

A New Role of Common Spaces for Environmental Conservation in Japan

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Abstract:

The purpose of this paper is two folds. The first task is to clarify five major types of common spaces including water surfaces in the present day Japan. They are (1) *iriai-gyojou* (common fishery grounds), (2) *iriai-rinya* (common forests/grasslands), (3) *uotsuki-rin* (fish breeding forests), (4) *tameike* (irrigation ponds), and (5) *ridou* and *suiro* (non designated hamlet roads and water courses). The number of commons in Japan after the WWII has decreased. But that is not all. Many of them are alive in their own manners in many localities.

The second task of the paper is to show that some commoners are very active for resource management toward environmental conservation in their own localities in spite of many socio-economic difficulties. The paper presents several cases of the common spaces which have been performing crucial roles of preventing environmental destruction in local communities. Some cases Cooperation between commoners and people outside of commons are also discussed.

Key words: *common fishery ground, common forest/grassland, fish breeding forest, non designated hamlet road, Japan, environmental conservation*

Introduction

Japan is an island country. At the same time, it is mountainous. From such a geological and geographical nature, various types of common spaces have emerged and evolved in the sea, terrestrial land, and in between until today. While many commons disappeared in the process of industrialization, there still remain many common spaces of interesting characteristics.

Since the time of turning point from the 20th to the 21st centuries, a new light has been shed on common spaces in Japan. Some of such commons began to function as lively spaces for environmental conservation. Given such new trend, the purpose of this paper is two folds.

Firstly we characterize the historical process of formation of the five major

types of common spaces in the present day Japan. They are (1) *iriai-gyojou* (common fishery grounds), (2) *iriai-rinya* (common forests/grasslands), (3) *uotsuki-rin* (fish breeding forests), (4) *tameike* (irrigation ponds), and (5) *ridou* and *suiro* (non designated hamlet roads and water courses). Sections 1 through 6 of this paper are devoted to this first task.

Secondly, we show that some commoners and their associates are very active for resource management in their own localities in spite of many socio-economic difficulties toward environmental conservation. We present several cases of the common spaces which have been performing crucial role of preventing environmental destruction in local communities. Section 7 of this paper is devoted to this second task.

As far as the study of (2) *iriai-rinya*, we have excellent, preceding works of McKean (1982, 1986). Some of the commons which we discuss in this paper, however, are not necessarily within the scope of Ostrom (2000) and other western literatures. We would like to enrich the study of commons by adding new elements to it from Japan.

1. Historical Formation and Present of Common Fishery Grounds

Japan is a country of extremely lengthy chain of large and small islands extending from north east to south west. Islanders have lived and live by significantly depending on marine resources. From such a way of livelihood of people, a unique system of fishery rights and fishery cooperative associations was born in the Meiji era (1868-1912), and it was amended after the Second World War toward more democratic manner. This section is devoted to a brief history of fisheries in Japan and to the illustration of modern system of fishery institutions.

1.1. A brief history of fisheries in Japan

In the medieval age, fisheries were practiced mostly by coastal communities. But there were some cases that wealthy persons monopolized certain sea surfaces.

In the Yedo era (1603-1867), a rule was introduced so that coastal sea was for exclusive use of the persons in the village community which faced the coast, and offshore was open to everybody. At the same time, each lord authorized the head of fishing village to act as tax collector from local fishermen. A fishing village community was called *urakata*.

Seven years after the Meiji Restoration (1868), the new, Meiji Government

declared that the sea surface was a state property. Many fishermen strongly resented this governmental decision all over Japan. Then the government soon gave up the original idea and issued the order that the fishery activities could follow the traditional manner. In 1886 the order of the then Ministry of Agriculture and Commerce introduced the system of fishery association and allowed fishermen in each association to follow the old custom. Since this order was incomplete, the congress passed the more complete Fisheries Law in 1901 and it was enforced in the next year. This law is often referred as the Meiji Fisheries Law.

This law had clauses which granted fishing rights to fishery associations and fishing licenses to individual fishermen who operated coastal, offshore and distant waters. Under this law, fishery rights were recognized as real rights. Fishery rights were categorized into the following four types:

- (1) Fixed-net Fishery Right
- (2) Demarcated Fishery Right (aquaculture for oyster, seaweed, pearl and others)
- (3) Specific Fishery Right (specific for beach seines, boat seines, and others)
- (4) Exclusive Fishery Right.

The exclusive fishery right was divided into the two subtypes; (a) exclusive in view of the past practices, and (b) exclusive to each coastal water in front of each fishing village. Among the above four types of fishery rights, the types (3) and (4) had a strong nature of commons equivalent to iriai forests/grasslands in the land areas.

