



Infomerics Ratings

Infomerics Valuation And Rating Pvt. Ltd.

SEBI REGISTERED / RBI ACCREDITED / NSIC EMPANELLED
CREDIT RATING AGENCY

Mr. Vipin Malik,
(Chairman, Infomerics Ratings)

Dr. Manoranjan Sharma
(Chief Economist)

Mr. Sankhanath Bandyopadhyay
(Economist)

Ms. Priyansha Pushkar
(Officer - Economic Analysis)

INDUSTRY OUTLOOK

INDIAN PAPER INDUSTRY- CUSP OF CHANGE

18 April 2023

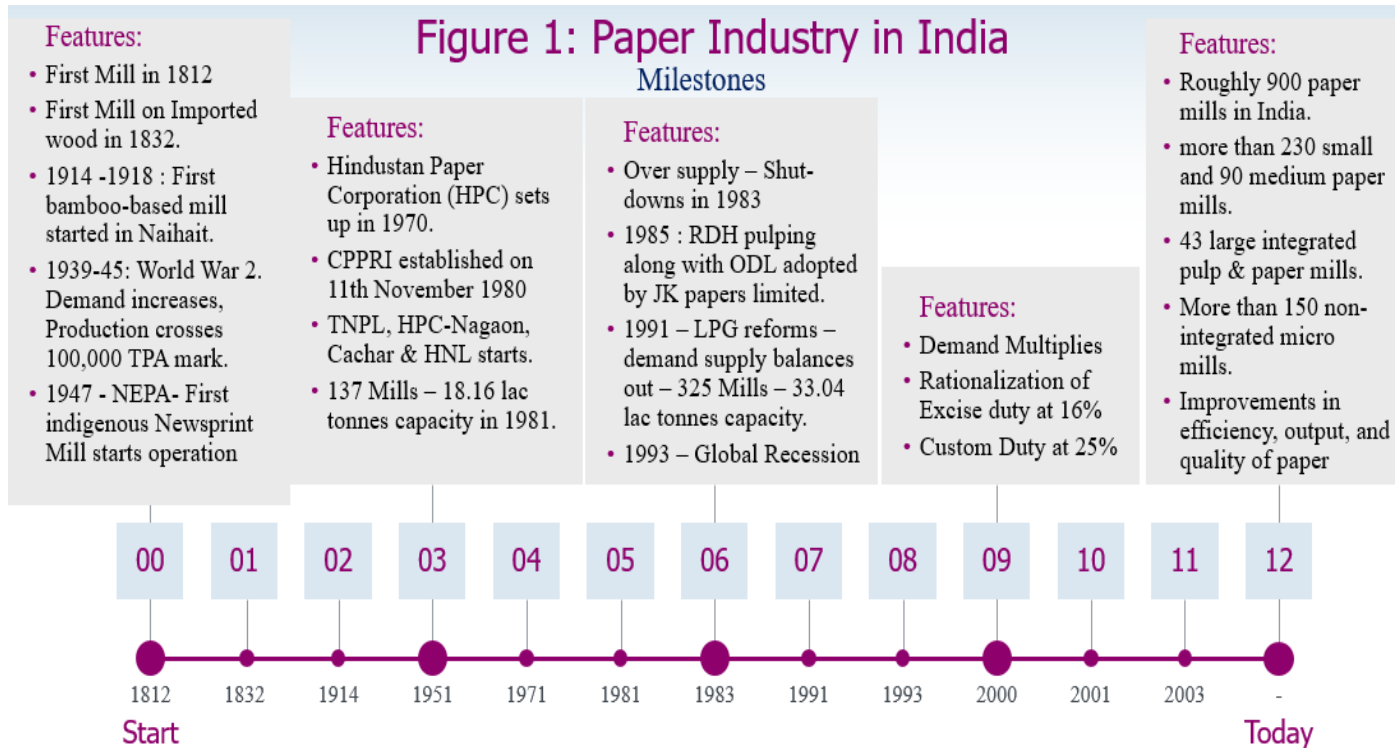
Introduction

The Indian paper industry is highly fragmented. It comprises of small, medium, and large paper mills with paper production capacity ranging from 10 to 1650 tonnes per day. As the primary raw resource for paper manufacture in the Indian hinterland, wood and agricultural waste is extensively used. The Indian paper industry is famous for its production of writing, newspaper, and commercial paper. Mills generate newsprint-grade paper using recycled wastepaper as the primary raw source. However, the raw material base has been changing significantly over the years.

The paper industry in India produces 5 per cent of the world's total paper. India accounts for about 5 per cent of the global paper market. The market is worth about US\$ 8 billion. The paper industry in India generates an estimated ₹ 70,000 crore in yearly revenue, with a domestic market size of ₹ 80,000 crore. The paper industry's tax contribution to the Government is around ₹ 5,000 crore.



In the 13th century, a captive monarch, Sultan Zainul Abedin, in Samarkand brought papermakers with him to Kashmir, India. In 1417–57 AD, he founded India's first paper producing enterprise.¹ Subsequently, in 1812 the first paper manufacturing machine in India was built by William Carey at Serampore.² In 1832, the first Fourdrinier paper machine was established at Serampore, West Bengal. It is a pre-colonial city on the west bank of the Hooghly River in Kolkata. However, shortages of demand resulted in its shut-down. The second mill was set up in 1870 at Ballygunge, near Kolkata.³ And India's oldest and core paper industry was Dyed in the Wool.



Note: Plant size classification; Micro units - below 50 TPD (Tonnes Per Day), Small units – 50 to 150 TPD, Medium Units – 150 to 300 units, and Large Units – Above 300 TPD.

