

A Panorama of Paper Industry in India

INDIAN PAPER INDUSTRY-A PROFILE

- * Wide range of Paper (viz. Writing & Printing, Industrial & Speciality) Paperboards & Newsprint produced in the country.
- * Domestic supply of Paper growing in tandem with increase in demand. Domestic Industry fully geared to meet the broad based and growing demand for Paper & Paperboards.
- * Imports are insignificant and constitute only 2% of domestic demand.
- * Demand for Newsprint outstripping present availability. Hence, dependence on Newsprint imports.
- * Broad geographical dispersal of Industry.
- * Increasing thrust and focus on international standards.
- * Increasing emphasis on Quality - Some large integrated mills have achieved ISO 9000 certification. Several others in the process of getting it and a few are following the TQM approach.
- * Catering to the growing requirements of discerning customers from India and abroad. Exports increased by the 10 times during the last 5 years.
- * Competitive and reliable supplier of all varieties of Paper and Paperboards. Making the "Made-in-India" label go global.
- * High level of Technical & Administrative skills of professional managers engaged in Paper Industry.
- * Strong inter-linkage between Industry and Economy. Factors like literacy rates, population growth, increasing per capita income and government purchases have a significant impact on the performance of the Industry.

WHAT INDIAN PAPER INDUSTRY IS SEEKING

- * Joint Ventures, Technology Transfer & Export possibilities.
- * **State-of-the-art Technology with emphasis on:**
 - Conserving energy,
 - Improving process efficiency,
 - Upgrading quality of final product,
 - Increasing capacity / production, through rebuilds of plant & machinery,
 - Product diversification,
 - Eco-friendly operations.
- * Commercially viable technology for using a broad mix of raw-materials, both, conventional (wood/bamboo) and non-conventional (waste paper & agri-residues).
- * Investments & quality upgradation in paper-making equipment, machinery and instrumentation.
- * To overcome scarcity of forest-based fibre through technology based and high yielding man-made plantation.
- * Research & Development which is Industry & Product oriented and meets the varied needs of Indian Paper Industry.
- * To become a reliable long term supplier in the export market with emphasis on quality, value addition and improved realization.

Prepared by:

**Joint Committee of the Paper Industry (JCPI)
C/o Indian Paper Makers Association
PHD House, 4th Floor,
Opp. Asian Games Village
NEW DELHI-110 016**

- * Investments in general infrastructure, in terms of adequacy and quality, to international standards.

PAPER INDUSTRY IN INDIA A HISTORICAL PERSPECTIVE

Paper Industry, which includes Paper, Paperboard and Newsprint, is one of the oldest industries in India. The first paper machine was set up in Serampore (West Bengal) in 1832.

Growth Phase

Although the Paper Industry existed for over a century, its growth really began in the early 1950s, and since this period, the growth of the Industry has been rapid as is evident from Table-I. The number of Paper mills increased from a mere 17 in 1951 to approximately 380 in 1994-95. The growth in production and capacity utilization during this period is also given in the table below:

Year	No. of Units	Installed Capacity	Production	Capacity Utilisation (%)
1950-51	17	0.13	0.11	85
1960-61	25	0.40	0.34	86
1970-71	57	0.77	0.75	99
1980-81	135	1.65	1.11	67
1989-90	317	3.23	1.87	58
1990-91	325	3.30	2.06	62
1991-92	326	3.36	2.11	63
1992-93	340	3.55	2.12	60
1993-94	380	3.79	2.32	61
1994-95	380	3.95	2.51	64

(The effective capacity utilisation, however, has been higher since the actual capacity is much lower than the installed capacity because of the closure of several mills.)

CURRENT SCENARIO

The Paper Industry in India went through a lean phase during the late 70's and 80's with profit

margins showing a continuous decline upto 1983-84. There was a slight recovery in 1984-85 and 1985-86 after which there was a steep decline, once again, until 1988-89.

The performance improved substantially in 1989-90 and 1990-91. The onset of the recession in mid-1991 affected this upturn and the performance was marginally lower in 1991-92 vis-a-vis 1990-91. The performance was severely affected in 1992-93 as a result of the recession. While sales increased, profitability was adversely affected. The subsequent recovery in 1993-94 continued in 1994-95 as well as in the first few months of 1995-96.

