

Outline of Systems to Maintain and Improve Forests' Functions for Public Benefit

- the Protection Forest System and the Forest-Land Development Permission System-

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Introduction

Japan is a volcanic island country, so it is topographically steep or mountainous, including many high peaks and volcanoes; its geological structure is very fragile. Moreover, it is hit by typhoons and has localized downpours occurring every year. Thus, it is subject to intense disasters such as floods and landslides. As a result, controlling these disasters to protect people's lives is very important in Japan.

In climate, it extends from the subtropical to the sub frigid zones. But the greater part of the country belongs to the temperate zone. Four seasons are clearly distinguished, and there are rainfalls throughout the year although they are more or less different from month to month. The precipitation is about 1,800 mm average a year, and so the vegetation is rich. For example, the 70% of Japan's total land area is covered with forests.

In addition to wood productions, forests have various functions such as conservation of land and water resources; accommodation of recreational and educational activities, Japan has two major systems which are to maintain and improve these functions based on the Forest Law; the Protection Forest System and the Forest-land Development Permission System.

The chief aim of the protection forest system is to maintain and maximize forests' functions for public benefit in order to secure people's lives. Under the protection forest system, forests which are especially required to perform these functions are designated as protection forests and they are conserved and managed properly to maximize these functions.

On the other hand, the Forest-land Development Permission System is applied to protect the functions of forests which are not designated as protection forests from excessive development.

The origin of the protection forest system dates back to the Middle Ages, when forests were cut down with increase of the population and development of industries, and consequently floods and droughts were frequently occurred. So, people developed recognition that forests would have functions of fostering water resources and preventing landslides, The importance of protection or creation of forests were taken into account and, therefore, various methods were carried out. For instance, felling forbidden forests for conservation of water resources or beautiful scenery were already seen by the 1600's, In Tokugawa era (1603-1867), several kinds of restriction forests such as felling forbidden forests for headwater conservation were designated by various feudal lords.

In 1897, the Forest Law was enacted and it established the protection forest system as a national rule for the first time. Since then, the protection forest system has been carried out within the Forest Law and basic ideas of it have been slightly changed although the Forest Law itself has been greatly reformed.

Today, forests designated as protection forests are up to 8.6 million ha, which corresponds to 34% of the total forest area in Japan (as of March 1997).

Forests designated as protection forests have been maintained and managed adequately. However, after entering the 1970's, land development such as golf links construction rapidly increased in forests other than protection forests. Sometimes excessive development did harm to forests' function for public benefit and had a negative impact on local communities. For this reason, in 1974, the Forest Law was partially revised and the forest-land development permission system was established in order to control random development in private forests.

1. Protection Forest System

(1) Purpose of protection forest system

The protection forest system focuses on the forests' functions for the public benefit such as conservation of headwater, prevention of disaster and improvement of living environment. Forests which are required to demonstrate such functions are designated as protection forests by the Minister of Agriculture, Forestry and Fisheries or prefectural governor. And they are to be preserved and managed adequately to maintain and promote anticipated functions.

(2) Types of protection forests

Protection forests are classified into 17 types according to purpose of designation (Table 1).

(3) Area, of protection forests

Total area of protection forest as of March 31, 1996 is 8,572,185 hectares, 4,080,928 hectares of which are in national forest and 4,491,257 hectares are in private forest (Table 2).

Meanwhile, by type of protection forests, protection forest for headwaters conservation accounts for vast majority (72.4%), followed by protection forest for soil run-off prevention (23.0%). When combined, these two types of forests account for 95.4% of the entire protection forests (Table 2).

