

FORESTRY REFLECTIONS IN THE NATIONAL ECONOMY OF JAPAN.

Dr. Deedar Hussain Shah
Altaf Hussain Ferozuddin

Nippon the land of rising sun has also developed forestry with the purpose not only to boost-up one of the important components of agriculture but to aid the national economy also.

From the total land area of 370000 K.M in Japan (or 37 million hectares), 25.22 million hectares i.e 68% is covered by forests, which provide timber and other forest products to the nation. Simultaneously, forests meet the requirements of public benefits, such as, conservation of national land and water resources. It also promotes health and recreation of masses, reflecting closer correlation with the people's life.

Historically, it may be mentioned, that in Japan, the forests were owned by feudal domains, temples and shrines. These were transferred to Meiji government in 1871. Since then the process of development of forestry started in Japan. District forest office system was formulated from 1886 A.D. The crown forest, the imperial forest and natural forest were merged into one single aspect known as national forest.

In 1900, first plan for the development of forest was formulated. In 1920 management of national forest was administered. After the Second World War, all the organizations of forestry development were integrated in 1947.¹

Since 1960, the graph of the usage of saw-timber including pulp, paper and construction has shown upward trend by 34% while in fuel wood it is in the downward trend, for, consumption patterns and trends in the means of fuel usage have been changed and diversified. The growing demand of forest made goods are being met with the imports from abroad, as the local supplies are unable to cope with it. Japanese forests may be termed young as, most of them have been developed in early 1950s, after the second

world war. The man made forests are still being developed, for, their percentage of contribution is lower, as compared to other developed countries of the world.

In Japan, development of forestry is necessary, because of the location in the Asiatic monsoon zone with steep topography. Consequently, Japan is always endangered to typhoons, flood damages, cyclones, lava eruptions etc. Most of the mountains of Japan are volcanic in nature, as from 150 mountains, 40 are still active or dormant. Hot springs, terrestrial wrinkles, deep ravines, steep slopes, and small water shades are found in many parts of the country. Flat land congenial for industry, agriculture and residences is located along the coast and downstream area. Therefore forestry in Japan is developed on slope, as no flat land is available for it.

Besides, advancement and promotion of socio-economic structures and urbanization, increasing demand of water for civic life, emergence of higher incomes of megapolis and development of the means of transport and communications has further pushed up the demand for rest and recreation facilities. Therefore the importance of developing the field of forestry goes on increasing, significantly. Slowly and gradually, natural forests are being converted into man made forests. Logging roads are being constructed and structural improvement of small scale forests have helped to raise up the productivity and income from forestry. Co-ordination between elasticity of timber supply, forest products and public benefits has been encouraged, which has further necessitated the importance and need of developing forestry in Japan, despite its complicated geological structure, which is composed of sedimentary rocks with volcanic interruptions and metamorphic rocks joined with mesozoic strata.

FOREST SOILS AND DISTRIBUTION:

Japan has a variety of forest soils, such as,

i) Podsol:

This soil is formed under the sub-alpine (sub-freezed) zone, which may be termed as futile soil and strongly aciduous.

ii) **Brown Forest Soils:**

These forests cover most of the Japan's hilly zone which is formed under warmer climatic conditions. In this forestry-conducive six types of soil are grouped from dry brown forest soil to wet brown forest soil, which are good for the growth of sugi trees.

iii) **Yellow and Red Soil:**

This soil is formed under warm and humiduous conditions. Red soils are found here and it is quickly tuned with decomposed organic matters.

vi) **Black Soil:**

It is formed of the piedmont from the volcanic ash with granite mixtures as mother material. The Black surface is thick and its sub-surface is clear.

v) **Distribution:**

Forests in Japan are distributed in the following order.

- a) Sub-frigid zone (shirabe-todo matsu belt), with Ohshirabiso, Kometsuga, Tohi, Zakekamba, todomatsu, azomatsu species.
- b) Cool temperate zone (buna belt), with mizunara, itaya-kaede, shinanoki, tochnoki, katsura, onigurumi species.
- c) Warm temperate zone with arakashi, akagashi, urajirogashi, shii, kusu and taliu, sugi and hinoki species.