After Japan's defeat in the Second World War in 1945, the government moved to amend the Meiji Fisheries Law toward democratization of the fishery system under the strong initiative of the General Head Quarters of the Allied Forces (GHQ). The Fishery Cooperative Association Law was promulgated in 1948 and enforced in 1949. The amendment of the former fishery law was promulgated in 1949 and the new fishery law, later called the Showa Fisheries Law was enforced in 1950. Fishery cooperative association (FCA) is an organization of fishing village, and has a nature of local common.

1.2. Various types of fisheries under the Showa Fisheries Law

The Showa Fisheries Law (simply the Fisheries Law hereafter) categorizes fisheries in Japan into the following six types:

- free fishery (the law not applicable)
- governor licensed fishery (either prefectural rule of fisheries or Article 66 of the Fisheries Law)
- fishery with fishery right (Articles 6 and 7 of the Fisheries Law)
- designated fisheries (Article 52 of the Fisheries Law)
- recognized fishery (Ministrial ordinance)
- reported fishery (Ministrial ordinance)

The Fisheries Law is not applicable to free fishery. According to Kaneda (2005), free fishery consists of (a) pole and line fishery and (b) long line fishery and others. The governor licensed fishery has two subcategories; the legal governor licensed fishery and general governor licensed fishery.

The fishery with fishery right consists of the following four subtypes;

- (3-1) fishery with fixed-net fishery right
- (3-2) fishery with demarcated fishery right
- (3-3) fishery with common fishery right
- (3-4) fishery with right of entry

It should be noted that all of these fishery rights are real rights (Articles 23 and 43 of the Fisheries Law).

The designated fishery is the fishery designated by the cabinet order. Those who want to operate the designated fishery must obtain a license from the minister of Ministry of Agriculture, Forestry and Fisheries (MAFF). Each designation is valid for five years. The recognized fishery is the fishery which requires the recognition of MAFF. Such recognition is valid only one year. The reported fishery is the fishery which can be operated under the condition that those who want to engage in this fishery must report such intention to MAFF.

The most important point in the fishery rights in Japan is in that they are institutionalized as real rights in the Fisheries Law in parallel to the Civil Law.

1.3. Five types of common fishery right

Among various types of fisheries described above, operation of the fishery with the common fishery right is predominant. It occupies the principal position of coastal fisheries in Japan. According to Kaneda (2005, p. 196), common fishery right is the right to engage in “common fishery” as determined in Article 6 of the Fisheries Law. The fishery in this category means the fishery which is allowed for

fishing village members to use specified waters in common. Because the common fishery use the common public waters in common, the fishery right is entitled to the local fishery cooperative association (FCA) for its management. Actually majority of the coastal fishermen make living from this type of fishery. The water on which FCA members are entitled to operate their fishing activities is the common fishery grounds. A license for common fishery is issued to each FCA by the prefectural governor and is valid for every ten years.

Each FCA is expected to introduce its own rule for fishery right execution. The rule prescribes the eligibility (qualifications) of the person to engage in the fishery, fishing area, period and fishing method and others in order to control the exercise of the fishery right.

Common fishery is classified from type 1 common fishery to type 5 common fishery. With regard to the first type and the fifth type, the FCA manages the right by artificial hatching and releasing of aquatic animals and plants, releasing of seedlings and parent fish, culling the rock surface, cleaning the beaches installing stones, and reefs. As an interpretation of the Clause 5 of Article 6 of the Fisheries Law which establishes five types of common fishery, Kaneda (2005, p. 196) describes them in the following manner.

The type 1 common fishery is the fishery to harvest seaweeds, shellfishes or other bottom clinging aquatic animals as designated by the Minister of Agriculture, Forestry and Fisheries.

The type 2 common fishery is the fishery operated by submerging stationary net gears other than those of fixed-net fishery. Major ones in this category are small scale set-net fishery, and fixed gillnet fishery.

The type 3 common fishery includes beach seine fishery, beach seine fishery with scare-fishes, trawl fishery by non powered boat, angling by aid of baiting, and fishery by means of artificial bank.

The type 4 common fishery includes wintering mullet fishery and feeding red sea-bream fishery with a flock of birds.

The type 5 common fishery includes the common fishery operated in rivers and lakes, which is other than those specified in the first type.

2. History and Present of Common Forests/Grasslands

The origin of the English words; right of common and commons traces back to the medieval history of England (Murota, 2004). Japan also has institutional arrangement on terrestrial lands similar to them.