The Paper Industry in India has, for the last 2 decades or so, shown a distinct cyclical trend in its performance. Indian Paper Industry is thus increasingly and intricately getting linked to the global markets. This trend is likely to be increase in the future.

However, the Industry has (since January 1996) started experiencing a downtrend due to softening in international prices of Paper and Pulp, and will go through a declining cyclic phase for some times to come. The same phenomenon is also being experienced by the Paper Industry worldwide.

The current share, and corresponding demand level according to type of Paper produced, is given in the following table:

Type of Paper	Demand	Expected Growth Rate (%) (1995-2000)
Cultural Paper		
a) Writing & Printing	1.07	9.5
b) Coated Paper	0.08	10.0
Total Cultural Paper	1.15	6.7
Industrial Paper		
a) Kraft	0.70	8.0
b) Paperboards	0.60	9.6
Total Industrial Paper	1.30	8.7
Speciality Paper	0.12	7.0
Total Paper & Paperboards	2.58	7.8

DOMESTIC DEMAND AND CONSUMPTION PATTERN

Per capita consumption in India is low in comparison with the world average, as well as that of other developing countries, as is evident from Table-III below:

Table-III

Per Capita Consumption	
India	
1994-95	: 3.6 Kg.
2000-01 (Estimated)	: 5.0 Kg.
2005-06 (Estimated)	: 6.0 Kg.
1994-95	
Malaysia	: 80 Kg.
Thailand	: 34.5 Kg.
China	: 20 Kg.
Indonesia	: 13.3 Kg.
Asia Pacific Region	: 40 Kg.
World	: 45.6 Kg.

Domestic supply is fragmented with over 80% of the number of mills contributing to less than 40% of the total production in the year 1994-95.

FUTURE PERSPECTIVE

Given the current stress on liberalization, growth in Industry, packaging, exports, literacy rates etc. will be reflected in growth levels in demand for Paper, Paperboard and Newsprint.

According to a recent study, the expected increase in demand over the next 10 years is given in Table-IV below:

Table-IV

Estimated Demand for Paper & Newsprint (2000-05)		(Million Tonnes)	
	Demand for Paper and Paperboards	Demand for Newsprint	
1994-95	2.58	0.69	
2000-01	4.05 (7.8%)	0.90 (4.4%)	
2005-06	5.48 (6.5%)	1.09 (4.0%)	

Figures in brackets indicate Compounded Annual Growth Rate (CAGR)

The expected increase in demand, in the year 2000-01, according to the type of paper produced, is likely to be as follows:

Table-V

Estimated Demand (Based on Types of Paper) (Million Tonnes)

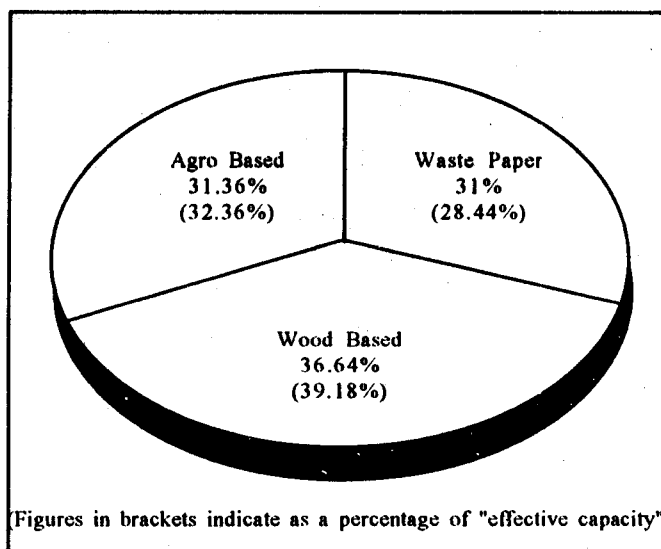
Type of Paper	Demand in 2000-01
Cultural Paper	
a) Writing & Printing	1.56
b) Coated Paper	0.14
Total Cultural Paper	1.70
Industrial Paper	
a) Kraft	1.11
b) Paperboards	1.04
Total Industrial Paper	2.15
Speciality Paper	0.19
Total Paper & Paperboards	4.05