These species found in Japanese forest belts are useful for timber needs. From all those species, ezomatsu (*picea jezoensis*) is used for pulpwood and construction. Amoritadomatsu (*Alvies sachalinesis*) is also used for construction. Hiba (*Thujopsis dolabrata*) is used for construction; base wood for lacquerware and sleepers.

Buna (*Fagus crenata*) is used for plywood, flooring board, furniture, pulp, sleepers and fuelwood. Karamatsu (*Larix leptolepis*) is used for poles, sleepers, posts, construction and pulp. Sugi (*cryptomeria japonica*) is used for construction. Hinoki (*chamaecyparis obtusa*) is used for construction. Shirabe Alies (*veitchii*) is used for construction and pulp wood, Tohi (*picea V.hondoensis*) is used for construction and pulpwood. Momi (*Abies firma*) is used for construction and pulp. Akamatsu (*Pinus thunbergii*) is used for windbreak, garden shelters, sawtimber, pulpwood, wood working and posts.

TARGETS:

In order to stimulate the forestry production following targets were to be achieved by the Government of Japan after the end of the Second World war.

1. To increase the production; productivity, development and improvement of forestry;
2. To offset the disadvantages of forestry and remove the obstacles arising out from the natural and social handicap;
3. To maintain the balance between forestry and other industries;
4. To promote socio-economic position by boosting-up income for labour working in forestry;
5. To promote higher utilization of forest land,
6. To improve the structure of forestry,
7. To diversify the technique of forestry and train the personnel working in it,
8. To stabilize supply and demand prices, marketing facilities and processing of forest products;
9. To bring welfare of labour working in forestry,
10. To cope with the unfavourable physical; economic and social

conditions required for promotion of forestry and checking the drift of population from rural; to urban areas.

MEASURES:

In order to achieve the above mentioned targets, following measures were taken by the Government of Japan, at the cabinet council meeting on 1st of April 1966, with the consultation of Forestry Administrative council, for the development of forestry and its products.

A basic plan for 50 years starting from 1966 was formulated to maximize the benefits from forestry and reforestation on rapid speed. This plan was further divided into 15 years and subdivided into 5 years developmental plans. A national forest development plan was chalked out for every five years. This plan has been taking care of falling of standing trees and bamboo, reforestation of forest roads and fortification of protectionary facilities.

In the light of the national forest plan, the prefectural governor prepares his 5-10 years plan for the district forestry and provides basis for private forest. Under these prefectural plans, rationalization and systematization of forest management has been executed. Preferential treatment has been given to forestry in the matters of financing and taxation. Forest lands are being used effectively, access roads have been constructed and fortifications have been arosed, with the help of the financial subsidy provided by the Government.

To gain the long range stabilization of the demand and supply of timber, maintenance and development of self-supply; national land safeguards and economic uplift of the rural community, the reforestation programme has been started vigorously. These programmes have the financial support from the subsidy of national treasury, department of agriculture; forestry and fisheries, as well as, finance corporation of Japan.

Efforts are on the way to convert low-valued natural broad leaved trees to economically high-valued man-made conifers forests. This has increased reforestation by leaps and bounds. In order to maintain the increase and growth of planted trees, securement o

superior seeds and seedlings has been arranged and such species are registered as mother trees or mother stand, therefore felling and cutting of the same is prohibited.

The prefectural governmental institutions with the co-ordination of state Forest Tree Breeding station has started the forest tree breeding project, cultivation of clones, establishment of seed orchard and cutting orchard etc.

With the purpose to stimulate the production of logs, the state has been encouraging the introduction of log production facilities and machines like yarders, chainsaw powercable, tractors etc.

Measures have also been taken to prevent and control the forest pests and diseases for wiping out the pine bark beetles and other forest infestations. To check and compensate the losses accrued from the natural, atmospherical and climatic disasters such as fire, flies, wind, flood, snow, drought, freezing and tide etc, state forest insurance service has also been introduced.

To improve the structure of forestry, modernization of project policy has also been implemented in a diversified manner. Accordingly, with the help of state financial subsidies, municipalities have been assigned the work of developing and fortifying foundation of forestry management, introducing modern forestry facilities and promote the work co-operation.

Since 1965, more than 722 municipalities have been registered as the plant area and 562 are conducting the work on the project. Common farm forest has also been streamlined for better utilization by agriculture and forestry sectors.²

FOREST ADMINISTRATION.