Since the implementation of the New Indian Economic Policy in 1991, paper usage in India has increased steadily along with the country's GDP (Gross Domestic Product). The consumption of paper in India increased from 8.5 million Tons in 2011-12 to 13.05 million tons in 2016-17. This sector is predicted to continue expanding in India as a result of rising domestic demand, a flourishing manufacturing sector, growing upstream market for paper products like tissue paper, filter paper, tea bags, and lightweight online coated paper, and higher demand for better quality packaging from organized retail outlets. During the last decade, from 2012-13 to 2022-2023, India's paper consumption registered CAGR (Compound Annual Growth Rate) of 6 per cent compared to the global growth of 3 per cent making India one of the fastest growing paper producers in the world. India's part of global paper demand is rising as domestic demand rises steadily and western demand falls. Indian paper demand increased from 9.4 million tonnes in FY 2008 to 15.4 million tonnes in FY 2016. Despite the industry's rise, per head paper usage in this country is just over 14 kg, far below the world norm of 57 kg and North America's 200 kg.⁴ (Refer to table no. 1 below).

As compared to the newsprint consumption, which has declined slowly and marginally, production and imports of the newsprint material has declined drastically in the past decade. As per Indian Newsprint Manufacturers Association (INMA), the annual demand for newspaper in India is approximately 2.2 million tonnes, but an overwhelming 68 per cent of this demand (1.5 million tonnes per annum) is met by imports,

primarily from Canada and Russia. The interruption in supply chains and increases in prices stemming from the Russia-Ukraine war have exacerbated the situation.⁵

Table1: Production, Imports, Exports and Consumption of Paper, Newsprint and Paper Product								
Year	Newsprint				Paper			
	Production	Imports	Exports	Consumption	Production	Imports	Exports	Consumption
	(Tonnes)	(Tonnes)	(Tonnes)	(Tonnes)	(Tonnes)	(Tonnes)	(Tonnes)	(Tonnes)
2011-12	1,070,850	1,431,693	9,871	2,492,672	8,145,160	881,345	550,270	8,476,235
2012-13	1,131,636	1,240,804	8,557	2,363,883	8,605,000	1,060,821	552,537	9,113,284
2013-14	1,237,247	1,379,414	3,789	2,612,873	9,479,200	1,122,839	581,723	10,020,316
2014-15	1,156,751	1,335,813	9,641	2,482,922	10,043,100	1,289,130	684,304	10,647,927
2015-16	1,048,398	1,496,898	5,066	2,540,230	10,711,900	1,410,819	721,513	11,401,207
2016-17	1,012,169	1,584,440	4,354	2,592,255	11,225,200	2,639,929	788,689	13,076,440
2017-18	1,004,101	1,448,006	6,849	2,445,257	9,933,300	2,035,714	1,041,781	10,927,233
2018-19	1,061,692	1,366,473	12,726	2,415,439	6,861,700	1,798,494	1,563,260	7,096,934
2019-20	800,246	1,353,868	16,020	2,138,094	6,442,500	1,990,591	1,725,139	6,707,952
2020-21	443,421	662,515	3,181	1,102,754	6,167,700	1,373,002	2,259,091	5,281,611
2021-22	568,481	605,693	6,767	1,167,408	6,279,800	1,455,418	2,965,782	4,769,436
2022-23	517,528	681,370	8,807	1,190,091	6,491,121	1,720,622	1,817,521	6,394,223
Year	Paper Product							
	Imports	Exports	Total supply	Consumption				
	(Tonnes)	(Tonnes)	Rs. million	Rs. million				
2011-12	76,964	211,891	87,095	69,530				
2012-13	87,305	239,890	89,537	65,642				
2013-14	68,274	247,497	101,647	73,271				
2014-15	69,184	262,431	112,502	81,226				
2015-16	75,011	249,737	124,187	90,354				
2016-17	88,423	266,989	118,005	81,249				
2017-18	95,582	274,544	124,254	85,989				
2018-19	90,314	334,677	143,507	84,372				
2019-20	198,194	355,924	137,372	79,259				
2020-21	104,941	319,360	118,341	65,087				
2021-22	117,352	564,387	163,600	86,382				
Source: CMIE								

The proliferation of digital alternatives is expected to have contributed to a gradual drop in demand for writing and printing papers. The effects are readily apparent in production and consuming rates. Data suggests that production of paper (excluding newsprint) was down by 11.5 per cent on a year-on-year basis in 2017-18 and by 30.9 per cent in 2018-19. Consumption numbers also saw a similar trend as they fell by 16.4 per cent on a year-on-year basis in 2017-18 and by 35.1 per cent in 2018-19 (CMIE, 2022).

The paper output increased by 67,100 tonnes in January 2023, i.e., output rose 12.5 per cent to 604,300 tonnes. During April 2022-January 2023, Paper output rose 6.7 per cent. The production reached 5,553,900 tonnes in the ten months ending January 2023. The production of paper products rose by 11.1 per cent in November 2022 over the production in November 2021. The month made ₹ 12,892 million via paper products. In April–November 2022, paper product output increased by 24.4 per cent. The eight-month production worth was ₹ 107,909 million that ended in November 2022. Early results of the paper products industry indicate a 4.5 per cent y-o-y growth in sales revenues in the December 2022 quarter (CMIE).

