

Bastar—A Challenge to Pulp and Paper Technologists, and Industrialists

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Introduction

Bastar district has been amply blessed by Nature's bounty and holds a tremendous potential for contribution not only to the economy of the State, but also to the national economy. The district is particularly rich in minerals and forest resources. In fact, in respect of forest area and forest growing stock Bastar could be placed almost at the top in the country.

In spite of the fact that the wood and Bamboo resources of Bastar are vast, there has been practically no industrial development based on these resources, with the result that a large production of the growing stock is remaining untapped. In fact the way in which the iron ore deposits in Bastar are being tapped to meet indigenous as well as export commitments presents a refreshing picture. This is the result of

bold and imaginative planning, which has led to the establishment of an industrial complex at the deposits as well as the laying of a railway line connecting the deposits with Vishakhapatnam. If only a similar blue print had been prepared for tapping the forest resources of Bastar, it would have been possible to meet a bulk of requirement of industrial wood and products from this region. At present there is no getting away from the fact that in respect of tapping forest resources for Industrial development Bastar has missed its date with destiny. It would serve no useful purpose in throwing blame for this on planners, technologists or industrialists. The spell or stalemate needs to be broken and a bold and pragmatic policy for the establishment of forest-based industries, particularly the prestigious ones of pulp, newsprint and board needs to be formulated.

The above idea would be considerably strengthened when predictions by experts of an impending global shortage of pulp and paper etc. in the next decade are taken into consideration. The Bastar forests can play a significant role not only in meeting the requirements of industrial products but also in contributing to export

earnings.

The last two decades have witnessed hectic activity in the forestry sector in Bastar and this interval has been punctuated with elaborate surveys, feasibility studies, etc. It would be worthwhile to recall the pioneering work done in Bastar by Pre-Investment Survey Organisation and of the contributions made to the cause of pulping of hardwoods by people like Fradon, Shagaet, Mahalaha and Seth, etc. From the period 1967 to 1972 there was hardly any national symposium of IPPTA or other organisations in which these people did not contribute articles or participate in deliberations.

The report of the Pre-Investment Survey Organisation in the year 1970 resulted in a keen interest being aroused among industrialists. There was a virtual scramble for obtaining letters of intent for setting up pulp and paper industries in Bastar. In this connection, mention could be made of the sustained efforts made by Bangur Bros, and of M/s. Baroda Rayon Corporation for a proposed Rayon grade pulp unit. The climate then appeared to be extremely favourable for the establishment of forest-based industries in Bastar. But the picture changed after some time

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and most of the industrial proposals which appeared to be sure to come up, faded out.

If a stock taking is done of the inputs made in Bastar on inventories, surveys, feasibility studies and projects reports it would be seen that more than Rs. 20 million have already been spent on these. The Forest Dept. of Madhya Pradesh had even gone several steps ahead of industrialists in undertaking formulation of industrial management plans. This was in anticipation of an almost assured industrial development activity.

As a result of the activities indicated above, Bastar can boast of authentic, precise and unique data on almost all parameters of forestry and industrial requirements. The value of these data has been recognised by the industrialists and financial institutions as well as by the World Bank. Nevertheless, there has been a complete stalemate in Bastar and unless the spell is broken, there is a danger of all the previous efforts and inputs going waste.

At this stage, the Madhya Pradesh State Forest Development Corporation (MPSFDC) has come on the scene and is striving to receive interest in Bastar. Among its activities it is implementing an ambitious forestry project in Bastar with the help of the world Bank. Particulars of this project are presented in the subsequent part of this paper.

The MPSFDC is doing its best to receive the industrial develop-

ment climate in Bastar. As such it could be said that it is squarely meeting the challenge. It would now be for the planners, technologists and industrialists to make their contribution in a big way and strengthen the hands of the corporation.