In order to implement the 50 years plan of forest development, the administrative set-up has also been reorganized to achieve the positive results within the stipulated period.

Forestry Agency as an external organ of the Ministry of Agriculture and Forestry, may be termed as the central organization of forestry in Japan. It is bestowed with the function of control and management of national forests, public forests, government reforested land under public ownership, supervision of private forests, co-ordination of production, marketing and consumption of forests, as well as development and improvements of forest roads.

Forestry Agency is divided into four major departments.

1. FOREST ADMINISTRATION DEPARTMENT:

It is responsible for planning, administration and sale of national forests, administration of governmental reforested land under public ownership, promotion; improvement; and consumption of production; guidance; supervision and subsidization of forest owner's associations along with other groups concerning forestry and forest products.

2. PERSONNEL DEPARTMENT:

It is entrusted with the duties meant for welfare, culture and training of personnel. It is also responsible to negotiate with the relative labour unions, other labour managements and organizations.

3. GUIDANCE DEPARTMENT:

It is dutybound to perform the functions of the overall site and management plan of the national forest and private forest, guidance, supervision, subsidy for reforestation, management and erosion control of private forest, construction and supervision of forest roads, forest insurance, experiment; research and study on forestry, control of pests and disease, protection and propagation of wildlife and administration of hunting.

4. OPERATION DEPARTMENT:

It is concerned with the activities of reforestation,

management, erosion control, forest products and manufactured goods of national forest, government reforested land under public ownership.

In addition to this, departments like, state Forest Experiment station (an organ to perform experiments, analysis, appraisal, survey, training), The Forest Tree Breeding station (an organ to conduct breeding projects and distribute seeds and seedlings), The Forestry Training Institutes (an organ to train personnel required for forest management and technology), Forest Insurance council (an organ concerned to forest insurance, its policies and implications), The Central Forest council (an organ to deal with implementation of legal matters of forest law and other related rules and regulations), The Central wild-life under the prescribed rules and norms, as well as, survey, protection and propagation of wildlife), etc. are affiliated organs of the Forestry Agency.

Besides, Forest Administration Council works as an advisory body to the Prime Minister of Japan. It also maintains its relationship with the concerned Ministries of Japan on the matters related to enforcement of injunctions of the Basic law of Forest.

Moreover, locally 14 regional and 350 District forest offices are associated with the Forestry Agency and are responsible for control, management, production and sale of forest products.³

FOREST RESOURCES:

In Japan more than 25 million hectares are covered by forests, which reflects Japan as a nation of forests as compared to Great Britain and Finland. Its per-capita area is 0.2 i.e 1/6 hectares against 1.2 hectares of the world average.

From the total of 25224000 hectares 31%(7839000 hectares) are controlled by the Forestry Agency and 1%(223000 hectares) by the concerned ministries and agencies. From the remaining area 68%(17162000 hectares) are known as private forest, 11%(2702000 hectares) goes to the share of public forest and 57% (14460000 hectares) is occupied as individual forest.⁴ As regards type of forest, man made is 33%, natural 60% and cut-over areas and others are 7% only. Japan's total forest growing stock is about 1.9 billion m³

equally divided in softwoods and hardwoods. It is about 1% of the world's total growth of forests. Most of the man made forests are reflected in 75m^3 and natural forest 110m^3 per hectare as a growing stock in both the qualities of softwoods and hardwoods, respectively. The final felling average age among different species varies between 35-50 years with annual mean increment of $7\text{-}8\text{m}^3$.

ACHIEVEMENTS:

Since 1960⁴ Japanese government has been more active, curious and responsible to implement the various programs of forest development with a rapid speed.

As regards improvement of forestry structure and project policy, more than 722 municipalities have been registered to get governmental subsidy for promoting forestry in their vicinity. Common farm forest has also been streamlined for better utilization of forestry sectors.

In order to maintain the smooth and stable relationship between demand and supply of timber at reasonable prices, necessary quantity of wood is imported to meet the annual requirement of 113 million cubic meters (4.0 billion cubic feet). In 1992 domestic production supplied 28% against this demand and the remaining quantity was met through imports.⁵ More over, steps have been taken for the improvement of marketing, purchasing, processing, modernization and trading of forest products, by forest owners associations, medium and smaller enterprises. Port facilities have been improved. Price fluctuations have been normalized. Lumber specifications, sawmilling and plywood manufacturing business etc. have been promoted.