Key Statistics of Indian paper Industry

Table 2: Key Statistics of Indian paper Industry.			
No. of Mills	900 (Approx.)		
Total Installed Capacity, million tons	27.43		
Operating Installed Capacity, million tons	22.73		
Production of Paper, Paperboard and Newsprint, million tons	18.91		
Capacity Utilization, %	91		
No. of Running units	526		
No. of Mills Closed	374		
Idle installed capacity, million tons	5.12		
Consumption (million tonnes)	22.83		
Per capita Consumption (kgs)	15.63 (approx.)		
Global Share (%)	4.57		
Import (million tonnes)	3.54		
Export (million tonnes)	2.07		
Source: CPPRI, Annual report 2020-2021 and Census Survey of Indian Paper Industry.			
Table 3: Contribution (million tons)			
	Wood Based	Agro-based	Recycled fiber (RCF) Mills
Production (million Tonnes)	4.2	1.66	13.5
No. of Mills	around 30	60	750 (Approx)
Installed capacity	3,385,147 TPA	1,630,020 TPA	16458149 TPA
Source: CPPRI.			

Indian paper output ranges from 5 TPD (tonnes per day) to 1650 TPD and is regionally distributed and highly fragmented, consisting of micro, small, medium, and large-scale paper mills. Plant size classification goes like this:

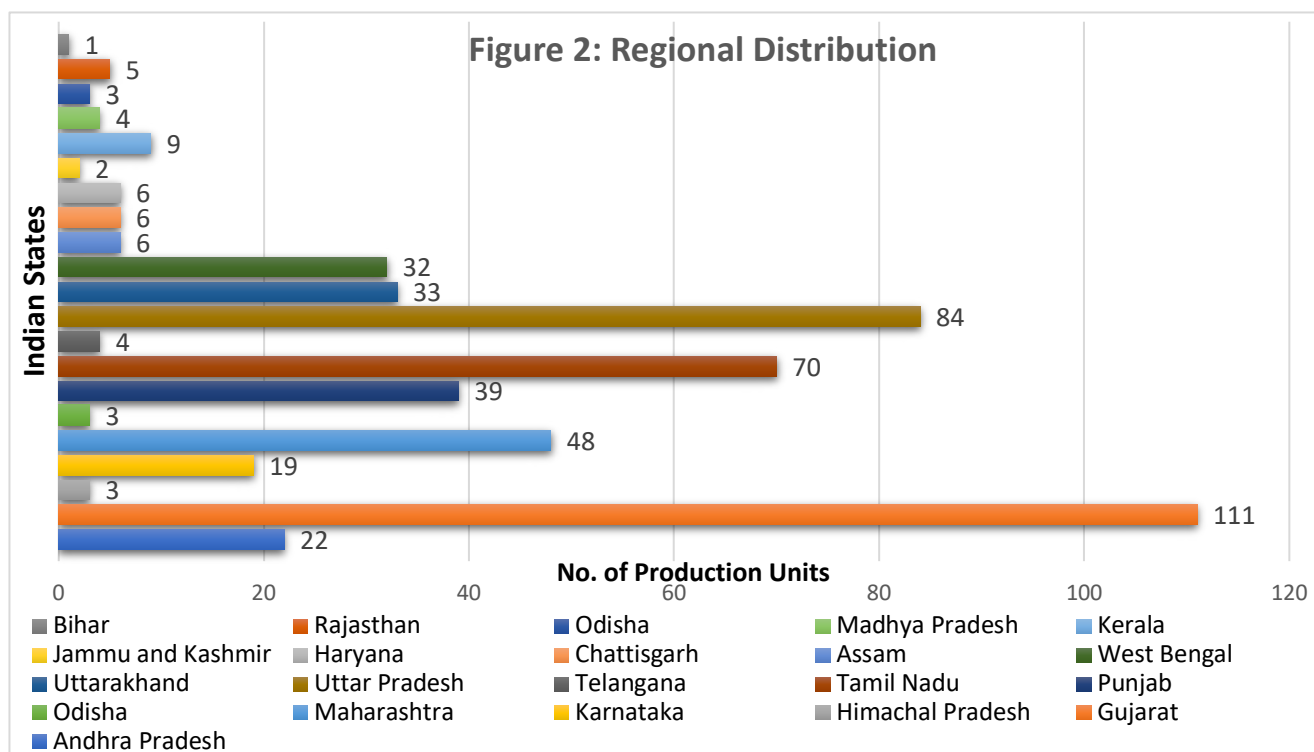
- Micro units - below 50 TPD,
- Small units – 50 to 150 TPD,
- Medium Units – 150 to 300 units,
- Large Units – Above 300 TPD.

Table 4: Scale wise distribution of Paper Units in India.					
Name of State	Large Units	Small Units	Medium units	Micro units	Total no of units
Andhra Pradesh	4	11	7		22
Gujarat	10	62	16	23	111
Himachal Pradesh	1		1	1	3
Karnataka	1	8	5	5	19
Maharashtra	3	17	7	21	48
Odisha	2	1			3
Punjab	4	19	4	12	39
Tamil Nadu	7	32	9	22	70
Telangana	1		1	2	4
Uttar Pradesh	9	40	23	12	84
Uttarakhand	2	14	14	3	33
West Bengal	2	15	3	12	32
Assam		2	2	2	6

Chhattisgarh		1		5	6
Haryana		2	2	2	6
Jammu and Kashmir		1		1	2
Kerala		3	1	5	9
Madhya Pradesh		1	1	2	4
Odisha		1		2	3
Rajasthan		4		1	5
Bihar				1	1

Source: Census Survey of Indian Paper Industry.

An examination of the statistics reveals that Gujarat is home to the highest amount of paper manufacturing facilities. However, most of these units are built from RCF. UP is home to the second highest concentration of paper mills in the country. These include one or two significant factories, the majority of which are located in the Muzaffarnagar and Meerut regions, respectively. The states of Tamil Nādu, Andhra Pradesh, and Maharashtra are home to the majority of the country's largest mills. The cities of Muzaffarnagar, Kashipur, Coimbatore, and Ahmedabad, are all home to significant concentrations of paper and pulp factories.



