

Insights and Applications

Effect of Instituting "Authorized Neighborhood Associations" on Communal (Iriai) Forest Ownership in Japan

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In recent years, changes in traditional communal (iriai) forest ownership have been taking place in rural Japan. One cause is the emergence of Authorized Neighborhood Associations introduced under the revised Local Autonomy Law, 1991. This study analyzes the effects of instituting multifunctional Authorized Neighborhood Associations on collectively owned forests in Japan. It examines the comparative institutional and policy characteristics of Authorized Neighborhood Associations and two other types of forest ownership, and presents findings based on case studies undertaken in Nagano Prefecture, Japan. The study reveals that hamlets are establishing Authorized Neighborhood Associations to acquire formal collective ownership of Iriai forests, adapt to present socioeconomic realities, and reduce bureaucratic transaction costs. Authorized Neighborhood Associations are clearly emerging as an attractive alternative to other formal and informal grass-roots forestry institutions.

Keywords Authorized Neighborhood Associations, Forest Producers' Cooperatives. Iriai forest and system, Iriai rights holders, Japan

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In rural Japan, people have collectively managed local forest resources since time immemorial using the traditional "Iriai" system that relies on informal regulation of forest management. Local Iriai rights holders living in a specific area extracted timber to build homes and collected firewood, fodder, dry grass, and twigs for fertilizing paddy fields and for charcoal making (Kainou 1943). Iriai forests have been changing in terms of use and ownership patterns, and have also declined due to a series of new forest policies and rapid economic growth that caused the boom and subsequent depression of domestic forestry (Kawashima et al. 1959 1961). Availability of substitutes for forest products and the government policies promoting tree plantations in the 1950s led to dramatic changes in forest composition from natural forests to tree plantations (Takei et al. 1989). Additionally, steep mountain slopes in Japan elevate domestic timber production costs, compelling wood-based industries to continue imports of lumber (Iland 1990; Seo and Taylor 2003). The corresponding decrease in silvicultural operations in unmanaged forests has led to weeds, insects, and environmental hazards such as soil erosion and vulnerability to land-slides and flash floods (Forestry Agency 2005; Seo and Taylor 2003).

Iriai forests in Japan can be recognized as a typical common-pool resource (CPR). Most characteristics of the traditional Iriai system correspond to the eight design principles (clearly defined boundaries, congruence between appropriation and provision rules and local conditions, collective-choice arrangements, monitoring, graduated sanctions, conflict-resolution mechanisms, minimal recognition of rights to organize, and nested enterprises) illustrated by long-enduring CPR institutions (Ostrom 1990, 90). More than 50 years ago these served Iriai forests in Japan well, but today the present decline in timber value, increased mobility of the population, and increased demand for other land uses have put Iriai forests at risk. However, the decline of the Iriai system in Japan should not be confused with the decline of CPR management systems in developing countries (for example, see Jodha 1986), where local people are dependent on them for their livelihoods. In fact, Japan has more parallels with the present condition of CPRs in Western Europe, as rural areas are experiencing significant changes and, in general, there is a changing economic significance of natural resources. For example, thecrofting common grazings in Scotland are "under major pressure from the economic restructuring, socio-cultural recomposition and changing policy context that characterize contemporary rural change" (Brown 2006, 109).

Despite the decline in the Iriai system and the propensity of unmanaged Iriai forest, local people continue to value such forest as CPR. With the changing forestry scene in Japan, ownership has become the most crucial factor in conserving Iriai forests. There has been a new twist in Iriai forest ownership since the early 1990s when local people started to establish Authorized Neighborhood Associations (ANAs), a formal local institution with corporate status. ANAs established under the 1991 revised Local Autonomy Law have had a significant impact on Iriai forest ownership. This law gives Iriai rights holders the opportunity to become legal owners of Iriai forests and to maintain and improve the traditional forest rights. This is a voluntary change independent of forest policies. A number of studies have identified the causes of CPR decline and shown that resource users often create institutional arrangements to manage them and transform weak institutions into stronger ones in order to adapt to changes and uncertainties (e.g., Armitage 2005; Ostrom 1992; Ostrom et al. 2002). The change in Iriai forest ownership in Japan that we describe in this study may well be such an example.