INDUSTRY PROFILE BASED ON RAW MATERIAL

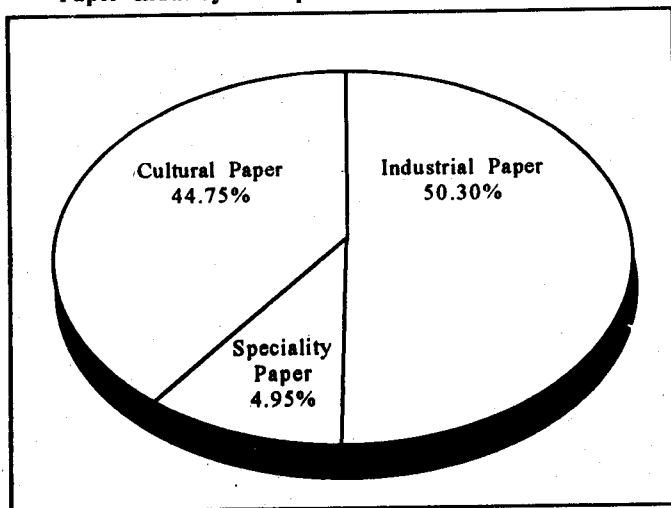
India is a fibre deficient country. Currently, Indian Paper Mills are using basically three types of cellulosic raw-materials viz. bamboo/wood (40%), agricultural residues (32%) and waste paper (28%).

The Segmentwise Installed & Effective Capacity and Composition of Demand is presently as follows:

Paper Industry: Segmentwise Installed Capacity (1994-95)



Paper Industry: Composition of Demand (1994-95)



The number of Mills, Installed and Effective Capacity and Production, on the basis of raw-material used, is given below:

Table-VI

**Raw Material Utilisation Profile (1994-95)
(Million Tonnes)**

Sr. No.	Category of Mills	Installed Capacity	Effective Capacity	Production	Effective Capacity Utilisation (%)
1.	Wood Based	1.47	1.14	1.07	83
2.	Agro Residue Based	1.06	0.94	0.70	96
3.	Waste Paper Based	1.17	0.83	0.74	78
4.	Total	3.95	2.93	2.51	86

Paper Mills in India were originally designed for processing bamboo. As the supplies dwindled, Mills were forced to use hardwood and necessary modifications in the plants were also carried on.

On account of constraint of forest based raw-material, use of alternate raw-materials like bagasse and other agricultural cellulosic materials (rice & wheat straw) were encouraged to meet the growing demand of Paper. Bagasse has received maximum acceptance for production of Paper, Paperboards & Newsprint. However, bagasse has certain inherent limitations in its usage, viz.,

- * Seasonal availability,

- * High volume : weight ratio,
- * Scattered availability,
- * High transportation & infrastructural costs,
- * Alternate uses like power generation etc.

Due to continued shortage of forest based raw-material, their use in total production of paper declined over the years from 84% in 1970 to 38% at present (1994-95). After considering increased usage of agri-residues (including Bagasse) and of waste paper there is likely to be a growing gap between demand and supply for Paper and Newsprint. Even if usage of Bagasse & other agri-residues is considered on an optimistic basis, the gap would still not be bridged.

It is therefore not surprising that there has been no major greenfield investment in wood based Pulp and Paper units for more than a decade or so. Industry is not the only sector reeling under shortages of wood to meet its increasing requirements. Wood shortages are even more critical at the level of much more basic needs like fuelwood.

(All wood based industries have been interacting with the Government to have a clear policy on "industrial plantation" of degraded forestland. A policy decision on utilisation of degraded forestland for industrial plantation is under consideration by the Government of India).

