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Master's Thesis

UNDERSTANDING RELATIONAL VALUES AND THE IMPACT OF TOURISM:  
A CASE STUDY OF THE PEOPLE IN HINOEMATA VILLAGE AND *IWANA*

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Advisor: Associate Professor ISHIHARA Hiroe

下田 成美

Narumi Shimoda

47-216814



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## ABSTRACT

In the 1960s, there was a tourism boom in Oze National Park and Hinoemata village in Fukushima Prefecture. There were a series of changes in the lifestyles of the villagers after the designation of national park regarding the management practices of the local fish and how the people perceive their surrounding environment.

This research aims to understand and answer the question “How did relational values of the people in Hinoemata village towards *Iwana* [char fish] evolve overtime? What are the impacts of tourism on these values?” by focusing on 1) identifying key management practices of *Iwana*; 2) understanding the impact of external influences on the local ecosystem of the village and 3) to demonstrate how the relational values of the villagers towards *Iwana* changed and evolved over time.

Literature review demonstrates three types of values that are associated with human-nature relationships; instrumental, intrinsic, and relational values (Jax et al., 2018). To understand the complex values of human-nature relationships and how these values are shaped, a relational values approach can be applied. Relational values are preferences, principles, and virtues associated with relationships (Chan et al., 2016) and these are expressed through elements like individual identity, stewardship, social responsibility, social cohesion, social relations, cultural and social identity (De Vos et al., 2018). Therefore, the questions of how values are processed and changed can be answered.

To understand relational values, methodology consisting of literature review, participant observation, review of historical documents, semi-structured interviews and inductive coding is applied. The author worked at a mountain hut to gain a deeper understanding of the value formation of the villagers and how they interact with nature in Oze National Park. As for the semi-structured interviews, the main questions were 1) meanings of *Iwana* for the villagers 2) current management practices 3) changes of interactions between the villagers and *Iwana*.

From the results of interviews and coding, the important aspects of relational values such as care and sense of responsibilities were identified. Later, the author combined management practices that are present in the park and

the village to the relational values of care and responsibility to find out how the values are processed. The results demonstrate that tourism had an impact on the ecosystems of the village, fishing practices, and how villagers engage with different stakeholders through events that are held in the village. These changes reconstructed their worldview and knowledge generation as well as shifted the boundaries between villagers and their surrounding environment.

The limitations of this research is that narratives and interviewees are based on the villagers who are actively involved in the management of *Iwana*. This research does not include the view of the general public in the village or the people that are outside the village. Additional research may include the general public from Hinomata village and different stakeholders that are present in Oze National Park such as park rangers, artisans who fix wooden paths, sherpa and villagers from Katashina village in Gunma Prefecture to gain a deeper understanding of the larger picture.

Keywords: relational values, care and responsibility, *Iwana*, management practices, tourism, internal and external influences

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I am sincerely grateful for everyone who helped me during my stay in Oze and Hinoemata village. Their warmth and welcoming spirit was a source of inspiration. Here is the story to tell.

Special thanks to my family and friends for their support and encouragement during my academic adventure.

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## CHAPTER 1 INTRODUCTION

### 1.1 Background

The sound of the ocean, the smell of grass, the feeling of breeze on our faces is a reminder that humans live on this planet as well as all the other animals and plants. What humans do in everyday life heavily depends on nature, such as drying laundry on a sunny day or taking a bus on a rainy day. Understanding human-nature relationships is crucial because everything is interconnected, and nature itself is a complex web of life. One's sense of reality is shaped based on the environment they grew up in or the interactions they had with their surroundings. The way humans interact and live with nature has been a long topic in many fields. This research will explore one aspect of human-nature relationships which is relational values in a context of a Japanese national park and a local village.

### 1.2 Literature review: Current trend in the value assessment of nature

#### 1.2.1 Empirical studies and frameworks

In recent literature for the assessment of nature, there are three types of values that are introduced, these are; instrumental, intrinsic and relational values. Chan et al. (2012) states that in the ecosystem service framework, economic valuation brought the ability to express some of the values of ecosystems in metrics that have meanings to publics, policy makers and decision contexts. This is called instrumental values and this value of nature is for means to human ends (Jax et al, 2018). On the other hand, intrinsic value refers to moral values that can be applied universally such as protecting nature for its own sake (Bataille et al., 2021). These values only express one another; monetary or inherent values of nature. Tadaki et al. (2022) pointed out that these dualistic notions oversimplify people's complex relations (obligations and experiences of nature into crude categories of presumed material interest, such as 'recreation' or 'culture'). Apart from instrumental and intrinsic values, Chan et al. (2016) points out that relational values are preferences, principles, and virtues associated with relationships, both interpersonal and as articulated by policies and social norms. These relational values are not present in things but derivative of relationships and responsibilities to them. Furthermore, relational values are expressed through elements like individual identity, stewardship, social responsibility, social cohesion, social relations, cultural identity and social

identity (De Vos et al., 2018). In this research, the author explores the process of how relational values formation of stewardship such as care and responsibility that are developed in response to external influences, in this case tourism, in the Japanese context. West (2018) mentions that care captures the more explicitly normative, subjective aspects considered to influence stewardship action - the desire to 'look after' something informed by, for example, values, meanings, emotions, preferences, and senses of attachment, connection or responsibility. Based on this definition, this research focuses on the care for the land and the surrounding environment.

### 1.2.2 Looking into one species

This research focuses on one type of species called *Iwana* [char] in Japanese. The main reason to focus on one species is to deepen our understanding of the construction of values on nature and people in a specific context which can be applied to other situations. The concept of relational values will be explored from the link between *Iwana* and management practices that are developed through the adaptation for tourism both in Oze National Park and Hinoemata village in Fukushima Prefecture in Japan.

In the literature of relational values, there is a case study that explores the impact of trout on the local ecosystem. In this case study, it is mentioned that relational values lens helps us to understand more deeply the reasons for differences in values and experiences, by revealing cultural, historical, and place specific relationships to fish and fish management. Trout impacts may be direct, indirect, and compound; socio-cultural as well as ecological; and heterogeneous across space (Tadaki et al., 2022).

### 1.3 Literature gap

In the previous study of relational values, the focus is mainly on what relational value is rather than the process of how these values are constructed or developed. Cundill et al. (2017) points out that "Artisanal fishing skills require processes of knowledge production and transmission between generations and such knowledge transmission processes are a key means through which identity, worldviews, customary practices and therefore relational values are constructed". There are not enough empirical studies that focus on the process of relational values formation;

therefore, this research will focus on how relational values are processed and evolved over time in response to external influences. Relational values are gradually formed and processed to the responses that are made by the local population to the external influences that are placed upon them. These changes do not only impact their livelihood, but also the way they adapt themselves corresponding to external influences. Therefore, the author will try to look at the changes in management practices that people developed through the process of adaptation in the context of a Japanese national park and a local village. It gives an idea of how people react and adapt to their own environment when the land is open to tourism and the outside world.

#### 1.4 Research purpose

##### 1.4.1 Research questions and objectives

This research unravels the impact of the national park system and tourism on the relationship of the people in a local village to nature. Oze National Park and Hinoemata village in Fukushima Prefecture in Japan was selected as a case study.

My research question is:

How did relational values of the people in Hinoemata village towards *Iwana* evolve overtime? What are the impacts of tourism on these changes?

My objectives are:

1. To identify key management practices related to *Iwana*;
2. To understand the impact of external influences on the local ecosystem of Hinoemata village;
3. To demonstrate how the relational values of the people of Hinoemata village and *Iwana* evolved overtime.

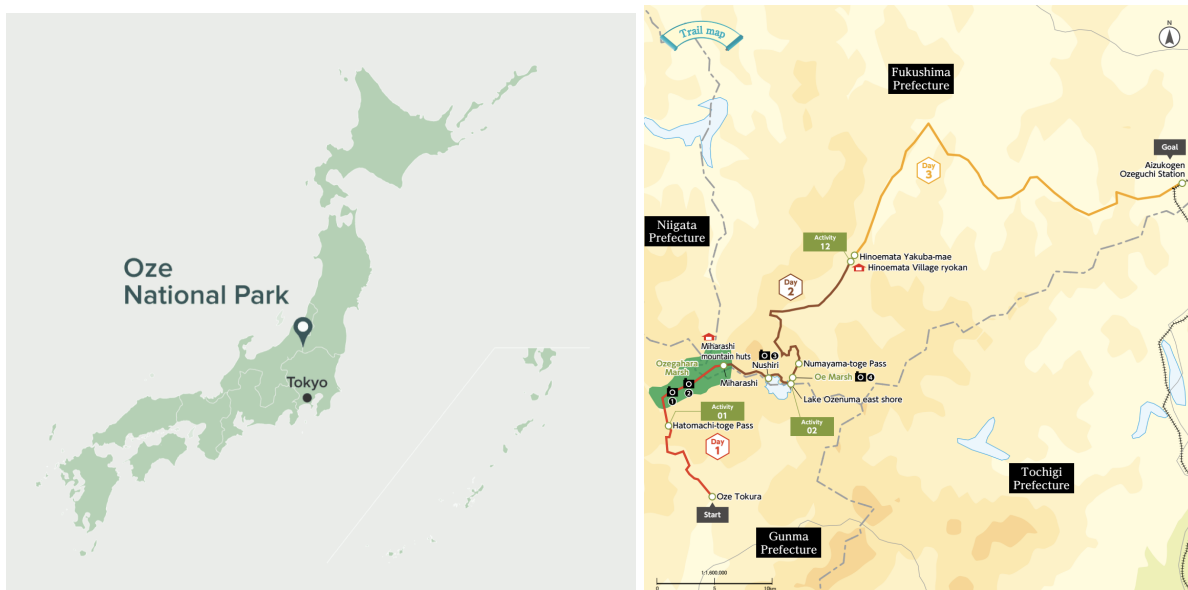
In this thesis, chapter 2 introduces the background and methodology, the importance of the site selection and how data was collected. In chapter 3, the result will be shown; timeline and different management practices and uses of *Iwana* that are associated with relational values. In chapter 4, the author will discuss the findings and how they relate to the process of relational values formation.

