

On the Principles of Japanese Forest Policy since 1950

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In Japan many governmental projects have been promoted during 35 years since 1950, which were most active in the history of our forestry and wood industry. They were pushed forward for and by high economic growth. This article refers to the development of our forest policy and projects in those days. Of course political experiences are so difficult to formalize, that it is better not to be in hurry to express schematically, I think. But as for the future of the forestry economics, I believe it is an urgent question to develop the comparative study between every nation's experience. In order to contribute to this problem even slightly, I divide forest policy into three fields and arrange out experiences in order.

Introduction

The purpose of forest policy is to exhibit the ability of the forest so that people may enjoy the material or immaterial living necessities. Of these necessities timber is the only material and marketable product. (Sometimes so-called by-products, for example mushrooms, bring more income. But here I ignore them.) Therefore the forest policy as the economic policy mainly deals with the production of the timber.

Forest policy about the timber production includes three fields:

- 1) *Output policy*: To increase (or decrease) the timber output through domestic production or foreign trade and to stabilize the timber price on national and local market level.
- 2) *Resource policy*: To increase or maintain the productive power of forest resource keeping the long-term tendency of increasing timber demand in mind.
- 3) *Structural policy*: To reform the economic or social structure, that means the ownership of woodlands, timber trade system and so on, in order to realize those policies throughly and smoothly.

Generally speaking, resource policy and output policy is put in practice without mutual linking, because the former stands on long-term view-point and the latter stands on short-term one. Contrarily the supply of immaterial necessities which forests produce is closely determined by the degree of completion of forest resources. As for them we cannot materialize the structural policy, because they are unmarketable and it is no use to occupy the woodland privately.

Further the typical immaterial necessities in Japan are (1) the stabilization of the stream flow for the water supply. (2) soil conservation on the mountainous region. (3) improvement of the environmental or recreational use. Lately those necessities increase so much that they are sometimes overcrowding on the same woodland. Accordingly it becomes very important to adjust them. That is a part of the resource policy.

Outline of the forest policy before 1950

In Japan, resource policy began at the end of the 19th century, and its main projects were afforestation. Since Meiji Revolution our agricultural and industrial production grew remarkably. And for future development it was thought necessary (1) to control the frequent flood which the devastation of the woodland had brought, and (2) to increase the timber supply for growing urban inhabitants. Afforestation surely does much for both purposes. The measure of the investment was done which was financed by the revenue from the sale of a part of her woodland. These investments continued during 22 years. It means the start of the access to sustaining yield man-made forestry. Secondly, of the non-governmental forests especially the commonland held the problem. Hitherto they had been used chiefly to mowing. Though the necessity of mowing decreased gradually, communities which consist of the small peasants could not plant the useful trees because of the lack of funds. To solve this problem it was encouraged to transfer the management from the communities to municipalities. Though the government could finance little for the improvement of the non-governmental forestry, only afforestation of municipal forests was often subsidized in order to induce these transfers. This is the only example of the structural policy in the pre-war time. Thirdly, by the revision of Forest Law in 1939 the whole non-governmental forests including private forests were compelled to prepare the management plan. The forestry cooperative, which became established by every municipalities, has been ordered to organize the regional management plan instead of every individual owner. Since then the forestry cooperative has been given the part of the lower reaches of governmental measure concerning to the forest policy.

Japan had been a timber exporting country till about 1920. But then she was reversed to importer, and the timber-price rose rapidly owing to the increasing demand. It was for the first time that the adjustment of the demand and supply became a national problem. When the timber supply became urgent after the disaster of the earthquake in Tokyo in 1923, the government took action and imported a good deal of timber from U.S. and

Canada. However, it caused the flood of the foreign timber through the 1920's depression period. Forest owners and timber merchants were much suffered by the fall of timber price due to the oversupply in the timber market. Hence especially forest owners required the revival of the import tariff which had been once abolished. The government endeavoured to do it too, and after the serious dispute she succeeded. Owing to the tariff timber import was cut, and since about 1933 the domestic timber came on stage to play the lead.