Studies have documented the dramatic change in Japanese forestry before and after World War II (e.g., Kainou 1943; Kawashima et al. 1959 1961). However, little research has focused on the socioeconomic and policy aspects of Iriai forests since the late 1980s. Moreover, no policy development process has taken place with respect to the Iriai forests in recent years. There are a few studies (e.g., Nakagawa 1998) on the influence of ANAs on the forestry sector, yet institutional and policy analysis is not enough. Research evaluating the role of ANAs in the forestry sector in Japan would help to envisage new forest policies to manage Iriai forests.

This study analyzes the effects of ANA emergence on Iriai forest ownership in Japan. The basic research question is: Why are Iriai rights holders increasingly converting to ANAs? To answer this, we have first undertaken an institutional and policy analysis of the formally established ANAs, the government-sponsored Forest Producers' Cooperatives (FPCs), and the traditional Iriai system. This analysis helps to weigh the advantages and disadvantages of institutional change. There-after, in order to comprehend why local communities are shifting to ANAs, we have provided evidence from case studies conducted in Iiyama City and Sakae Village in Nagano Prefecture in Japan.

Changes in Iriai Forest Ownership since the Meiji Restoration

According to the still-effective Civil Code of 1896, there are two types of Iriai rights. In one type, a group of local people have collective-use rights over Iriai forest owned by individuals or other entities; alternatively, a group of local people have exclusive ownership and use rights. Iriai rights cannot be formally registered with the government but the rights exist irrespective of the formal/registered owner of the forest-land. Iriai rights are effective as long as practices of collective forest management like planting, thinning, pruning, and weeding continue.

Next, we explain how the various types of Iriai forest ownership have emerged. This analysis is based on studies undertaken by Handa (1990) and Kawashima et al. (1959 1961). Iriai forests have been modernized in three general ways: national, municipal, and private forest ownership. The changes in ownership started with nationalization of Iriai forest under the demarcation of national and non-national forests in 1874 during the Meiji era; non-national forests include those owned by prefecture/municipality, individuals, and associations. The government sought to erode Iriai rights and establish a new ownership system to increase land tax revenue. Subsequently, many Iriai forests were nationalized, while others were integrated with municipal forests. There were two major consolidations of municipalities in the 1880s and 1950s. These enabled local government to appropriate forests previously owned by villages and towns, most of which were Iriai forests. But many villages and towns rejected the merger because they did not want to part with their Iriai forests. This compelled the government to allow villages and towns to maintain their forest rights by establishing a special ward or financial ward (*Zaisanku*). Furthermore, from 1910 to 1938, the national government promoted a program to unify Iriai forests, including hamlet forests, into municipal forests. As an outcome, substantial proportions of Iriai forests were reclassified under the municipal forest category.

Groups of Iriai rights holders who were not willing to hand over their forests to national or local governments resorted to other measures to retain Iriai forest ownership. In such cases, various bodies such as associations, public corporations,

individuals, groups of individuals, shrines, and temples were recognized as de jure owners. For administrative purposes, such Iriai forests are categorized by the state as "hamlet forests" (*huraku-ruu-rin*), which are de jure private forests. But in reality these forests are de facto Iriai forests that are yet to be modernized. Hereafter, Iriai forest means a "forest yet to be modernized" in terms of ownership and rights.

In 1966, a privatization policy was implemented as another alternative to the modernization of national and municipal Iriai forest ownership. This was facilitated by a new law enacted to modernize Iriai rights. Under this law and the program promoting modernization of Iriai forest (hereafter referred to as the "modernization program"), a number of FPCs were established to modernize Iriai forest ownership in order to facilitate joint forestry operations for efficient forest production.