Note: Refer to table 4.

Raw Materials

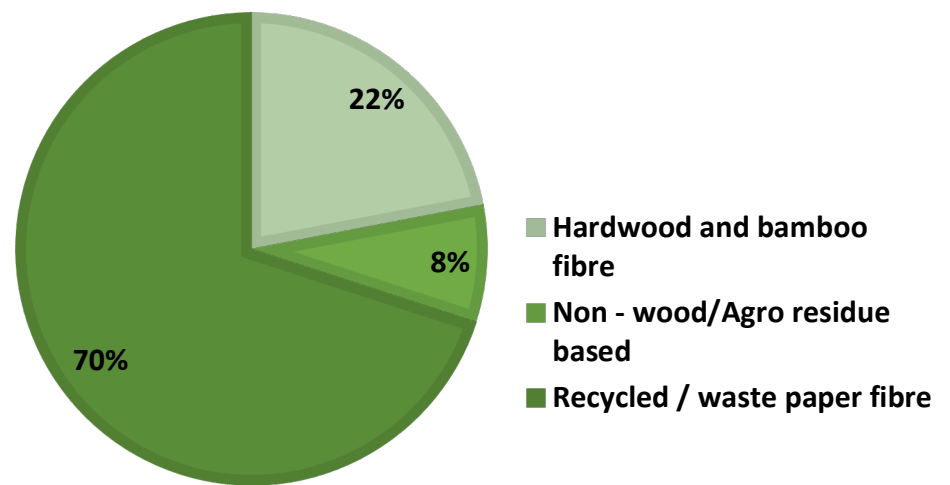
While making paper, the traditional paper mills would employ a wide variety of resources. The most common types of raw material used to make paper include recycled fiber, bamboo, wheat straw, rice husk, sabai grass, salia wood, bagasse, jute sticks, soft wood pulp obtained from eucalyptus, pinewood, wattle, and mulberry trees, etc. Though, using recycled paper in the production process has boosted the growth of the Indian handcrafted paper industry. But the paper industry in India faces challenges due to a lack of a key raw material, i.e., wood fiber. Almost 90 per cent of the raw wood pulp used in the paper industry comes from agro/farm forestry. In India, the agro-forestry industry and the agricultural community provide the raw

material for the majority of the 800 to 850 paper mills found across the country. In order to acquire the wood fiber used in paper manufacturing, trees must be grown and harvested. Because of the efforts of wood-based paper mills, 12 lacs acres of land throughout the nation have been converted to agro-forestry, which has had a positive impact on the environment. The paper industry has invested much in research and development, resulting in the creation of high-quality tree clonal seedlings that are resistant to disease and drought and can be cultivated in a wide range of agro climatic conditions. To better agro-farming, technical extension services are being provided to farmers for half a decade as a gestation period.

The affairs of the Indian Paper Sector are steered by these major pan-India associations, namely, Indian Paper Manufacturers Association (IPMA), Indian Agro & Recycled Paper Manufacturers Association (IARPMA), Indian Recycled Paper Manufacturers Association (IRPMA), and Indian Newsprint Manufacturers Association (INMA), etc.

This has led to growth in employment levels in this agro-based industry. Nationally, paper sector is one of the core entities in terms of supplying employment in India. Overall, 2.5 million persons are directly (over 0.5 million) and indirectly (more than 1.5 million) getting their livelihood from this sector. Out of this overall sectoral employment, it provides direct employment to more than 0.33 million people in the country's rural areas.

FIGURE 3: DISTRIBUTION OF RAW MATERIAL USED IN PAPER PRODUCTION

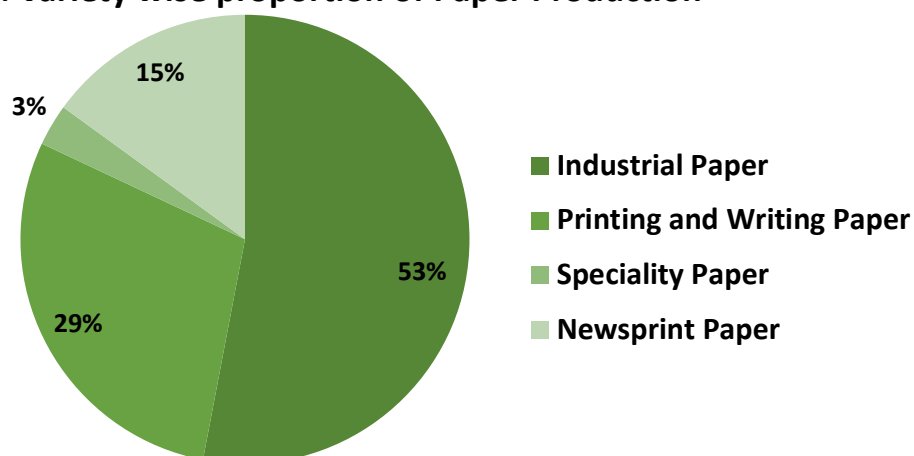


The proportion of output that is based on RCF has expanded, which has come at the cost of the agro-based sector, whereas the wood segment is consistently giving its expected output supported by aggressive agro/farm forestry. At present, 4.20 million tons of paper demand is met out from the wood segment (refer to Table 2). Around 8 to 10 per cent of the demand is fulfilled by the agro-based paper.

Variety of Paper

India produces a variety of paper types that are often used in writing, packing, printing, and specialty papers like tissue papers, textured papers, copier paper, super printing paper, thermal paper, stone paper, bond paper, cream weave paper, map-litho paper (surface size and non-surface), coating base paper, and other types of paper are available for printing and writing (P&W). Paperboard, Kraft paper, posters, and other papers are used as packing materials. Chromo paper/board, art paper/board, and more types are also available. Figure 4 demonstrates variety-wise proportion of paper production.