During the World War II, especially since 1941, our forest policy exercised much power under the planned economy. The increase of output to fill rising timber demand was the most important problem. I will notice two aspects. The one is to loosen the restriction of cutting based on the management plan, and the other was to construct the forest roads especially to undeveloped remote woodlands. In that time afforestation was thought as a nonurgent activity. Even after the war the distribution of most commodities including timber was controlled till 1949. But generally the measure of control was already ineffective. Since 1950 the resource policy has recovered its priority.

Several years since 1945, the recovery of the denuded woodland was the main purpose of the forest policy. Under the still rising timber demand, in order to scatter the cut area and stop the denudation, forest roads should be developed to remote woodlands. Of course the investment for afforestation was also required. Since about 1950 they have been well subsidized by the government. It owes to the founding of the account of the public investment in the governmental budget. Further new Forest Law has been established in 1951. One of its features is that the responsibility for keeping of the regional (not forest owner's) management plan of the non-governmental forests also lies with the government (in fact prefectural authorities). Forest owners must cut or plant obeying to those management plans. Furthermore in that time it was materially prohibited to cut the tree under the standard rotation age (about 35-45 years old), and the unit of regional sustaining yield was rather small (about 7000 ha) that the principle of free enterprise was greatly restricted. Though

those legal power was possibly indispensable, we can say that the forest policy kept little concern to the forestry practice as economic activity.

Forest policy under the high economic growth

We can call about 20 years since the former half of the 1950's as the age of high economic growth. The yearly timber demand grew rapidly from 44 million cubic meters of 1955, through 66 million of 1961 and 90 million of 1968, to 116 million of 1973. The floor space of yearly house building starts increased twice since 1955 till 1960, thereafter four times since 1960 till 1977. Especially during 1950's timber price index rose to 160. Not only the long-term resource policy but the short-term output (increase) policy became indispensable to deal with the expanding timber demand. Since 1958, National Forest has much increased her annual cut by regarding the sustaining yield bases as the likely-looking growth of timber. At last in 1961 the government took action to keep the price stable. That was firstly to strengthen further the annual cut of National Forest, and secondly to import the foreign logs, especially U.S. hemlock as the substitute to cedar which is the most popular tree in Japan.

On the other side, the announcement of the long-term outlook for the timber demand and supply has started in 1966 under the provisions of Forest Fundamental Law (1964). This outlook has been announced every five years according to which the national and regional management plan should be remedied.

As for the resource policy, afforestation, especially new plantation, has greatly improved. The ratio of man-made forests grew from 23 % of 1956, through 31 % of 1966, to 37 % of 1976. In 1961, 310 thousand ha was newly planted which occupied 1.2 % of whole forest area. Surely it was a golden age for our forestry. Then the internal rate of return has reached 6 % at least, though nowadays below 3 %. Those good conditions stimulated greatly the practice of forestry ac-

tivities, above all small forest owners who had just got rid of the poverty in the pre-war time. Furthermore, new plantation was still well subsidized (over 50 %), or financed at low interest rate (yearly 3.5 %) by Governmental corporation, although replantation became excepted from the governmental aid.

The share renting system in the afforestation was authorized by special law in 1958. Different from the ordinary superficies, in this case there are three partners, woodland owners, capitalists and affesters. They can make an optional contract with one another, according to which they can divide the whole cutting revenue (mostly each dividend has been 40 %, 50 % and 10 %). At the beginning, it was expected that the pulp and paper companies would play the role of capitalists. However they lost soon the interest to the plantation, and inclined to rely on the imported pulp. Instead of them a governmental enterprise, named Forest Development Corporation, and later each prefectural corporations have played as capitalists. Meanwhile woodland owners have consisted of the big landlords and communities till now which are apt to lose the interest in the planting for themselves. As affesters forestry cooperatives came on stage, which had revived as un compulsory cooperative entities owing to Forestry Law of 1951, and since then had grown gradually proficient.

As to the construction of forest roads, at least half of their expense was governmentally subsidized. And in keeping step with the need, which was based on the development of the large-scale logging and the remote transportation, the rate of the subsidy has been much raised. The largest-scale ones are subsidized about 50 %, but generally prefectural governments add 20-25 %. Municipal governments also add something.