Table 1

Purposes of Designation, Types, Functions and Authority of Protection Forest

Purposes of designation (Section 1 of Article 25, Forest Law).	Types of protection forest	Anticipated functions of forest	Authority
Subsection 1 Cultivation of headwater	(1) Protection forest for headwaters conservation	To maintain and increase the functions that promote underground permeation of rainfall and allow the detained water to flow gradually, thereby contributing to prevention of flood and securing of water resources	Minister of Agriculture, Forestry, and Fisheries
Subsection 2 Defense against washout of sand and soil	(2) Protection forest for soil run-off prevention	To prevent erosion of top soil and washout caused by shock of raindrops and running of surface water with forest tree and ground coverings	
Subsection 3 Defense against collapse of sand and soil	(3) Protection forest for landslide prevention	To prevent collapse of forest-land with the binding and fixing effect of forest tree roots and protect houses, farms, roads and other public facilities	
Subsection 4	(4) Protection forest for shifting sand prevention	To prevent shifting of sand by covering coastal sand areas and protect farm houses and other houses that are located behind it	Prefectural governor (Minister of Agriculture, Forestry and Fisheries in the case of national forest)
Subsection 5 Defense against damages from wind, water, tide water, drought, snow and fog	(5) Protection forest for windbreaks	To prevent damage from strong wind by alleviating wind velocity with forest zone	
	(6) Protection forest for flood damage prevention	To prevent and mitigate damage by reducing flood energy and blocking driftwood and drift rocks with forest zone.	
	(7) Protection forest for tidal wave and salty wind prevention	To protect farm and houses that are located behind it by mitigating the energy of tidal wave and high tide or by capturing salt contained in air with forest zone.	

	(8) Protection forest for drought prevention	To contribute to preservation and securing of local headwater with irrigation ponds
	(9) Protection forest for snow drift prevention	To prevent damage from snow such as shifting and drifting of snow
	(10) Protection forest for fog inflow prevention	To prevent damage on farm crops by obstructing shifting of sea fog to inland area and capturing fog particles with forest zone
Subsection 6 Prevention of risk of avalanche or rock fall	(11) Protection forest for snow avalanche prevention (12) Protection forest for rock fall prevention	To prevent occurrence of avalanche, or prevent and mitigate damage from avalanche that has occurred To bind and fix sand and soil with forest tree roots, and obstruct and mitigate falling of rocks with trunks
Subsection 7 Prevention of fire	(13) Protection forest for fire prevention	To form fire resistant forest zone to prevent spreading of forest fire
Subsection 8 Fish breeding	(14) Protection forest for fish breeding	To contribute to inhabitation and breeding of fish by projecting shadow on water surface, supplying nutrients and preventing contamination of water
Subsection 9 Preservation of navigation landmarks	(15) Protection forest for navigation landmarks	To secure safe navigation by becoming the landmark of fishing boats that are navigating along the coast
Subsection 10 Public health	(16) Protection forest for public health	To contribute to public health by preserving and creating the living environment through alleviation of climatic conditions, prevention of noise and filtering of dust as well as by offering the place for forest recreation.

<p>Subsection 11 Preservation of the scenic beauty of scenic spots and places of interest</p>	<p>(17) Protection forest for scenic site conservation</p>	<p>To preserve the scenic beauty of scenic spots and places of interest</p>	
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Table 2

Area of protection forests by type (as of March 31, 1996)

(unit: hectares)

By ownership Type of protection forest		By ownership			Percentage against the entire protection forest (%)
		National forest	Private forest	Total	
1	Protection forest for headwater conservation	3,197,727	3,005,369	6,203,096	72.4
2	Protection forest for soil run-off prevention	740,023	1,231,184	1,971,207	23.0
3	Protection forest for landslide prevention	13,192	33,840	47,032	0.5
Subtotal of protection forests (ITEM 1-3)		3,950,942	4,270,393	8,221,335	95.9
4	Protection forest for shifting sand prevention	3,995	12,230	16,225	
5	Protection forest for windbreaks	23,056	32,201	55,257	
6	Protection forest for flood damage prevention	91	621	712	
7	Protection forest for tidal wave and salty wind prevention	4,948	6,978	11,926	
8	Protection forest for drought prevention	16,149	25,593	41,742	

9	Protection forest for snow drift prevention	-	7	7	
10	Protection forest for fog inflow prevention	8,742	46,764	55,506	
11	Protection forest for snow avalanche prevention	3,087	13,922	17,009	
12	Protection forest for rock fall prevention	437	1,277	1,714	
13	Protection forest for fire prevention	0	332	332	
14	Protection forest for fish breeding	5,490	20,490	25,980	
15	Protection forest for navigation landmark	54	290	344	
16	Protection forest for public health	56,509.	52,677	109,186	
17	Protection forest for scenic site conservation	7,428	7,482	14,910	
Subtotal of protection forests (ITEM 4-17)		129,986	220,864	350,850	4.1
Total		4,080,928	4,491,257	8,572,185	100.0