Figure 4: Variety wise proportion of Paper Production



Source: <https://forum.valuepickr.com/t/newsprint-paper-industry-on-the-road-to-recovery/20905>

Table 5: Variety wise production from various raw materials

Variety	Production Million tons (2019-20)	Raw Material	Production Distribution, Million tons (2019-20)	Share %
Writing Printing Grade	7.215	Wood Based	2.78	35%
		Agro Based	0.61	
		Recycled Fiber Based	3.83	
Packaging Grade	11.33	Wood Based	0.85	55%
		Agro Based	1.28	
		Recycled Fiber Based	9.2	
Newsprint	1.03	Wood Based	Nil	5%
		Agro Based	Nil	
		Recycled Fiber Based	1.03	
Others	1.03		1.03	5%
TOTAL	20.61		20.61	

Source: CPPRI 2019-2020

Table 5 shows the distribution of variety wise production coming from various raw materials. This demonstrates that 100 per cent of the fiber used to make newspaper comes from recycled sources. Packaging Papers & Boards have a share of around 55 per cent in the total production. The Printing & Writing (P&W) paper segment forms around 35 per cent of the market.

Major Players in the Paper Industry

The P&W grade of paper comprises mainly of uncoated brands viz., cream wove, map-litho; copier paper and is mainly produced by wood-based mills with a little share from agro and RCF, whereas the industrial paper, classified into kraft paper, whiteboard, Machine glazed (MG) poster, duplex board, and grey-board, is mainly produced by the RCF and agro based mills. However, some varieties such as Flexible Box Board (FBB) are made by large players such as ITC & JK.⁶ Table 6, 7 and 8 provides the list of the top ten companies in the respective segments.

Table 6: Market Share of the top ten Companies: Paper Products (per cent)			Table 7: Market Share of the top Eight Companies : Newsprint (per cent)		
Rank	Company	2021-22	Rank	Company	2021-22
1	Avery Dennison (India) Pvt. Ltd.	14.7	1	Shree Rama Newsprint Ltd.	7.58
2	Parksons Packaging Ltd.	9.24	2	Pragati Paper Inds. Pvt. Ltd.	3.51
3	Bank Note Paper Mill India Pvt. Ltd.	6.89	3	Vamshadhara Paper Mills Ltd.	1.99
4	I T C Ltd.	4.9	4	Malu Paper Mills Ltd.	1.88
5	K C L Ltd.	2.61	5	Akula Boards Pvt. Ltd.	0.86
6	Astron Packaging Ltd.	2.59	6	Sri Lakshmi Prasanna Agro Paper Inds. Ltd.	0.68
7	Borkar Packaging Pvt. Ltd.	2.3	7	Saffron Industries Ltd.	0.46
8	B & B Triplewall Containers Ltd.	2.21	8	Sree Ramachandra Paper Boards Pvt. Ltd.	0.01
9	Pragati Pack (India) Pvt. Ltd.	2.11			
10	S J S Enterprises Ltd.	1.87			
Table 8: Market Share of the top ten Companies : Paper (per cent)					
Rank	Company	2021-22			
1	I T C Ltd.	5.14			
2	J K Paper Ltd.	3.84			
3	Tamil Nadu Newsprint & Papers	3.7			
4	Century Textiles & Inds. Ltd.	2.59			
5	Tetra Pak India Pvt. Ltd.	2.42			
6	Huhtamaki India Ltd.	2.36			
7	Emami Paper Mills Ltd.	1.79			
8	Khanna Paper Mills Ltd.	1.77			
9	West Coast Paper Mills Ltd.	1.71			
10	N R Agarwal Inds. Ltd.	1.47			

Source: CMIE data

The consumption of Printing & Writing (P&W) segment is enhanced by rising literacy rate. The results of the 2011 Census revealed an increase in literacy in the country. The literacy rate in the country is 74.04 per cent, 82.14 for males and 65.46 for females.⁷ This rise is largely attributable to the following Government's flagships schemes:

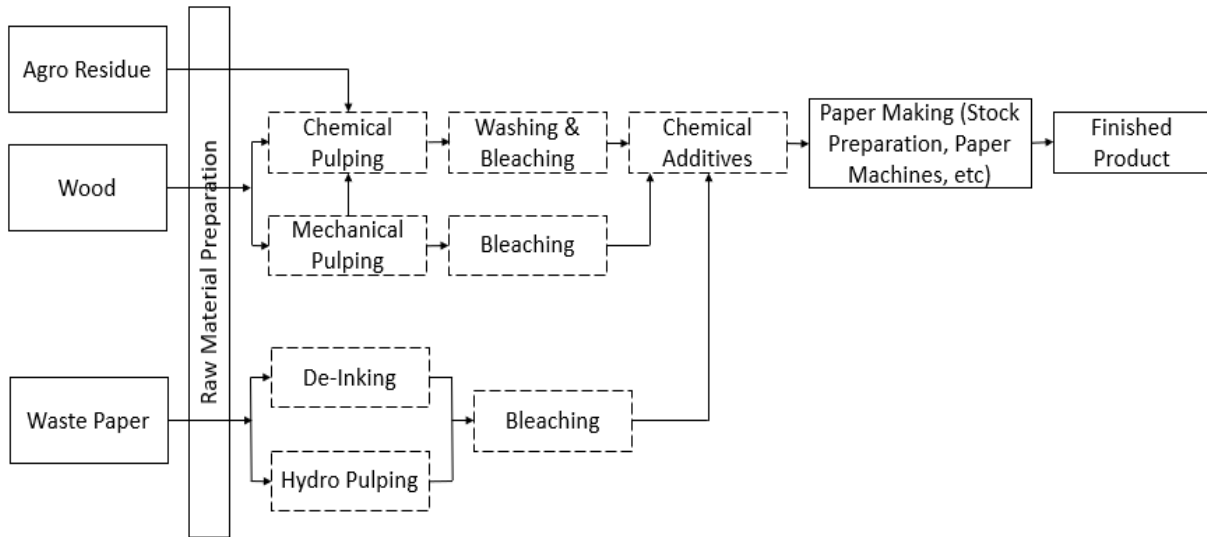
1. Pradhan Mantri Kaushal Vikas Yojana (PMKVY),
2. Mahila Samakhya Programme,
3. Sarva Shiksha Abhiyan (SSA),
4. Beti Bachao Beti Padhao,
5. Strengthening for providing quality Education in Madrassas (SPQEM),
6. Rashtriya Madhyamik Shiksha Abhiyan (RMSA),
7. Saakshar Bharat (Adult Education) and lastly,
8. Goods & Service Tax (GST) and the Make in India program.

