

PAST, PRESENT, AND FUTURE OF TRANSITION OF PEOPLE'S PERSPECTIVES TOWARDS MONOBE RIVER

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Abstract: Monobe river used to be a perfectly clear class A river with a lot of Ayu. However, it has many problems such as the murky waters and water shortages. As a result, catchment of Ayu virtually becomes zero. Ayu is a symbol of rich natural environment of Kochi; therefore, the authors consider that Ayu should be protected to maintain inherent characteristics of Monobe river basin. Many attempts have been made to protect Ayu by mainly Monobe fishery cooperation. Unfortunately, however, peoples' concern towards the river is not necessarily high. Thus, it is considered useful to find "why are peoples' concern towards the river low? Was there any period when those concerns were high? Then when were those concerns lowered?" In this study, focusing on the period between 1950 and 1970 when relationships between people and the river seemed changed very much, an attempt is made to study transition of people's perspectives towards the river through interviewing people living in the upstream and the downstream. Based on these findings, some measures are proposed to enhance people's perspectives towards the river.

KEYWORDS: Monobe river, people's perspectives, history study, transition, development

1. INTRODUCTION

Monobe river used to be a perfectly clear class A river with a lot of Ayu. However, it has many problems such as the murky waters and water shortages. As a result, catchment of Ayu virtually becomes zero. Ayu is a symbol of rich natural environment of Kochi; therefore, the authors consider that Ayu should be protected to maintain inherent characteristics of Monobe river basin. Many attempts have been made to protect Ayu by mainly Monobe fishery cooperation.

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In this study, focusing on the period between 1950 and 1970 when relationships between people and the river seemed changed very much, an attempt is made to study transition of people's perspectives towards the river through interviewing people living in the upstream and the downstream. Based on these findings, some solutions are proposed to enhance people's perspectives towards the river.

2. RESEARCH METHODOLOGY

This paper focuses on the period between 1950s and 1970s when the postwar changes in the industries of Japan (around 1950) occurred. Transition of people's perspectives towards Monobe

river are surveyed in Monobe town (the former Monobe village) in the upstream and in Tosayamada town in the downstream of the river.

First, in order to have an overview of the historical facts of the upstream and downstream, the authors made a concise chronological table describing events occurring in between from 1950 and 1970 in Japan, Kochi Prefecture, Monobe village, and Tosayamada town. Using this table, hearing surveys about production and consumption lives in the past were conducted towards two former foresters, three fishermen, one farmer, and five residents. Specifically, the following questions are asked:

- Consumption life in 1950 (after the war)
- Characteristics of water use in consumption life in each period
- Changes in water use by foresters, fishermen, and farmers
- Opinions on the current efforts for conservation activities in Monobe river
- Current anxiety associated with water use

3. CHANGES IN CONSUMPTION LIFE IN MONOBE RIVER MASIN

3.1 Overview of consumption life in the entire basin

In 1950's water use in consumption life is similar among foresters, farmers, fishermen, and residents. Here consumption life is observed through daily life time, which is classified in the three categories: physiological, household, and socio-cultural life time. It is found from hearing surveys that water in the river was used for dining and bathing in the physiological life time, cooking and washing in the household one, and swimming, entertainment for children, and recreation such as fishing in the socio-cultural one. In other words, in every activity which needs water, water in the river was used.

There is much similarity in consumption life in

between the upstream and the downstream. Differences in two areas also exist such as the way of taking drinking water and rule of water use. Their transitions were also different in the two areas. Details are described in the following section.

3.2 Peoples' "relationship" with water in the upstream

Some people took water directly from Monobe river. Since most houses are built higher than Monobe river, a majority of people used mountain stream water flowing into Monobe river. Thus, small mountain streams leading to Monobe river supported peoples' lives. Mountain stream water was taken by the whole community in some case and by each house in other case. In either case, water was taken by connecting pieces of bamboo, whose joints were removed.

The location of water intake is different in each village. In Kubonumai district where this hearing survey was conducted, water is taken from 500m ~ 600m above sea level. Mountain stream water is used for irrigation in the community and for daily life in each household.

