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The Struggle over the Arase Dam: Japan's First Dam Removal Begins

By Hoyano Hatsuko

Building no dams at all would be best. This is clear. How can we open discussion concerning the destruction of dams that have outlived their usefulness? Kumamoto Prefecture becomes the first to take up the challenge of dam removal. Summer has come to the Kumagawa River. Local fishermen who ply the waters for ayu sardines as a livelihood continue to decrease, but tourists from Tokyo and the Kansai area coming for the sport of it are on the up.

The river is broad, the water clear, and the 30cm-long "shaku ayu" with their distinctive aroma when cooked are drawing more and more people. The government's unprecedented plan to expropriate the river's fishing rights is currently deadlocked, thanks to the stubborn resistance of the residents protesting the construction of the Kawabegawa River dam upstream which would be the second largest in Kyushu.

Meanwhile the dismantling of the Arase Dam downstream to be completed by 2010 has commenced. In December of last year Governor Shiotani Yoshiko citing financial reasons announced the removal in a public ceremony. The dam was built 3 km upstream from the mouth of the Kumagawa River in 1954 to generate hydroelectric power with a holding capacity of over 10 million cubic meters. While there are examples of rebuilding sluices under 15 meters and sand barriers, this will be the first example of actually removing a dam.

The Arase Dam was first planned along with the Kawabegawa Dam over 50 years ago: one has continued despite the fact that growing doubts, and the other has seen its last days. Kumagawa River had pride of place within the pantheon of dam construction in Japan. What then was behind the decision for its removal?

Arase as the First "Public Nuisance Dam"

While giving me a tour from the bottommost limits of Kumagawa through to the top of the dam's headwaters, 68-year-old Kimoto Seiko the head of the fishing co-op of Sakamoto Village confided, "I would like to see the fish swimming upstream naturally in the Kumagawa once more." Kimoto, who lives in the village where the dam is located, is a member of the fisherman's association, and despite the association's support for construction of the Kawabegawa Dam, as a fisherman he is personally against its building. He assumed duties as head of the local co-op in 2001.

The ayu flow into the river from the Yatsushiro Sea from early March to May. When I visited in late March, ayu spawning from breeding pens three kilometers from the mouth of the Kumagawa were being brought upstream by hand by members of the association. "They're still young," said a worker of the spawn who made their way up a specially-built run and were now jumping over the surface of a small holding pool into a net; when a large enough number were caught they would then be carried upstream by truck.

The spawn would be released into the various areas along the 225 km river separated by dams and sluices; every year approximately 3 million fish are trucked upstream including the desired shaku ayu. At present there are three dams and over thirty sluices along the river, among them the Kumagawa Sluice, Yohai Sluice, the Arase Dam and Seto-ishi Dam in the river's lower reaches seem to have the greatest influence over the progress of the fish. According to the Sakamoto Ayu News published by the village fisherman's union, until Arase was completed in 1955 about 1200 fisherman from Sakamoto and Yatsushiro made their living along the river. However, due to the creation of artificial breeding grounds, a condition for the dam's construction, in place of the natural waterways used by ayu and eel, the catch dramatically declined causing those in the fishing industry to either close shop or find a new line of work. The disappearance of the fish led likewise to the relocation of people – 119 households -- from the village itself.

Then there were the other ecological problems that came with the construction of the dam: the water became turgid, dammed water seeped into the river, the tides changed, over one million cubic meters of sand shored-up, along with a nasty smell and red tides. All these problems increased to the point of overwhelming the residents when the Seto-ishi hydroelectric facility commenced 10 km upstream from the dam. Residents of Sakamoto studied the kinds of options available to them for several years. Kimoto and his group believed they had the right and opportunity to speak to the governor about their problems as the river's 50-year leasing deal expired at the end of March last year and the prefecture had to make a renewal application to the Ministry of Infrastructure.

Until the former Construction Ministry built a special fish route in 1999, there was no flowing waterway for 1.8 km downstream from the Fujimoto generating facility built below the dam. However, even the completed route only allowed for a half ton volume of water every second which was not enough to allow the fish population to replenish itself and thus positively affect the economy. Therefore the fishing co-op concluded they could not renew the lease.

In September 2001 they hand-delivered a letter to the governor requesting they be given responsibility for restoring the river to its former glory. The response of the prefectural department overseeing the dam was that the department would like to maintain it with an eye on environmental issues.
Despite the number of meetings held by the prefecture in Sakamoto and Yatsushiro, voices in favor of dam renewal from inside and outside the villages continued to be raised. Therefore, the legislature had no choice but to raise it as an option. In September 2002 the village council unanimously approved an official request to have the dam removed. Gov. Shiotani agreed, seeing it as an issue in tandem with the construction of the Kawabegawa Dam.