The changes in Iriai forest ownership were not without problems. These arise mostly in Iriai forests that have yet to be modernized because they cannot be registered under the names of Iriai rights-holder groups. Since a group without corporate status cannot lawfully register the forest, sometimes the forest is registered under the name of a representative. However, in the case of registration by one or more individuals representing a group, if a registered individual moves out of the locality or sells forestland unaware of the fact that she or he is the registered owner, there is a risk that other rights holders will lose their stake in the forestland. The implications are the same when a registered owner dies and her or his children are not aware of the fact that their parent was a representative owner for the entire group. On the other hand, when a group of Iriai rights holders establishes an FPC, they can register forestland in their names with corporate status. But there remain some practical problems due to differences between centralized FPC regulations and the local scenario.

The Emergence of Authorized Neighborhood Associations

In addition to FPCs, ANAs have emerged as popular new local institutions across Japan. ANAs enabled erstwhile informal neighborhood associations constituted by local communities to obtain corporate status for the first time since World War II and hence possess the common property of local communities. By 2002, there were 22,050 ANAs in Japan, constituting 7.47% of all neighborhood associations (Government of Japan 2004).

More Iriai rights holders are starting to register their forestland as ANAs. Despite the importance of ANAs in forest management, forest policymakers have ignored their relevance, as discussed later. However, the reality is that Iriai rights are relevant in case forest owners switch to ANAs. This is unlike a change to FPCs, which results in a termination of Iriai rights.

Differences in Coexisting Institutional Arrangements and the Implications of a Changeover

The Iriai system, FPC, and ANA are the three different and coexisting institutional arrangements affecting Japan's forestry sector. All three were instituted based on the principle of collectives. However, in terms of their objectives and legal backgrounds, they differ significantly. The Iriai system is rooted in traditional customs, whereas FPCs and ANAs are formal, legally binding organizations instituted under 20th-century laws. Legally supported corporate ownership is not possible in the Iriai

system, while it is in the FPCs or ANAs. This is the major reason why local people are abandoning the Iriai.

The basic objective of FPCs is joint forest production and management by members employing their own resources, whereas ANAs are a platform for local people to improve their lives by dealing with various local issues. Around 80% of FPCs were established after the implementation of government policies promoting forestry-sector modernization, mostly during the period from 1966 to the 1980s (National Federation of Forest Owners' Cooperatives 1966 2002). One goal of this modernization program was the dissolution of trial rights, whereas the process of establishing ANAs is driven solely by local initiatives and there are no government policies or incentives to promote their establishment.

Further, there are many legal differences between FPCs and ANAs. FPCs fall under the jurisdiction of prefectures, whereas ANAs come under the jurisdiction of municipalities. In the case of FPCs, their setup and annual report to the prefecture involve much paperwork and a high transaction cost. On the other hand, the formation and administration of ANAs are not complicated. The basis for membership is also different. FPC membership depends on the investment of forests as in-kind capital made by an individual forest owner living in the locality, whereas ANA membership is voluntary. In comparison, under the Iriai system, only traditional rights holders are members.

Institutional differences are also reflected in forest management regulations. Only FPCs have a detailed and bureaucratic framework defined by law requiring, for example, that all members are active participants. The benefit-sharing arrangement also varies. In the Iriai system, this is defined by custom and varies from place to place, but FPC benefits are shared according to the investment made and the forest management activities undertaken by each member. By law, ANA benefits cannot be divided on an individual basis; benefits are meant for collective consumption. Another difference is in the corporate tax status. The Iriai system pays no corporate tax due to its non-corporate status, but FPCs and ANAs have corporate status and hence do have to pay. However, ANAs are exempted from paying if they make no profit.

There are important implications in changing from one institutional arrangement to another: from Iriai to FPC, Iriai to ANA, and FPC to ANA. The main advantage of changing from Iriai to FPC is that a group of local people can collectively register and own forestland with corporate status. After getting corporate status, it becomes much easier to set up protection forests for soil and water conservation or benefit-sharing arrangements from tree plantations between registered forest owners and investors. Aside from these benefits, however, there are also some problems; e.g., FPC members have to pay annual corporate tax in addition to land tax.