In the upstream region, mountain stream water was used for drinking water and cooking. Monobe river provided people with food, and its water was used for bathing, washing, and entertainment. Mountain stream water and Monobe river were embedded in daily lives; thus, people in the upstream region had to be always conscious of the conditions of water supply. For especially use of mountain stream water, as the water was run with the simple bamboo equipment, wastes such as fallen leaves and tree branches were frequently clogged in areas connecting bamboo pieces by heavy rains and typhoons. Whenever such clogging occurred, people said, "we welcome water," climbed up the mountain, and repaired the clogged areas. Since this bamboo equipment was also easily damaged, much effort was

needed for proper maintenance. Thus, people were “caring” mountain stream water.

3.3 Change of consumption life of people in the upstream area

The Japanese society has changed drastically with the rapid economic growth after the war. It also influence Monobe village. Especially construction of dam and power plants by “Comprehensive Development Project of Monobe River” in 1950s gave a significant impact on lives of people in the upstream area. Water was taken for power plants at further upstream than where communities were located. In communities where water was taken for the power generation, rich water flow fell drastically. This led to a sudden fall of the amount of river fish, which had been a valuable source of protein; thus, it became difficult to capture the river fish. Furthermore, the river had been a place for children to swim; however, swimming was banned due to decrease in water flow.

As compensation associated with construction project of the power plants, water intake equipment made of bamboo pieces was replaced with new facilities of esuron pipes, which is hard vinyl chloride pipe. Pool was also built in each elementary school as a place for children to swim.

In the late 1950s with which these compensations overlapped, household electric appliances such as washing machines and refrigerators were becoming popular, and a large-scaled road infrastructure was started to be developed. In the 1960s, the color television and private cars were becoming popular.

Maintenance works became much easier after the water intake facility was renewed. As its “byproducts,” people did not have to become conscious of water supply everyday.

Decrease in river fish became a problem of reduction of a source of protein. This problem was being solved through popularization of refrigerators

and road improvement, which enabled people to preserve and obtain food. Swimming places for children were moved from rivers to pools due to depletion of river flow. Diversification of entertainment through popularization of color televisions and private cars further moved people away from the river. The number of children playing in the river and the mountain seemed to decrease.

3.4 Peoples’ “relationship” with water in the downstream

Methods of water use in the downstream area can be divided into two cases. The first case is where a house is located higher than Monobe river, and the second case is where it is located lower than the river. In the first case, mountain stream water was used similarly to the upstream area. This method was already described in the previous section. Thus, the authors describe the second case here.

In the downstream area, water in the Monobe river and the underflow of the river, is used. Regarding the underground water, since each house did not have its own well, common well was used as the main water intake facility in each community. Furthermore, in the downstream area, water was classified for different purposes: “pure water” and “bad water.” Pure water refers to water channel which has not gone through rice fields and does not accept discharge from any household. Water in the pure water is clean, and using this water for washing something dirty was prohibited. “Bad water” refers to the water channel which has gone through rice fields and accepts discharge from households.

The bad water flows lower than the location of community in general. Rules of water use had been conventionally determined by each community, and people living in the community must follow them.

For example, the groundwater taken from the common well was used for drinking and cooking. Water for bathing was taken from Monobe river, and

the used water was returned to the bad water. Water was taken from the pure water for washing food. Water was taken from the bad water for washing dishes and clothes.

For entertainment, Monobe river was a safe “pool” for children because there was a volunteer watching children swimming at Yamada weir. Similarly to the upstream area, Monobe river was embedded in the consumption life of people in the downstream area. This life tied with the river can be visibly imaged except for drinking water.

3.5 Changes in consumption life in the downstream area

By Nankai earthquake and the Pacific War, Kochi city and Nakamura city suffered from considerable damage. Under such circumstances, only Tosayamada town was designated as the city with no damage in Kochi prefecture, and land readjustment was started quickly based on the city plan. Furthermore, the importance of the town as the east land entrance of Kochi was recognized by the central Japanese government, the industrial structure of the town has developed rapidly. Rapid increase in water demand was a natural result of this. Urgent development of water supply facilities was required. After the war, water supply and simple water supply facilities have been established.