As far as written documents are concerned, the first description of the resources used in common in Japan is found in the Taiho Ritsuryo (Taiho Penal Code) at the time of Emperor Mommu in 701. One of the articles of this code states that “mountains, rivers, bushes and marshes belong to the nation and shall be commonly used without prejudice to whether the user is a public person or private person” (Matiya et al, 2006, p. 21). But there were no clear, systematic use of the concept of commons in the ancient and medieval ages in Japan. Emergence of common lands began to be seen in the Yedo era (1603-1867).

2.1. Emergence of common forests/grasslands in the Yedo era

The Yedo era essentially was a peaceful age in the history of Japan under the “sakoku” (national seclusion) policy. In such an age, the need of harmonization between increasing population and limitation of terrestrial natural resources started being obvious. War lords (sengoku daimyo) in the previous era became under control of the Tokugawa shogunate government. Each daimyo, say A, was entitled to control over a certain area of land, say a, which the shogunate government prescribed. The economic value of the prescribed land was measured by the average annual harvest of rice in terms of the unit of volume called koku (1 koku = some 180 liters). Political status of daimyo was expressed by the amount of koku called kokudaka. Lord with the kokudaka less than 10,000 koku was called hatamoto, instead of daimyo.

But this land entitlement was not the ownership of land. If the government thought that daimyo A was not loyal enough to the Tokugawa family, the government could abolish A’s entitlement over the land a, and change his status as a daimyo over less productive or more remote land, say b, which had been entitled to daimyo B, for example. The Tokugawa family, who was the supreme lord of many lords, owned scattered pieces of good forest here and there in Japan.

General public, mostly villagers at that time, cultivated their own lands and paid tax in kind, namely rice, to their lord. There was no idea of privately holding forests and grasslands which physically did not fit to or were thought not to fit to cultivation. Such spaces were left open to every villager, rich or poor. At the same time, each village had its own boundary settled in the middle age. Any villager in village X could collect firewood, green manure and others from or graze domestic animals on the forest and grassland within the boundary of X.

Such an uncultivated lands were named iriai-yama, hyakusho-kasegiyama,

and many other terms depending on what region of Japan such village located. *Iriai* literally means “enter collectively.” Sometimes, agreement was made, say between village X and village Y, so that anybody in X could collect natural resources grown on the uncultivated land in Y, and vice versa. Such was the origin of iriaichi (common land) or iriai-rinya (common forest/grassland) in Japan.

Since a lord himself did not own his territory, such commons locating within his territory could not be owned by anybody. Similar situation prevailed in fishermen’s village along sea coast.

All of iriai refer to common lands where villagers used to be entitled to collect firewood, green manure, thatching materials, and others. In some area, there were common lands for digging and collecting rocks as building materials. Beach was sometimes common space for people of adjacent fishing village, the common space for drying anchovy.

Each of such common lands had its own rules upon which the commoners agreed to mutually observe in order for them to avoid over-exploitation of natural resources born from the lands.

2.2. Iriaichi in danger in the Meiji era and its new forms in recent times

Under the American-European pressures, Japan opened the country to foreigners and the new, Meiji Government was formed in 1868. The new government wanted to totally eliminate iriai lands from all over the country either by transforming them into national forests or by bringing them in the private hands.

The iriaiken holders (commoners) strongly opposed this move of the central government in many regions in the country. The government was then obliged to allow the continual presence of many iriai lands. Typical forms of the newly formed common lands, which were the successors of iriaichi of the Yedo era, have been property ward forests (*zaisanku-yu-rin*), name inscribed forests (*kimei-kyoyu-rin*), village-owned forests (*sonyu-rin*), and authorized neighborhood association forests (Mitsumata and Murota, 2007). The management of such forests is based on the cooperative works of commoners. Common forests/grasslands in Japan have the nature of *Gesamteigentum* (Ishida, 1927). In that sense, right of common in Japan is legally different from right of common in England and Wales, where “a right common has been defined as a right, which one or more persons may have, to take or use some portions of that which another man’s soil naturally produces” (Halsbury’s Laws,

1991, para. 504, p. 197; Murota, 2004, p. 2). In contrast to this, a right of common is a real right (Sachenrecht) in Japan (Kawashima and Kawai, 2007). Such right is prescribed by Article 263 of the Civil Law.

At the same time, however, it should also be noted that there are some cases that the rights of common have been exercised on state owned, or prefecture owned, or municipality owned lands (Totman, 2007). Such right of common in Japan is similar to the one in England and Wales. It is prescribed by Article 294 of the Civil Law.

2.3. Change in the socio-economic significance of iriaichi under the oil civilization

Between the late 1950s and the early 1960s, Japan moved from the coal to the oil civilization. This rapid change in the livelihood was called fuel (or energy) revolution. Firewood, green manure and others, taken from the common forests of broad-leaved trees, became unnecessary for daily lives of people in the oil-based society. Yet, many iriaichi have continued to exist as of managing conifer forests for the benefits of villagers.

