

# Effects of Dam on Nature and Humans

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**Abstract:** The purpose of this investigation is revealing the effects of dams on nature and humans. This investigation was conducted in village-vicinity mountain in the Taki area in Mie Prefecture in February, 2018. The method of this investigation was interviewing local people and observation during field work. As a result, two bad effects of construction of dams were revealed. One was decreasing algae that had an important role in raising sweet fish. Pollution of the water with the dam caused this and is destroying biological diversity. Animals lose their home in the mountains due to the construction of dams, so the population of animals decrease in the mountains. Because of the result of the two negative effects, when we develop nature, we will need policies that considers environment.

**Keywords:** Effect of dam, Environmental policies, Sweetfish

## INTRODUCTION

The purpose of the fieldwork at Satoyama in Mie Prefecture with Kansai University students and students in Philippine was to investigate environmental problems actually occurring in Japan. Students discovered the Satoyama's unique major problems. That is the relationship between the dam and river. In this thesis, we will describe the influence that the dam actually has on the natural environment and humans and the disadvantages of dams that cause the problems.

## PURPOSE AND METHOD OF RESEARCH

The purpose of this investigation is revealing how about the relationship of animals and humans change because of dams. This investigation was conducted in village-vicinity mountain at Taki area in Mie Prefecture in February 2018. The method of this investigation was interviewing local people and observations from field work.

## Results and Considerations

Construction of dams revealed two bad effects as follows. {1} significant decreasing natural sweetfish and decline in quality of sweetfish. {2} destroying biological diversity.

Regarding {1}

Construction of dams revealed that in the satoyama we visited, there are influences of the significant decreasing natural sweetfish and the decline in the quality of sweetfish. Before the construction of the dam, there were "natural sweetfish". This sweetfish grew up only in natural environment, and no human hands were used. However, after the construction of

the dam, the growth environment of sweet fish has become worse. Therefore, today, local people in the satoyama released fries of sweetfish that they cultivated into the river, and then the sweet fishes could grow in a natural environment. In the river of satoyama, such "semi-natural sweetfish" is abundant. The cause is to stop river nourishment and sand contained in the water of the river because of construction of the dam. And the quality of the river's water has been deteriorated because of floating sedimentary sludge in the river. In addition, the decreasing algae near downstream has an important role in raising young sweetfish. This is one of the causes found by interviewing local people about the significant decreasing natural sweetfish. Further other research showed that there was laying eggs environmental degradation. The research described that because of stopping earth and sand by dam, the small gravel bottom disappeared in the downstream area where sweet fish spawning place.

Next, explains the causes of the decline in the quality of sweetfish. Swimming upstream is essential in the process of sweet fish's growth. The sweet fish cannot swim upstream as result of the dam having been built in the upstream area. The sweetfish there decrease their muscular strength and their body have not become firm. As result, they have growth defects revealed that decrease in the quality of sweetfish. Because of these two reasons (significant decreasing natural sweetfish and decline in quality of sweetfish), students learned from interviews with local people in the satoyama that they were dissatisfaction with the dam. One reason is that one of the local people' income sources was gone. Before, natural sweetfish was traded at an expensive price. But today, natural sweetfish cannot be sold at an expensive price, so

people in the satoyama can only be able to give it to people in the neighborhood.

Another is that the traditional fishing method in the satoyama is declining. This is called "Shakuri," traditional fishing method. The traditional fishing method is an effective tradition method and environmentally conscious. So, events with this traditional fishing method had been held in the satoyama. That is the reason for attracting many tourists. The decline of the traditional fishing method has also reduced opportunities for development of the satoyama.

Next, regarding {2}

Because of large scale construction for the dams, trees in the satoyama and animal living environment has disappeared. According to one article, the number of endangered animals is decreasing. Their reasons revealed was that biodiversity were destroyed. This investigation in the satoyama revealed the two-above influence of the dam ({1} and {2}). We think that construction and mechanism of dams should be more consideration of the natural environment. In the present circumstances, there seems to be little idea of coexistence with nature. Nature is destroyed because of one-sided human greed. From the past, humans needed nature's blessings to live and human have spent time with nature. We hope that it will not change from now on. So, we think that it is necessary to think again about construction and mechanism of dam from the viewpoint of coexistence with nature.

### **Conclusion and Outlook**

Our research revealed that the influence of dam on natural environment, including satoyama is very serious and similar. Major problems are occurring not only in the satoyama where we visited, but also in satoyama areas in various parts of Japan. In our future research, we will expand our fieldwork to areas all over Japan, and finally we investigate about dams in other countries. We want to investigate if the relationship between dams and natural environment can improve.

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