

FORESTRY IN CHINA

by

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I visited China with Five Members Forestry Delegation for three weeks from 19th October to 8th November, 1977. These are my impressions:

The People's Republic of China is situated in the eastern part of Asia and on the west coast of Pacific Ocean. It has a vast territory of 9.6 million sq: kilometres. The topography varies from cloud-caped peaks to basins of different shapes and sizes and from wide rolling plateaus to low broad plains. There are great deserts and wild lands in the north-west, while, rivers, streams and lakes stud the plains in middle and lower reaches of the Yangtze River. The climate is dominated by the monsoonal winds rising out of the difference in the heat absorbing capacity of the land and the ocean. A combination of high temperature and plenty of rainfall provides favourable conditions for afforestation and farming.

China was extremely poor before liberation. The country was divided into segments which were held under sway and domination by the colonial powers. The people were addicted to opium, diseases were common, agriculture production was low, floods were too much and too many and famine was almost an annual feature. Natural resources were available but they were being exploited by the feudal lords and colonial masters. The lot of common man was therefore, miserable.

Indiscriminate fellings and other types of abuses inflicted on forests by the starving masses and the ruling classes through ages had depleted the forest resource to less than 10% at the time of liberation in 1949.

China has made tremendous strides in all fields including forestry after liberation. Self reliance and hard struggle are the key stones of China's success in Agriculture and Industry. The people are deriving strength and aspiration from the teachings of their great leader, Chairman Mao such as:

- (i) Maintain independence;
- (ii) keep the initiative in your own hands;
- (iii) rely on your own efforts; and
- (iv) make the past serve the present.

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By adhering to these principles, the Chinese people, during last 28 years, have completely transformed the old China into a progressive and dynamic nation with brighter future ahead. They have carved mountains, constructed railways, dug canals, trained rivers, controlled floods and attained self-sufficiency in Agriculture and Industry in shortest possible time to the utter amazement of the Western World.

China has achieved great success in forestry through selection and breeding. Nurseries are managed in such a manner that they are self financing. Organic manure is prepared within the nursery by decomposing leaves and other herbacious material mixed with droppings of pigs, which is then added to the soil in bulk quantity. The nurseries are therefore, capable of maintaining fertility even though they are used indefinitely.

Planting stock is raised from the best available source. For this purpose seed orchards and seed stands of all major species have been established. Seed is always collected from the known source. Even in seed orchards, best trees are selected for collection of healthy cones which are then dried and the seed collected after cleaning. Selection is made even at this stage and the best seed among the seeds so collected is separated and then sown in the nursery. The process of selection is therefore thorough and takes place at all stages. This is one of the major causes of improvement of forestry in China.

China have also made tremendous achievement in forestry research, equipment and techniques. They are raising deodar through branch cuttings whereas for foresters in Pakistan, planting of this species with bare roots is still a problem.

China for the last 20 years is pursuing a policy of mass afforestation. In 1956 Chairman Mao issued the famous call "*Cover the country with trees*". Since then the nation has launched a vigorous tree-planting campaign throughout China. Along mountains, valleys, deserts, grass-lands and sea coasts, beautiful young forest plantations have been raised. The work so far done can be classified into the following categories:—

- (i) Hill afforestation;
- (ii) Coastal afforestation;
- (iii) Inland afforestation comprising the planting of eucalyptus, rubber, mulberry, tea oil, tree and bamboo.

China has a limited resource of natural forest wealth in the north-east and south-west. In these areas, fellings have been rationalized with greater emphasis on re-afforestation on both sides of the Great Wall of China, extensive areas have been planted with pines and other suitable species.

In the central and southern regions, which are characterized by favourable temperature and high rainfall, million of acres of hill slopes have been covered with pine, tea oil tree and other valuable species. The approach is labour intensive and the results are just astonishing.

China has a long sea coast along east and south. Drifting of sand and recurrence of typhoons was a common feature along these coasts. With determination and hard work the Chinese have controlled sand drifting and reduced the severity of typhoons by erecting coastal tree belts and windbreaks. Thousands of kilometre long green belts of *Casuarina equisetifolia* have been raised along the coast. 20 years experience of raising shelter belts in southern China has yielded the following benefits:

- (i) Drifting of sand has been stopped.
- (ii) Minor typhoons have been rendered ineffective. In case of major typhoons the losses are reduced to minimum.
- (iii) Soils along the sea coast have improved and stabilised due to addition of organic matter and binding effect of roots.
- (iv) The plantations are yielding substantial revenues from thinning and main felling.
- (v) A network of small indigenous type wood working industries have been set up on the raw material supply from these plantations which have created numerous job opportunities for the people living in remote areas along the sea coast besides contributing to the overall economic growth of the country.
- (vi) Large number of small country type brick kilns have been set up which are run on *Casuarina* needles swept from the floor of the plantations. The bricks are used for construction of new houses. This practice is in line with the policy of the Government regarding modernization of China.