## CHAPTER 2 BACKGROUND AND METHODOLOGY

### 2.1 Background

#### 2.1.1 Field site selection and scale: Oze National Park and Hinoemata village

The history of national parks in Japan goes back to the 19<sup>th</sup> century, when the National Diet received “the application to recognize Nikko as Imperial Park” in 1911 (Ministry of the Environment, n.d.). First national parks were recognized in 1934, followed by other parks in 1936 (Oyadomari, 2009). Today, there are thirty-four national parks in Japan (Ministry of the Environment, n.d.). One of the distinct features of the national parks in Japan is the zoning system, which resulted from the limited landmass and complex relationships between the people and the land (Tanaka, 2012). This system allows the national parks to include state-owned lands, local government lands and private lands. The main reason for the adoption of this system was that the local people’s livelihoods and sacred sites were essential for the scenic beauty and as a part of the ecosystem (Ministry of the Environment, n.d.). By protecting both nature and livelihood of the people, it resulted in the preservation of Japanese traditions and cultures in addition to the development of their unique management practices that are suitable for their surrounding environment. Therefore, the local people play an important role in keeping the balance between human habitat and their surrounding nature.



(Figure 1 & 2: Map of Oze National Park)



(Figure 3: Oze National Park)

The field site for this research is Oze National Park and Hinoemata village. Originally, Oze was a part of Nikko national park which was designated in 1934. However, due to different features of the park, Oze National Park became independent in 2007 (Oze Preservation Foundation, n.d.). Oze National Park is situated across four different Prefectures; Fukushima, Tochigi, Gunma and Niigata Prefecture. The park is known for its marshland and environmental movements throughout its history (Oze Preservation Foundation, n.d.).



(Figure 4: Hinoemata Village)

Hinoemata village is in Fukushima Prefecture next to Oze National Park. According to the national census, the population was 504 people in 2020 (e-Stat, 2020). The government (village) office is located 935m above sea level, and is surrounded by the forests and mountains. Geographically speaking, the village is located in a valley between mountains, and is isolated and far from other villages. Because 95% of the land area is a national forest and there are limited areas for farmlands, villagers went outside from the main areas of the village in search for more land and sunlight (Miida, 1972). Due to its natural environment and geographical features of the land, the main production of the village were buckwheat and millet. However, their livelihood activities were changed drastically by the construction of a forestry office, facilities related to national parks, and outside recreational areas in the 1960s. Not only the governmental facilities and recreational areas, but constructions of water pipes for bathrooms and natural hot springs took place in the village at the same time. In 1970, there were still people working on farms and living outside of the main village during harvesting seasons. People lived in the main village during winter and farming area that is outside of the village during summer. The space for food production and procurement was spread across these two places. Villagers farmed in the farmlands and slash and burn fields, hunted and gathered native plants in the mountains, and fished in the streams and rivers (Hinoemata board of education, 2015). The shift in the numbers of people who were working in different industries were as follows; in the 1950s, more than 95% of the population was categorised in the primary industry, such as agriculture and it went down to 28% in the 1970s. Meanwhile, the percentage in tertiary industry, such as the tourism industry, went up to 54% in the 1970s along with the changes in land use in these 20 years. The number of people who were visiting Oze National Park, the tourism industry in Hinoemata village had increased (Miida, 1972). This shows that the designation of a national park has an impact on the land use and the occupation of the local areas.

Therefore, the reasons for choosing these sites are as follows:

1. Oze National Park was historically turned into a tourist destination.
2. Large number of the local residents in Hinoemata village are involved in tourism. (Village as a whole)

With the growing number of the people visiting Oze National Park and Hinoemata village, *Iwana* started to get more attention as one of the characteristics of the village and as supply for the visitors. The history and the link between



*Iwana* and Oze National Park go back to the 1800s when people went to the Oze area for fishing. The mountain huts known as *Yamagoya* today were first built as fishermen's huts in Oze.



(Figure 5: *Yamagoya* in Miharashi District in Oze National Park)

It is mentioned that Oze was the destination for the fishermen to catch fresh *Iwana* for their livelihood (Kawasaki, 1978). Along with the tourism boom in the 1960s, *Iwana* was offered as a part of meals for visitors. In the 1980s, a fish farm was constructed in the village which supplied most of the *Yamagoya* in Oze National Park and accommodations in the village. The construction of a fish farm had an impact on how villagers perceive *Iwana* today.

## 2.2 Methodology

The author collected data through literature reviews of academic papers and historical documents and conducted participant observations and semi-structured interviews. The data was further analysed through inductive coding. In the literature, the author explored the concept of relational values in different contexts and in real life. Historical documents include old books on the history of Hinoemata village as well as Oze, and stories that are told by the people who visited Oze and fishermen from the village. As a participant observation, the author worked at

*Yamagoya* for a few weeks in Oze National Park during summer in 2021 and 2022. The aim was to gain more insights from daily activities and management practices in the *Yamagoya* as well as building rapport with the local residents who are working in the park and the village. The first *Yamagoya* that the author worked at was in the Miharashi district in the park, and there are five other *Yamagoya* in the same area. Many of them were used to run by the villagers or relatives from Hinoemata village, collaborating with other *Yamagoya* owners in the same area. During the participant observation in the first year in 2021, the focus was mainly on the relationships of the people and the management systems that they developed within the park both for the wildlife and the people. In the second year in 2022, the author selected a *Yamagoya* that is close to the Miharashi district to conduct interviews during the stay. Semi-structured interviews were narrowed down to questions on the informant's occupations, their life in the village and *Iwana* (For details, see appendix A) to understand their views on nature. The interviews were conducted on 13 different informants with different occupations across Oze National Park and Hinoemata village between August to December 2022. For more detailed information, 2 of the 13 informants were interviewed twice during the period. The list of informants are as follows:

Informant	Interview date	Age group	Gender	Occupation
A	August 25th, 2022	40s	Male	<i>Yamagoya</i> owner (Through village office <sup>1</sup> )
B	August 30th, 2022 & December 15th, 2022	30s	Male	<i>Yamagoya</i> owner
C	August 30th, 2022	60s	Male	<i>Yamagoya</i> owner
D	October 5th, 2022	30s	Male	<i>Yamagoya</i> owner
E	October 6th, 2022 & December 14th, 2022	50s	Male	Campsite owner
F	October 7th, 2022	30s	Male	A member of tourism association at village office
G	October 7th, 2022	40s	Male	Employee at fish farm (Through village office)
H	October 7th, 2022	70s	Male	Former <i>Yamagoya</i> owner
I	December 13th, 2022	60s	Male	A member of fishery cooperative association
J	December 13th, 2022	30s	Male	A family member of the owner of <i>Minshuku</i>
K	December 14th, 2022	40s	Male	Employee at fish farm (Through village office)
L	December 14th, 2022	30s	Male	Campsite owner
M	December 15th, 2022	70s	Male	<i>Minshuku</i> owner

(Table 1: List of informants)

To conduct this research of relational values between *Iwana* and the people in Hinoemata village, informants were selected based on their relationship to *Iwana*. Most of the initial informants were the *Yamagoya* owners from Hinoemata village who were working in Oze National Park, three of them work at *Yamagoya* as family traditions and one of them from the village office. *Yamagoya* in Miharashi district in Oze were run by the local people and private companies today, however, one of the *Yamagoya* by Ozenuma lake side is run by Hinoemata village. By looking at the operation of *Yamagoya*, it was observed that individuals hold dynamic views on nature based on their experiences and lifestyles (how they grew up and how they became a *Yamagoya* owner). Two campsite owners were selected and both were involved in the activities for increasing the fish population in the village rivers as well as participating in other *Iwana* related activities in the village. An informant from the tourism association provided information and opinions on the tourism in addition to the history of the village. Informants from the fish farm, who are also working for the village office demonstrated various knowledge producing in the fish farm and releasing

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<sup>1</sup> Usually the villagers who work in the tourism sector rotate their position every few years.

practice in the river. A former *Yamagoya* owner expressed the real-life experiences and stories during the tourism boom in the 1960s in the park. A member from the fishery cooperative association described how to manage fish population under certain rules and expectations by Fukushima Prefecture, and explained the different characteristics of wild and farmed *Iwana*. One of the informants who was running *Minshuku* [Japanese style accommodations] in the village has a history of living in Oze with other family members. Another informant who is running *Minshuku* used to work at a fish farm. Interestingly, even though the above thirteen informants have different occupations, they all shared their childhood memories associated with *Iwana* and how the relationship remained and changed overtime.

The gathered data was transcribed, analysed, and coded by inductive methods. Some of the key concepts and terms were extracted from the text such as; views on nature, management practices, sense of care and responsibility, and the concept of wild and released *Iwana*.

## CHAPTER 3 RESULT

### 3.1 Unfolding the relationship between the people of Hinoemata and *Iwana*

This chapter introduces the timeline of Oze National Park and Hinoemata village based on the narratives from the villagers, different management practices that developed, and how tourism influenced their relationship between the people and *Iwana* overtime. After the introduction of the timeline, management practices and uses of *Iwana* in the park and the village will be introduced and analysed by relational values lens. The focus of this chapter will be as follows;

1. What were the historical events which influenced management practices? Who are related to those management practices and how?
2. What do people think about *Iwana*? What does it mean to the people?
3. How did their relationships change with *Iwana*? What is the concept of nature for the people?
4. What does nature mean to the villagers? What do they consider as ideal nature while promoting tourism?