3. Revived Interests in Uo-tsuki-rin (Fish Breeding Forest)

Material cycle between terrestrial lands and sea bodies is an important theme to be explored for sustainable human economy (Murota, 1996). In this regard, it is worth for the researchers of common pool resources in the world to study uo-tsuki-rin in Japan.

The system of protection forests is institutionalized in Japan. Historically, it was introduced in the Forest Law of 1897 which was the first of that kind in modern Japan. The present system is in effect under the third Forest Law of 1951. At present, there are the following seventeen types of conservation forests:

- 1 Headwater conservation forest
- 2 Soil run-off prevention forest
- 3 Landslide prevention forest
- 4 Shifting sand prevention forest
- 5 Windbreak forest
- 6 Flood damage prevention forest
- 7 Tidal wave and salty wind prevention forest

- 8 Drought prevention forest
- 9 Snow drill prevention forest
- 10 Fog inflow prevention forest
- 11 Snow avalanche prevention forest
- 12 Rock fall prevention forest
- 13 Fire prevention forest
- 14 Fish breeding forest
- 15 Navigation landmark forest
- 16 Public health forest
- 17 Scenic site conservation forest

They are designated by the Minister of Agriculture, Forestry and Agriculture or a prefectural governor.

Uo-tsuki-rin (fish breeding forest) was considered to be important for fishermen and be protected in the Edo era (1603 and 1867) in Japan. The Forest Law enacted in 1897 under the new Meiji government. Article 25 of this law stated that fish breeding forest had to be protected as a type of protection forest among many other types of protection forests. This means that not only local fishermen but the central government recognized its importance.

During the 1930s through 1970s, some scientists of Hokkaido Prefecture such as Masayuki Miura and Tetsuo Inukai investigated the reason why denudation of land caused bad effects on marine fish, especially herring (Inukai, 1938, 1951, 1965). Wakana (2001) tells that "Miura who was an executive officer of Forestry Department of Hokkaido Prefectural Government insisted that 'Inland forests should be conserved to maintain herring survival rate of Japan seaboard' in 1955. He made remarks 'Forest conservation should be done to protect the fishery resources' in the department, and he simultaneously carried out the policy of the forest conservation. He wrote the same assertion in the papers in 1971."

Thus far, scientific reasons why forests along coastal areas or even in inland areas are provide good habitat condition for marine fish have not been fully established. However, the good effects of riparian vegetation on fresh water and anadromous fish have been discussed by many scientists in the world (Mills, 1989; Nakano et al, 1999; Pusey et al, 2003; and others). For example, Mills (1989, pp. 248-250) points out the importance of streamside vegetation in the context of Northern Atlantic countries, especially in the context of Atlantic salmon

rivers. According to him, the reasons why it is important are as follows: The streamside vegetation

- (a) shades water, stream bed and stream bank from the sun's heat,
- (b) provides energy to the stream through leaf fall, terrestrial insect drop and dissolved nutrients,
- (c) gives protective cover for fish,
- (d) protects the stream banks from channel erosion, erosion from overland runoff, and the erosive effects of precipitation impact,
- (e) acts as a buffer against debris from overland runoff, and
- (f) intercepts toxic materials from spraying.

Mills also notes that "removal of streamside vegetation can facilitate increases in the temperature of streams which may then reach a lethal point for salmon and trout"(ibid., p. 248).

We think that circumstances similar to this kind of relationship also may hold between coastal and inland forests and marine fish. Fishermen may intuitively have understand the benefits of such forests to fish and attempted to conserve such forests.

During the age of rapid economic growth, the total area of fish breeding forests decreased due to industrialization and other development projects. While the area was some 50,000 ha in the whole nation in the period of 1935-1955, it diminished to less than 30,000 ha since the middle of the 1960s on (Mitsumata et al, 2008, p. 151).

However, reevaluation of has been under way in the last two decades or so in Japan. Starting point was in Hokkaido. Women in the fishery cooperative associations (FCA) there started planting trees along the coast in 1986. This movement spread all over Japan afterward. Now, not only women but men of FCAs and other environmentally-concerned people are planting trees on coastal zone or sometimes on inland. Such activities are to attract fish to the water near such wooded areas. Regardless whether forests attract fish or not in terms of scientific evidences, participants in such tree planting movement believe that forests must provide marine (or freshwater as well) fish with habitable environment by giving them shades, nutrients, shelters and so.

4. Irrigation Ponds as Many as 200,000

Japan has been and is a country of paddy rice cultivation. This means that irrigation is an absolute necessity for rice growers. If river flow is large, rice

paddies can receive water from irrigation channels connected to the river. But if river flow is not available, irrigation ponds can be the most realistic alternative.