(4) Authority for designation

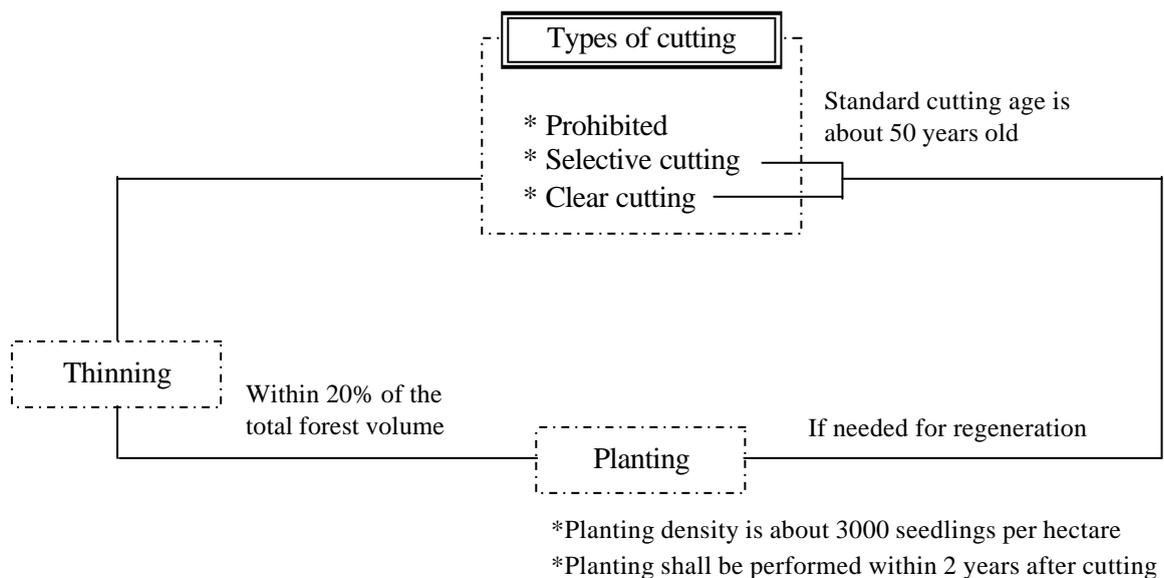
The aim of protection forest system can be achieved through regulation: the essential point is regulating personal right regarding utilization of the forest for public benefit. So, designation of protection forests must be valid and accountable from following viewpoints: the purpose of designation; the necessity of forests' function which could be demonstrated by the designation; and, the beneficial objects from the designation. In order to designate fairly, hearing public opinions is provided as a necessary process in the Forest Law.

The authority for designation lies in the Minister of Agriculture, Forestry, and Fisheries in case in national forests or for protection forests for headwater conservation, soil run-off conservation, and landslide prevention. For other protection forests, each prefectural governor has the authority for designation (See Table 2).

(5) Management guideline on protection forests

To demonstrate the functions according to their designated purposes, it is necessary to ensure adequate forest management. For this reason, designation of protection forests determines not only the area and type of protection forests, but also the management guideline for maintaining and promoting the functions of protection forests. The management guideline includes; types of cutting; cutting age; limits of cutting volume; and methods of planting for regeneration such as planting density, period, and species.

Management Guideline on Protection Forests



(6) Regulation on protection forests

Basically, felling, damaging standing trees, pasturing livestock, collecting undergrowth, fallen leaves and fallen branches, digging up rocks and tree roots, and other acts of altering the land character is prohibited in protection forests in order to maintain the anticipated functions. Those who wish to do so will have to obtain a permission from the prefectural governor. As for felling, permission must be given within the regulation by the management guideline.

(7) Administrative disposal dealing with violators

As mentioned above, felling or alternating the land character in protection forests requires permission. If violations against this regulation are found, prefectural governor can order the offensive to stop the act, to reforest the site or to recover the original conditions.