The following steps are involved in the production of paper:

1. A process called "pulping" is used to separate the fibers and clean them.
2. The pulping process is followed by the refining procedure.
3. Washing: Process of diluting.
4. Fiber formation on a thin screen.
5. Putting the material under pressure to make it denser.

6. Letting the paper dry to make it lighter.
7. Bleaching – the process of coloring the material as per requirement.
8. Final Product.

Figure 5: Paper Making Process

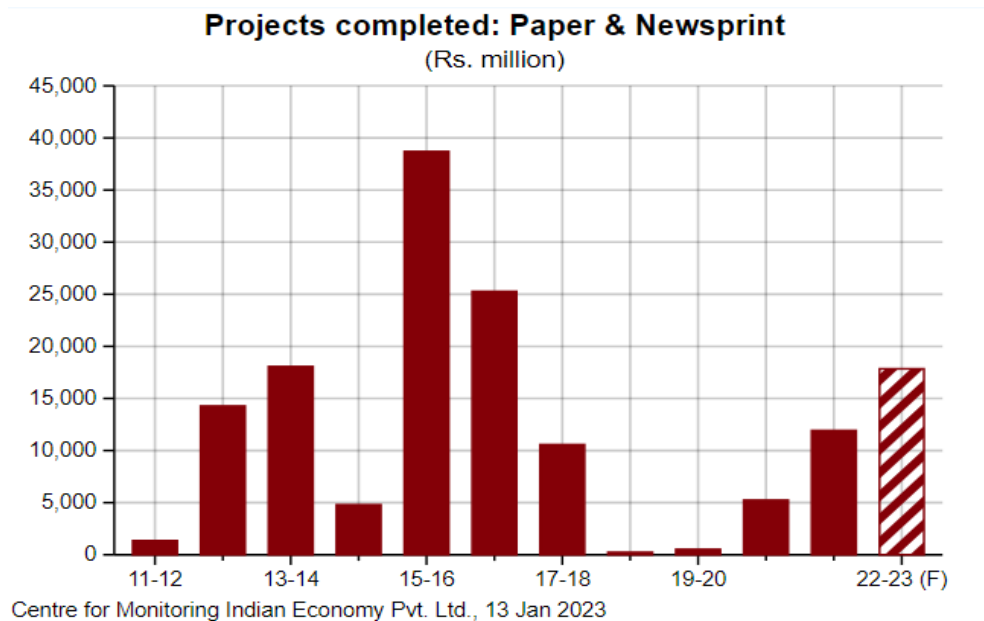


Source: <https://www.alphainvesco.com/blog/understanding-the-indian-paper-industry/>

Pandemic Effects – COVID 19

After March 2020, a nationwide lockdown halted the industry level operation, with the result that the paper industry's both inward and outward supply chains were disrupted. According to IPMA (Indian Paper Manufacturers Association), educational institutions, commercial enterprises, and downstream printers, publishers, converters, and stationery services were locked down, causing significant demand compressions.⁸ As per CMIE, there were only two new project announcements in the industry in 2020-21 and both the announced projects were in relation to adding capacities for the manufacturing of kraft paper and packaging boxes. In the same year, project completions in the industry stood at ₹ 5.2 billion.

Figure 6: Projects Overview



The mill operations of Indian paper sector were functioning smoothly till 20th March 2021 when nationwide shutdown was once again imposed by the government. During the lockdown, most of the mills stopped their operations completely from late March to April 2021. Some mills began operations partly in May 2021, depending on their locations and situational factors. The detrimental impact of the pandemic is readily observed on the Indian Paper Sector, and from April 2020 to date, it is estimated that only around 30 per cent of the mills attained 70 per cent capacity utilization.⁹ The rumors of contracting Covid-19 via newspapers affected demand for newsprint too.

Due to the continued closure of schools and other educational facilities throughout the COVID period, the P&W segment received a significant blow. As online lectures and assignments become increasingly prevalent, demand for traditional printed materials naturally declined. Rise in the imports of copier and coated paper was already a major challenge for the industry. The imports of the specialty segment of printing paper, i.e., cheque paper, security paper etc., also rose.

Both the inward and outward supply networks were impacted by the disruption. Accordingly, there was a significant decrease in the availability of all major supplies, even though the mills' inventories were at the typical level that had been established over a period. The outward disruptions created major challenges because suddenly, the manufactured material could not be moved. Within the geographical boundaries of the country, there were several types of restrictions, such as, those imposed from one state to another, within a state, and at the district level.