Inland Afforestation. The Chinese have raised eucalyptus plantations on large areas for producing industrial raw materials on marginal and submarginal level lands in southern China. The plantations are managed on 20 years rotation. The wood is utilized as props in mining industry. The branches and defective stems are utilized for the manufacture of handles, thread pullies and wooden chips. Even furniture is made out of this wood which in Pakistan is considered as a third rate stuff. The leaves are also steamed for extraction of scent and eucalyptus oil. For this purpose small wood working industries have been set up in the vicinity of Forest Research Stations. All these things have been nicely integrated under a unified command.

Mulberry is also grown on large scale which is a species of dual importance in China. It has its own place as forest tree for producing wood for sport industry. But it has other economic benefits also. Silk-worms are reared on the leaves of this species. For this purpose China has raised plantations of mulberry on vast areas in deltas of eastern and southern China. In this region Agriculture, Forestry, Fishery and Silk Industry have been nicely integrated. Because of deltas the whole area is criss crossed with creeks and water channels. In rainy seasons, the area is prone to inundation. In order to avert this situation, numerous ponds have been excavated in such areas. The earth taken out from the ponds is dumped along their periphery in the form of embankments. The ponds are filled with water and are used for fish culture. The embankments of the ponds which are

2 to 3 metres wide are used for raising of mulberry vegetables, bananas, medicinal plants, palms and other useful plants.

All these functions are nicely integrated so as to ensure the maximum production per unit area. The mulberry plants are cut during early age to encourage pollarding. This has two benefits: the trees stay bush-type which facilitates plucking of leaves and they also produce side branches with profuse leaf formation. This is helpful in promoting the silk industry.

Among other species, Chinese tea oil tree, rubber, teak and bamboo plantations are worth mentioning which are contributing towards agriculture and industrial development in China.

Secrets of Chinese Success. The Chinese have made great progress in all fields including forestry because of self-reliance and hard struggle. They are a nation of 800 million hard working people, who are determined to secure an honourable place for themselves in the comity of nations. They are not worried about their increase in population because they believe that two hands can produce much more than one mouth can consume. The great Chinese Leader Chairman Mao-Tze-Tung has given them pride, direction and purpose in life to which they devotedly adhere. If you pose a question to a Chinese as to what is the secret of China's success, the answer would be "self-reliance and hard work".

Land, labour and capital are the major sources of production and the Chinese have all of these in plenty. China is a vast country with abundant natural resources which are wisely put to the most rational use. Labour is also efficient and plentiful. Capital is generated not through foreign loans and assistance but through austerity and self-sacrifice. China is the only country in the world, which does not have any external or internal debts.

So far as forestry is concerned, China has controlled or eliminated all destructive factors. The nation has been trained to abide by rules and follow instructions. Today the Chinese are a very disciplined nation. The cutting of trees or misuse of resources in any other manner is therefore, out of question. In order to avoid damage to forests through over grazing, the Chinese have replaced goats with hogs for meat production. Forest fires are unheard of. For these reasons, the Chinese have been able to achieve more than 90% success in all afforestation ventures.

We can learn a great deal from the Chinese experience. Self-reliance, hard work and devotion to duty are some of the traits which if attained will make a lot of difference. This is however utopian thinking which cannot be imbibed over night. The nation has to work for it. The great Chinese leader, Chairman Mao devoted his entire life to induce these higher values of life in the Chinese people. We have to produce another Quaid-e-Azam or Allama Iqbal to prepare this nation to acquire these values. Till then we have to work for increasing production through integration and intensification. One such proposal relating to integration of forestry with Agriculture and Industry in Kaghan valley is given below:

The Provincial Government should create a revolving fund of about 5 crore of rupees. With this money all land in Kaghan valley should be acquired. Land capability classification should be carried out and all areas with more than 50% slopes should be utilized for raising trees. The land having slope between 30 to 50% should be utilized for raising fruit trees e.g., apple, walnut, soap-nut etc. The scattered population on steep slopes should be brought down to the bottom of the valley and re-settled in small townships. Two room low cost houses should be constructed for each family and what-ever level land is still left in the valley should be utilized for opening wood based industries, fruit processing industry, poultry farms, sheep farms, dairy farms and vegetable gardens. The amount of land compensation payable to the people should be distributed among the land owners in the following manner:

- (i) 30% share of each family should be paid in cash.
- (ii) 20% of the share should be adjusted towards the cost of newly constructed houses.
- (iii) 50% should be invested by purchasing shares in the industries, to be installed in the area.

Work on intensive scale should be started in the area and the local labour should be utilized for construction of colonies, timber extraction, nurseries and afforestation. This approach will lead to the following benefits:

- (i) land would be utilized judiciously according to its capability.
- (ii) large number of skilled and unskilled jobs would be created for the people living in remote localities.
- (iii) timber production will increase and the country would become self-sufficient rather surplus in wood and wood products.
- (iv) local economy in the area will become self-supporting and self-perpetuating.
- (v) everybody will become productive member of the society.

This will eliminate idleness and lethargy, which are the two main causes of poverty in the hilly tracts of NWFP.