Since 1960 the improvement of the economy of family-size self-dependent small woodland owners or farm forestries has been thought as most important. That is, structural policy was principally preferred to resource policy. Hence, 1) the rate of subsidy of large-scale planting (over 10 ha) has been raised since 1967 compared to the small-scale one. 2) It has been recognized that forest roads contribute not only to the log transportation but to planting and bringing-up of young stands. The subsidy system was revised to

accept the change of the idea.

On the other side, the size of the unit of regional sustaining yield by the regional management plan has been enlarged (to about 60,000 ha) in 1962, and it has become possible only by notice to the authority to cut the tree under the standard rotation age. It has helped to set free the management of small owners. As for the lower reach, owners have been encouraged to make their own plan for and by themselves. Later on in 1968, it was announced by Forest Law that the income tax could be cut about 20 % of the revenue brought by the harvest due to the plan of each owner. But regrettably the economy of small owners has not been so much improved, that the emphasis of our forest policy has been shifted to forestry cooperatives.

The structural policy is the main subject of Forestry Fundamental Law. It was thought most necessary to encourage and stabilize small forest owners. In 1960 the average of their holdings was only 0.8 ha under cultivation and 4 ha as woodland. Furthermore, as they had only just begun to plant, most of their man-made forests were occupied by young stands. But they were generally eager to planting. The Law aimed to bring up them to proficient foresters who enjoy enough income and keep the creative spirit. It has set the standard size family forestry at 5–10 ha of man-made forests (in the case of farm forestry) or at over 20 ha (in the case of full-time forester). To reach these goals various means to enlarge their holdings were pursued. For example it was persuaded to divide commonlands to community members or to rent a part of National Forest. But thereafter man became afraid that these policies might endanger the entity of the community. At the same time it seemed doubtful whether small owners intended to make the most of their holdings or not. With the tendency that most of them want to go to the city or industries, the independent farmers became more and more difficult to realize.

In turn the bringing-up of forest cooperatives has been promoted as the most important policy for the private forestry since about 1970. Firstly the amalgamation has been persuaded by special law in order to strengthen them financially and humanly and raise the efficiency of management. As the result the number of cooperatives has much di-

minished. Though there were five thousand in 1955, it became three thousand in 1965, further has reached below two thousand in 1980. Their main activities are 1) logging and marketing of logs and 2) planting and bringing-up of useful trees, being trusted by their members. In the beginning the former was thought much, but since about 1965 the latter was considered more important. Because of the outflow of hard workers from remote villages, it became difficult to keep the labor power in individual farm-family. As for the labor force most of woodland owners relied partly on themselves and partly on employee. But owing to the outflow of hard workers, when we would like to support the labor force, it has become necessary to organize the employee to raise the efficiency and deal with rising working conditions. Also loggers and their employee were under the same economic condition. For solving these labor problems, the government took the policy to prefer forestry cooperatives to self-dependent forest owners. That is to organize the crew of both logging and planting employed by the cooperative. Whole member of crews has increased since the beginning of the 1960's. From 44 thousand in 1965 the number reached the peak of 67 thousand in 1969, which consists of about one fourth of all forestry and logging workers.

Forest policy under low economic growth and depression

After the oil crisis of 1974, not only the increase of the timber demand has stopped, but since 1980 it is rather decreasing. The demand in 1984 is 91 million cubic meter that is only 77 % of the peak in 1973. Timber price index in 1984 also has fallen to 76 % compared to 1980. Nevertheless, the effect of the new plantation in the 1960's has become outstanding, and now it is anticipated that the output of timber will surely increase greatly in one or two decades. Current main problem lies on the controversy between (a) the shrinkage of timber demand and (b) the supply pressure of the increasing man-made timber resources. Therefore it seems indis-

pensable to us (1) to develop the use of the timber, (2) to cut down the costs of wood-products and (3) to lead the timber resources to sustaining yield basis in the long-run.