#### 3.1.1 History of *Iwana* and Oze National Park and Hinoemata village

As it was mentioned earlier, what we call *Yamagoya* in Oze were first built as a fishermen's huts to spend the days, process and store *Iwana* during the fishing period (expedition) back in the 1800s (Kawasaki, 1978). The landscape of Hinoemata was not suitable for agricultural productions, therefore the villagers went outside of the village in search of open lands and fishing ground (Hirano, 1996). In the old text of Hinoemata village history, one of the oldest industries in the village is said to be the fishery, especially *Iwana* and trout. *Iwana* that were caught in Hinoemata were sold to the Kanto region, and it has become one of the special products of the village. Until the Taishiyō period (1912-1926), there were people who specialised in fishing, however later, it was not enough to support their livelihoods anymore (Hinoemata village, 1970). In the history of Lake Ozenuma in Oze National Park, *Chozo Hirano* (1870-1930) from Hinoemata village acquired the territorial use rights for aquaculture to release *Iwana* and trout for farming purposes. This drew the attention of a fish farmer who visited all the way from Towada

lake in Aomori. The Fishery Cooperative Association of Hinoemata was established in 1951, allowing the villagers to actively participate in the preservation of different kinds of fish in the village (Hinoemata village, 1970). Among the informants, 3 of them answered that their great grandfather was fishermen who went to Oze in search for *Iwana*, mentioning that they would process *Iwana* in their fisherman's hut to sell for their livelihood (For details see Appendix B-1). This shows how important the fishing expedition was and how much it meant to the people from the village; as their main source of income.



(Figure 6: Fisherman in Oze, Soukichi Hirano et al, 1978 )

Informant D (For details see Appendix B-2) mentioned that his great grandfather was one of the first people who stayed in Oze who went to various places around the area. Furthermore, the informant mentioned that the fisherman's hut was for the fishermen and their place to stay and process *Iwana*, it gradually changed its use as an accommodation for the people visiting the site. This adaptation process of the use of fishermen's hut shows that Oze, its nature and villager's lifestyle started to open for the people from outside, and became more exposed to the

external influences. Informant B (For details see Appendix B-3) added that when the use of accommodation started to shift, people would catch wildlife from the river as their meal before Oze became a tourist spot. The shift in the use of the hut and its purpose gradually changed into accommodation business, however the connection with the wildlife remained. It was common to fish and cook, there were no such regulations on the wildlife nor the people's behaviour.

The increasing number of tourists caused a drastic change in the land use and the negative impact of the natural environment in Oze (Goto, 1984). Around the 1960s, there was a tourism boom in the park and the village at the same time. Not only the park started to be recognized for its beauty by the people from the city, but also natural hot springs were discovered in the village. Informant F mentioned that many villagers turned their houses and expanded for accommodating people from the outside during this period. (For details see Appendix B-4) Maximum of 40 houses turned into guest houses at its peak, turning the village into a tourism destination as well as Oze National Park. Informant E expressed that the main source of income shifted from farming to tourism business, with villagers who return to the village working at commercial and village facilities (For details see Appendix B-5) The shift from farming to working in tourism sectors had changed the land use and the villager's lifestyles. It impacted the way the villagers engaged with their surrounding ecosystems while developing their own management practices that could meet the demand for tourism, while keeping the balance with nature.

Soon after the tourism boom in the 1960s and the 70s, the fish farm was constructed in the village. Based on the information that was given by the tourism sector in the village, the fish farm is run by the special budget of the village office. Informant M explained that once the fish was produced at a fish farm in the village, there was a notion that these fish were processed and provided at *Yamagoya* in the park and guesthouses within the village (For details see Appendix B-6). The fish farm was one of the biggest factors in the expansion of tourism business, considering that the villagers no longer had to go outside the village to farm or hunt for their livelihood, but rather to stay in the village with the products that were made locally. Overtime, with the notion of farming and producing a large number of *Iwana* that was consumed in the village, the very first fish farmer had learnt and developed the way to manage the fish population in the farm from the prefectural experimental facility and others who had business with them. The first *Iwana* was brought from outside of the village (For details see Appendix B-6). Soon after, it was produced and

populated within the village. Farming fish contributed to the distribution of the food to tourists, and were released in the river to increase the fish population and centred around the promotion of tourism. According to the interview, more than 95% of the fish produced were sold to accommodations and the rest for the locals (For details see Appendix B-7).

The construction of a fish farm influenced the purpose and perception of fish for the people in two distinct aspects; daily life and tourism. In daily life, the villagers who enjoy fishing would catch *Iwana* in the river for their consumption. During the interview, it was mentioned that farmed *Iwana* is expensive for the local people compared to other fish that is sold in the supermarket. The villagers purchase *Iwana* only on special occasions (For details see Appendix B-7). For tourism on the other hand, almost all fish produce is supplied from the fish farm; *Iwana* in the catch and release area, fishing events, fishing pond and meals in the accommodations.

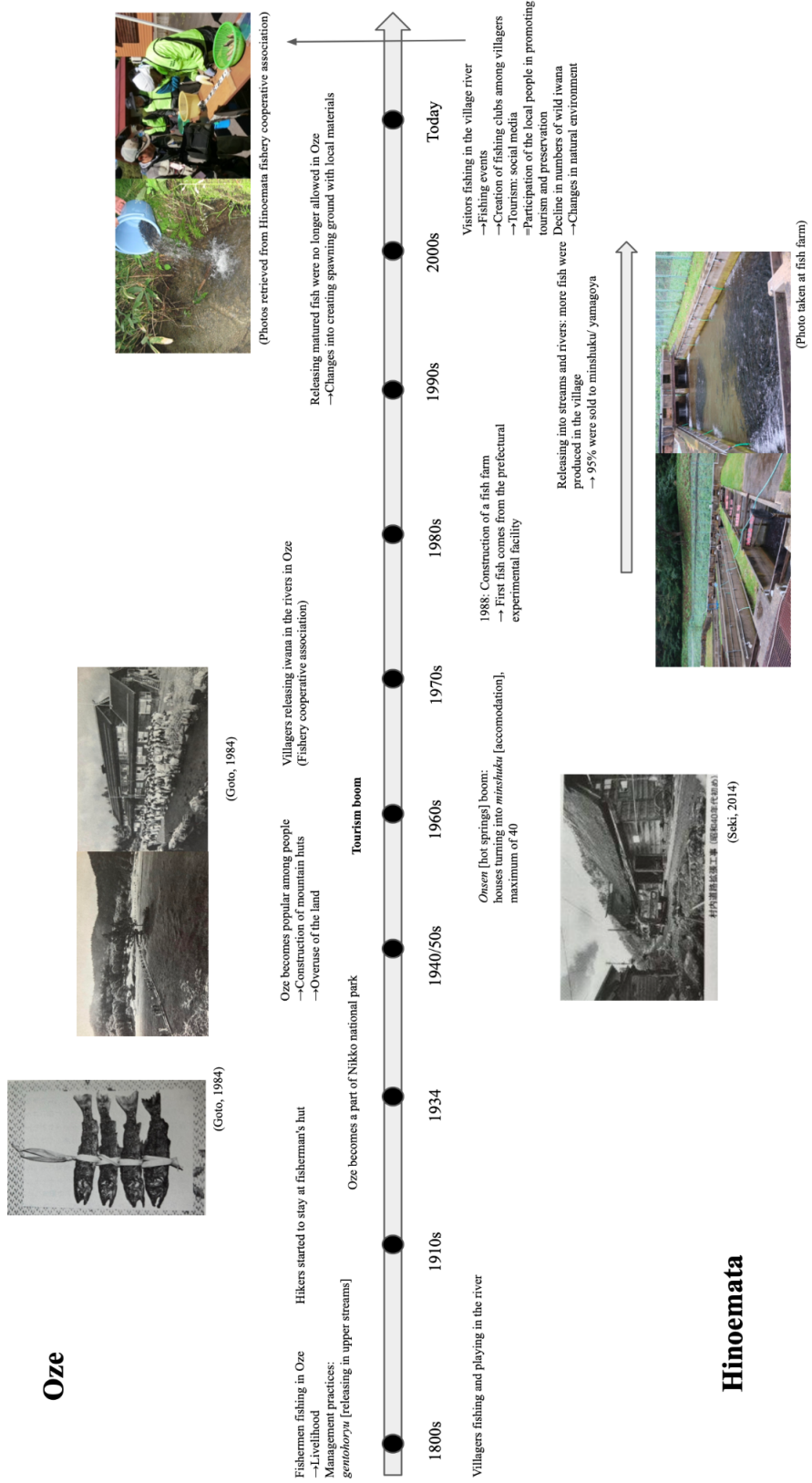
Around the 1990s and 2000s as the tourism boom continued, it was mentioned that one of the management practices of releasing the fish in the park had changed (For details see Appendix B-8 and B-9). Releasing the fish in *Numajiri* River in the park was carried out mainly by the members of fishery cooperative associations and a few other people from the village at the beginning. However, it was pointed out by the nature conservation group that fish which were produced in the village would not be native to the land and it could potentially change the local ecosystem in the *Numajiri* river. Therefore, the villagers started to create spawning grounds using the locally collected materials such as twigs and rocks so that it could be considered as releasing the fish to keep the fish population<sup>2</sup>. The Fishery cooperative association follows the guidelines by the Fukushima Prefecture as one of their main obligations to keep the fish population stable. In addition, this follows the regulations as *Oze* becomes a national park. This notion of creating the restrictions and for protecting *Iwana* does not only apply in the park, but also extends to the village. Today, there are people who visit the village for recreational fishing. Since *Iwana* and fishing became one of the tourism attractions in the village, the village started to hold fishing events and tournaments that are related to *Iwana* which the local people are actively engaged in (For details see Appendix B-10). Fishing events that have been held in the past few years not only contributed to tourism, but also for active engagement in nature for the locals and people who visited. By looking at the history of the village with *Iwana*, it reveals how the values towards the natural

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<sup>2</sup> Creating a spawning ground is considered to be one of their “releasing activities”.



environment and lifestyle of the villagers changed overtime as well as the surrounding ecosystems. The author created a timeline based on the interviews and historical documents of the village.



(Figure 7: Timeline of *Iwana* in Oze National Park and Hinoemata village)

This section focused on the narratives of the informants supported by historical documents and key events which are related to *Iwana* in Oze National Park and Hinoemata village from the 1800s to today. The timeline illustrates the changes in the relationships between *Iwana* and the local residents, especially in focusing on tourism. These changes in the relationships and events influenced on the relational values of the local residence towards *Iwana* and these processes and changes will later be discussed from the perspectives of relational values lens.

### 3.2 Management practices and uses of *Iwana*

This section introduces management practices and uses that are present in the park and the village where different stakeholders are involved in those practices. The stakeholders are categorised into three; Fishery cooperative association, village tourism sector, and the fish farm. Management practices that are carried out by different stakeholders are; releasing, regulations, and techniques that are developed in the fish farm. This section also distinguishes the management practices and uses of *Iwana*, and these practices and uses will be applied to different relational values and how they are related to each other.