(8) Compensation for loss

For private forest owners, if their forests are designated as protection forests, their forestry activities are to be limited. This means the designation might violate their private property. So the government must compensate their economic loss according to the provision of the Forest Law.

The compensation is made for the loss which resulted from designation as protection forests, and it is made for the standing trees, which are older than standard cutting age, in protection forests which are prohibited cutting or designated to cut selectively by the management guideline.

The compensation is made by money and it is estimated at an amount equivalent to the interest (5% a year) of frozen appraisal of standing trees in the protection forests.

(9) Benefit for forest owners

In addition to direct compensation for loss, there are some benefits for owners of protection forests. These are not only kind of compensation for their regulated property in a broad sense, but also incentives for promoting designation of protection forests. They are as follows:

- Exceptions of taxation; taxes such as property tax and real estate acquisition tax are not imposed; taxes such as inheritance tax and income tax are reduced.
- High rate subsidization of afforestation subsidy
- Financing at low interest from Central Cooperative Bank for Agriculture, Forestry, and Fisheries.

(10) Measures for improving protection forests

(a) *Designated area for forest conservation projects*

As mentioned above, protection forest system is a regulation system, aiming to contribute to public benefit through preserving forests and scouring adequate management of them. In short, protection forest system is based on regulation but not on performing conservation works such as afforestation and restoration of devastated area.

However, to improve protection forests and promote forests' functions especially for headwater conservation and disaster prevention, it is necessary to carry out conservation work projects in addition to the regulation system. Thus, the Minister of Agriculture, Forestry, and Fisheries or prefectural governors can designate the area where to carry out forest conservation projects in case it is necessary to promote forests' functions. Forests in such designated area will be managed as protection forests later.

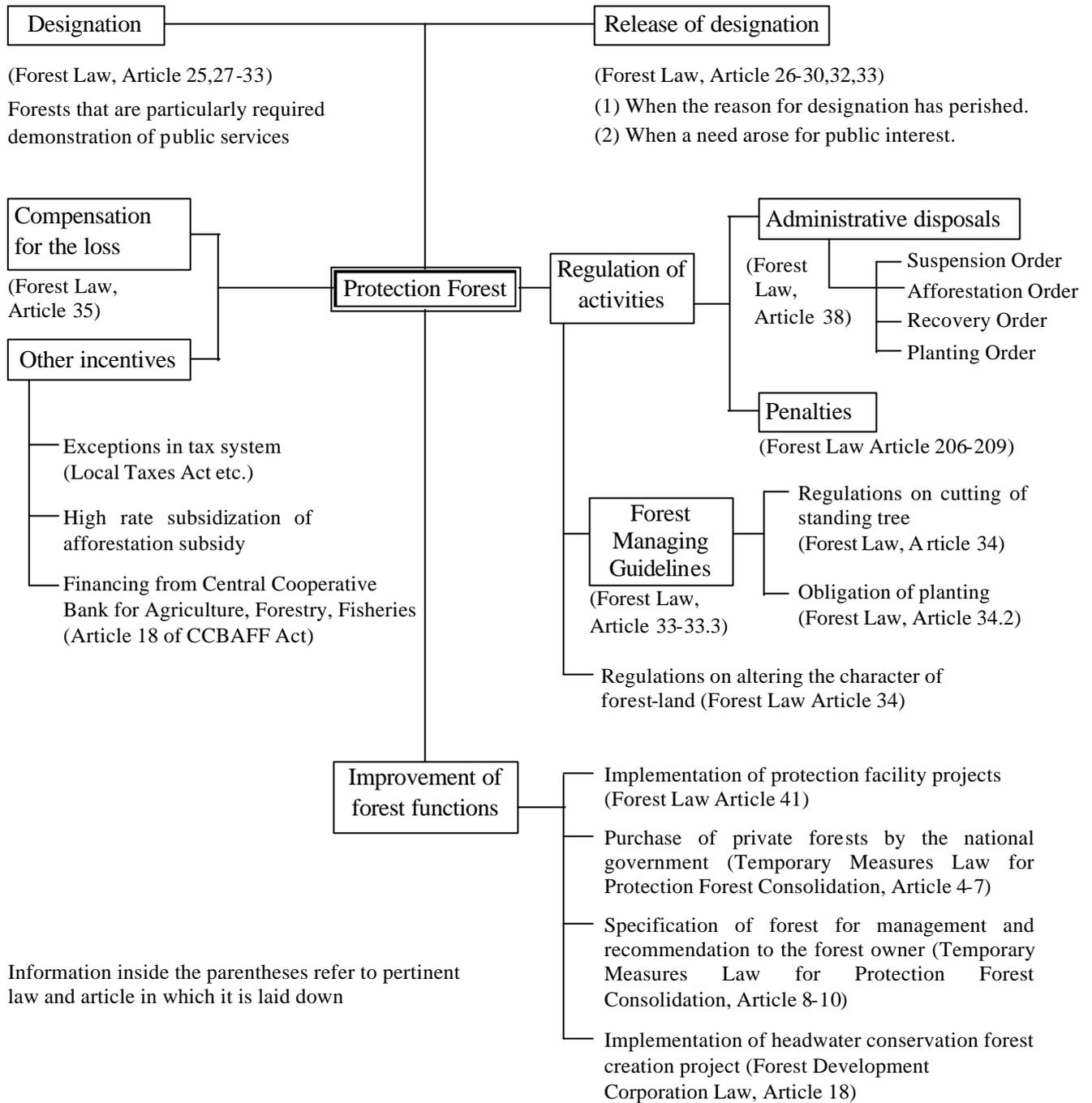
(b) *Protection forest improvement plan*