However, the immaterial functions of the forest have become more and more precious in recent years. Nowadays people sometimes consider it more important than the output of timber. Though this opinion a little exaggerates the state, perhaps we must regulate the timber production for the immaterial necessities in the future, I believe.

To keep the stability of the timber price by the output policy, we should pay attention to two aspects, that is against short-term fluctuation and long-term trend. As for the former the governmental lumber storage system in large cities has started in 1973, in order to control the rapid rise of timber price. In that time this system is seemed to be very workable by the sale of a part of storage. However, as the measure in the case of falling price is not sufficient, materially it doesn't work not so well now.

As for the latter, in order to hinder the falling trend of price, we must decrease the timber supply. The first measure is to control the import by collecting the new import tariff. Some people insist on this measure. But it may be almost impossible now to introduce such one, because our government agrees to the international free-trade principle and our rapid economic growth has owed greatly to free-trade system. Now our government makes his effort for the more liberalization.

The second measure may be the control of the cutting volume in National Forest, that occupies about 30 % of whole timber production. As mentioned above she cut more timber to cope with the rising trend of price in 1961. However under the current state of the management and finance, it seems that she is not going to do it in order to affect the output or the price of timber. Now the government has no trump card to play for the supply control. It is a serious problem.

Why the influence of National Forest on the domestic timber market has been lost? Till 1968 her account was in the black every year. And under the independent accounting system, she could continue to expand her cutting and planting operations. But since then the loss has begun to exceed the profit, owing to the rising personnel expenses com-

pared to rather stable timber price. Though the crazy rise of price in 1972 and 1973 temporarily helped to cancel the deficit, situation has become worse after the oil crisis. Furthermore following new economic and social conditions have appeared to lie heavy on her budget. Those are (1) steadily increasing personnel expenses, (2) increase of the cost of bringing-up or thinning as the result of great new plantation in 1960's (3) request from the environmentalist to reduce her cutting. In 1973 she introduced the new guideline of the forest management which reduced the amount of harvest taking the ecological effect in consideration.

At last she has reduced to the borrower since the middle of the 1970's, thereafter interest on the debt has lain heavier. Now redemption and interest payments occupy about half of her annual expense. In 1978 the amendment plan of National Forest has started aiming at the covering of accumulating deficit, and in 1983 it has been strengthened to set the term of the covering at 1997. In recent years she is obliged to curtail all kinds of expense. Not only the new plantation but even the replantation must be prudently examined about how profitable the investment is. She is also advised to reduce her own harvesting operation and to increase the stumpage-sale or the logging by contract. On the other hand she is very eager to require the new revenue. For example she is introducing the share renting system for the brought-up young stands supporting by the revision of the above-mentioned law in 1958. It means the sale of immature stands in advance. Anyway the revival of National Forest is very urgent problem.

As to the resource policy for the private forest, new plantation has been constantly promoted till now. Now the ratio of them is still 40 % which is 10 % less than the goal announced by the governmental outlook. But recently opinions against more expansion of man-made forests become influential, one reason of which is the rapid decrease of the expectable internal rate of return.

Meanwhile the young stands which should be thinned are increasing. Now the forest which should be urgently thinned occupies 20 % of whole man-made forests (including National Forest). Nevertheless the marketability of thinned small logs is unusually falling now.

Then for its development thinning has become included to the object of the governmental subsidy for afforestation.

In the relation to thinning the importance of the forest roads has been increasing, because without better hauling facilities we cannot cover the thinning cost by the sale of logs. Anyway the network of the roads in Japanese forest is not yet improved by now, though the forest roads is the most general and important equipment to decrease the producer's cost of timber. One reason is that the construction of forest roads usually relates to many beneficiaries under our small and dispersed woodland ownership system. Hence owing to the difficulties of the cooperative decision-making they have been inclined to assume a passive attitude, contrary to the active attitude to the afforestation. The coming guideline of the private forestry should lay stress on the construction of forest roads.