POLICY FRAMEWORK FOR PAPER INDUSTRY

Import Duty Structure

As in the case of Industry in general in India, the Paper Industry also had a high import duty structure which was as high as 140% till 1990-91. With the onset of economic liberalisation, the tariff rate was reduced progressively for the Indian Industry, as also for Paper Industry. In 1995, however, the import duty for Paper Industry was brought down very significantly compared to other industries (Reference Table-VII).

Table-VII**Import Duty Structure : Paper & General Rate**

Year	General Rate of Import Duty (%)	Import Duty for Paper & Paperboards (%)	Countervailing Duty (CVD)
1986-87 to 1990-91	140	140	10% + Rs. 1900/Tonne
1991-92	110	110	10% + Rs. 2425/Tonne
1992-93	85	85	10% + Rs. 2425/Tonne
1993-94	65	65	20%
March 1995	50	40	20%
May 1995	50	20	20%

Other Policy/ Fiscal Structure

- * No Industrial Licence for Paper and Paperboards is required for setting up Industry, if it is based on minimum 75% Pulp from non-conventional materials.
- * Excise Duty at concessional rate of 5% on Paper and Paperboards manufactured with minimum 75% Pulp from non-conventional raw materials.
- * Concessional rate of Excise Duty @ 15% for Large Paper Mills and @ 10% in the case of Small Paper Mills (having capacity less than 33,000 TPA) on Paper made with Pulp containing not less than (50% by weight of Pulp) from materials other than bamboo, hardwood, reeds or rags.
- * No import duty on Pulp for manufacture of Newsprint.
- * No statutory price control over indigenous Newsprint.
- * No excise duty on Newsprint manufactured by mills, registered under Schedule I of the Newsprint Control Order, 1962 and supplied to newspapers registered with the Registrar of Newspapers.
- * Import of Paper and Newsprint is under Open

General Licence (OGL) and is freely importable. In case of Newsprint, the duty is "nil".

PAPER INDUSTRY IN INDIA:**ISSUES & CONCERNS RELATED TO "TECHNOLOGY"**

Technology adopted by Paper Mills in India differs due to their sizes and the raw material furnish. Quality of paper is also a major consideration in its adoption. Larger mills, both agro and forest based, are comparatively more energy efficient mills compared to the smaller ones. Most smaller mills do not have chemical recovery systems and co-generation due to installation of low pressure boilers. Other salient features and requirements of the Industry, in relation to Technology, are:

- * Many smaller mills do not have full fledged effluent treatment plant and E.S.P. for their power boilers. Of late, many small mills are increasing their capacity to more economically viable level and are installing chemical recovery plants.
- * India is a very price sensitive country. Technology should assist in diminishing the cost of production, resulting in an end price acceptable to the customer.
- * Technology should also deliver enhanced quality to compete in a globalised economy.
- * Energy costs in India are far higher than the international norms. Technology should lead to better energy management of Indian Paper Mills, reducing the cost of energy.
- * Enhanced labour productivity, accompanied with better Technology, should lead to re-training and better jobs for the Indian manpower.
- * Technology should enable flexibility in manufacture to meet the varying demands of Printing & Writing Paper, Newsprint and Industrial Paper in the Indian marketing scene.
- * Technology should be environmentally friendly at affordable costs and deliver economies of scale.

- * Technology should facilitate use of diverse raw-materials for Paper making.

Concerns and challenges to be addressed to and resolved by upgradation of Technology are:

- * To improve the quality of hardwood pulp comparable to international standards;
 - * To significantly reduce the present levels and cost of power and steam;
 - * To introduce electronically operated process control system with a view to reduce costs and to achieve targeted parameters relating to various properties of paper, viz. basis weight, caliper, brightness, percentage of moisture, clay etc.
- * To overcome the poor quality of coal made available to the Industry;
 - * To examine viability of installing Paper Machine which has capacity to manufacture both Printing & Writing Paper and Newsprint;
 - * To adopt (if captive plantation of hardwood is permitted), technology relating to tissue culture and drip irrigation to assist quantum jump in growth and economic water management;
 - * To examine and undertake bio-bleaching of bagasse and development of enzymes which will consume lignin during storage of bagasse;
 - * To evolve Technology to treat trade effluents to prescribed standards.