

Transition of the Forest Management in Yakushima, Japan

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Introduction

Yakushima, which is a part of Kirishima-Yaku National Park of Japan, forms bountiful and unique nature. Since it contains significantly unique ecosystem even in the world level, a part of island was designated to the world heritage. Since then, numbers of tourists visited to see the distinctive nature, and ecotourism, focusing on the forest, has been the most flourished industry in the island. In fact, it has been only 20 years since the forest began to attract many tourists. The worth of forests in Yakushima had been recognized early on, but the abundant nature was also the important resources in several developments in Yakushima. For instance, the forest has been utilized for forest development and generation of electricity. In other words, people have obtained the various benefits and services from the forest.

Therefore, the transition of the forest management could represent and reveal the attitudes people had towards the forest, the background of the shifted managements, and the interactions among different managements. Moreover, the discussion will be focused on the incidents after 1920s and it is because that people started to utilize the forest in the large scale in 1920. In this paper, the term, the forest management indicates the large scale forest managements that are influential to numbers of people. The term doesn't include the small scale usage of the forest. For example, it doesn't include firewood or charcoal use of the forest by local people.

The transition of forest management in Yakushima

There are four categories of major forest managements in Yakushima since 1920. Three direct managements are the forestry, the electricity generation, tourism, and an indirect management is the natural preservation.

Forestry (1921 to present, the peak was during early 1960s to early 1970s.)

In Yakushima, the national forest project was officially started at the area where became the public property in 1885. The Basic Plans of National Forest Management in Yakushima was published in 1921, and the logging was operated with an understanding that Yakusugi has the significance in both the academic field and the natural legacy. Also, a part of the national forest was chosen for an academic forest reserve for Yakusugi. Up to the beginning of the World War II, the forest management had a strict standard that prohibited to cut living tree of Yakusugi.

Nevertheless, the management plan shifted towards the one with a focus of increasing the production yields in Post World War II era. One of the main driving forces was a high domestic demand of the timber for the reconstruction and for the Korean War in 1950. Another reason was that the national forest began to use a self-supporting accounting system. In consequence, even the depth of the forest became a part of the logging area: in addition to that, clear cutting and artificial regeneration were operated in order to increase the production. The introduction of a chainsaw and a bulldozer also improved the efficiency of logging; as a result, clear cutting was expanded rapidly. Furthermore, the public management of Yakusugi encouraged the logging. In the Plan of National Forest Production Improvement in 1957, for example, the treatment of

Yakusugi was lowered to the level of the ordinary trees. Moreover, Yakushima Forestry Development Plan was established in 1961 and a large quantity of logging began. The large scale logging, supported by the technological innovation was operated for several years (Figure 1).

The large scale national forest project, however, started to decline because of the energy revolution in 1950s and the resulted industrial component transition. Also, cheap foreign timber took over the Japanese forestry, and the Kosugi-dani office, which was the center of logging, was closed in 1970. The outcomes of large scale logging were not only the landscape destruction but also the disasters such as drought and an avalanche of rocks and earth. At the same time, natural conservation movement was growing in Japan, and there were numbers of petitions for natural protections were submitted to the government. (Kagoshima Natural Protection Agency. in 1968, The Botanical Society of Japan, Ecological Society of Japan, The Nature Conservation Society of Japan in 1969.) In 1971, the second regional management plan responded to the petitions, and it enlarged the forest conservation area and settled the Yakusugi recreation forest. In the forth regional management plan, which was established in 1981, it strengthened the forest conservation standing point, and the forest management was shifted from clear cutting with artificial regeneration to group selection cutting, which is better alternative. Another remarkable change was the reintroduction of the policy that mandates the preservation of the living Yakusugi trees permanently. In addition, utilizing the multiple functions of forest, including the recreational use, became the foundation of the forest management. The plan changed its name to the Management Control Plan in 1991. In 1995, two district forestry offices that were in charge of the forest management were consolidated to Yakushima forestry office and it carried the logging. The forest environmental protection center was also settled, and it carries the forest management.

Power Generation Development (1953 to 1960s)

In the post war era, not only the timber but also the electricity was in high demand. There were some coal mines in Hokkaido and Kyushyu; however, the long distance transportation caused high cost. As a result, hydroelectric power generation gained the attentions in Japan. In order to utilize the high precipitation in Yakushima, the water power plant, Senpiro-daki waterfall water power plant was built in 1953. With the support of the electricity, factories of carbide, abrasive, and firebrick were in work in 1960s. This period was described as the daybreak of the coal mining island.

Tourism (before the war time, and the after)

In this paper, the term, "tourism development" includes the all sorts of required developments that support tourism. In the beginning of the Showa era, the rich and diverse forest in Yakushima gained the attention from the tourism industry. The Law of National Park was enacted in 1931, and Kagoshima prefecture funded for researching tourism development in 1935. In the later investigations, the rich forest was recognized and the forest was in consideration as the national park in 1954. It became a national park as a part of Kirishima-Yaku National Park ten years later. At that time, national parks were selected for its potentials of demonstrating the Japanese unique beauty and attracting foreign tourists (Hatakeyama, 2004.) There are major three reasons why it took long years to become the national park. First, Yakushima is far from the main land. Second it didn't have sufficient port facility (Fujimura, 1971). Finally, it took years to

balance the forest development and electric power generation (Itoga, 1974.)

