National Policy for Proper Utilisation of Forest Materials by Paper Industry

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Paper Industry is basically a forest based industry and gorwth of this vital industry in our country is linked with proper utilisation of scarce forest materials. Paper Industry is engaged in extraction of cellulosic fibres from various forest raw materials and this fibre is sold to customers in the form of paper. Fibre after extraction from cellulosic materials is in the form of pulp. The following are mjaor sources of fibre in our country:—

1. **Primary Fibres:** These are derived from natural or man-made forests. Bamboo is the most important fibre and Paper Industry in our country is unique as major production is from bamboo, as in no other country of the world. some mixed hardwoods are also used by the industry since 1962. Eucalyptus is our main fibre from man-made forests. Of course we have some limited supplies of coniferous woods and other long fibered Paper making materials.
2. **Secondary Fibres:** Agricultural residues like straws, bagasse and jute sticks are our secondary fibres, available in plenty 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 of better quality pulp manufactured from primary materials. In fact, in our country we have to give maximum importance to use of agricultural residues. Thousands of tonnes of jute sticks are burnt in West Bengal. We can easily get bagasse grom Sugar Mills if we give them alternate fuel. With so called "green revolution" in our countcy there is now excess production of wheat straw and rice straw, all of which can be used for paper making. Millions of our farmers shall be very happy if they can make some extra money by selling the agricultural residues to Paper Industry.

   For using these secondary fibres it is important that some better quality primary fibre pulp is available to the paper manufacturers at economical price for blending purposes to be used along with the fibre from agricultural residues etc.
3. **Re-cycled Fibres.** from waste paper and rags etc. All over the western world there is now emphasis on pollution. Waste paper in garbage bins creates solids pollution. Revolutionary techniques are being developed to use more and more waste paper from garbage bins. In a country like ours we have to adopt all such means that may give filip to use of recycled fibres. Here again we need some pulp of primary fibres for blending pnrpose if we want to use the re-cycled fibres to best possible extent.

As at present our country is nearly self-sufficient in cultural and industrial papers, but there is serious shortfall in production of newsprint. We are still relying heavily on imports of newsprint. Only one mill in our country is producing nearly 42,000 tonnes per year of newsprint as against an estimated demand of 220,000 metric tonnes per year, which also is a restricted demand. The importance of free available newsprint in a democratic society need not be emphasized. Our neighbour Bangla Desh has been able to develop newsprint industry and they are in fact exporting to us while our plans for manufacture of newsprint in Third and Fourth Five Year Plan periods could not be implemented.

On completion of Fourth Five Year plan, demand for paper and board was estimated at 960,000 tonnes. Production, however did not come up and in 1972 Pro-

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duction of various varieties of paper and board including newsprint was nearly 845,591 metric tonnes only.

We have yearly increase in population of 37 per 1000 people and with rapid development in field of literacy, industrial production and with risining standard of living of our masses, both the requirements of cultural and industrial papers have to increase by nearly 10/15 % every year. Our per capita paper consumption at present is amongst the lowest in the world.

If proper attention is not paid to development of paper industry even in the Fifth Five Year Plan, country faces paper famine and prices of this essential commodity shall become abnormally high.

Numerous Government and Semi-Goverment Agencies have been busy trying to visualise the demand pattern for paper and board during the Fifth Five Year plan of the country which starts from 1974. The final picture seems to be as below:-

	Paper & Paper Boards	News-print	Straw & Mill Board ('000 tonnes)	Rayon Grade Pulp
1. Anticipated demand 1978–79.	1330	350	70	205
2. Production level to be achieved.	1330	350	70	205
3. Total capacity needed for achieving the production at (2) above.	1500	400	120	230
4. Existing capacity.	903	75	120	112.5
5. Additional capacity already under implementation.	92	15	—	—
6. Additional capacity required to be created to achieve targets at (3) above.	505	310	—	117.5
7. Capacity to be in pipe line for Sixth Plan.	195	90	—	33
8. Net additional capacity to be created.	700	400	—	150
9. Estimated investments : per annual tonne — Rupees.	6000	5000	—	3500
10. Total outlay required for (8) above, million Rupees.	4200	2000	—	525))Rs.)7.25)=1$
11. Estimated Foreign Exchange requirements, : million Rs.	1000	800	—	90)

From above Table it will be seen that by 1979 production level to be achieved is about 2 million tonnes of paper and board, newsprint and rayon grade pulp. For this purpose roughly nearly 6 million tonnes of air dry fibrous material is needed on air dry basis per annum. This requirment may easily increase to 10 million tonnes air dry per annum by 1984. Most important raw material used by the industry is bamboo. At present nearly 2.7 million tonnes of bamboo are used by the industry. Potential annulavailability of bambo is nearly 4 million tonnes only. This clearly shows that future development of the industry cannot be on the basis of hundred percent bamboo. Against our requirement of 10 million tonnes raw material per annum by 1984, bamboo may be available to the extent of 4 to 4.5 million tonnes only or even less than 50% of total require ment. Bamboo is considered the best raw material by the paper industry. Under such conditions what should be our rolicy in future years regarding utilisation of bamboo for this industry. There can be two alternatives:-

1) **Alternative A** : In areas where bamboo is still available in plenty, integrated pulp and paper mills of capacity 150 to 250 tonnes may be installed, based on use of 100% bamboo.