About Bastar and its Forests

Bastar is a predominantly forested territory and constitutes one of richest single forested regions in the country. Out of the total geographical area of the district which is 39,176 Sq. Kms. the extent of forest area is 22,882 Sq. Kms. (56%). In the national context, it works out to some 3% of total forest area whereas it constitutes some 13% of the State forest area. In terms of growing stock and potential yield also, it is prominent indeed. It contains some 7% (187 Million m³) of the total growing stock of the country. The estimated growing stock Bamboo according to Pre-Investment Survey of Forest Resources Organisation is to the tune of 4.2 million tonnes. The potential annual cut from these areas has been estimated as nearly 3.14 million cubic metres of timber and fuel and 0.32 million tonnes of Bamboo.

The forests of Bastar which are purely tropical, and deciduous can be boardly classified as Teak, Sal, and Miscellaneous types which contain almost all the assortments which are capable of catering to the demand of all the utility classes needed to establish an integrated complex of forest-

based industries. The average assortment of annual cut (3.14 million Cubic metres) in major utility classes from these forests could be estimated as 2% special size timber of Sal, 2% Plywood and Veneer logs, 18% Sawmilling material, 9% Poles and Small timber and some 68% Pulp and fuelwood. These figures may vary for each forest type separately but they certainly give an indication of vast potential still waiting to be harvested for industrial development.

As against the picture of potential annual cut indicated above, the tempo and intensity of actual forest working is in a low key. For want of adequate demand, the forests of Bastar are being worked on a selective basis only for large-sized timber, which can yield marginal profits inspite of long transportation leads by roads to markets outside Bastar. This selective working results in removal of hardly one large-sized tree, and that too mostly of Sal, per hectare. The remaining growing stock is either allowed to stand, or if felled, the material is left in the forests, adding to the fire hazzard. The practice of selective felling, firstly results in the creaming of the forest trees, and secondly in the progressive deterioration of the growing stock due to accumulation of unhealthy growth and absence of tending operations. From the silvicultural point of view it is necessary to create a demand for smaller timbers, poles, and pulpwood/fibrewood, so that the forests

could be worked scientifically and hygienically.

At the present level of demand the annual cut from the forests of Bastar is hardly 200,000 Cubic metres. As for Bamboo, it could be said that there is practically no working. It is pathetic that a rich long fibre resource like Bamboo, which is the mainstay of the pulp and paper industry in the country is going waste in Bastar. The potential of this material in Bastar is 32% of the total annual potential of the State and 8% of the potential of the country.

Like Bamboos, there is practically no demand for pulpwood/fuelwood. The solution for the utilisation of Bamboo and pulpwood would be in the establishment of large capacity pulp and paper units in the region. It would also be a good idea to set up low temperature carbonisation plants and activated charcoal plants for improving the utilisation of hardwoods.

One of the major constraints in Bastar is the weak and inadequate infrastructure. A rail link with the northern part of the State is a dire necessity. So also there is need to step up power production and the road-network intensity. All this would be possible only when an aggressive industrial development programme is taken up for Bastar.

Highlights of Some Studies Carried Out in Bastar

One of the earliest studies carried out in Bastar was that by Nagraj Rao Committee set up in the year

1964 by the ministry of Rehabilitation Govt. of India. This Committee proposed the establishment of several forest based industries including a paper unit of 100,000 tonnes per year capacity and a newsprint unit of 70,000 tonnes per year capacity.

The next important landmark in industrial investigations is LeCachau's report to the Government of Madhya Pradesh in 1966 which also recommended setting up of a newsprint mill in Bastar of 85,000 tonnes per year capacity, based on 40% chemical Bamboo pulp and 60% mechanical or semi-mechanical pulp from hardwoods.

Another study of considerable importance was carried out by P. S. Kothari at the instance of the Directorate General of Technical Development for the setting up of an integrated pulp and paper unit in Bastar of 50,000 tonnes per year capacity, based on Bamboo exclusively. Kothari in his report had recommended the subsequent expansion of this unit to 85,000 tonnes per year with the additional use of hardwoods with Bamboo.