Even before the Yakushima forest became the national park, the tourism industry from outside paid attentions to the values of the Yakushima forest. After the nomination to National Park, tourism facilities such as the mountain lodges, the hiking trails, the accommodations, were improved, and Yakushima tourism conference was established. In 1968, Kagoshima prefecture included Yakushima in the area of important marine and mountain recreational development. It was a part of their long-term program, called “Next 20 years in Kagoshima.” Moreover, Yakushima became famous by the discovery of Jyomon-sugi and following the conservation movement. In addition to that, essential infrastructure, for example, an airport, a port for ferries, and accommodations for tourists were developed for the foundation of tourism industry. The designation of the world heritage in 1993 and the ecotourism trend have contributed to increase the numbers of tourists in Yakushima (Figure 1).

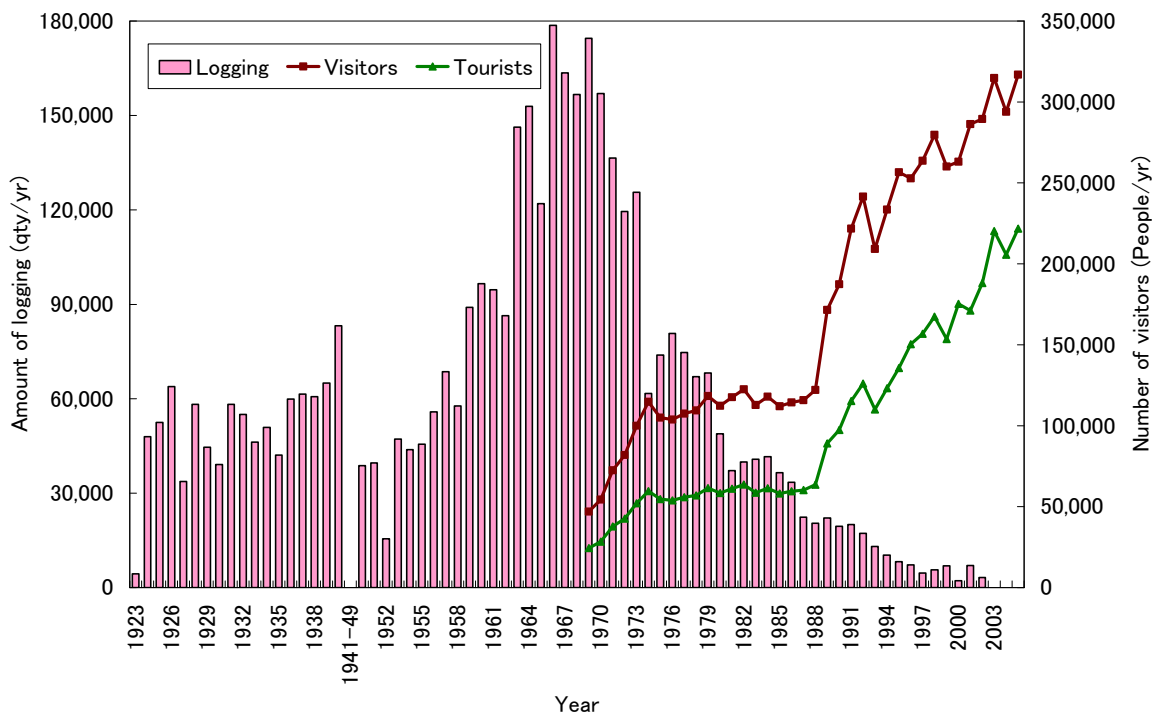


Figure 1. The amount of logging and the number of visitors in Yakushima.
Source: Kumage Branch Office, Kagoshima Prefectural Office
Natural Conservation Movement (from 1960s to present)

The forest of Yakushima was an icon of the natural conservation movement (Iseki and Harashina, 2006). The rapid economic growth in Japan, caused severe pollutions, and the awareness for the environment developed as a result. There were many natural conservation movements against the deforestation and the environmental degradation. Since Yakushima became the national park in 1964, it also promoted the natural conservation movements. The groups of scientists and local people requested the government to reconsider the forest managements such as the national forest project plan and the conservation forests. Moreover, Jyomon-sugi, which found in 1966, showed Yakusugi’s distinctive feature that is a remarkable long life, and also it demonstrated the rich environment in Yakushima. When Yakushima became the world heritage,

Yakushima and Yakusugi appealed the significance of the natural conservation.

Transition of the forest usages before and after the large-sized logging

Four forest usages were influenced and transformed by the social demands and the interrelated relationship among four usages. For example, an extensive logging was operated in early 1960s to early 1970s. It is assumed that this large scale logging affected to other forest usages. Therefore, it is important to understand how other usages were affected and how those usages were interrelated with each other.