#### 3.2.1 Management practices

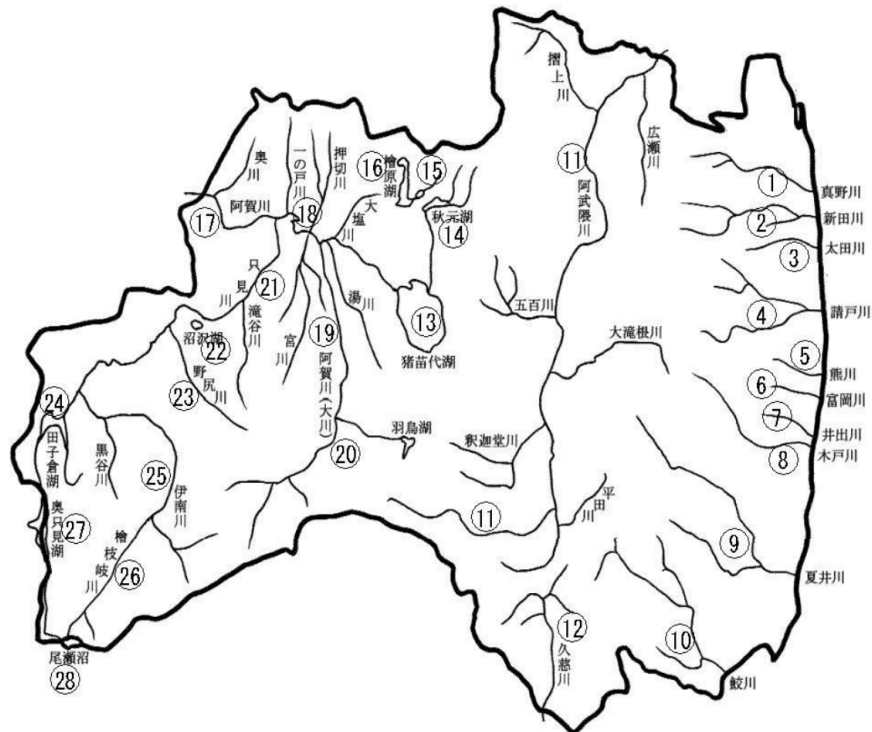
##### Releasing activities

Historically, releasing activities have taken place by fishermen in Oze; there is documentation showing that fishermen brought fish to upper streams to release and to increase the fish population. Releasing in the upper stream is called *Gentohoryu*, and it is said that the population of the fish would go back to the same amount after 3 years (For details see Appendix B-11 & B-12). Today, releasing activity is one of the central management practices of *Iwana* done by fishery cooperative association and tourism association in the village. According to informant M, it was initially started by the fish cooperative association even before the fish farm was constructed and after they started to produce fish that were grown in the farm, they released those fish to the river in the village (For details see Appendix B-13). This takes place in the rivers both in the park and the village under certain regulations. According to Fukushima Prefecture, the legitimate territorial use rights of fishing of the Hinoemata Village are recognized in

three different locations. This gives the village the right to farm in designated areas such as rivers and lakes. Hinoemata Village is responsible for the areas that are sections No.26, 27 and 28 in the map that is shown below. Section No.26 refers to the Hinoemata River and Tadami River within the village. On the other hand, section No.27 refers to Otori Lake, Okutadami Lake and Tadami River, which is shared between Hinoemata Village and Uonuma City in Niigata Prefecture. The farming areas are strictly regulated by the Prefecture. As for section No.28, which refers to Ozenuma Lake and Numajiri River in Oze, it is shared between Numata City in Gunma Prefecture.

### 内水面共同漁業権連絡図

数字は公示番号

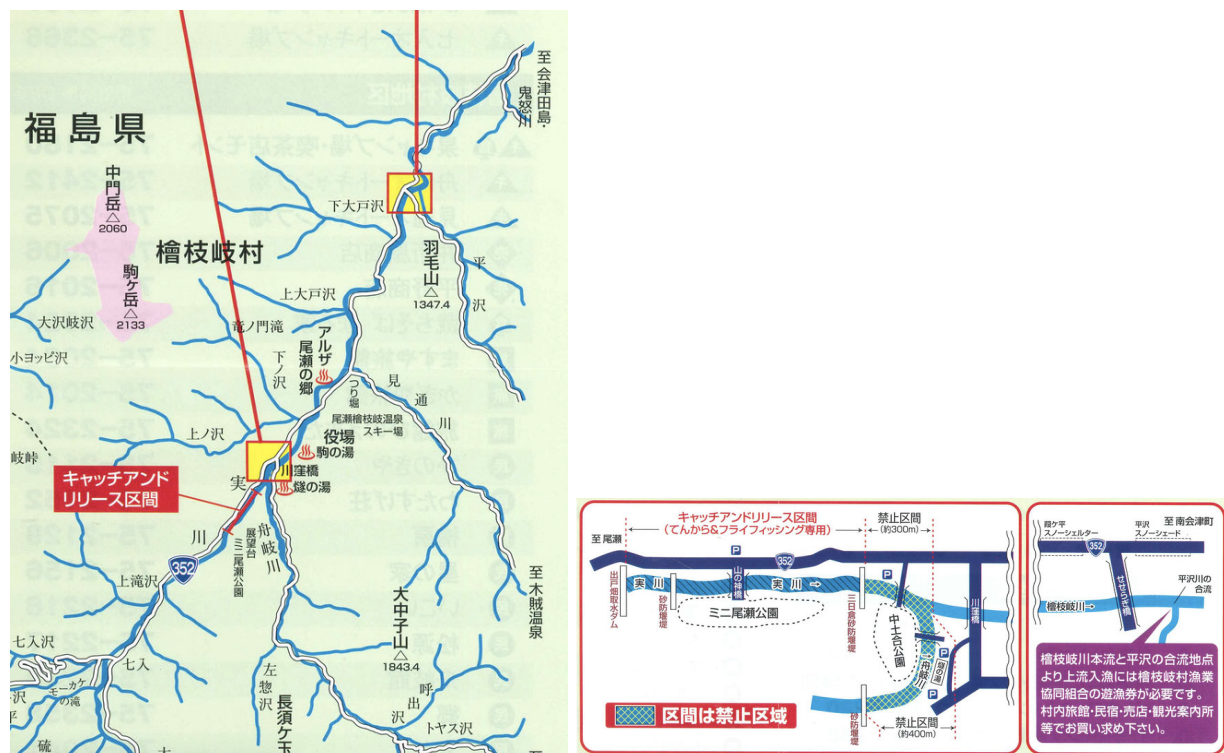


(Figure 8: Map of Fishing Rights, Photo Retrieved from Fukushima Prefecture)

By releasing *Iwana* that are raised in the fish farm in the village, the fish population both in the fish farm and the rivers in the village are kept under control. It is done during the fishing season from April to September, and the weights and numbers are presented by the Prefecture. The author found three different types of releasing activities;

creating spawning ground in Oze, releasing matured fish in the main part of the village river and eggs in the upper streams in the village. In Oze, what is considered in the releasing activity is to create spawning ground with the local materials that are found in those areas, so that the fish can lay eggs easily. This is not only to protect the population; but to protect the native species in the park at the same time. For the village rivers, informant I described the decrease in the natural fish population downstream of the Ina and Funamata river around the sand control dam (For details see Appendix B-14). They also release before the fishing events and other activities that are planned for tourist attractions. In addition to releasing the matured fish, the eggs are placed in upper streams of the village every winter. One of the reasons for these practices is because the matured fish get caught easily right after they are released; whereas the eggs might be more resilient to different conditions as they grow in the natural environment (For details see Appendix B-15). Those matured fish and the eggs that are released in those rivers and streams are farmed in the village by the villagers.

#### Fishing regulations



(Figure 9 & 10: Fishing Regulations Map of Hinoemata Village, Photo Retrieved from Fishery Cooperative

Association in Hinoemata Village)

Fishing regulations stipulate their rights to fish (purchasing tickets), equipment, size of the fish, fishing areas, and seasons in Hinoemata village. For tourists to fish in the river in the village, they are required to purchase the fishing tickets which give them the right to fish in the village river under the territorial use rights of Hinoemata Village that is managed and monitored by the fishery cooperative association of the village. The regulation is named under “Hinoemata village fishery cooperative association No.26/ 27, type 5 territorial use rights for fishing”. The regulations on equipment and size are also an important factor for the fishermen and the villagers to prevent harm and overfishing. The main river in the village has a catch and release area; the rule is that the fishermen need to release the fish if they exceed more than five fish. Since this catch and release area is situated in the middle of the village in front of another tourist spot, it is easier for the people to monitor these fishing activities. As for the fishing season, it is from April 1<sup>st</sup> to September 30<sup>th</sup> every year to avoid catching the fish during the spawning season.



(Figure 11: Catch and Release Area in Hinoemata Village)

#### Fish farm

According to informant M, the fish farm was constructed around 1988, and the first fish was from the prefectural experimental facility and it allowed the villagers to learn how to farm in a way that is suitable with the local ecosystem. For example, Hinoemata village is prone to heavy snowfall during winter and one of the round-shaped tanks has water constantly flowing, which prevents water from being frozen during those months. In order to grow fish from the egg, the staff members squeeze the eggs from matured fish, put them in the special tank with special equipment, sort out the healthy eggs, feed and separate them depending on the size and physical conditions. Throughout those processes, there are other factors that require attention; such as water temperature and diseases. Once they have the matured grown fish in the farm, some are sold to *Yamagoya* in Oze and accommodations in the village, processed into souvenirs and some are released in the river or the fishing pond. This fish farm is one of the



most important factors that changed the lifestyles of the villagers; providing more fish for tourism, keeping constant fish populations in the river, and maintaining relationships between people and nature.