The system of the forest management plan has been revised in 1974. By this revision, accompanied with the individual owners' plan, in the lower reach the establishment of the cooperative management plan has been authorized by Forest Law. The latter means that the owners of the woodland within a block (mainly 30–50 ha) make the plan for the block, regardless of whether each one owns another woodland outside or not. Probably forestry cooperatives do much in order to adjust and get together the various ideas of beneficiaries. And when the plan of every block is aggregated, it surely leads to the plan of regional basis. Thus the regional management plan may be connected with lower reach. Hence it means a remarkable change of our forest policy. Instead of the effort to bring-up individual forest owners, we can say political efforts have been oriented to the regional cooperatism.

As for the upper reach of the system, they say the feasibility of the regional management plan is to examine. Under the current system, the content of the plan is determined based on the national management plan. The latter accords to the outlook of the timber demand and supply. But the current outlook is inclined to overestimate the future demand. Therefore the content of the regional plan also has little actuality. If the actual operation continues to be separated from the content of the plan, the system itself may be

thought as meaningless. Now the staff of the government works to decrease the planned amount of annual timber cut by the extension and the diversification of the planned rotation age. The former is also suitable to the improvement of marketability of timber, and the latter is required in order to induce the current distribution of age-class of man-made forests to sustaining yield basis.

The revision of Forestry Law in 1974 is noticeable too about that the gravity of material and immaterial functions – timber supply, water supply, erosion control and environmental effect – have been inspected by each block for all private woodlands. The regional management plan should be established based on those inspections especially taking care of immaterial functions.

Meanwhile a problem has grown, especially about water supply. That is who is responsible to the expense for the supply of this unmarketable function. By now some cities in the lower reach have agreed to share the expense for planting and bringing-up in forestry regions of the upper reach. Developing these ideas, the government has tried to introduce a new indirect tax on the consumption of the water in 1985. But the trial has not succeeded. Maybe we have still several theoretical and practical problems to be solved. But under the fall of the timber price the forestry will not be able to survive without the support by outsiders. In this meaning the share by citizen does so much, though they think it is paid for the water.

We have a great many small loggers, saw-mills and lumber merchants. They compete with each other. In the boom they could go well altogether. But in the depression, heavy competition may push down the market price of logs and lumbers more and more to torment themselves. Furthermore their investment for modernization of the equipments may become difficult, though it is essential to the decrease of the producer's cost. The cut-down of the cost contribute not only to become able to cope with the foreign timber but also to raise the price of stumpage to encourage foresters. Therefore excessive competition must be controlled. Then, since 1981, the abolishment of the equipments of saw-mills and private factories in the form of their cooperation is encouraged by governmental loan. It is expected that the mitigation of the

excessive competition will stabilize the management of the firm and arouse profitability and activity.

The necessity of the horizontal and vertical integration of the various timber operating firms is also discussed as the measure of the decrease of lumber cost. Above all the dealing cost is problematical. For example the auction-sale of logs between loggers and saw-mills has widely spread since about 1955, to contribute to deal with rapidly increasing amount of timber trade. However, on the other side it has brought the additional dealing cost. Though the merit of the former excelled the demerit of the latter in the boom, the situation has turned reverse in the depression. Of course the adequate trade system may be different region by region. But generally speaking, short-cut of the trade-channel should be pursued. However the government has not been so accustomed to the political measures about the timber trade. Nowadays the independent efforts of the related associations are regarded as main executors.

As for the development of the use of timber, the political effort has started from the thinned small log. Since about 1975, considerable many forestry cooperatives have settled the equipments suitable to process small logs, subsidized by the government. Some of them have failed. But some of them are successful. In the case of the log from the mature forest too, the current state is alike, except the little volume of high quality. The timber of low quality including the thinned log is most competitive not only with foreign timber but with the non-wood materials. In recent years marketing activities especially for the housing industry are emphasized. But I think, the weak points of wood must be conquered by the processing, in order to cope with the non-wood materials.

In this area, we have had no outstanding measure. However in 1985, the government has decided to take budgetary, financial and other necessary measures for the next five years particularly pointing to (1) increasing the demand of wood-products, (2) strengthening the structure of wood industries and (3) revitalizing forestry through the complete practice of thinning. These measures have been realized as the compensation for the reduction of the import tariff on the plywood according to the strong request by U.S. Thus

we are now endeavouring to the revival of the domestic timber market.