2) **Alternative B** : We install Mother Pulp of bamboo producing areas and make parer grade market pulp of bamboo available for use in the entire country. This bamboo pulp along with secondary fibres from agri-

cultural residues or re-cycled fibres of waste paper will help to maximise paper production.

Anybody who is concerned with rapid growth of the industry on proper lines will prefer alternative B given above. In other words, no new integrated Paper Mill Project based on use of 100% bamboo should be set up in the coming years. New projects should be based on maximum 50% bamboos and 50% other raw materials like mixed hard woods or agricultural residues.

If paper grade market pulp of bamboo is available freely in the country it will give big boost to setting up of 25/50 tonne a day paper plants all over the country based on use of pulp from agricultural residues like straw, bagasse, jute sticks etc. along with some long fibred bamboo pulp purchased from the market.

We have limited resources of coniferous woods that can be allotted for use of Pulp & Paper Industry. It is very important that we decide best possible use of these limited resources for maximum benefit of the industry. Why not set up a large size market Pulp Mill to manufacture high strength bleached kraft pulp from coniferous woods and such pulp could be made available in all parts of the country for blending purposes to make different grades of Writing/ Printing Papers with major furnish of pulp from bagasse or straws.

What can be the best mode of utilisation of Eucalyptus raised in our man made forest at such high cost to Public Exchequer ? Should this be used for manufacture of newsprint or for rayon grade pulp ? What should be our National policy regarding furnish for newsprint production ? In the opinion of the author ours is basically agricultural country. Proper utilisation of agricultural residues for National economy is very important for us. We should not burn our straw, bagasse or jute sticks. These fibres should form the major source of pulp for manufacture of newsprint. We may have to develop our own technology for making newsprint from such unconventional cellulosic raw materials. We have done well in the past. We have developed our tenhnology to make different grades of papers from bamboo. We have now to concentrate and find ways and means of making newsprint from materials like bagasse with minimum primary pulp used from the forest raw materials. In Southern State of Kerala there is a very special raw material (Eeta Reed) –(*Ochlandra Tranvancorica Reedi*) available for paper industry. This has special characteristics and makes very strong and long fibered pulp. This pulp is stronger and better in quality than bamboo pulp. How should we use Eeta Reeds for best benefit to the country ? Why should we not ear-mark this raw material available only in limited quantity for making strong Kraft papers and for Speciality papers like Cable Insulation paper, Sack Kraft etc. ? Why should we utilise this for making newsprint as is being planned by Hindustan Paper Corporation, recently set up by Government of India for putting up new paper and newsprint Projects in Public Sector ?

It is felt strongly by the author that development of paper industry in our country will depend upon development of market pulp industry. We have paid some attention to development of rayon grade pulp industry, but no attention has been paid to develop paper grade pulp industry. In all other developing countries of the world Governments are paying very serious attention to develop the pulp industry which forms the basis for development of paper industry. We should set up Mother Pulp Mills to manufacture bamboo pulp, pulp from coniferous woods, pulp from Eeta Reeds, pulp from Eucalyptus etc. These Pulp Mills should be installed based on latest technology so that the cost of production is kept to barest minimum. All such areas of our forest land where raw materials are available in abundance should first be scrutinised for setting up of Mother Pulp Mills. If market pulp of different forest raw materials is available freely in the country, paper industry will develop rapidly.

Progress in manufacture of newsprint in our country is also linked up with availability of chemical pulp, which has to be mixed in suitable proprotion with mechanical pulp for making, newsprint. It means high project cost and high cost of production if every newsprint mill in the country makes its own chemical pulp needed to the extent of 30 to 40% for mixing with mechanical pulp or other cheaper grade of pulp from recycled fibres or secondary fibres. If chemical pulp is available at

economical prices newsprint industry will rapidly expand with setting up of medium sized newsprint mills based on use of agricultural residues and waste paper etc.

The following shall be the advantages in installing Mother Pulp Mills:-

1. Utilisation of agricultural residues like wheat straw, rice straw, bagasse, jute sticks etc. for paper making shall receive impetus.
2. Re-cycling of more and more waste paper for making new sheet of paper shall also receive a boost.
3. Instead of setting up a few giant integrated Pulp and paper Mills, the industry will get difused and numerous medium size paper plants shall come up all over the country. Plant and equipment for these medium size plants could easily be manufactured in our own country while big size paper machines may have to be imported.

   Anyway.setting up of these giant Mills by Hindustan Paper Corporation in the public sector may be a serious drain on Public Exchequer for the next few decades as the economic viability of such giant Projects is very doubtful.
4. The country is facing serious shortage of newsprint. Manufacture of this grade of paper in medium sized newsprint mills shall be possible.
5. We shall generate much more employment potential in the Industry.
6. Our farmers who constitute the bulk of our population shall be very happy if they can get some extra money by selling agricultural residues like straw, jute sticks or cocount husks.