4.1. Historical origin of irrigation ponds

Archaeological studies tell that the origin of irrigation ponds in Japan dates back to some 1,800 to 2,000 years ago. Written records of irrigation ponds start in the 6th century (Uchida, 2003).

When anybody talks about irrigation ponds in Japan, mention cannot be avoided to the Manno-ike Pond. This pond is located in Manno Town, Kagawa Prefecture in Shikoku Island. It is the largest irrigation pond in the present day Japan. It has the maximum water storage of 1,540 m³. It is not only large but very old in its origin.

“It is said that the pond was constructed in the Daido era (701-704) by the lord of Sanuki province, Michimori Ason. It can be said that the history of Manno-ike Pond is that of its repair works. In 818, it was destroyed by a flood for the first time and left abandoned until in 821, when Kobo Daishi was sent as the construction supervisor by the emperor of the time. It is well-known that Kobo Daishi repaired and expanded the pond in only 3 months.

However, the pond was repeatedly destroyed by floods in the later periods. In 1625, Nishijima Hachibei, an expert civil engineer and a retainer of the province lord, took up a repair work and completed it in 1631. Still in the later periods, the pond had been destroyed by flood or earthquakes several times and had been repaired by the efforts of many people. It was lastly repaired to the present form in 1942.”(Website: Manno-ike Pond)

The early form of Manno-ike Pond was the product of large national project in the olden time, and is an exceptional case. Much smaller irrigation ponds have been constructed in many areas of Japan since that time. Construction of small irrigation ponds in later times became more and more of the nature of small community works.

4.2. Current status of irrigation ponds

In the total area of irrigated rice field, 88.1% depended on rivers, 10.3% did on irrigation ponds and 1.6 % did on others (underground water and so on) in 1996 (Uchida, 2003, p. 191). Corresponding figures for 1946 were 68.3 %, 18.3 % and 5.3 %, respectively. From these figures one can say that the role of irrigation ponds has decreased after the WWII, but that some 10 % of rice field

still use them. Their role is especially large in the areas surrounding the Seto Inland Sea where precipitation is relatively small in comparison with other areas of Japan, and available amount of river water is small.

According to the statistics of the Ministry of Agriculture, Forestry and Fishery, there were as many as 213,893 irrigation ponds in 1989, while 246,158 in 1973 and 289,713 in 1952-1954 period. Question then arise as to who own and who manage such irrigation ponds. The answer is found in Table 1.

Table 1. Owners and Managers of Large Irrigation Ponds in Japan in 1989

	Owners # of ponds	Managers # of ponds
State	9,901 (14.38 %)	79 (0.12 %)
Prefectures	366 (0.53 %)	117 (0.17%)
Municipalities	14,626 (21.25 %)	7,683 (11.16%)
Land improvement wards	3,526 (5.12%)	6,839 (9.93%)
Hamlet or mutully agreed cooperatives	33,657 (48.88%)	47,756 (69.36%)
Private persons	4,968 (7.22%)	5,698 (8.27%)
Others	1,807 (2.62%)	681 (0.99%)
Unknown	0 (0.00%)	0 (0.00%)

Total	68,853 (100.00%)	68,853 (100.00%)

Source) Uchiyama (2003, p; 193). Large irrigation ponds here mean the ponds of which the beneficiary area is equal to or larger than two hectors. Land improvement ward was created based on the Land Improvement Act of 1951. It is a modern form of traditional irrigation association in Japan.

From Table 1, we understand that dominant part of irrigation ponds is owned and managed either by hamlets (smaller that municipalities) or mutually agreed cooperatives (moshi awase kumiai). This fact implies that irrigation ponds are common pool resources for small communities. If one investigates smaller irrigation ponds of beneficiary area less than two hectors, he/she is likely to find that much more percentage of ponds are owned and managed by small communities and that their autonomy is stronger than the cases of large ponds.

Irrigation ponds are often susceptible to natural decay, earthquakes and others. Proper management of irrigation pond is essential for ponds to be free from disasters like floods (Ito et al, 2005). Irrigation pond cannot be maintained without human cares, and such cares are taken by local people in each community. If properly managed, irrigation ponds serve as fishing spots, place for collecting bottom mud (fertilizer), and others. In such a sense, productive ecosystem can be formed around irrigation ponds.

6. Non designated hamlet roads and water courses

Japan is now in a critical situation in the sense that narrow roads and narrow water courses may become the targets for various kinds of development project. There have been many *ridou* (hamlet roads) and *suiro* (water courses) for the convenience of everyday life of people in each community almost everywhere in Japan. Hamlet roads and water courses are the non designated public properties to which the Road Law, the River Law, the Sewage Law, and other laws concerning with the management of public properties are not applicable.