The advantages of changing from Iriai to ANA are more or less the same as when changing from Iriai to FPC. The main disadvantage is that the one-time cost of registering forestland under ANA is high (JPY 100,000 to JPY 3,000,000) when there is a large forest area and a number of registered forestland owners under Iriai system. On the other hand, ANA allows a free ride for new arrivals, who enjoy the same privileges from the forest as those of Iriai rights holders.

The main advantage of converting from FPC to ANA is the reduction of transaction costs. This is because the working norms of ANAs are simple compared to FPCs. Further, an ANA does not pay corporate tax as it usually makes no profit.

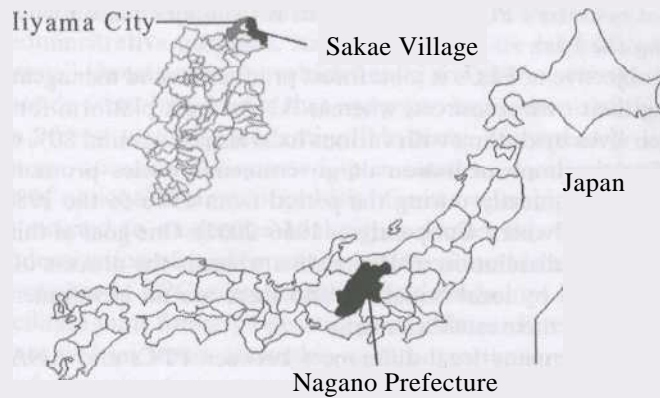


Figure I. Location of case study sites in Japan.

Case Studies

For our case studies, we first selected Nagano Prefecture because of its large proportion of Iriai forest (Government of Japan 1960). Furthermore, modernization took place on a large scale in Nagano because of past institution of FPCs. In the second stage, Iiyama City and Sakae Village in Nagano Prefecture (Figure 1) were chosen as there are relatively more ANAs in Iiyama and FPCs in Sakae. Finally, we selected nine hamlets (out of 119) in Iiyama City and six hamlets (out of 31) in Sakae Village for detailed case studies. The number of hamlets chosen for this study was constrained by limited resources. The analysis presented in this section is based on secondary data collected from local government and primary data based on interviews with key informants belonging to Iriai groups and forest-related institutions.

Some characteristics of case study sites are shown in Table 1. Iiyama City, with a population of around 25,000, is located in the north of Nagano Prefecture. It has mountainous forests constituting 60.3% of the total geographical area (20,232 ha). The main occupation of local people in Iiyama is rice farming rather than forestry, which has been reduced to a side business. Sakae Village, adjoining Iiyama, is a more mountainous forest area with a population of around 2,500 people. Forestland constitutes 87.1% of the total area (27,151 ha) in Sakae. After the war, some large private companies were involved in timber production from the natural forests in Sakae. After felling, local and national governments, together with local people including Iriai rights holders, planted new trees. Thus, local people in Sakae became involved

Table I. Characteristics of case study sites

Characteristic	Iiyama city	Sakae village
Total population	25,205	2,482
Total number of households	8,159	924
Total land area (ha)	20,232	27,151
Total forest area (ha)	12,205	23,662
Ratio of forest area (%)	60.3	87.1

Note. Source: Iiyama city office and Sakae village office.

Table 2 Institutional situations and sampling units in case study sites

Situation	Iiyama city	Sakae village
Iriai system to Authorized Neighborhood Associations"	42 (4: Narazawa, Ookurazaki, Kuramoto, Kosuge)"	3 (3: Hirataki, Koakasawa, Gohougi)
Forest Producers' Cooperatives to Authorized Neighborhood Associations"	3 (3: Nishiootaki, Kamisakai, Nukui)	0 (0)
Maintaining current status as Iriai system`	50 (2: Nakaya, Houji)	19 (2: Niteno, Uenohara)
Maintaining current status as Forest Producers' Cooperatives'	0 (0)	7 (1: Tsukioka)

"Categorized under institutional change.

`figures/names in parentheses are sampling units/hamlets.

`Categorized under maintaining current status.

with forestry, and they still collect mushrooms, edible wild plants, and firewood from forests. In most communities in Iiyama and Sakae, the population is declining to varying degrees. There are a few new arrivals and they are usually accepted into the community.