Finally it was decided to renew the lease for seven years until 2010, with the funds for removal to be taken from the profits of the hydroelectric plant over the same time period.

Sea Fishermen join the fight

Yatsushiro City held a symposium on Japan's first dam removal on March 25 of last year sponsored by the Kumagawa Beautification Association and the River Policy Network. Over 500 local residents attended despite inclement weather, serving to raise general awareness about the issue. Nishiyama Katsumi from the Yatsushiro Fishing Association spoke: "In the past the banks of the Kumagawa River were home to many kinds of life. With the building of the dam the sand banks and grasses that were the breeding grounds have been greatly reduced and consequently all life has disappeared. The clams, shrimp, and other fish all depended on it." As he spoke he displayed a chart showing the decline in shrimping over the last twenty years.

Until then the dam and its problems had been solely placed within the context of the river, but the thirty-seven fishing associations active in the Yatsushiro Sea came to make public their demands against both the Kawabegawa and Arase dams as they too had felt their livelihood critically diminish since the construction of dams on the Kumagawa. In light of these demands researchers from the Japan National Nature Conservatory announced results of their inquiries last year. According to their data, 7 million cubic meters of silt that otherwise would have been washed to the bay had been blocked by the dams at the mouth of the river resulting in the severe depredation of wetlands and sandy areas around the river and thus a dramatic reduction in fish catches. Nishihama, reflecting the hopes of his fishing association, expected sea life to revitalize once the dam was removed.

Attending the meeting as guests were two American specialists who had been opposing dams for the past thirty years. One was David Wagner, a former

researcher with USAID whose book Dam Removal was published in translation by Iwanami Publishers. Citing the example of the Columbia River, he said that the decline in salmon and trout due to dams had been scientifically verified. Specially-designed fish runs had been constructed but a lack of consideration of the entire river environment prevented their success. In contrast, the removal of the Edward Dam on the Kennebeck River resulted in the return of salmon upstream within two weeks and complete revitalization of fish stocks two years later. He asserted, “Rivers not only return to their original condition once the dam is removed. They remake themselves into new shapes.”

In the US 500-1,000 dams over 1.8 meters have been removed, but these resemble the size of sluices in Japan. There are only a few examples of the removal of dams on the scale of the Arase and probably the project appears ambitious even from the US viewpoint.

The need for more discussion

According to opinion surveys written by attendees to the Yatsushiro symposium, many people still have doubts and fears about dam removal and these concerns have not been adequately addressed. In June of last year a committee was created to debate policy concerning the Arase Dam chaired by former Kumamoto University professor Shitazu Shoji. It is intended to make a detailed study of local fishing community opinion, but the possibility remains high that the limited number of meetings may only allow for time to debate removal techniques and environmental impact.

In truth, opinions from the local community are quite varied: Will the river really return to its original state? Couldn’t there be a study on how Yatsushiro and the mouth of the river will be affected? Will there still be water available for agricultural purposes downstream from the Yohai Sluice? Can there simultaneously be debate about removal of the Seto-ishi dam? Nagoya Women’s University professor Murakami Tetsuo, who along with the national conservancy has studied the effect of the Kawabegawa Dam on the Kumagawa River and the Yatsushiro Sea, offers this advice: “Before any removal is carried out there needs to be a study into the amount and character of the sludge to be generated and what steps can be taken to reduce it. In addition, we have to estimate the impact on life in the river since the temperature of the water downstream of the dam is different from an unobstructed waterway.”

If the residents concerned with the Arase dam removal have come to be aware of anything, it is that the anti-dam movement is not only the concern of fisherman but also that of the general population as well who feel they have a stake in the condition of the Kumagawa River. Will they be successful in restoring the river to its past bounty? This remains the question, and the dam removal should become a model for the rest of the country not as an opposition movement but as an example of local populations becoming knowledgeable about the dams in their locale.

Addendum:

The Unstoppable Kawabegawa Dam Project

A petition from the Ministry of Infrastructure forcing the Kumogawa Fisherman's Association to grant against their wishes access to their upstream section of the Kumagawa River – the Kamabegawa River – in order to construct a multi-purpose dam was submitted in January of last year to the Kumamoto Prefecture Expropriation Committee. However farmers who were the planned recipients of irrigation projects won on appeal a judgment against the government, with the courts viewing such a demand as illegal. This has caused a reappraisal of precisely who stands to benefit from the dam itself and who will use the water, making changes in the dam’s plan unavoidable. The appropriations committee has cancelled hearings, but there have been nine meetings directly between the Ministry and concerned citizens groups. There is at present a certification process that would recognize the importance of forests in the preservation of water supplies, but the government has not shifted from its stance to proceed with construction.

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