. Their knowledge about how to make a profit can’t be learned in a book - only by experience. Costs and barriers to entry are high and connections or who you know don’t matter as much.

Opportunity for Revitalizing Tohoku’s Fishing Industry

The fishing industry in Tohoku experienced a disaster of unquantifiable proportions on March 11. An opportunity exists for the Japanese government and fishing industry to look at this as a turning point and potentially a testing ground for innovative management initiatives that combine consensus based decision-making and stakeholder autonomy with market-based incentives, strict quotas based on biological limits, and fewer participants. I am fortunate because none of my friends or colleagues were physically affected by the disasters. However, one colleague summed up the situation best when he said, “The Japan I knew…is gone”. I find solace in the fact that the men and women I met whom are involved in the fishing industry and its regulation are some of the most committed, hard-working individuals I have had the privilege of knowing. If elected officials in Japan can provide bold leadership in the face of adversity, I am confident that a stronger, more revitalized version of the Tohoku fishing industry can be realized.