

OBJECTIVE FORESTRY RESEARCH IN EAST PAKISTAN

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INTRODUCTION:

East Pakistan has a very high density of population. In order to raise the standard of living of the people the pace of industrial development has to be stepped up. Immediately after independence Pakistan was faced with the challenge of finding all its requirements from its own resources. East Pakistan was generally very poorly developed. Agriculture was the main occupation and although she was the largest producer of jute, no jute mill existed within her territorial jurisdiction. The farmer produced jute only to be exploited by other countries. There were no known mineral deposits and the only gift of God available for industrial development of the country was the organic raw material which also included the forests. Most of the forests in East Pakistan are situated in inaccessible regions and the poor communication system made things much more difficult. This source of raw material was, therefore, slow to play its part in the development of the country. It was only after some bitter experience that the resolve of developing our own resources became stronger. It is said that the University and school examinations had to be postponed due to lack of paper and the unfriendly attitude of our neighbours. The tea industry had to depend entirely on imported tea chests. In spite of the extreme difficulties a paper mill and a few tea chest factories went into production within five years of independence. Other industries such as saw milling, packing cases, match, furniture etc. followed.

FOREST PRODUCE AS INDUSTRIAL RAW MATERIAL:

Wood is the principal product of the metabolism of trees and is a variable and complex material. It is no wonder that from the several thousand commercial species in the world the interrelationship between the anatomical, chemical, and physical properties of each species are not fully understood. The choice of species for specific use presupposes that a complete appraisal of the requirements of the use has been made. In some cases more than one species may be found to meet the requirements while in others mixtures of two or more species may be necessary. The problems involved in acquiring fundamental knowledge about the technological properties are difficult. The measurable values of many specific properties range between wide limits not only in different species but also within same species or even among pieces of timber from different parts of the same log. The unsatisfactory performance of a wood may not be due to the inherent characters of the wood but factors involving dearth of information concerning its properties, error of judgement, workmanship or all three. There are other pertinent characteristics such as workability, nail holding capacity etc. which are responsible for the wide acceptance of wood in the construction field and in the production of finished goods. Wood is an important raw material for many chemical industries. Because of its fibrous structure and chemical composition it can be reduced by relatively simple means into pulp which may be formed into paper or converted to plastics, rayon, transparent films and similar products. A number of species yield resinous material and latex which form the basic raw material of many chemical and other industries. The seeds of still others yield oil and starch

which after processing in the factory are used as animal and human food and for pharmaceutical purposes. Species research is necessary on all these potentialities of forest produce so that the indigenous raw material can play its proper role in the industrial development of the country.

#### FOREST INDUSTRIES IN EAST PAKISTAN AND FUTURE SCOPE:

Since independence considerable stride has been made in the utilization of forest produce in its natural form. In this process we have come face to face with problems that have to be solved by research. The forests of East Pakistan are a mixture of a large number of species varying greatly in their technological properties or in other words the yield per acre of industrially and commercially utilizable timber is very low. Industries have therefore to cover large areas to meet their specific requirements creating difficulties of transportation and distribution. Most of the industries based on the utilization of wood in its natural form appear to be satisfied and some how or other procure their requirements. The worst sufferer appears to be the veneer and plywood industry which mainly produces tea chests. Although the specifications of the woods to be used for tea chests include a large number of species the industry appears to limit itself to the use of limited number of species which may be due to the nature of the machinery installed. The major species used, Civit, is readily attacked by borers if it is not peeled and seasoned soon after felling. Here research can only solve the problems of this industry.

Industries using forest produce in its natural form have been springing up in a haphazard manner in East Pakistan. It is common to see way side small saw mill units springing up overnight. At the present there is no statistics of the number of saw milling units, packing case manufacturing units and other smaller industries existing, their installed capacity, their power requirements, their production and the problems they are faced with. This information is essential before any large scale industry using similar methods and material can be planned or any attempt is made to solve the problems of the existing industries by research. A complete statistical survey of the existing industries using forest produce in its natural form is therefore essential in planning out research to help them.