As for the protection forest system, the basic framework is provided in the Forest Law. However, over cutting of trees, digging of tree roots and development of forest land that occurred during and after the Second World War resulted in devastation of national land, and therefore, frequent occurrence of intensive disaster, due to storm and heavy rain. And demand for improvement of protection forests to prevent disasters grew urgently after intense disasters occurred one after another in the western part of Japan in 1953. For this reason, the Temporary Measures Law for Protection Forest Consolidation was enacted in 1954 for the purpose of improving protection forests so as to contribute to preservation of national land. In this law, the purchasing system of protection forests by the Government and preparing the protection forest improvement plan by the Minister of Agriculture, Forestry, and Fisheries were provided.

Protection forest improvement plan is the plan which establishes the measures that need to be taken by the Government in an urgent and systematic manner, and the national policy, concerning improvement of the protection forest. Its unit is a basin, from the upstream to the mouth of the river regardless the administrative boundaries, and it is prepared for every 218 basin in Japan. It is a decade long plan, and now, the 5th plan (from 1994 to 2003) is being carried out. The chief aim of the 5th plan is as follows:

- to optimize the disposition of protection forests such as for soil run-off prevention to deal with frequent occurrence of disasters
- to designate protection forests for headwater conservation and drought prevention to secure water resources for drinking water
- to promote designation of protection forests for public health to preserve life environment

Organization of Protection Forest System



2. Forest Land Development Permission System

(1) Purpose of the system

The chief aim of the forest land development permission system is to control excessive and disorderly development in private forests which are not designated as protection forests and, therefore, contribute to maintaining public benefits. Development actions can be checked and kept in order through permission by prefectural governor.

(2) Forests subject to the permission system

Forests which are subject to forest land development permission system are private forests that are included in the area of the regional forest plan (The regional forest plan is formed by prefectural governors according to the Forest Law.)

(3) Development actions subject to the permission system

Development actions subject to permission system is mining of soil, rocks or roots, cultivation and other actions that exceed the scale stipulated in the Forest Law and the government ordinance. The "scale" is as follows:

- Area of development actions exceeding 1 hectare
- Road constructions in which the width of roads exceeds 3 meters

(4) Permission standard

Prefectural governors must permit development actions that do not harm to all of the following functions of forests;

- Prevention of disaster
- Prevention of flood
- Cultivation of headwater
- Preservation of the environment

(5) Dealing with violators

Prefectural governors can order cancellation of development actions or recovery of forest damage to maintain the public benefits in following cases.

- a) Development actions without permission,
- b) Development actions in violation of the conditions that were given in permission
- c) Development actions permitted through deceit or other illegal means