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The proposed targets for fifth five Year plan are as under :

Paper & Boards : 1.5 million tonnes Newsprint : 0.4 ---do---Mill Board : 0.12 ---do---Total 2.02 million tonnes

Numerous Letters of Intent have been issued for this purpose and as per Government records, total capacity of nearly 1.37 million tonnes is already licensed or covered by Letters of Intent pending implementation. How much of this licensed capacity shall actually materialise? This is anybody's guess.

It is estimated that cost of setting up a new 100 tonnes per day capacity integrated paper unit with own pulp mill, chemical recovery and captive Caustic Soda/Chlorine plant shall be around Rs. 30 crores. Are such projects economically viable? Such high capital cost shall mean that nearly Rs. 1,700/- per tonne of papper production shall be the charges to cover depreciation and interest alone on such huge investment. There is tussle going on that machinery manufacturers in India should reduce their prices. How much can they reduce? Will that make the projects economically viable? Other alternative will be to increase the

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New Strategy for Development of Paper Industry In the Fifth Five Year Plan

selling prices of paper to abnormally high level of Rs. 4,000/- per tonne instead of present Rs.2,500/- per tonne. This will be penalising poor consumers who perhaps will never understand that lot of bad planning at the National level has resulted in boosting up the prices of this essential commodity to such an abnormal extent.

Problems of development of paper industry in our country as are being faced by us are also being faced by many other developing countries. How are they meeting the situation? It should be realised that paper industry basically is engaged in selling fibre to customers in the form of sheet of paper. The following are the major sources of fibre ;—

- Primary fibres-These are derived from natural or man-made forests. Bamboo pulp is our pri
 - mary fibre.
- 2) Secondary fibres Agricultural residues like straws, bagasse and jute sticks are our secondary fibres and utilisation of these is of utmost importance for our National economy. It should, however, be realised that for using these fibres we need some blending pulp of better quality manufactured from primary materials. In fact in our country we should give maximum importance to use of agricultural residues. Millions of tonnes of jute sticks are going

to waste in West Bengal. We can easily get bagasse from Sugar Mills if we give them alternate fuel. With green revolution there is now excess production of wheat straw and rice straw which cannot be used for cattle fodder etc. Millions of our farmers shall be very happy if they can make some extra money by selling the agricultural residues to paper industry. Again the problem is non-availability of primary pulp at economic price for blending purposes to be used along with the pulp from agricultural residues.

3) Re-cycled fibres from waste paper and rags etc. All over the Western World there is now emphasis on avoiding pollution. Revolutionary techniques are being developed to use more and more waste paper from garbage bins. In a poor country like ours we have to adopt all such means that may give fillip to use of recycled fibres. Here again we need primary pulp for blending purposes if we want to use the recycled fibres to best possible extent.

In the opinion of the author, in the fifth five Year plan we should give highest priority to set up big size Mother Pulp Mills, each of capacity of 1,00,000 tonnes per year. One such Mother Pulp Mill of 1,00,000

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tonnes per year capacity may give us 4,00,000 tonnes of paper annually with secondary fibres from agricultural residues and waste paper etc.

Newsprint Industry will also progress rapidly if chemical pulp is available from the market at cheap price. Unfortunately we are short of forest raw materials and there are only a few areas available in the country where such big size Mother Pulp Mills could be established. Such areas should be quickly identified and exclusively reserved for setting up of Mother Pulp Mills whether in Joint Sector, Private Sector or in Public Sector. No integrated Paper Mill based on use of 100% Bamboo should be set up in such areas.

There is a general thinking that market pulp industry in India cannot be profitable. It is an absolutely wrong thinking. Japan imports wood chips and can still sell the pulp in the International market at very economical prices. The crux of the problem is that the Mother Pulp Mill has to be designed to produce pulp at minimum cost of production. This should operate on same level of efficiency as any Pulp Mill installed in the developed areas of the world in the 1970's. Technology has to be carefully selected and may have to be imported. In general the following should be the criteria of efficiency of production:-

 Yield of pulp - It should not be less than 45% air-dry pulp from air-dry raw materials.

- Percentage of chemical recovery on yearly basis should not be less than 95%. The recovery Boiler should be on the range at leastfor 345 days in a year and the Boiler should be suitably designed for such cotinuous operation.
- Strength of black liquor from Brown Stock Washing Plant to Evaporator Plant should be around 17-18% total solids and not less.
- Steam consumption for cooking should not be more than one tonne of steam per tonne of pulp.
- 5) At least 50% lime mud produced in Causticising Plant should be re-cycled.
- 6) There should be minimum consumption of power per tonne of pulp production.
- There should be suitable mechanical handling equipments for raw materials and processed goods to save on labour costs.
- 8) Least consumption of water per tonne of pulp.

The above are only a few of the criteria of efficiency. It is well-known that in a Pulp Mill manufacturing unbleached pulp, steam generated in the Recovery Boiler itself may be able to provide all the steam for cooking of raw materials and for evaporation of black liquor etc. If a Turbo Generator is installed along with the Rccovery Boiler, power produced from such Turbo Generator may be sufficient to meet the requirement of the entire pulp manufacturing process.

If anybody tries to calculate cost of production keeping above efficiencies in view, he will find that even if we spend Rs. 20/22 crores to set up a 1,00,000 tonne per year capacity Mother Pulp Mill for unbleached pulp, such project shall be economically viable-at least much more so than expenditure of Rs. 30 crores on 100 tonne per day integrated unit.

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If Mother Pulp Mills are installed these will give fillip to installation of 25/30 tonne a day paper plants all over the country and we shall generate much more employment potential than if we follow the policy of setting up a few giant integrated pulp and paper mills.

Manufacture of paper making machinery in India will also get impetus if customers only desire to set up 25/30 tonne a day paper machines, as engineering know-how for construction of such medium size paper machines is well established in the country.

In short, in the opinion of the author development of this vital industry will suffer serious set back if Mother Pulp Mills are not installed in the fifth five Year Plan. This has been the view recently expressed by Chairman, Joint Committee of Papper Mills Association. Those who have set up small scale paper manufacturing units are also clamouring for the same.

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