In early 1960s to early 1970s, Japan went through the rapid economic growth and the large-scale logging period. In the meantime, the National Forest Project shifted to clear-cutting in order to meet the high domestic timber demand. The excessive logging and the electricity generation, which triggered watershed alteration, were problematic to tourism development and the natural conservation.

As a result, both the tourism industry and the natural conservation movement sometimes opposed to the forest development and the electricity generation. For example, there was a disagreement between the Forestry Agency, which supported the forest development, and the Ministry of Health and Welfare, which supported tourism development. Especially, Yakusugi was a controversial theme. In 1951, the Forestry Agency lowered the protection level of Yakusugi in the forth forest management plan so that Yakusugi was felled. At the first place, the Forestry Agency and the Ministry of Health and Welfare were recognizing the value of the Yakusugi forest as the tourism attraction that could compete with giant sequoia or the forests in Yosemite National Park in the United States. In one hand, the Ministry of Health and Welfare claimed that all Yakusugi trees should be protected because it is an unrenewable resource. In the other hand, the Forestry Agency claimed that there was no need to protect all Yakusugi trees as long as there are sufficient areas of the Yakusugi forest left for tourism (Shibatate, 1964.) In short, it is assumed that these conflicts caused the late designation as the national park.

During the period of large-scale logging, it was also found a conflict between the Forestry Agency and the local groups that supported the natural conservation. For instance, it was seen in the large gap in existing tree numbers of Yakusugi, which has lived a thousand years, and Kosugi, which has lived less than a thousand years. The Forestry Agency claimed that there were 145,000 Yakusugi and Kosugi trees in total (11,600 trees of Yakusugi and 133,400 trees of Kosugi); on the other hand, the local conservation group claimed that there were only thousand trees of Yakusugi and Kosugi (Aragaki, 1974). There was a huge gap in their understandings. It could be because they gave the numbers that could support their points, but it showed that both sides didn't have enough discussion over the topic.

Next, there are also some corporative relationships among different forest usages. First of all, the forest development and electricity generation demonstrated a good example. Electricity that generated from Senpiro-daki waterfall water power plant supported the daily life of people who worked for developing the forest and transporting lumbers. Second, the natural conservation movement and tourism development also had a cooperative relationship. For instance, Kagoshima prefecture, local towns, scientific groups and local groups altogether submitted the petition of the natural conservation to the Forestry Agency. Also, the Ministry of Health and Welfare requested to conserve natural and tourism resources to the Forestry Agency. It is presumed that the natural conservation movement and tourism industry were worked together against

the forest development.

During the period of the declined forestry, opposing and cooperating positions kept changing. An article, “Visiting the Natural Forests in Yakushima” in the Forestry News (Fukura, 1970), contains comments such that “It is important to support the Yakushima local community by assisting their tourism development from the positions as the Forestry Agency and or the district forestry office.” and “Both district forestry offices were constructing the forest road and contributing for the tourism development.” At first, the Forestry Agency had no need or intent to support the tourism industry, but they began to provide assistance. It could be that the Forest Agency’s attempted to justify the forest development by demonstrating the contribution to the tourism development. According to Shibata (1964), “the road infrastructure is an essential part of tourism development, and it was improved because of the Forestry Agency.” It applied in the case of Yakushima, and tourists obtained the access to the deep forest. Moreover, the port facility that used to transport timbers contributed to the tourism.

Conclusion

In this paper, the main focus was on the transition of the forest usages in Yakushima because it may help to assume the reasons and backgrounds that the forest usages shifted largely before and after the extended logging. Also, it could help to see the interdependent relationships among four forest usages.

The Yakushima forest that contains rich and diverse flora has been providing the resources to the tourism industry and forestry. However, the landscape and natural resources were degraded because of the expansion of logging in responding to the domestic lumber demands. The most of land in Yakushima was the national forest so that the forest management plans and policies had strong influence over the forest. With the growing environmentalism and natural conservation movement, the preserved forest and recreational forest were arranged. At the same time, the timber production was declined due to the introduction of cheap foreign timbers and the energy revolution in Japan. In short, we have gained the provisioning service of nature such as the timber, but the excess demand caused several problems. As a result, we recognized the significance of the natural conservation and also realized the value of the forest in the cultural service of nature such as recreational use. Moreover, the Forestry Agency changed their standing point from supplying the domestic timber demands to contributing for the island industry in responding to the people’s concerns and awareness.

The forest development resulted environmental degradations. The crisis of Yakushima forests due to large scale logging drawn attentions from the nationwide, and it led to the recognition of bounty nature in Yakushima. However, the tourism industry is also depending on the forest developments. Housing and transportation infrastructure are essential for the tourism industry, and they were developed by the expansion of the forestry. Moreover, the history of logging and forestry became an important part of tourism attraction. For example, the development of forestry and traditional ways of life in the forest in Yakushima are demonstrated in the exhibitions in Yakusugi Museum and in the eco-tour.

The several forest usages have coexisted and transformed with the social needs. Those usages were also influenced with each other. The history and whole transitions of the usages have contributed to develop the present social and geographic environment in Yakushima.

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