The chemical utilization of forest produce has lagged much behind in East Pakistan. Utilization of cellulosic raw material in the production of consumer goods has been briefly referred to earlier. Uptil now only two pulp mills have been established and two more are in the process of establishment. If the chemical utilization of forest produce has to be exploited it is essential that more pulp mills should be established. There is great scope for this industry in East Pakistan. The pulp mill have the advantage that these do not upset the production of wood required in other industries using wood in its natural form. These mills mostly utilize the smaller woods such as tops and branches and pieces not utilizable as timber which is included in the general term 'forest residue' and can also utilize industrial waste. It is for the research worker to find out methods and techniques for developing this industry so that the available raw material in the country could be fully utilized.

Volatile distillates procured in the destructive distillation of wood are the basic raw material for several industries and the by product, charcoal, in addition to being essential for other industries is a material of daily

consumption in the domestic field. The produce of bark are numerous. Barks of trees are rich in alkaloids which can be utilized for the benefit of man. One of the most important used in East Pakistan is tannin. The exploitation of this resource needs a thorough knowledge of the nature and quality of such material in each species before any industrial project can be conceived. Research in all these fields can greatly help the development of industries based on forest produce.

#### GROWING INDUSTRIAL RAW MATERIAL:

Forest produce, unlike minerals, is a renewable resource. The absence of known mineral deposits in East Pakistan puts a heavy responsibility on the forester to provide organic raw material for the industrial development of the country. The high density of population, the low standard of living and unemployment all demand that the industrial development should be as rapid as possible. The natural forests of East Pakistan consist of a mixture of tropical evergreen and tropical deciduous species occurring in association with each other and with bamboo jungle. Over 100 trees species have been recognised to which numerous undergrowth shrubs and bush like species must be added. No one forest type is uniform or clearly defined over a large area. The species vary greatly in their technological properties or in other words the yield per acre for the purpose of specific requirements is very low. Tapping of raw material from natural forests has, therefore, proved to be very unsatisfactory, as far as industries are concerned. Specialized plantations, such as exist in rubber and tea industries, may be worthwhile in the field of forest industries. This is particularly true if resin industry, based on the Dipterocarps, and pulping mills based on grasses and bamboos are to be developed in East Pakistan. In other words the natural forests have to be converted into forests for specific purposes which necessarily means monoculture or a mixture of technologically allied species. Although large tracts of forests exist very near the largest paper mill in East Pakistan the required raw material has to be brought from forests situated about hundred miles away.

The changing trend in the utilization of forest produce have brought in new problems in silvicultural research. Hitherto timber was mainly used for constructional purposes but the technological development have found other uses of forest produce. Purely from the point of view of industrial utilization of forest produce species hitherto regarded as useless are becoming more and more important. Judging purely from the point of employment given and the value, utility and variety of finished produce derived from forest produce, bamboos will, most probably, get the highest priority in silvicultural research. Other species following bamboos would be the softer woods and the harder wood in general and teak in particular will get the lowest priority in the future scheme of things to come.

The projected future demand of forest produce gives a very bleak picture and shortages can be forecast. This means that more and more land has to be brought under forests or where limited land is available for forestry due to other considerations the use of smaller rotations to increase the production of forest produce is being increasingly felt and the question of fast growing species is becoming more and more important. Some serious thinking and hard work has to be done by the forester and the research worker

together to avoid any future shortages of rawmaterial. If such a thing happens the nation will never excuse the forester and the research worker for their short sightedness. Silvicultural research, in contrast to the old practice of concentration on the constructional timbers, will now have to concentrate on research on the methods of regeneration, growth and other method of increasing the production per acre of the species most required for the industrial development of the country.

CONCLUSIONS:

The essentials of an objective forestry research are coordinated research on problems of utilization and silviculture. Priorities in silvicultural research will depend on the industrial use of forest produce. Under the existing circumstances in East Pakistan the highest priority for silvicultural research appears to go to Bamboo and the industrially utilizable timber species.