To cope with the drift and shortage of rural forest labour and their migration to urban areas, on the spot training facilities have been arranged for the management and labour engaged in forestry. Education, research and expertriates and their successors have been provided with favourable conditions of social security and good financial benefits. Protections against seasonal and sporadic employment have been provided. Steps like promotion of technical research, development, dissemination, specialization, instruction and

extension of forestry have been adopted. Not only this, but Japan has fully co-operated with International Tropical timber organization (ITTO), for improving forest conservation, to bring all tropical timber product exports from sustainable managed resources. Under such programme Japan has contributed to the greening of over 8000 hectares in Pandtabangan area of Philippines and 3000 hectares in South Sumatra, area of Indonesia. Fourteen such projects in twelve other countries have also been completed by Japan through its technical, labour and financial assistance. From 1973 and onwards the productivity of Japanese forest labour has been increased by 7.3%.⁷

To foster the activity of state, prefecture; Forest owners association and other related organizations, have been formed, rules and legal provisions have been promulgated. Legislation to develop forestry and its fundamental utilization, The Forestry Basic law and The Forest Law, has been enacted and enforced since 1897.

Accordingly it has been successively, revised and promulgated since 1951 and onwards, as the conditions and requirements warrant.

CONCLUSION:

While concluding, it may observed that Japan has made a tremendous progress in the field of forestry also. Economically the development of forestry is necessary in Japan, for, it occupies about 70% of Japan's total land area. Forestry play important role in supply of wood, timber products, fuel, conservation of land and water storage, environmental protection, shield against land erosion, fortification and protection of rest and recreational facilities and construction of roads etc. in Japan. Timber supplied from Japanese forests provide more than 30% of the total production of national forest.

Efforts are on the way to promote reforestation, maintenance of wild life, protection against floods and cyclones, availability of pasture lands, provision of seed and seedlings, increase in forest products, such as timber, honey, chromite, charcoal, fuel, stumpage, logs and stimulate man-made forestry, as 90% of ownership of forestry in Japan is below 5 hectares.

Arrangements have been made to compensate for the losses, accrued from natural, atmospherical and climatic disasters. State forest insurance has also been started. Reformation, renovation and revaluation of existing technology and adoption of new and dynamic one has been implemented to meet the rising demand of timber at reasonable prices.

Process of planting, weeding, vine cutting, thinning, fertilization, planting old and new species, maintenance of soil profile to plant right tree on the right site, spray of medicines, harvesting, logging, yarding, falling, transporting and cutting etc. have been fully mechanized.

Japan has been actively promoting paper-cycling for better utilization of forest resources. It has achieved the highest rate of recycling utilization (consumption of old paper/paper and paste board production), i.e 50.3% as compared to Italy 47.9%, France 45.7% Germany 45.3%, USA 27%, Russia 26.2, China 25.1%, Switzerland 11.5%, Canada 11.3% and Finland 4.7%.

Japan has also been helping developing countries in the field of reforestation, greenery, preservation of forests and training of local personnel through sharing its extensive experience. Official co-operation is also extended in this regard to check the menace of deforestation.

REFERENCES:

- 1) Ministry of Agriculture and Forestry, "Business Statistics of Forestry Agency", Tokyo 1968 and subsequent issues, pp 1-11.
- 2) Toshitaka Ushiomi, "Forestry And Mountain village", published by Kokusai Bunka Shinkokai, Tokyo, 1964, pp 20-25.
- 3) Rinya Kosai Kai, "Forestry in Japan", published by Forestry Agency, Tokyo, Japan, pp 24-32.

- 4) Ibid, pp 20-22.
- 5) Kodansha International, "Japan profile of a Nation", Tokyo, 1994, pp.137.
- 6) Ministry of Foreign Affairs, "Japan's Environmental Endeavors, Taking care of Earth", Tokyo, April,1992, pp 11-12.
- 7) Hiromatsu, Takeshi, "Japan's Economic Development", Tokyo, 1990, pp 22.