After business operations picked back up, the packaging industry gained speed thanks to the high demand from industries like pharmaceuticals, fast-moving consumer goods (FMCG), internet retailing, and the surging need for sanitary paper products. There was demand-driven cost cutting. This was due to the demand crunches coming from all the way from 2020. The rising cost of raw materials, fuels, and other inputs had increased local paper and paperboard production, rendering India's paper industry uncompetitive. India's imports increased for paper and paperboard (excluding newsprint).

Increasing urbanization, consumer's demand for convenient packaged meals, and the need for higher quality packaging sold in stores provided an impetus to the steady growth of this sector. Unfortunately, production reduced severely in the pandemic.

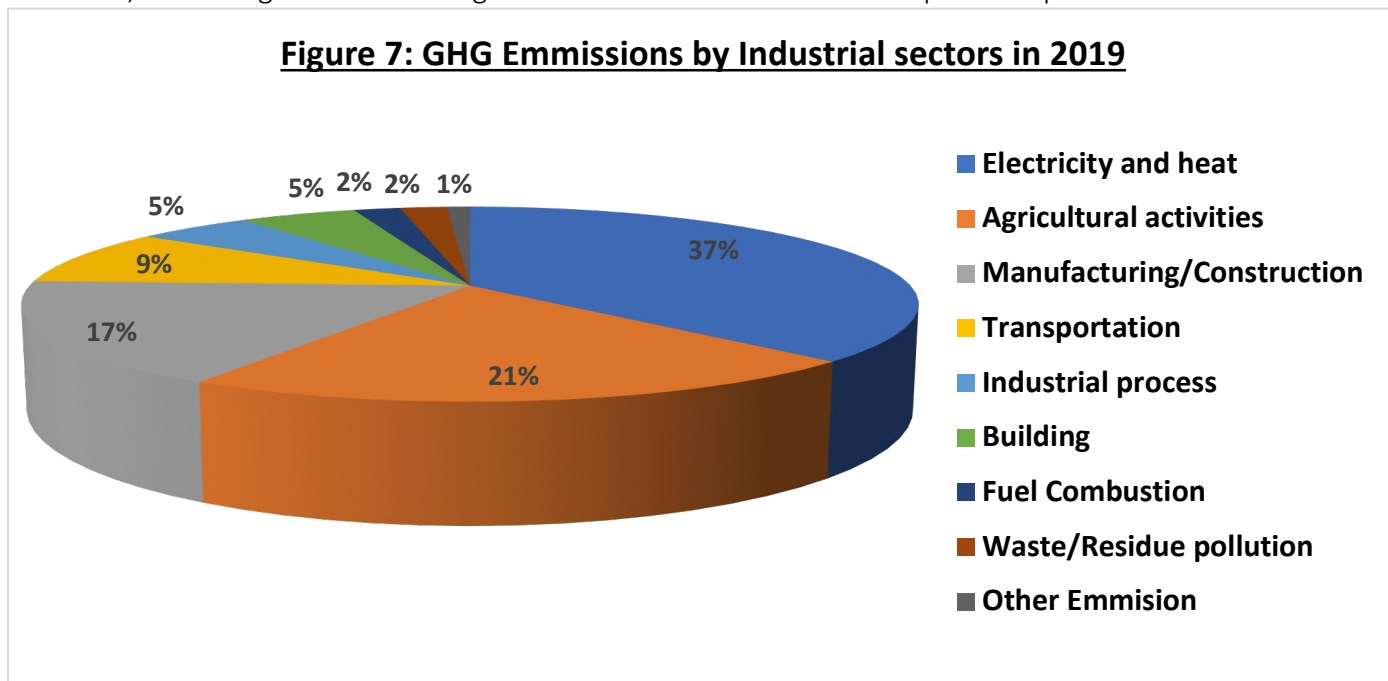
Industry Risk

As the industry plans and looks forward to a demand escalation in the future, it must also plan to address some of its weaknesses and threats posed under the current scenario. In this respect, there are many facets that the industry must grapple with to steadily march ahead. Some of the key risks are:

- **Raw Material Shortage:** The Indian paper industry is highly dependent on the availability of raw materials such as wood, bamboo, and bagasse. Any shortage or price fluctuations of these raw materials can adversely affect the industry's operations and profitability. Due to extreme insufficient supply and high input costs, the Indian paper market is in an untenable state. The increase in production costs, logistics, chemicals, and raw materials has compelled paper mills to set new price records.¹⁰ Given the pandemic and Ukraine war, the entire paper business community turned mindful of the supply chain scenario for 2023, even though it may be difficult to predict the world cargo trend for the future. The coal prices have also been impacted by Indonesia's decision to curb exports. The issue of a conspicuous shortage of basic raw materials together with their high cost has aggravated the pressure on the margins and the unviability of the operations in some cases also led to the closure of mills. The gravity of the situation is reflected in the fact that at present the cost of procuring wood in India is more than

\$100 per tonne whereas the same in other competing countries that have advanced paper manufacturing is \$60 per tonne.

- Environmental Challenges:** The paper industry is a significant contributor to environmental pollution, and therefore, it is subject to stringent environmental regulations. Many environmental issues, such as climate change, human toxicity, ecotoxicity, photochemical oxidation, acidification, nutrification, deforestation and solid refuse production, are exacerbated by this resource- and capital-intensive nature of this business.¹¹ Though Paper industry in India is an agro-based industry and it includes enterprises that make pulp, paper, paperboard, and other cellulose-based goods from wood as a raw material can be classified under Manufacturing as well as Agricultural sector. And both these sectors produce the most greenhouse gases (GHG) combined.¹² Since the pulp and paper industry in India is largely considered as a polluting and non-sustainable industry, concerted efforts have to be made to remodel the industry with an accent on sustainability and renewable or recyclable raw materials. Towards this end, the Green Rating Project (GRP), undertaken by the Centre for Science and Environment, New Delhi attempts to examine the environmental impact in terms of raw material inputs, fiber sourcing, discharges and uses to formulate a holistic and broad-based criterion of environmental parameters factoring all these aspects. This is a new and innovative concept and needs to be supplemented with personal visits to the mills by surveyors, and reports from pollution control boards, local communities, the media, and non-governmental organizations for a credible and transparent report.