6.1. Historical origin of hamlet roads and water courses

Hamlet roads had the origin in a governmental order of 1876. Before that time, all roads in Japan had been categorized by the numbers such as the first, the second, the third, and so on. The order of 1876 abolished such numbering of roads, and introduced a new system of state roads, prefectural roads and hamlet roads.

The Road Law enforced in 1919 recommended that important ones among hamlet roads were to be transformed into municipal roads. But many roads remained to be hamlet roads as before. In terms of ownership, the state owned such roads while they were not regulated by the Road Law. In this sense, hamlet roads have survived as convenient footpaths for local people until now.

The historical origin of water courses was almost the same as hamlet roads. They were treated as public lands exempt from levying land tax in the Meiji era. In many cases, water courses were small scale channels for agriculture. Each piece of colorful *kozu* (public land map) drawn by hands to cover all over Japan in the Meiji era showed hamlet roads and water courses by red and blue lines, respectively. Because of this, hamlet roads are alternatively called *aka-sen* (red line) while water courses called *ao-sen* (blue line). Lot numbers were not assigned to them.

6.2. Hamlet roads and water courses under the wave of decentralization

Heavy financial burden on the central government budget induced politicians and administrators in Tokyo to plan decentralization scheme of various kinds (Niikawa, 2001 and others). Japan has moved to devolve power from the central to local governments through the Decentralization Promotion Law approved in May 1995 and the Comprehensive Decentralization Law passed in July 1999. The later was enforced in 2000.

Until recently, hamlet roads and water courses were the properties of the state. But the Comprehensive Decentralization Law prescribed that such non designated public properties should be handed over to the municipalities (city, town, or village administrations) during the period of fiscal years 2000-2004.

According to the survey conducted by the then Ministry of Construction in 1975, the total length of hamlet roads was as long as some 1,458,000 kilometers, and their area totaled some 2,670 km². Adding the area of water courses and other non designated properties (such as embankments along water courses to this, total area of non designated public properties amounted to some 4,000 km², which is some 1.1% of the total land area of Japan. Now, such vast areas scattered in narrow, but long shapes are managed by the municipalities.

If municipalities want to sell them to private bodies, the purchasers can use them for all kinds of development purposes. Under this critical situation, new roles of them are expected to arise toward environmental conservation.

7. Case Study of Successfully Conserved Common Spaces

In what follows, we list some cases which show that commoners have been playing the roles of environmental conservation, or that common spaces have actually been functioning such roles.

7.1. Tree planting activity of fishery cooperative association in Hokkaido

There are two fishery cooperative associations (FCAs) in Bekkai Town, Hokkaido, facing the Sea of Okhotsk. They are Notsuke FCA and Bekkai FCA. Dairy farming is one of the major industries has in Bekkai Town. Accordingly, expansion of grassland was made by cutting trees. Pollution of rivers was also seen due to cattle's excrements. Such a situation was not favorable to the fisheries of the FCAs.

When a landowner showed his intention to sell the land of 250 ha near the shoreline in town in 1989, the Notsuke FCA decided to purchase it. When some

people purchase large plot of land, it is usually for the economic benefit from asset formation in Japan. In this case, however, the intention of the FCA was for environmental conservation. Fishermen thought that somebody else would buy that land for some kind of development if they did not buy it. Again in 2002, the Notsuke FCA purchased the land of 170 ha when the Forestry Cooperative Association of Bekkai Town asked the FCA if they had an intention to buy it for tree planting.

In this way, the Notsuke FCA started to own lands for tree growth. This FCA has had a direct tie with the consumers' cooperative association of the Tokyo metropolitan area called Palsystem. Since 2000, the consumers of Palsystem have started participating in the tree planting activities of the Notsuke FCA (Mitsumata et al, 2008, pp. 175-182).

7.2 Iriai-ken (right of common) as a bulwark against the influx of waste in Okinawa

In Kunigami Village, Okinawa Prefecture, the iriai-ken (right of common) has been helping to reduce waste intrusion. Kunigami Village is located in the northernmost part of the main island of Okinawa, and the fourth largest county in the prefecture (194.80 km²). About 80% of the land is covered with natural mountain forest called Yambaru Forest with rich biodiversity. Such a mountain forest makes it a representative mountain region in Okinawa.