(Figure 12: Fish Farm in Hinoemata Village)

#### Relational values

Now, the management practices that are mentioned above will be analysed through the relational values lens. First, releasing activity relates to their perspectives on nature; what is considered to be good, and how their values are constructed and go back to their childhood memories and experiences. Maintaining the fish population in the river connects to their values on nature; keeping nature as it was before (For details see Appendix B-16). It also allows the villagers to be connected with their surrounding environment and to be aware of the ecosystems. One of the interesting aspects of this sense of connectedness and awareness, a few of the informants mentioned the differences in the wild and farmed *Iwana* and how their different characteristics and behaviour affects the released and wild fish population in the wild river.

*“ Released fish don’t have fins because they grow in areas where there is no current. If they are released in the river and do not get caught for a long period of time, their fins grow. However, the pattern is different. The native species*



*of Hinoemata has orange spots on them. Also, Iwana change colour depending on how they are exposed to the sun. The fish from the fish farm are all whiteish. if they don't get the sunlight, they turn completely black.*” - Informant J

*“Iwana at the fish farm run away from the people, but they are fed by hands, so they have no wariness to bait. Ones that learned to eat insects in the fish pond don't jump on bait paste anymore. The hooks in fishing ponds don't really have returns and they are like shallow hooks. They jump on a bait, Iwana that fail to be caught gradually become worn out by it, and they start eating insects.*” -Informant B

It was mentioned that wild and farmed *Iwana* are not only visible by their physical appearances, but also by their behaviour and the villagers are able to identify them. In addition to differentiating the two, the villagers are aware of how/ why they should choose the right place for releasing *Iwana*.

Releasing activities had taught the fishermen the limits of wild and farmed fish and how much to intervene in nature. It grows ones' perspectives for protecting the natural habitat while balancing out with the fish that they farm; the villagers grow a sense of awareness and responsibility for the fish population throughout this process.

Rules and regulations on how to fish, what kind of equipment to use, when/ where to enter is to prevent damage and protect natural habitat from human intervention. Adjusting the distance between the people and natural habitat allows them to draw a line on where people can enter and where they should be preserved. In the old days, entering the rivers and forests in search of upper streams was limited to the villagers who were knowledgeable about their surroundings and aware of its characteristics such as fishermen. However, today, these sites are open to the people from outside the village, who are not familiar with the local ecosystems in those areas and could go over the boundaries without realising. Which means that not only have the numbers of people who enter the natural environment changed, but also there is an imbalance of the knowledge and purpose among the individuals. Therefore, the rules and regulations keep the fish population and the impact of tourism under control. The villagers are actively engaged in monitoring and making sure that the rules are being followed while visitors learn the ecosystems and its limitations. As it was mentioned earlier, the catch and release area are the main feature of recreational fishing; however, the villagers are noticing the impact of human activities in those village rivers.

*“I eat Iwana at my place, there are a lot of people who talk about catch and release, and say they don’t eat the fish and return them in the river, but I think the fish that are released are dead in these areas. No matter how well they do it. I think it’s better to take responsibility for the fish you catch. You can see dead fish in the river. I’ve already raised the fish and I think it would be better to eat them (than release them and let them die). Some fish get sick so it’s better to eat and they are tasty.” - Informant L*

Within the catch and release area; where wildlife is supposed to be protected, the *Iwana* that were released have been found dead because of the fishing practices. Along with the rules and regulations that are placed upon districts, the villagers are aware of their surrounding environment and develop their sense of responsibility towards wildlife. Informant L explained his involvement in the process of farming the fish and that it influenced the way he values his surrounding nature.

The fish farm plays a crucial role in the perspectives of relational values of the villagers; the main purpose is to farm fish; however, the individuals develop skills and knowledge about the fish and how they grow within the environment-specific conditions they live in. The farm is managed by the people from the village office, however villagers who are not working in the village office also participate in the process. By doing so, it creates a notion of taking responsibilities and care by the village as a whole. Two of the main purposes of farmed fish are; 1) consumption for tourists 2) releasing in the village rivers. However, the sense of duty and responsibility of the villagers not only apply to the fish farm for growing them, but also extends to the natural habitat after the fish is released. Placing the man-grown fish into the river brings nature and people closer in terms of managing their own environment with constant care. The villagers think that once humans alter the environment, it is their responsibility to maintain its well being.

### 3.2.2 Uses

This section looks at different uses of *Iwana* through special events and everyday life in the village. The uses of *Iwana* are mainly for tourism such as advertisement, souvenirs, fishing pond and fishing events. As a result of the

tourism boom in the 1960s, fishing practices of the villagers were distinguished into two categories; *Iwana* for tourism and for everyday life. While management practices dictate the interaction between villagers and *Iwana*, use of *Iwana* enhances the connections among people and responsibility by the individuals.

## Tourism

With tourism being a centre of the livelihood of the people, the tourism association puts great effort into bringing people to the village. *Iwana* is used in their advertisements along with the natural hot springs in the village. One of the emerging trends for advertisement is video on social media, one such video shows a group of villagers who are in their 30s and 40s formed Hinoemata fishing club 3 years ago. Fishing club initially started as catching fish and eating them among the people who do the fishing including children. Besides advertising purposes, those videos express the villager's connection to the environment and how to connect with people and nature through fishing. In recent years, fishing tv programs and shows have visited the village, experiencing what the village could offer. One of the well-known *Iwana* products is candied *Iwana* called *kanroni*, which is entirely made in the fish farm by the villagers, and is provided in *Yamagoya* in Oze. The visitors are able to connect themselves with the village. All the other souvenirs and products that are related to *Iwana* are processed in the fish farm as well. The fishing pond, which is located by the fish farm at the entrance of the village is one of the tourists' spots that attracts visitors and also villagers. The pond is filled with farmed *Iwana* and is managed by the members of the fish farm. After fishing with a bait that is prepared at the fishing pond, *Iwana* will be processed and cooked in front of the customers. This is not merely a place for enjoyment, but also education as it teaches the process of how to catch, treat, cook, and eat the fish.



(Figure 13: Fishing Pond in Hinoemata Village)



(Figure 14: Cooked *Iwana* at Fish Pond)

The village holds different events throughout the year; such as a fishing event which is a collaboration of the fishery cooperative association and tourism sector, and other events called “snow festival in summer”. At the snow festival in summer, the villagers from the youth club sold *Iwana* burgers for the first time. In addition to these events, informant L expressed his experience for the environmental education program for the children who visit the village during summer.

*“I also help children in summer for environmental education. I help them catch, process, and cook Iwana in salt water. Today, children see fish in the supermarket as something they don’t understand nor recognize. The fish they see at the aquarium is the one that they are eating. Some kids even think that fillets are swimming, like salmon. So, I let the kids grab their own fish and I rip the bellies out, salt and grill them. I’d play with them for another half hour or so, and when they come back, they know where the fish came from. Iwana is very useful in that aspect as well. I think that for the village as a whole, we need to think of these systems.”* - Informant L

Holding fishing events and participation of children on different occasions allows the villagers to successfully incorporate these educational aspects for tourism.

#### Connections among people

Through these events and educational programs, different stakeholders are actively engaged with each other. The link between different stakeholders is mainly divided into three categories; 1) the fish farmers engaging with people from outside the area to learn techniques and develop skills that enhance fish farming 2) people who visit Oze and the village interacting with the villagers 3) villagers working together for tourism while strengthening their bond in everyday life through their interactions with *Iwana*.

The interaction between fish farmers from the village and other areas enriched their skills and techniques for growing *Iwana* while building relationships with the people who work in the same industry from different areas. When the fish farm was constructed in the village, the people who were initially on the farm had to learn their ways through other people from different Prefectures who were already experienced in fish farming. From the interview, it was identified that the relationship the villagers built with the other people was one of the important aspects of

taking proper care of the fish. The trust that they built through these times extends to other situations such as helping neighbouring Prefectures, they were able to assist in issues such as the declining number of *Iwana* in the other areas.

Secondly, the connection between the visitors and the villagers through *Iwana* was one of the key aspects in the national parks in Japan. Since the management practices have the local people involved, the visitors get familiar with the local ecosystems and people through experiences such as staying at *Yamagoya* in Oze or accommodations in the village. When *Iwana* is served in their meals, the locals realise that the fish is one of the main sources of food in the areas and the way they interact with each other. Since farming to processing is all done at the fish farm, the visitors are able to make connections between the two. Fishing and other events, where the village welcomes people from other places, become a platform where people can share their knowledge.

Lastly, *Iwana* management encourages and contributes in active interactions among villagers; for example, informant L helps the fish farm on occasions such as squeezing out the eggs from matured fish and placing them in upper streams as a part of the releasing activities. Not only does it contribute to managing the natural environment among villagers, but it also builds trust by sharing the tasks and responsibilities among villagers. These processes deepen their knowledge of *Iwana* and the surrounding environment.

Based on the experience of informant L, by collaborating with fish farmers and other villagers for the events, his experience in sharing and passing down knowledge with other villagers to children from outside the village is a meaningful undertaking. By participating in this process, the connections that he makes will extend to the other aspects of life in the village. Looking at the above stakeholders engaging with each other through *Iwana* on different occasions, the use of *Iwana* is not only limited to tourism, but also to connect people at different levels. It becomes a platform for the people to engage with each other in a different environment.

#### Relational values

In this section, the use of *Iwana* in tourism and connection among different stakeholders will be analysed from a relational values perspective. Those tourism events bring people to work together, share their knowledge and develop skills while fostering the deeper meanings of nature. The villagers create the advertisement videos for

tourism; their worldviews are based on what they know and how they want their surrounding nature to be. Forming a fishing club allows them to catch *Iwana* casually, but also keeps connections with the other villagers who share the same/ similar values. Steps towards developing care and responsibilities flourish from their first-hand contact with nature, and those events which are held in the village are designed apart from the recreational aspects. Environmental education through *Iwana* is one way of passing down the knowledge and skills that the villagers hold to the younger generations and to the people who are not familiar with the natural environment, and is a valuable service that the village offers. As for the fishing event that is held in the summer, their main target was children. The villagers release *Iwana* in the river before these events so that the visitors could enjoy participating in those activities. The main finding here is that both villagers and participants grow a sense of care and responsibility through the interactions that they have with one another. A tourism spot such as a fishing pond encourages visitors to learn and brings a sense of awareness towards nature by allowing them to learn the process and cycle of life with farmed *Iwana*, and how *Iwana* is merged into everyday life in the village.