Peoples’ water usage varied greatly. Water for drinking and cooking, which had been taken from the common well in each community, started to come out from water tap as much as possible. Tap water was also started to use for bathing and washing food. By popularization of the washing machine, people were released from taking the water from bad water. Development of transportation infrastructure and diversification of entertainment moved children away from the river. Popularization of the refrigerator was considered to accelerate a change of diet life from the one with river fish-based

to a variety of diet lives.

In the downstream area, sharp increase in water demand and development of water supply with the main source of groundwater is considered a major factor in changing the way people relate to water. The impact of construction of dams and power plants was small.

Diet life has changed from the one with river fish-based to a variety of diet lives. However, the amount of the river fish has not changed. The water flow in the river was not much changed either at the beginning of dam operation. Thus, children could enjoying playing in the river for a longer period than those in the upstream. Another reason for this long enjoyment in the river is that pools were not developed soon because of no compensation associated with power plant construction.

3.6 Summary of changes in consumption life

As described above, in 1950s, after the war, Monobe river was deeply embedded in peoples’ daily lives. Regardless of types of works, perspectives of people living in the river basin towards the river were warm. By the time of 1970s, however, due to development of water supply, popularization of home electric appliances, and diversification of entertainment, perspective of peoples towards the river seems to be much thinner. For only 20 years, occurrence of these factors moved peoples’ perspectives away from the river suddenly rather than gradually.

4. CHANGES IN PRODUCTION LIFE IN MONOBE RIVER MASIN

4.1 Changes in forestry and agriculture in the upstream area

During the war and until occurrence of rapid increase in demand for timber after the war, foresters in the upstream area had been renewing the forest by

selective-cut forestry, that is, to choose to cut trees for required demand and plant successive trees. After the war, however, timber demand has increased because many houses were burned in air raids. This demand increase necessitated so called clear-cut forestry consisting of cutting all the trees in the target area and harvesting them. After the clear-cut forestry started, the forestry took place in the following procedure in the upstream area.

- a) Clear-cutting the target forest
- b) After cut-off and fallen leaves and branches became dry, burning the area and changing it to the field
- c) Planting crops because the burned field became fertile for a few years
- d) Planting “Mitsumata,” paper bush, which produces materials for Japanese paper, after a few years
- e) Planting trees during growth of paper bush
- f) Cutting paper bush when planted trees grow
- g) Waiting for growth of trees and backing to a).

Forest owners living in the upstream area did not necessarily have rich lives. More than 70% of them have the forest area less than 5ha. Under such conditions, it was difficult for them to sufficiently earn their living from the forestry only. Mountainous areas were used for not only mountain forest but also farm land after clear-cutting. In the 1950s, due to introduction of agriculture and cultivation equipment, efficiency of agricultural production was generally enhanced in the Japanese society. Since the agricultural field in the upstream area has very steep slopes, however, it was difficult to fully introduce agricultural machinery.

Thus, even when the timber industry was enjoying the economic boom, most of the forest owners in the upstream area could not obtain sufficient income due to small area of ownership. They could not do so through agriculture either due to poor physical

conditions peculiar to the mountains.

Under such circumstances, monetary economy was being penetrated in the rural society. Because of these phenomena, people started leaving Monobe village. As a result, some communities disappeared. Leaving agriculture and the village by many people brought a serious water management problem. That is the lack of workforces of maintaining water supply in the community. Maintenance of the water supply in the upstream was to develop water channels and conductive pipes regularly by people in the community. This maintenance scheme was operated on the premise of the existence of sufficient workforces. As the population was decreasing, a problem occurred of difficulty in water maintenance. That is, in the upstream area, the vicious cycle that population decrease generated the difficulty in water maintenance, which led to further population decrease.

Phenomenon that an action to ensure the self interest affects others negatively is called the social dilemma. The phenomena which had occurred in the upstream were the social dilemma. Furthermore, even though there are sufficient workforces in terms of number, some communities can not maintain water supply because of their aging due to severe depopulation.