According to the Census of Agriculture and Forestry in 2000, the area of artificial forest consisting of the Ryukyu pine, cedar, and she-oak is 2,897 ha, and the area of natural forest is 12,530 ha. The population as of 2002 is 6,020. According to the research of Hidetoshi Nakao, the iriai practice of regarding the forest as part of the village was highly respected by village residents. For example, even reforestation of the forest, which is directly managed by a village, required consent by the local village community. (Nakao 1973, p. 47).

In February, 1999, The Kunigami village administration drew up a plan to locate a municipal solid waste (MSW) landfill site in Hedo Ward in the northern most portion of the village. The residents of the Hedo Ward resisted the plan. The Kunigami Youth Environment Organization was formed in May, 2001, and they filed a provisional disposition with the Naha District Court to discontinue the construction of the waste landfill site (Urashima, 2002). Eventually, they came to understand that they had a right of common over the planned landfill site and that the right have long been perpetuated.

They vehemently protested that it was outrageous to establish a waste landfill site without any regard to the intentions of the ward residents who have the right of common over the landfill site land, even if it was owned by the village. However, the local administration forcibly started construction on September 20 and 21, 2001 without awaiting the district court's ruling. According to a news release, "They cut down 80% of the trees on the proposed disposal site, ripping some 60 older men and women from the trees to which they were clinging."

Ten days after the event, the Naha District Court acknowledged the iriai ken (right of common) of the ward residents and issued a provisional disposition order to prohibit the construction. The ward residents not only deployed a protest movement, but also implemented a "Zero Waste" project in order to review their waste disposal habits and won the suit. In order to avoid further conflict, the village administration did not bring an intermediate appeal (Miwa, 2007).

In this way, iriai-ken still exists in 21st century Japan as an effective means of protecting people's lives and natural environment.

7.3. Multiple functions of irrigation ponds

Needless to say, the role of irrigation ponds was irrigation of paddy rice field. But they can function in many ways if it is conserved as ponds instead of being covered by soil or concrete.

In Kyushu Island, we find one good example. Soda-no-ike pond is an irrigation pond located in Amagase District, Hita City, Oita Prefecture. Soda-no-ike pond, at an elevation of 700-800m, was made from damming the spring water from the surrounding mountains. Hence, the pond has become a wetland, with vegetation such as nymphaeales, water shields, trapa and a large variety of flowers, insects and wild birds that can be seen from spring through autumn. It is a perfect example of a wetland ecosystem and is a natural treasury of life. Primarily built for irrigation purposes, the pond is a place where people, even non-locals, come to relax and quietly enjoy the simple joys of nature.

In Koriyama City, Fukushima Prefecture in north eastern Japan, we find two good examples of well managed irrigation ponds appreciated as recreational spaces.

The one is Gohyakubuchi Park. It was built to be an irrigation pond, and cherry blossoms are in full bloom all over the whole neighborhood of the pond in April. It is a paradise of wild birds because the natural forests are breathing in Gohyakubuchi Pond and its surroundings. Reeds in the pond are suitable for the

nest of birds, so swallows come flowing in the summertime and ducks in winter.

Another one is Araiike Pond which was constructed as an irrigation pond in 1662. At that time, Koriyama was left to be a wild plain where no irrigation could be accomplished due to the lack of channeling facilities though it had many rivers. As Araiike Pond was full of water, people in the surrounding areas could utilize the water effectively. Now, its role as the source of irrigation water is diminishing, but it is becoming very popular among the city dwellers as a place of comfort and recreation.

7.4. Residents' movement of activating hamlet roads

Non designated hamlet roads and water courses now transferred into municipalities' hands can go either way; a way for environmental betterment or environmentally destructive way. We find a case of the former way Kamakura City in Kanagawa Prefecture.

Kamakura City is located in the middle of Kanagawa Prefecture. It is about 50 minutes away from Tokyo by the local train. Surrounded by mountains and hills in east, west and north, and by coastlines in south, Kamakura is a small city in terms of the area only 39.60 km². The population is not small and counts about 173,588 as of January 1, 2008.

In the south western part of Kamakura City, there is a district called which is quiet residential area. In June 1996, a plan to build 5 story flats in a site of this district was suddenly announced to the residents by a housing developer. The entrance to that site was only 4.27 m wide and there was neither space for car parks for the visitors nor access for fire engines should they be required. If the plan should proceed, the result would only tall building, noises, destruction of scenic, historical environment and others.

There arose a protest group among Oomachi residents and their associates in the city. During the time when such people were protesting the development plan, they came to know that there were other development plans in the city. Residents' movement spread over the city to preserve the scenic, historical environment of the city. Several new protest groups also were born and they appealed the city administration to stop such housing projects.