Concerning the recent structural policy, the main subject is to bring-up "regional forestry systems". It means that it is thought more important to put the relations between various producers horizontally and vertically in order than to encourage directly individual producer. The purpose is (1) to decrease the producer's cost of timber through rationalization of the trade and (2) to increase the total amount of the various forest products and the income of foresters and employees through the intensive and composite woodland use. When the system is accomplished, the stability of both market and employment will be realized and the regional economy will circulate smoothly.

But in order to develop the system, the role of the economic initiator is essential. In most of the remote mountain villages we could not find the initiator. This is one reason of the inactiveness of economy and society in these regions. From the political side, forestry cooperative are expected to play the role of initiator. Precisely speaking their role is (1) to integrate the woodlands of small owners and manage various forestry activities instead of them, (2) to talk with saw-mills or lumber merchants so that the log or lumber may be processed or dealt roundly and stably, sometimes to manage the timber-yard or saw-mill by themselves and (3) to give the stable employment and income to foresters and workers. Furthermore regional forestry system must keep contact with agricultural system and so on. It is expected as the role of municipal government to adjust the activities of various industries.

The idea of regional forestry system has been firstly announced by the government in 1979. However, the concept is not yet confirmed. Above-mentioned is my understanding. Anyway in order to develop this idea, we must have the socio-economic viewpoint. We can say it is the boundary area between forest policy and communal policy. But I am sorry here I cannot express about the latter precisely.

Conclusions

It is very difficult to formalize the historical experience of our forest policy. This summary is only the first approach to attain the theoretical form.

The supply of logs and lumbers are both inelastic to the change of the price, and the price is unstable usually, because the small loggers and saw-mills often behave speculatively. The quick measure against such fluctuations is probably that the government controls the amount of timber trade through direct sale or direct purchase activity. This kind of policy for price stability is now practised concerning to some agricultural products in Japan. However in the case of timber the current measure is insufficient and not workable particularly under the depression.

Considering from the macro-economic viewpoint, the government had two measures to control the timber supply. One is the import tariff for foreign timber, and the other is the direct control of the harvest of National Forest. In the crisis of 1920's the import tariff was strengthened and the logging activity in Sakhalin (whose forests were governmentally managed at that time) was heavily cut. The government succeeded through these measures. Contrarily in the boom of 1950's and 1960's, the timber import and the increase of the harvest in National Forest was promoted. However, in recent years both measures are no longer workable, because we declare the faith to the international free trade principle and National Forest has almost lost her influence owing to the change of her fiscal condition. Therefore for the purpose of the recovery from the falling tendency of the timber price, political efforts are to be pointed to the increase of timber demand. Such efforts have just started.

Our resource policy which was founded before the World War II has generally succeeded after the War too. Owing to the vigorous afforestation activity of all kinds of forest owners the timber storage of man-made forests has been much increased quantitatively. But the network of forest roads is not yet filled up. And the outflow of hard workers from the remote forestry villages has brought the lack of active foresters. Hence despite of the fulfillment of the timber storage, we can say it is still insufficient from the viewpoint of access or administration. On the other side the immaterial necessities which forests produce become more and more important. Therefore I think it is necessary for us to examine once more how valuable forest resources are to be arranged. The performance of the resource policy which has lasted so long may be obliged to turn.

Structural policy which was eagerly pursued in the 1960's, lay emphasis on the bringing-up of self-dependent family forestry when keeping the harvesting and planting activities on the high level. It has done much for the resource policy, however it has comparatively little concern to the influence to the supply price. Therefore it related mainly to forest owners. After 1970 the emphasis of the structural policy has shifted from the individual forest owner to the formation of the "regional forest system". Furthermore since about 1980 various governmental measures become introduced to the improvement of inner structure of the firm and installment of modern equipments of high productivity, though the government hitherto has not attached to the processing and marketing. Therefore perhaps the concept of "regional forestry system" should be expanded to include the wide range from the operations in the forest to the marketing of lumber in the city.