### 3.3 Shift in boundaries

From the data that was collected, it was identified that there is a shift in boundaries between the villagers and nature that not only brings them together, but reinforces the distinction between the two. It was observed in two different ways; i) changes in the perception of what is wild and what is part of their livelihood/ local ecosystems within the village, ii) the concept of protected areas. Historical events and developments of management practices have influenced the way villagers perceive their surrounding environment.

As for the i), upper streams in the village for example, “should remain untouched” because wild streams will produce and bring more fish into the river during their life cycle. On the other hand, main rivers in the village such as catch and release areas “should be managed/open to tourists”. Today, where the population and presence of *Iwana* is managed, people feel a sense of responsibility and obligation to protect nature with their own hands and skills. The different characteristics of these areas influence the villager’s sense of place and how they interact with respective areas. During the interviews, it was identified that some of the villagers are aware of the behavior of *Iwana* in various natural environments.

*“There are some excellent streams in Hinoemata where the fish population doesn’t change. There are fallen trees and they are full of rocks, and too far for fishermen to fish. I know that there are four or five of them like that. The more they grow in numbers, the weaker ones go downstream to seek their own territory.” - Informant K*

Furthermore, informant J mentioned the differences in the human interventions according to the areas among Oze's upper streams and main rivers in the village.

*“In each season, the fishery cooperative association decides how many kilograms of Iwana to be released in the village rivers. The locations like streams and rivers are decided. There is an erosion control dam, but the area between the two is a no fishing zone, so the fish increase there. When there is a big flood, they are released downstream and the fish that make it to the top can survive without being caught. Because of these no fishing zones, the number of Iwana never drops to zero. That is the reason why the river in the village area is safe. So, the inside of the village and its main part of the river is protected but the outside is not.” - Informant J*

This notion of knowledge about the place and connectedness with nature within the village, individuals and the village as a whole construct the meanings for what they care and are responsible for. As it is mentioned, these would be the reasons for their behaviour and decisions that are based on what is good for nature according to their experiences and values.

Furthermore, for ii) Protected areas, in this case, Oze area used to have people who made their living from fishing, however the values that came from the protected areas adds on to the notion of protecting the land from the influence of people. The land was no longer a fishing place for fishermen but a place where nature is preserved and protected for different meanings. Changes in the releasing practices in Oze from matured fish to creating spawning ground was a result of the knowledge of wild and farmed fish. Therefore, due to Oze being designated as a national park, the concept of native fish and environmental protection became dominant which guided the villagers to adjust their ways of managing the fish population under the natural condition.



*“Well, fishermen are not allowed to enter Oze, so I think it is good that Iwana in Oze are protected. It’s better to see that Iwana here (village) is categorised for tourism while Iwana in Oze is for preservation.” - informant J*

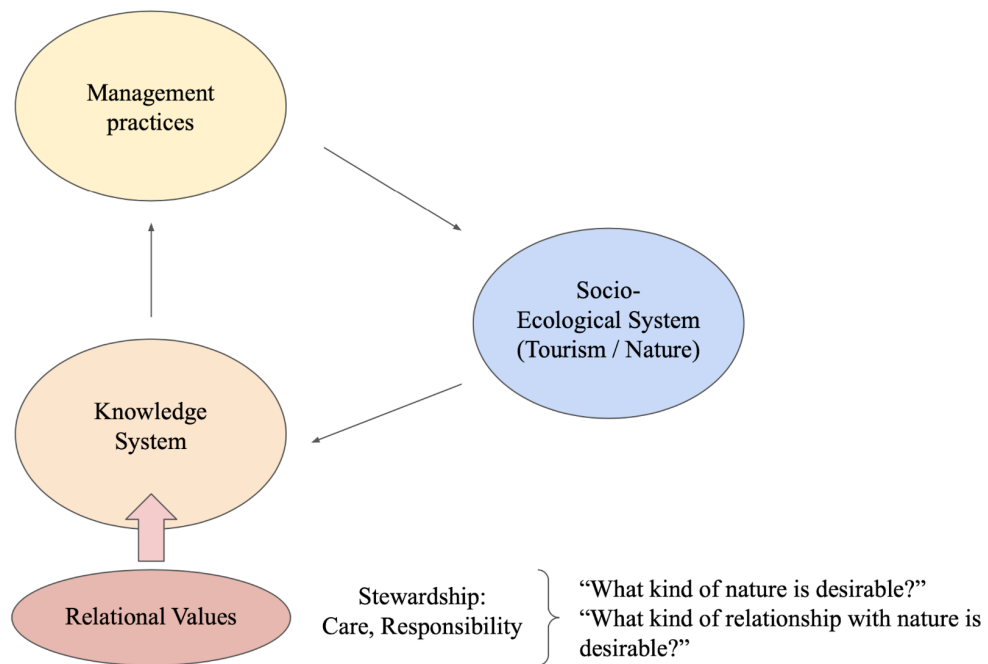
From this interview, it is clear that there is a distinction between the nature in the village and the park. This guides how they should behave and perceive nature in two different ways. The concept became more clear when the idea of conservation appeared after the designation of national park. The boundaries shifted in what used to be the extension of their village nature and after the land gained the name of a national park.

### 3.4 Summary

This chapter introduced the result of the interview combined with historical events as well as various management practices, the uses of *Iwana*, and the shifting boundaries between human and nature. First, the author introduced the timeline with different historical events that took place both in Oze National Park and Hinoemata village. These changes impacted the ways in which the villagers manage their local ecosystems while meeting the needs of tourists. The author identified different management practices that are carried out by the villagers such as releasing activities, implementing fishing regulations and managing fish at the fish farm. The presence of natural *Iwana* has been around for a long time, and the villagers put effort into maintaining the fish population so that the *Iwana* would not be lost. Furthermore, the uses of *Iwana* were also identified; tourism and connecting people together. These management practices and uses of *Iwana* were analysed through the relational values lens to understand how villagers develop their care and sense of responsibility towards *Iwana*. By considering both aspects, it became clear that direct management of nature such as entering the river to release the fish or to fish, influences their relational values towards *Iwana*. No matter what external influences or changes in nature occur, the villagers demonstrate their sense of responsibility to pass down *Iwana* both for the natural ecosystems and future generations. Furthermore, the shifting boundaries between human and nature indicates how villagers perceive and engage themselves in nature of the village and the park. These distinctions between places influence what is done in the respective places and shape the knowledge of what is good for the environment under different circumstances.

## CHAPTER 4 DISCUSSION AND CONCLUSION

In this chapter, the author discusses the knowledge generation in the village and the relational values of the villagers that was observed. The author created the diagram below to explain how relational values are processed and formed into different systems. The importance of this diagram is to show that the relational values imply what management practices are suitable to respond to the external factors while meeting the villagers relational values of “desirable nature” or “desirable relationship with nature”.



(Figure 15: Diagram Of How Relational Values Are Integrated Into The Systems)

### 4.1 The knowledge generation

From participant observation and interview results, the author identified that there are two separate processes for the generation of knowledge by the villagers. First is internal influences that are derived through their direct contact with the natural world, family members and surroundings within the village. Second is external influences; that occur through interaction with other stakeholders, tourists, and during the process of adapting to change for tourism,

and regulations that are placed upon the national parks. The significance of this section is in trying to deepen the understanding of how the knowledge of the local people in Hinoemata village is being produced and how their knowledge is applied to management practices.

The knowledge of the people from Hinoemata village can be analysed by understanding how knowledge was created and transmitted between generations, namely knowledge created from internal factors. In this research, knowledge created from internal factors refers to the knowledge that is generated within and through the interaction among the people of Hinoemata village. In the old times, fishermen followed techniques that were passed down from the older generations. For example, it is mentioned that one of the fishermen in Oze had entered the business with his family members at the age of 14 (Hirano et al, 1987). In those times, the fishermen created their traditional ways of fishing, fishing tools, and preservation methods of *Iwana*. A few of the informants mentioned about *Gentohoryu*, the way fishermen released a paired fish into the upper streams for the purpose of preserving the number of fish. This type of knowledge was developed and passed down across generations among the villagers. Above all, most of the informants mentioned their childhood memories associated with *Iwana*, playing in the rivers as one of their main activities while growing up in the village. Ishihara (2018) mentions that “individuals are born into a culture that provides knowledge and information regarding desirable interactions with nature and among people, that is, the ‘right’ ways of doing things”. Their direct contact with their surrounding environment had accumulated their knowledge and experiences, connecting them with other villagers.

On the other hand, knowledge created from external factors can be referred to as knowledge that was created through the interactions with other stakeholders during the process of development and adaptation of tourism after Oze had become one of the national parks. For example, the regulations that were placed on the land had eventually changed the way the local people engaged with the management practices; such as creating spawning ground instead of releasing matured fish in Oze. Although changes of the title of the land brought controversy among different stakeholders, construction of a fish farm not only satisfied the requirements from the prefectural office for the fish populations, but as a supply to meet the demands for tourism. Later, the villagers learnt their ways to farm fish using the techniques they developed and from their experiences as well as adapting those techniques that were taught by the fish farmers from outside of the village. Those skills and techniques were exchanged with the fish farmers and

specialists from the outside, but the villagers still had to find ways to farm fish in the specific environment of Hinoemata village. The village created the system for maintaining the population in response to the tourism boom and formed their ways of seeing the surrounding environment while establishing the suitable management practices. These events not only influenced their views on nature, but also their behaviour, and what was considered to be “good and acceptable” in front of visitors despite their traditional ways of doing things. These changes were observed after the village opened up for tourism, for example, informant B describes the changes in the behaviour after Oze was recognized as a national park.

*“When the title ‘national park’ was placed upon Oze, I think there was an understanding that it was no longer possible to do such work in public places. The right to go into the mountain itself was not taken away, but it was no longer possible to do things like hunting or gathering wild plants. When that happened, inevitably, the villagers started to refrain from hunting, even if it was for extermination.” - Informant B*

Regarding knowledge systems, there is knowledge that was created from internal and external factors. In the next section, the author will discuss how the knowledge that is applied to management practices is based on one’s relational values of stewardship such as care and responsibility towards the environment. The decision or behaviour is based on those relational values and applies to the questions of “What kind of nature is desirable?” or “What kind of relationship with nature is desirable?”.