4.2 Changes in agriculture in the downstream area

4.2.1 General description

Farmers in the downstream area had been taking water from Monobe river. By the pre-war period, the old feudal system between the landowner and the tenant had existed. The landlord gave land to the tenant. The tenant cropped rice by using the land and offered a certain amount of it. Therefore, water flowing in Monobe river had been important for the tenants and actually necessary to keep themselves alive. Whenever the drought was going to happen,

water dispute occurred in between communities such as the upstream area and the downstream area. When the big drought occurred in the early Showa era, big conflict occurred between the farmers who took water from the Yamada weir and the farmers who needed water below the Yamada weir. At this time, police officers in all areas in Kochi prefecture were asked to monitor the conflict.

Thus, farmers in the downstream area had been suffering from water shortage and wishing acquisition of a stable amount of water. Fear against water shortage is a main anxiety in their lives. Then dam was constructed based on Monobe River Comprehensive Development Project, and 15.5 ton per second of water was assured during the irrigation period. This assurance solves the water conflict and lowered farmers' anxiety towards water shortage.

It seems, however, that this assurance made farmers' perspectives thinner towards Monobe river. In the river, three sectors of agriculture, power generation, and environment are "competing" as far as water use is concerned. Some old farmers who experienced the water shortage before the dam construction wonder why they need to give away to people in the other sectors the sufficient amount of water which was finally obtained. Younger farmers who were born after the dam construction have never experienced water shortages. Some of those seem to take the assurance of needed water for granted.

4.2.2 "Rice field function": Maintenance of agricultural facilities in the downstream area

Maintenance of agricultural land, farm roads, and waterways channel is needed for farmers to do agricultural works. Maintenance activities of these facilities are called "tayaku" in Japanese. Here the authors translate this word as "rice field function." These maintenance works had been done by people in the community.

Regarding maintenance costs, how much each

farmer has to pay is proportional to the percentage of her/his farm area to the total area of the community. For example, the farm area of farmer A is 10% of the total area, farmer A has to pay 10% of the total maintenance costs. In the old days, since most of community members are farmers, this rice field function had been working.

Due to influence by liberalization of occupation in the postwar period and decrease in agricultural income, however, many farmers are leaving this sector. Even though the number of farmers decreases, the total length of waterways and farm roads are the same. The cost paid by each farmer increases. Thus, there are some cases in which the rice field function is not sufficiently conducted. In communities where the number of farmers leaving this sector increases rapidly, maintenance of the entire agricultural facilities is becoming difficult. In such a case, the remaining farmers maintain only facilities around her/his rice field. If the maintenance is insufficiently done in an upward community, its downward community in waterways is influenced. Farmers in the downward community need to pay for maintenance fee for its upward community.

In the downstream community, therefore, the vicious cycle that increase in the number of farmers leaving agricultural sector brings difficulty in rice field function, which leads to more farmers leaving the sector. This situation is also the social dilemma which has occurred in water maintenance in the upstream area.

4.3 Changes in inland water fisheries

4.3.1 Overview of changes

Monobe river fishery cooperative was established in 1950. There was recognition among people in the basin that the fishery cooperative had no notable activities. After implementation of the Monobe River Comprehensive Development Plan in 1950s, the cooperative received the compensation for a negative

impact on river ecosystems. The cooperative actively started projects and a project of releasing the sweetfish as a main project.

In those days, people, mainly children, in the basin held some tools called “chandeppo” and “kanatsuki” and caught river fish which was a valuable source of protein to survive. From the start of the project of releasing the sweetfish, however, peoples’ consciousness of fish catchment was significantly changed accompanied by change in diet life due to the widespread use of refrigerators. That is, the recognition of “I do not catch the fish excessively because the fish is a valuable source of our food” was changed to the recognition of “I can catch the fish as much as I can because the fish is released from the cooperative.” As a result, some people caught several buckets of the fish. The purpose of fish catchment was changed from living to doing recreation.