Out of the 119 hamlets in Iiyama City, 95 hamlets own Iriai forests. Forty-five hamlets have changed their institutional profile to ANAs, whereas the rest of the hamlets (50) have formed neither FPCs nor ANAs. There are three hamlets that had earlier formed FPCs, but later changed the legal status to ANA. Sakae Village, on the contrary, has a different forest profile. Out of the 31 hamlets, 19 have maintained the Iriai forest; two hamlets do not own forest. There are seven FPC's, none of which have changed their legal status to ANA. The remaining three hamlets have switched to ANAs. We have categorized four situations in which grass-roots institutions are involved in Iriai forests in Iiyama and Sakae, and accordingly selected the sampling units for detailed study by ensuring representation of the entire area (see Table 2).

Factors Affecting the Establishment of Authorized Neighborhood Associations

All the hamlets in Iiyama and Sakae that have established ANAs sought corporate status, which was not possible under the Iriai system. There were also other specific factors that led to a change from the Iriai system to ANA. For example, in Kuramoto hamlet, the need to change the registration of common property emerged after local people bought the land outright to build a community hall. Although the community did not have corporate status, members wanted to register the land collectively. In other cases such as Narazawa, Ookurazaki, Kosuge, and Gohougi hamlets, one of the rights holders learned about ANAs from adjoining areas and city/village offices. Based on his recommendation, communities from these hamlets agreed to register their common property as an ANA. Although new arrivals might potentially have caused problems, in fact there has been no conflict observed between rights holders and new arrivals because of the relatively small number of new people and the lack of profit from the forestland.

The reason for the institutional change of FPC to ANA in Nishiootaki, Kamisakai, and Nukui hamlets lies in the process of establishing FPCs. The main objective of establishing FPCs was to clarify the rights of all stakeholders in order to facilitate the purchase of some Iriai forestland by the local government for road construction and setting up government-managed farms. But the rights holders had no interest in timber production under the FPC. However, the stakeholders in all three FPCs had to pay annual taxes ranging from JPY 160,000 to JPY 400,000 to the local government, as well as having excessive paperwork. The respective chiefs of the three communities also commented that this process was quite a financial burden for no profit. After the stakeholders found out about the ANA institution, they dissolved the FPCs to establish ANAs to overcome these problems.

The Nagano prefectural government, municipalities, and forest owners' cooperatives are also affecting the establishment of ANAs. One of the major responsibilities of the prefectural government in the forestry sector, particularly in the context of Iriai forests in recent decades, has been to establish FPCs and advise them on forest policies. However, in Nagano Prefecture, seven FPCs out of 156 have already dissolved and changed into ANAs, and 87 out of the 149 existing FPCs are losing money. The institutional change from FPC to ANA is inevitable given these economic problems. But the prefectural government does not recognize the establishment of ANAs as a viable means of managing Iriai forests, favoring the FPC as an institutional tool to modernize Iriai forests despite local preferences. This suggests a need to review current forest policies, particularly those concerning FPCs.

The municipalities that grant legal status to ANAs support local communities to varying degrees. Almost half the municipalities in Nagano Prefecture have no ANAs within their administrative boundaries. This would imply a lack of dissemination of information to local communities.

Forest owners' cooperatives have also influenced the formation of ANAs. Forest owners' cooperatives are another type of grass-roots forestry institution in Japan comprising forestland owners who undertake common forestry operations such as cutting trees, thinning, and planting. The forest owners' cooperative that looks after Sakae Village actively discourages change from FPC to ANA because ANAs are not designed for forestry. However, the forest owners' cooperative in Iiyama City encourages institutional change from FPC to ANA to avoid the annual corporate tax payments to municipalities and the prefecture.

Reasons for Maintaining the Status Quo

There are also cases where hamlets still maintain the status quo of their Iriai forests. Hamlets sought to establish ANAs but were not successful. For example, Nakaya hamlet has been hindered by the lack of local leadership and its aging population. There is no one able to do the paperwork necessary to establish an ANA. Iijouji hamlet cannot establish an ANA due to lack of funds. And as of now, the rights holders have no immediate need to break up the status quo of its Iriai forest. They do not stand to lose the forest and hence have no interest in changing it to an ANA. Meanwhile, in Niteno and Uenohara hamlets, all the rights holders are well-informed and continue to use the Iriai forest for collection of nontimber forest products.