#### 4.2 The process of relational values formation

In this section, the author will discuss how relational values of stewardship such as care and responsibility influence knowledge systems and also have a direct impact on management practices and socio-ecological systems.

Management practices that were introduced in chapter 3, such as releasing activities, fishing regulations and fish farms are considered to be stewardship such as care and responsibility. For example, the villager’s relational values of having a constant and stable fish population of *Iwana* is considered to be “desirable nature” or “desirable

relationship with nature”. Both in the old historical documents and many informants mentioned how the river was full of *Iwana* back then.

*“ In summer when we returned home to the village, we would help out women on farming. They used to do the work since we were out in the mountains. In the meantime, we would fish. In those days, the way of catching fish was not like it is now, so we could catch a bucket full of fish in a short period of time. It was around the 1950s, and there were still plenty of fish back then. I would catch plenty of them in any river I went to.. ” - Morimoto Hirano (Hirano et al., 1987)*

*“In the past, people took fish for a source of income, and there were not many people like it is now. That’s why I could catch a lot of them. I used a dragonfly, you put a dragonfly on a hook and move it around in the water. We only caught a certain amount of fish, and it was such a time. ” - Informant E*

*“There was so much Iwana in the village river. ... I felt so lucky to be born in such an environment with a river full of Iwana. I think it’s amazing. ” - Informant F*

It is observed throughout history; it links to the management practice of releasing activities, where they directly involve themselves in the natural ecosystem such as *gentohoryu* in the old times, or creating spawning grounds in Oze and releasing matured fish in the river after the tourism boom.

*“ I used to go to Otsumata River; and the amount of fish was enormous compared to what it is today. But the number of fish decreased after the construction of a dam. That’s when I started to release fish. I took fish to places where fish could not climb, such as the top of a large waterfall. My father and I both tried it. We would take the fish to places where no one knew, but in old days there were no plastic bags filled with oxygen. So we would put fish in a fish basket, put them in the water for a little while, walk for a little and then put them in the water, repeat until we release them alive. After six years, the number of fish would increase instantly. Well, they say it’s eight years. It’s so exciting and I made my own place to fish. ” - Sokichi Hirano (Hirano et al., 1987)*

Furthermore, their stewardship for the land appears in the form of caring about and taking responsibility for the lives of *Iwana*; taking them back and eating once they catch them even after the part of the village river has turned into catch and release area (For details see chapter 3.2.1).

In the case of the village river, in addition to maintaining the fish population, it is for tourism so that the people can enjoy interacting in the natural environment of the village where there are plenty of *Iwana*. Even though tourism is directed towards the outside world, relational values of stewardship towards their own environment is observed in the form of fishing regulations such as fishing equipment and areas. One of the examples is the catch and release area, where the fish population is easy to manage and behaviour is easy to monitor.

Despite the fact that these events are primarily for tourism, the villagers are controlling and monitoring the fish population as well as creating space for people to engage with each other. Things they do for tourism have an impact in many different aspects of the lifestyle of the villagers and visitors, not everything is obvious, but they are all part of the formation of relational values. These practices are exposed to socio-ecological systems such as tourism and nature, then the knowledge that is created within the process will be passed on to the villagers and other stakeholders.

Even though the villagers are putting effort into the management practices to make their “desirable nature” or “desirable relationship” happen, there is a gap between the relational values of the villagers and the tourists. It was identified that the intentions of the villagers are not fully applied in the management practices. There was a concern for people entering the upper stream where nature mostly remains untouched and wild *Iwana* live in those areas. Technically, those areas are not regulated like the other parts of the village river, therefore it is not forbidden to fish. However, the villagers know that these areas should be untouched because those wild ones populate naturally in those parts of the rivers. Considering the above, the initial relational values of “desirable relationship with nature” that the villagers had was to leave the upper stream as it is, reassured and shaped their “desirable relationship with nature” once again when the environment was exposed to tourism. Because knowledge systems, management practices and socio-ecological systems are all interlinked, the impact of these changes on the ecosystems and the life of the villagers will be apparent sooner or later. As long as humans live on this planet, there needs to be constant

consideration of the balance between how we interact with nature and “desirable relationship with nature” because society is dynamic and interdependent with the natural environment.

Looking at historic change of the natural environment and events that took place in the village, the author identified that the villager’s relational value of stewardship such as care and responsibility has not changed throughout the history. What has changed is the management practices that gradually developed through the response to tourism.

In this section, the author looks at the process and the link between knowledge systems, management practices and socio-ecological systems and how these are influenced by relational values. Relational values, such as care and responsibility can raise questions such as “What kind of nature is desirable?” or “What kind of relationship with nature is desirable?”. However the villagers developed and transformed management practices that fit both their surrounding natural environment and tourism, these relational values that villagers hold are constant even under the changing circumstances.

#### 4.3 Limitation of this research

Limitation of this research is that the primary informants are male villagers between the ages of 30s-70s, who are knowledgeable about *Iwana* and experienced in fishing or participating in different activities and events. Furthermore, the informants who worked at *Yamagoya* were the family members of fishermen in Oze and have been exposed to the changes of fishing practices in the park and the village. Most of the informants were involved in the management practices, however, it would be interesting to apply a larger scope of opinions of the general public in the village as well as including different stakeholders in the park management. Furthermore, what is considered internal and external have different definitions over the course of history, but this research did not look into these characteristics.

#### 4.4 Conclusion

This research looked at the evolution of relational values of people in Hinoemata village towards *Iwana* in Oze National Park and Hinoemata village in Fukushima Prefecture, Japan. Many stakeholders including local people play an important role in managing ecosystems in Japanese national parks. The author conducted literature reviews, participant observation, semi-structured interviews and inductive coding of collected data. At the end of this research, it was concluded that the relational values of care and responsibility of the villagers remain the same throughout history, however, the villagers adapt their lifestyle with management practices that were developed in the park and the village in response to tourism.

Chapter 1 introduces the empirical studies of relational values and the research gap. Empirical studies of relational values put emphasis on different relational values in different contexts and not many were focused on the process of how relational values change and evolve overtime. Human-nature relationship is dynamic and reciprocal, it is important to deepen our understanding of the process of how values are constructed and shaped. Therefore, the research question is to answer how relational values of the people in Hinoemata village towards *Iwana* evolve over time and to identify the impact of tourism on these changes. The main objective of this research is to identify key management practices that are related to *Iwana* and how they are implemented by different stakeholders.

Chapter 2 focuses on the background of this research as well as the methodology that was used. The site was selected because of its long history with *Iwana* and the village's large-scale involvement in tourism. Semi-structured interview focused on finding out 1) the villager's perceptions towards *Iwana* 2) management practices that are present and developed in the village 3) the changes in their interactions with *Iwana*.

Chapter 3 shows the result of the research by introducing the history of *Iwana* in Oze National Park and Hinoemata village based on the narratives of the villagers as well as key management practices and stakeholders who create space for interaction between humans and nature which later become an important element for the formation of relational values. In this chapter, the author identified that the main stakeholders such as the tourism sector, fishery cooperative association and fish farm in the village actively hold fishing events and activities in the village. It



became clear that these activities are deepening the connections and understandings of the surrounding ecosystems, sharing ideas and interactions among villagers and visitors, and most importantly, impacting one's value towards nature. Mainly, management practices such as releasing activities, putting regulations and fish farming involve villagers to be aware of their surrounding ecosystems and focused on their own skills and generations of knowledge. Uses of *Iwana* for tourism and everyday life create the notion of changes in fishing practice and connections among people. It was evident that villagers developed their sense of care and responsibilities towards *Iwana* by engaging themselves through different management practices and among others.

Chapter 4 discusses how relational values are processed in the linkage of knowledge generation, management practices and socio-economic systems. The knowledge is generated through internal and external factors among different stakeholders and when it is applied to management practices, new knowledge is generated. Throughout the process, the relational values of stewardship are applied in the form of knowledge systems that develop new management practices. These management practices and the implementation of these practices on socio-ecological systems create new knowledge that will transform and apply to nature once again. However, the author identified that while villagers were developing new management practices that fit to tourism, their relational values of keeping the population of *Iwana* have not changed throughout the history.

Finally, this research looked at the relational values in the context of the Japanese national park and the local village in Fukushima Prefecture. This case study can be applied to other areas - not limited to specific environments, but applicable anywhere in the world. Relational values are constantly put into practice as a result of the interaction and exchange between human and nature, and among people. Rethinking how things are valued in one's worldview is the first step to understanding the complex human-nature relationship in modern society.

## APPENDIX A - LIST OF QUESTIONS ON SEMI-STRUCTURED INTERVIEW

1. Personal information: age group and occupation
2. *Iwana*
  - a. What does *Iwana* mean to you?
  - b. What are the management practices and who is involved in those management practices?
3. Releasing activities
  - a. History
  - b. What are the changes in the number of *Iwana*? How do people perceive these changes?
4. Traditions and use of *Iwana*
  - a. Do people eat *Iwana* in everyday life?
  - b. What is the use of *Iwana* other than eating?
5. Oze and *Iwana*
  - a. What is the relationship between the owner of *Yamagoya* and *Iwana*?
  - b. What are the management practices in Oze?