The expert Group set up by the Ministry of Industrial Development to prepare a project report for the proposed Paper Corporation in its report had admitted that Jagdalpur in Bastar district is one of the best sites for establishing a paper mill. Strangely enough this Group came to the conclusion that on the basis of statutory prices of production the proposed mill would not yield any profit until the ninth year

from the commencement of production and as such, the proposal was not viable. When the Hindustan Paper Corporation was formed, the Bastar proposal was not even considered by it. While no useful purpose will be served at this stage in discussing the wisdom of the decision of the Hindustan Paper Corporation of not accepting the Bastar Project, it can only be said that the region has had a raw deal and that the clock of industrial development has been considerably put back. In a paper contributed by V. K. Seth *et al* to the IPPTA Journal (Vol. VIII, No. 3, Sep. 1971), it was shown that the cost of Bamboo delivered at the Mill site taken into consideration by Kothari was on the higher side. It was shown in this paper that with rational cost assumptions for raw material delivery, the gross profitability on the proposed investment before providing for depreciation worked out to nearly 20%. In spite of the convincing arguments put forward in this paper, the Bastar proposal was allowed to languish.

A new interest was aroused among industrialists as a result of the publication of the report of Pre-Investment Survey of Forest Resources Organisation in 1970. At about the same time, FAO brought out an Asia Newsprint Study conducted by the eminent consultants, Jaakoo Poyry and Co., which also recommended the setting up of a 100,000 tonnes per year capacity newsprint mill in Bastar. The

Pre-Investment Survey of Forest Resources Organisation presented unique data conforming to the requirements of industrialists for taking investment decisions. This organisation utilised the latest techniques of sampling combined with photo-interpretation techniques, and use of computers for data processing. This organisation also had elaborate wood tests carried out on Bastar species in laboratories and paper mills within the country as well as abroad. These results proved to be quite encouraging and assuring that Bastar hardwoods could be used for manufacture of pulp—both paper grade as well as dissolving, paper, newsprint and board. The results of the Pre-Investment Survey were received with interest and enthusiasm by the pulp and paper world in India as well as abroad.

Looking to the Keen interest shown by the industrialists, the Forest Dept. of Madhya Pradesh undertook in right earnest the formulation of industrial management plans so that the way could be paved for the establishment of industries and a systematic and smooth supply of raw materials to them.

The importance of Bastar was also brought out in the report of the National Commission on Agriculture. The Ford Foundation also organised a comprehensive Study of the forestry picture in Bastar.

The latest landmark in Bastar is the Bastar Forestry Project being undertaken by MPSFDC with

the help of the World Bank. The details of this project are elaborated in the following parts of this paper. It would be worthwhile pointing out here that the Preparatory Mission which was mounted by the World Bank in 1974 for scrutinising the proposal submitted by the Madhya Pradesh State Forest Dept. had been impressed by the rich forest resources of Bastar. This Mission put forward the idea of undertaking an ambitious programme of establishment of forest-based industries, the focal point of which would be an export oriented pulp mill of 250,000 tonnes per year capacity. This was to be in addition to the proposals of Bangur Bros., and M/s. Baroda Rayon Corporation which have been mentioned earlier in this paper. The subsequent World Bank Mission which came to the State in 1975, while agreeing with the findings of the Preparatory Mission, suggested undertaking of a Comprehensive Feasibility Study for exploring the total industrial possibilities in Bastar.

Efforts of MPSFDC and Particulars of the World Bank Forestry Project

The Project

The MPSFDC has boldly accepted the challenge and the clock has been set forward by undertaking the execution of MP Forestry Technical Assistance Project in Bastar (MPFIAP). It is the first project in the forestry sector on the country which has been accepted by the International Development Association in

(IDD) Washington. The agreement was finalised in Feb. 1976 for a credit of US \$ 4 million. The project focusses its attention on the three industrial catchments of Bastar district viz. Jagdalpur, Barsur and West Bastar. The main components of the project are :

- (a) **Research Trials :** (of species, provenances and silvicultural methods) and *pilot plantations* to establish the techniques of largescale reforestation with fast-growing species with emphasis on tropical Pines;
- (b) **Site Assessment Survey :** to select suitable areas for clear-felling and reforestation having regard to physical limitations of the forest, the requirements of tribals and to environmental considerations;
- (c) **Feasibilities Studies :** to provide basis for determining the location, size and configuration of forest industries that could be established;
- (d) **Studies of Tribals :** to work out plans to ensure their integration with future forest and forest industrial development;
- (e) **Pilot/Training logging Unit :** to develop suitable systems to supply large volumes of wood that would be needed for the new industries; and
- (f) **Provision of four specialists** for forestry operations and training of selected promising local key personnel by *student-ships* abroad.