Protest groups eventually realized that hamlet roads were running here and there in the green district called Hiromachi. They argued that such hamlet roads are the property of the city, not to be privately held for development. Under the strong pressure of protest movement, the city assembly finally decided to

purchase the Hiromachi Green Area of 38.9 ha from the developers by spending public money of some eleven billion yen on October 2, 2003.

As a result, green area of some 60 ha including the land which the city purchased become open to everybody. Hamlet roads are remodeled as the “Warriors’ Roads” reflecting the history of Kamakura which was once the capital of Japan under the Kamakura Warriors’ Government in the medieval time. Volunteers among the city dwellers are now constantly clean the roads and their surroundings. Encircled by densely populated residential areas, the Hiromachi Green Area, with hamlet roads being comfortable footpaths, now stands as a lung of Kamakura City.

We find good example of actively using hamlet roads not only in Kamakura City but in Obuse Town in Nagano Prefecture. Obuse Town is located in the northern part of Nagano Prefecture and in the northeast section of Nagano Basin known as Zenkoji Plain. Its main industry is agriculture.

Obuse Town is unique in that it has chosen to be independent against the strong political move of “consolidation (merger) of smaller municipalities in the Heisei era” in the present day Japan. There may be many ways to achieve independence. In the case of Obuse Town, townspeople considered that independence should be materialized when they gain the ability to clearly imagine the future of town by understanding the exact state of the town including landscape and others which were endowed with the town historically and naturally. There also were some professors of Tokyo University of Science (TUS) who were interested in a new way of town building, called machizukuri. They thought that Obuse Town under the leadership of Ryozo Ichimura, the mayor, is a good place for experimenting machizukuri for independence.

Then, the Machizukuri Institute of TUS and Obuse Town was established on July 18th, 2005. “It has placed Obuse Town as a subject of survey and research. On the other hand, the participation of townspeople in research and discussions has changed the whole town into a university campus. This is the ideal state in which the Institute seeks: ‘University as a town, town as a university,’ the new ‘Machizukuri (town-building),’ and also the creation of a new place for education and research”(Website: Machizukuri Institute of TUS and Obuse Town).

In such a context, the TUS students and townspeople have made research of hamlet roads in the town. Some of them were almost forgotten even among townspeople. Then the institute is now attempting to find the ways of their active use. Most of the hamlet roads in the town are unpaved so that the combination of

the roads and their surroundings is a good material for ecological education by itself.

8. Concluding Remarks

Japan is now under the process of privatization and decentralization. But it is the financial matter of the central government. Politically, move for centralization rather has been seen. Consolidation (merger) of towns and villages always has been the important political issue of the central government since the Meiji era.

During the first consolidation move of 1889, 71,314 town and villages were merged into 39 cities and 15,820 towns and villages. Under the Towns and Villages Consolidation Promotion Law of 1953, some 10,000 towns and villages were reduced to 3,975 by 1956. Many large cities were created instead. There were 3,232 municipalities (cities, towns and villages) in 1999 in Japan. Their number decreased to 1,820 by April 2005.

Under such trend of domestic politics and globalized economy, common spaces can play significant roles of protecting small local communities from outer pressures and of conserving rich ecosystem against reckless development. In this paper, we considered the five major types of common spaces in Japan. Among them, only irrigation ponds were analyzed in detail and with a nation wide scale by an almost life long research of Uchida (2003). Other types of common spaces have been discussed, but they do not have a nation wide survey result thus far.

If we look at forests as example, village communities had been enjoying their rights of common to collect woods for fuel, brushes, grasses for manure and others. Despite of the fuel revolution, many forest commons have survived by the afforestation of conifer trees for logs in the future. Then, we ask: How are they surviving?

One of the methods for their survival was the formation of property wards. The mountain areas where villagers had been commonly using may turn into the public lands of a newly born town. If such is the case, they would not agree with the plan of towns and villages consolidation. Then the Meiji government made concessions with such villagers so that they could continue to use iriai forests as property wards, the name being different from before but the practice being the communally managed forest as before.

Recently, Izumi et al (2008) made the exhaustive survey of property wards all over Japan. This survey shows that 1,795 municipalities have property wards in

their administrative area, and that there are 3,704 property wards in total as of March 31, 2007. The types of properties which the property wards are diverse such as forests, cemeteries, irrigation ponds, grasslands, embankments, hot springs, and others. Then, Izumi et al (2008) made it clear that forests are predominant in property ward system. This laborious work can be seen as the beginning of the systematic study of common spaces in Japan after Uchida (2003).

Consolidation of local fishery cooperative associations (FCAs) into a large prefectural FCA also has been promoted by the fisheries administration. One has to be also cautious of the transfer of non designated public property from the state to municipalities. Facing such a critical age, research of common spaces including both seas and terrestrial lands in Japan has to be advanced much further.

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