## APPENDIX B - INTERVIEW QUOTES

B-1. *"My grandfather was the same way as my great grandfather. Fishing Iwana was a source of income. In the case of Oze, we entered the area for fishing in the very beginning. From spring to fall, they caught fish and dried them. They would weave the dried Iwana about 10 at a time, and take them to the Kanto area, Tochigi or somewhere there to sell. So, there were people who did it in the river in Hinoemata, and there were ones who did in Oze."* - Informant E

B-2. *"He was my great grandfather. At first, he slept here (in Miharashi district in the park) because there was a spring of fresh water, Yashiro shimizu. He was a fisherman. I think he started using this place as a base from which he went fishing to various places around this area, and gradually he began to accommodate people."* - Informant D

B-3. *"At the time of my great grandfather, the hut was mainly for yamodo [mountain people who hunt and collect wildplants], or for processing and fishing Iwana, but my grandfather started to work here. So, he rebuilt to accommodate lodging business, while workspace for fishing remained. Second generation, my grandfather was a yamodo and ran an accommodating business on the side and it was around this time the business shifted more towards accommodating people. The guests would bring their own food from the river which they would then cook and serve at the hut back then. It is impossible to imagine these things today, but it seems like they were able to do such things back then. This was before Oze became a real tourist spot."* - Informant B

B-4. *"According to what I heard, it was around 1965 when everybody started running guesthouses in what used to be ordinary houses but were remodelled and expanded. The number of visitors in Oze increased and people stayed at any place they could find. Peak was in 1995 to 1996. Oze also peaked in 1996 and Oze had 640,000 visitors."* - Informant F

B-5. *"Our grandparents farmed during summer, then tourism became the main business, and guesthouses started to open around 1967. No one went that far to farm anymore, and the village started to take on tourism and people who returned to the village from outside started to work at commercial and village facilities so there was no need to do so*

*much farming. When we were working part-time in 1975 or 1976, there were more than 100 tourists' buses. The skunk cabbage season in May was very crowded. They were earning more money in tourism than farming.” - Informant E*

*B-6. “Candied Iwana is served for tourists in Oze, and such products were from other places, but now we expected to sell them with the Iwana that was produced in the village. If it’s done in the village, let’s use the village one. There was such an atmosphere in the village. I think the fish farm was built around 1988. When I came here, the first thing I did was to buy fish from the prefectural experimental facility because they had training there. We didn’t sell them at first, and if someone wanted some Iwana a few times a year, I would share some of them. I think it was around 1990 that we actually started doing business in this way. Well, the number of guesthouses and inns had already increased by that time. We made the product to be used in the village.” - Informant M*

*B-7. “Even ordinary households consume, or at least occasionally eat the fish they catch as a hobby. So there is nothing special about eating it everyday. People who like fishing would eat them, but personally, I don’t have any problem not eating them. It’s more like during Golden Week vacations or summer when children come back from far away, we get some fish from a fish farm to serve them. I would say that more than 95% of the products are made to serve to tourists, or to serve at Minshuku.” - Informant M*

*B-8. “The fisherman’s union used to carry the eggs on their backs to the Numajiri river and other places in Oze, but the nature conservation group told us that the ecosystems would change if we released the eggs with the created ones, which meant that they were not native to the land. That’s why we can’t do that. So, what we are doing now is to create spawning grounds instead.” - Informant E*

*B-9. “About 15 to 20 years ago, there was a lot of dumping and development. So, a nature conservation group was formed, and they told people not to build roads, not to ruin the rivers, not to build dams and so on. The purpose of the fishery cooperative association is to protect native species, which is a real obligation. If you apply this to Oze, it is not allowed to bring in or out the fish from elsewhere even if it is the same Iwana. We decided to use artificial spawning beds, using only suitable local materials from the surrounding areas. There is a formula so we could*

*calculate the amount which is equivalent to releasing the fish. We do it in about 7 to 10 locations and we are the first ones to do it in Fukushima Prefecture. I have been the head of the association for 15 years, and we have been doing it since the first year. That's the release of Iwana in Oze."* - Informant I

B-10. *"Since we could not sell the fish because of COVID19, we decided to release live Iwana that were about 10 cm in length into the river. The manager of the fish farm said that the pond would be full of fish and that can lead to a big problem. So, we all agreed to do it together. Then, we created a video showing the footage of fish being released, and the response was rather positive. Then, we decided to make a video advertisement, and decided to focus mainly on fishing. The fishing tournament started at the same time I started the camping site two years ago. Originally, there was a tournament held by the fishing cooperative, but we also started a tournament sponsored by the tourism association. The first year, the tournament was held for adults, and last year we held one for children. And if it was for kids, usually the family stayed over in the village. I've been running the camping site for two years and in the second year there were more families so I thought it was successful and somewhat effective."* - Informant L

B-11. *"The old men who specialise in char take juvenile fish and release them. Then, they would start again in different areas for another three years and give another a break. That's why the population has never decreased in the past."* - Informant K

B-12. *"There's no river directly connected to this place. So people used to release Iwana in the upper streams after catching and taking them alive. So they brought the live ones to the nearby upper stream to increase the number and make more fish for their business. There would be no point if they were released in areas with poor access. That may be why native Iwana from Hinoemata can be found in the upper streams today."* - Informant J

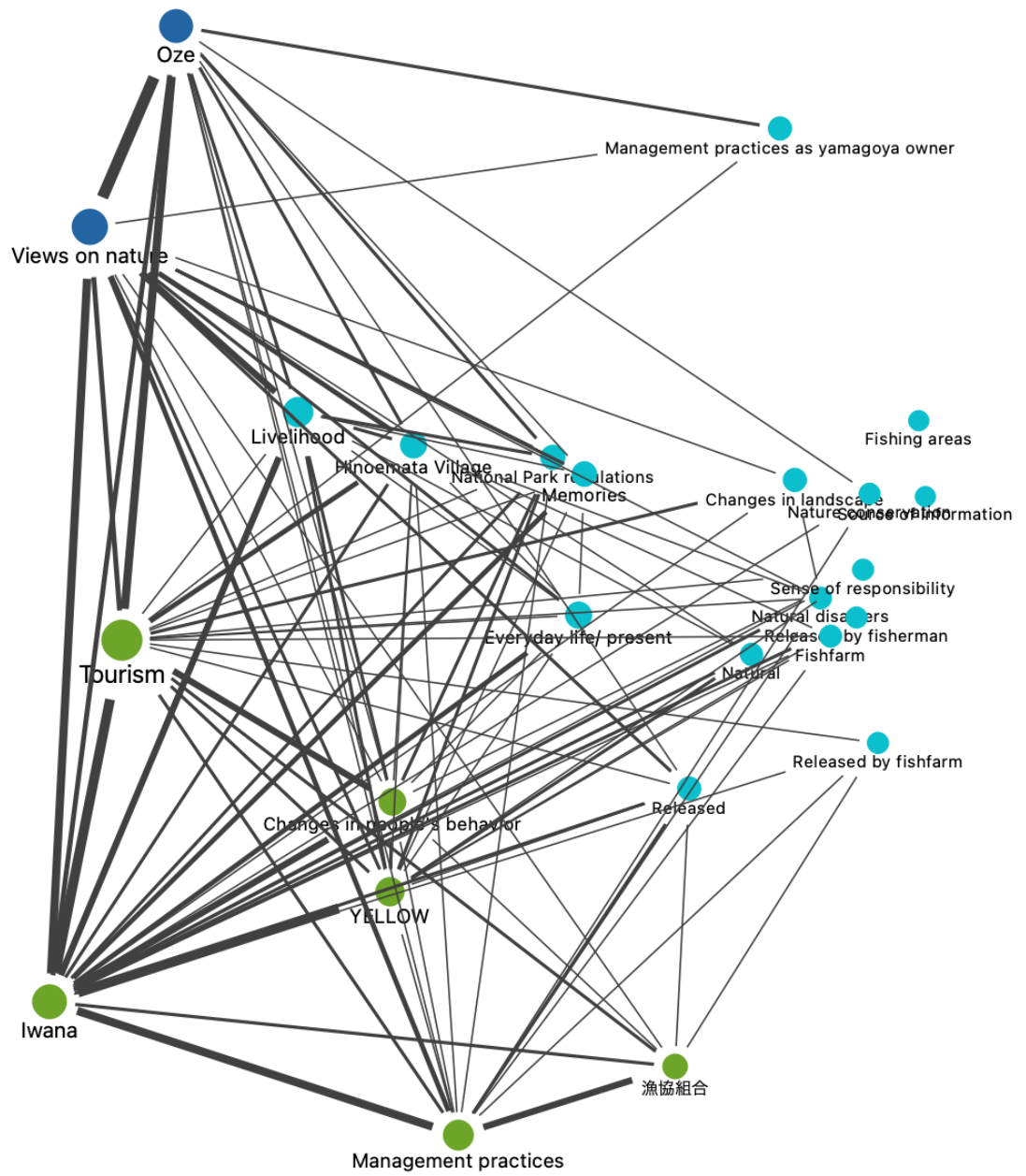
B-13. *"The fishermen's association had a rule that they had to release tens of thousands of fish a year, or else their fishing rights would be lost. They had been releasing fish for quite some time, even before the fish farm was established. Now that the fish farm produces fish, they started to release fish that are produced in Hinoemata village."* - Informant M

B-14. *"In the old days when there were no erosion control dams or something like that, fish would move up and down in a steady stream, but it would be difficult for them to do so if there were those dams like now. If there is no erosion control dam and there is a natural stream on top of the river, if the upper part of the stream is left as it is, the number of natural fish will increase, right? However, downstream of the erosion control, the only way is to release the fish. It depends on the location. Conversely, as I mentioned earlier, it is better not to release fish in the real headwaters upstream. If you do, there is a risk that the released fish will eat the wild fish. They may eat the eggs of wild fish, so it is better to release the fish only in the right places. So, we should not release them too deep into the river. There are some erosion control dams along the river here. But if there are natural fish and released fish, the fish that eat the bait first will eat the bait first because natural fish are more determined to catch the bait on their own. Even if there are natural fish, they are caught first. If you keep doing the same thing repeatedly, there will be no natural fish and only the release ones are left."* - Informant I

B-15. *"If we release adult fish, they will end up getting caught. The tourism division and fishery cooperative association are working on a project to release juvenile fish and keep them in the wild to strengthen them, but there were many objections releasing them saying that they would be eaten by their parents so we should take them upstream. They said it would be too much work to take juvenile fish upstream so they decided to release the eggs instead."* - Informant K

B-16. *"There's no more hiding room for the char because the river has become straight. Before, there were large stones and other things in the muddy water, so there were places for them to hide. Now the channel has been straightened, they can hide where the water comes out, but other fish get swept away. When we were kids and after the typhoons, we took the nets and went to find them. There were big ones after the typhoon. I haven't seen many sculptures since the last typhoon and I miss them now. I used to see them often before that typhoon, the village used to release them to increase the number."* - Informant I

## APPENDIX C - CODING MAP



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