A Fresh and Comprehensive Feasibility Study

Very comprehensive terms of reference for feasibility studies were drawn up after incorporating opinion of experts from Hindustan Paper Corporation Ltd., MP Audyogik Vikas Nigam Ltd., and Forest Resources Survey Organisation of MP Forest Dept. Letters of invitation were issued to all the reputed consultancy firms in the pulp and paper field both in India and abroad. Response from 27 firms from abroad and 7 firms from India was received out of which the following three firms of international repute have been shortlisted :

- i) Jaako Poyry & Co., Finland.
- ii) H.A. Simons (International) Ltd., Canada.
- iii) Sandwell & Co. Ltd., Canada.

The detailed proposals from these firms have been received and final selection of the firm will be done shortly. The study would take about 180 man-months of counterpart staff of the Corporation. It is estimated to cost US \$ 1.676 million and is likely to be completed by middle of 1979. The study would include a detailed analysis of the existing resource base, including topography, climate, land use and forest inventories, social characteristics and effects on population of proposed development; infrastructure; harvesting and transportation methods and requirements; reforestation practices and proposed replanting programme; market studies and evaluation of existing

and proposed forest industries.

Following a preliminary study of utilisation alternatives, it would develop analyses of alternatives and propose detailed organisational and financial plans, to have a technically sound and realistic approach. The MPSFDC has taken steps for selection of counterpart pulp and paper consultant who would maintain liaison with the international firm selected for carrying out feasibility studies and take effective steps for finalisation of proposals at different levels. A pulp and paper technologist is also being recruited for establishment of paper mills and allied industries. With the preparation of feasibility report, it would be possible to involve both international and national financing agencies/investors for an industrial venture in the field of pulp and other allied industries.

Conclusion

It would be seen from the preceding parts of this paper that a good deal of money, time and efforts has been invested by several agencies so far in an endeavour to present authentic and precise information about the rich forest potential of Bastar. Would it then be an exaggeration to say that, as far as the forest resources of this region are concerned, it is a sleeping giant ?

In spite of a rich data base available for Bastar and the impressive array of studies done, the goal of

harnessing the large uncommitted forest resources of the region for industrial development still remains elusive. It is time that this stalemate was ended, and catalyst introduced to speed up the process industrialisation. It would hardly need any persuasion for doing this if the question of opportunity cost of a delayed decision to set up forest-based industries, and especially of pulp, paper, newsprint and board, in the region is considered. The value of production foregone each year would literally run into several thousand million rupees. And to crown it all, the forest resource is going waste and having very little economic value. In a country which, according to experts is going to face an acute shortage of industrial wood, such prodigality in husbanding untapped resources would be difficult to understand or justify. The need of the day is to have a bold, conscious and pragmatic policy for breaking the spell. The sleeping giant must be made to wake up. The Madhya Pradesh State Forest Development Corporation with the help of sister organisations and Government departments is striving to inject a spirit in the situation. Towards this end, it is spearheading drive for the establishment of industries in Bastar. With the help of the World Bank it is implementing a forestry project, which may serve as a breakthrough in several respects. It is also planning to give a momentum to the industrial development process by set-

ting up a large-sized timber treatment-cum-seasoning-cum-joinery unit.

The industrial developments prospects in Bastar are truly fascinating and stupendous. This region can take, during the next ten years, an investment of nearly Rs. 3,000 million on forest-based industries. Any constraints, such as those of infrastructure, and

capital will need to be removed or overcome. What is now required is that planners, industrialists and technologists should seriously bend their energies for translating the blueprint into action. The Central and State Governments will have to mobilise sufficient resources for the purpose, and if there is still any problem, recourse to national and inter-

national finance could be taken.

Bastar is truly a challenge to the planners, technologists and industrialists. The time has come to meet this challenge confidently. What is needed is to look upon a problem or a challenge as an opportunity. Then, the greater the challenge, the greater the opportunity of producing of results.