In Sakae Village, all seven FPCs have maintained the status quo, mainly because the large profit surpluses from past forestry operations are used to pay annual taxes. There is continuing interest in forest management with the expectation of profits

from timber in the future. In Tsukioka hamlet, FPC members even undertake thinning by themselves every year. It is rational for FPCs in Sakae to maintain the status quo as timber production is generally not a priority under the ANA institution.

Conclusion

The emergence of the Authorized Neighborhood Association (ANA) institution in Japan, made possible by the revision of local autonomy policy, has helped to clarify forest rights and registration of forestland ownership. This implies there is no need to change the registration of an Iriai forest time and again, and also eliminates problems associated with variations in Iriai forest ownership. In other words, the ANAs are facilitating conservation of collective trial forest ownership. ANAs are emerging as an alternative institution in situations where trial forest usage has declined precipitously over the years or where modernization was not implemented for reasons such as a small Iriai forest area, and where hamlets preferred to stay with Iriai forest management rather than instituting Forest Producers' Cooperatives (FPCs). The ANA institution is also emerging as an alternative to FPCs. Unlike FPCs, ANAs are easy to establish and involve fewer legal regulations and administrative complexities, while at the same time, like FPCs, they facilitate the corporate status that suits present socioeconomic conditions. The postwar FPC institution, which was meant to modernize Iriai forests, has lost significance in today's forestry market in Japan because timber imports have undermined domestic timber production.

However, the ANA is only a stop-gap institution, and it has some drawbacks too. In many cases, an ANA is successful in overcoming problems associated with Iriai forest registration, but it is unable to completely cope with the problems arising from Iriai rights. Unlike the FPC, an ANA by definition does not dissolve Iriai rights because this depends on the preferences of rights holders. In most cases, ANAs ignore Iriai rights and hence the problems associated with them remain. For example, there might be conflicts between traditional Iriai rights holders and new arrivals without trial rights when a collective decision is required in the future to get substantial income accrued to ANAs from the sale of timber. Although there is not yet any firm evidence to substantiate these fears, policy intervention for the future must clarify the status of Iriai rights under the ANA, i.e., whether Iriai rights should be continued or not.

The government of Japan needs to recognize the growing influence of ANAs in the forestry sector and to formulate appropriate forest policies to deal with this new situation. It is expected that the ANA institution will expand and take over the role of FPCs in Japan as most of the FPCs are losing money (National Federation of Forest Owners' Cooperatives 1966 2002). Another policy measure could be to prevent the breakup of FPCs by exempting them from paying corporate taxes, and also easing state-administered regulations. It is important to review the FPC institution, too.

Finally, we conclude this study from the point of view of common-pool resource (CPR) management. The trial system in Sakae Village, where traditional use of trial forests still continues, includes all of Ostrom's (1990) eight design principles for long-enduring CPR institutions. This is the reason that a few hamlets have established ANAs in Sakae. On the other hand, the Iriai system in Iiyama City has only some of the eight design principles while others are losing relevance. The design principles of collective-choice arrangements, conflict-resolution mechanisms, minimal

recognition of rights to organize, and nested enterprises hold relevance because collective activities other than the forest management are taking place such as management of irrigation canals and community halls. However, the design principles of clearly defined boundaries, congruence, monitoring, and graduated sanctions for a robust Iriai system in Iiyama City are losing relevance because the rights holders do not use Iriai forests as they did in the past. This holds true specifically in the case of clearly defined boundaries of the rights holders, as switching from the Iriai system to ANA results in the inclusion of new arrivals. In view of declining Iriai forests in Japan, as some of the eight principles become increasingly less relevant, it is important for local people to retain their traditional forest rights without too many transaction costs or complex regulations. The voluntary change of Iriai rights holders to ANA underlines the need to review this situation.

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