To prevent excessive catchment, the cooperative strictly strengthened the regulations and placed guards in the river basin, and to prevent overfishing. The cooperative has also banned the use of catchment tools for children. It seemed, however, that the ban of these tools to means decline of fishing culture full of the ancient wisdom.

4.3.2 Distrust towards the fishing cooperative

There was a key phrase for Monobe river fishery cooperative to which the author frequently listened during hearing surveys: “The cooperative has been receiving the compensation.” Its real meaning seems to lie in a feeling of “The cooperative is supposed to conserve the river environment, and the compensation should be used for this ideal objective. However, the actual activities of the cooperative may have been different from the ideal objective.”

Gap in between peoples’ expectation towards the cooperative and the actual activities by the cooperative seems to generate a sense of distrust

towards the cooperative in peoples’ minds.

5. LESSONS LEARNED FROM HISTORY

5.1 Summary of survey results and some proposals for future

From this survey it is found:

- Implementation of Monobe river comprehensive development plan accompanied by development of road infrastructure and popularization of home electric appliances has moved people away from the river in the upstream and the downstream. It should be noted, however, that children were still enjoying swimming in the downstream of the river.
- As a result, people’s perspectives towards Monobe river suddenly faded away for only 20 years or so between 1950 and 1970.
- Monobe town (former Monobe village) in the upstream area was first influenced and has been swallowed by the monetary economy. As a result, population in the town decreases to 1/4 of the peak population.
- Vicious cycle occurred that the decrease in population made water management difficult, which leads to further population decrease.
- Another vicious cycle is currently occurring that increase in farmers leaving agriculture makes water management difficult, which can lead to further increase in farmers leaving agriculture.
- Though Monobe river fishery cooperative is currently playing a central role of conservation of Monobe river, some people still have a sense of distrust towards the cooperatives.
- Water systems in the basin coordination of forest, river, farm land, and ocean has been weakened.

To solve these issues and problems, thus, the authors consider that it is important for people to understand the history of peoples’ water life in the basin, to support foresters and farmers by developing

a network for mutual support, and to improve public relations functions of Monobe river fishery cooperative.

5.2 Significance of history study and our trial

Implementation of our proposals is not easy at all. In order to do so, it is first needed to clarify why we have to study history.

The authors consider that an important objective of studying history is to realize that we can exist owing to many efforts by all peoples living in the region in the past very hard. That is to understand the lives of those people, to feel that we and those people are tied together still now, and to co-create future together. Thus, it is important for us to have opportunities to not only study historical knowledge but also listen to older people each other in the region.

As a first step towards achieving these objectives, the author's team and people in "The Association of Enjoying Deep Monobe Region" had a joint meeting of "Full Stomach Party" in December 2008 at the Kochi University of Technology. The program consists of introduction of various activities by the association and the university, potluck lunch party full of local delicious food in deep Monobe region, "The game of finding similarities between us," environmental study game being developed by the author's team, and workshop to discuss measure to activate people in deep Monobe region. Deep Monobe region is famous for preserving "Izanagi-style," which is a type of "Shinto" religion. A short version of Izanagi dancing was also performed.

More than 50 people participated in this party from not only Kochi but also other places such as Hokkaido and Tokyo.

The party was "wrapped" with warm and enjoyable atmosphere. Participants were satisfied with most of programs. Some of responses are "I

was happy to watch the performance of Izanagi dancing for the first time (a university student)." and "It was very interesting to know activities each other and to discuss measures to activate Deep Monobe (a member of the association)."

The author felt a possibility in this party as an opportunity to know and listen to each other, feel a tie between people, and discuss future.

6. CONCLUDING REMARKS

Implementation of Monobe river comprehensive development plan accompanied by development of road infrastructure and popularization of home electric appliances has moved people away from the river in the upstream and the downstream. As a result, people's perspectives towards Monobe river suddenly faded away for only 20 years or so between 1950 and 1970. The authors consider that an important objective of studying history is to realize that we can exist owing to many efforts by peoples living in the region very hard. Thus, it is important for us to have opportunities to not only study historical knowledge but also listen to older people each other in the region.

ACKNOWLEDGEMENTS

The author would like to sincerely thank those who cooperated with this study.

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