Source: Statista.

Globally, the paper and pulp business were responsible for approximately 190 million metric tonnes (Mt) of CO₂ emissions in 2021, which was a record high for the sector and accounted for approximately 2 per cent of all industrial emissions.¹³ According to estimates published in the Global Carbon Budget Report in 2022, India had the highest rate of carbon emission growth among the world's main contributors to global warming. It increased by 3.8 per cent annually to become the fourth largest emitter worldwide. India's per capita carbon emissions are still one-eighth of those of the United States and one-third of the global average. According to the Report, India's total emissions in 2021 are estimated to be 2.7 billion tonnes, marginally less than the EU's total of 2.8 billion tonnes. India's share of global emissions in 2021 was 7.5 per cent, marginally lower than the EU's 7.7 per cent.¹⁴

While regulations are necessary for minimizing the deleterious environmental impact of ongoing business activities, cumbersome procedures and rigid standards imperil the level of predictability of future business opportunities and even stifle the incentives for pursuing more fundamental and environmentally responsible technological advancements.¹⁵ Failure to comply with these regulations could result in fines, penalties, or closure of the operations, which would affect the industry's growth. These regulations are in the form of performance standards (emission limit values)¹⁶, technology requirements¹⁷, as well as various incentive-based instruments¹⁸ such as taxes/charges, voluntary/self-regulations and tradable emission allowances.¹⁹

- **Competition:** The Indian paper industry is highly competitive, with several large and small players heavily concentrated in a single community. Price competition, coupled with increasing demand for high-quality paper products, can affect the industry's profitability. Government policies related to tariffs, taxes, subsidies, and import/export regulations can significantly impact the paper industry's profitability. Any adverse changes in these policies can increase the cost of operations and reduce the industry's competitiveness.

The challenge of restraining indiscriminate shipments of paper from China and other ASEAN countries is one that will never go away completely. The paper manufacturers in China and other ASEAN countries not only have access to low-cost supplies and raw materials, but they also receive assistance and incentives. Because of this, it is impossible to provide Indian manufacturers with an equal playing field in the internal market.²⁰

The Indian paper industry's competitiveness on the fronts of cost and quality has come into a sharp focus as a consequence of the advent of a globalized economy leading to reduced protectionist measures and the inculcation of FTAs (Foreign Trade Agreements) with burgeoning bordering economies.

- **Technology:** The paper industry is constantly evolving, with modern technologies and processes being developed to improve productivity, efficiency, and quality. Failure to keep up with these technological advancements could result in a competitive disadvantage for the industry players. The lack of indigenous manufacturing capabilities for plant and machinery is one of the many challenges that the industry face. Nearly 36 per cent of the paper production comes from the forest based raw material and the remaining from the non-conventional raw material, like agro residues and wastepaper.²¹ At present 73 per cent (14.75 million tons of the production) comes from the RCF sector. In the face of pollution problems, many small/medium agro-based mills, which could not afford chemical recovery switched to using RCF for paper making.²²

The vast majority of paper mills in India employs obsolete technology. Due to the industry's complex structure, the mills' technology and apparatus vary in accordance with their scale of operation and raw materials. This has not only a negative impact on the product's quality and price, but also on the environment, as outdated technologies are frequently less efficient and more polluting.

The Indian paper industry faces several risks that require adroit management and mitigation to ensure sustainable growth and profitability. These have been discussed in numerous forums, but a lasting remedy remains elusive.

Policy Initiatives

We observed that in comparison to the budget for the previous year, the Union Budget 2023-24 represents an advance in the utilization of technology for the purpose of enhancing India's agricultural economy. The Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharman announced in her Union Budget 2023-24 Speech that the Government will provide funding to help implement policies that will promote agro-forestry and commercial forestry. The Indian paper sector has lauded and accepted the Government's assistance. In Union Budget 2022-23, this policy that the Government of India had put in place to encourage agro-forestry could give the paper industry a boost in terms of the stability of its raw materials, in addition to contributing to an increase in the overall amount of green cover across the country. This is after Indian paper Manufacturing Association (IPMA), in its Pre-budget submission, urged the Government to offer degraded forest land and non-forest Government land near pulp mills for pulpwood plantation to the industry, which faced wood pulp/raw material shortage.²³

In 2019, Union Budget imposed 10 per cent custom duty on newsprint and was appreciated by the paper industry as the duty-free imports were harming the domestic mills. Along with that, there was a 5 per cent import duty on printed books. Last year, the basic customs duty on recovered/wastepaper, which is an essential base material utilized by the paper industry, was raised from 0 to 2.5 per cent.²⁴ The production cost rose as a result of a higher duty on wastepaper. Due to India's low domestic paper recovery rate of 40 per cent (compared to over 70 per cent in industrialized countries), the nation relied on imports of recycled or discarded paper for domestic value addition to keep up with rising paper consumption. Thus, this decision was not appreciated by the paper industry and its stakeholders.²⁵

“The changes in customs duty make up for less than US\$14 billion or 2 per cent of the value in India's current merchandise import basket. This includes products where duty was increased or reduced... This will allow the firms to think long-term,” said Ajay Srivastava, co-founder, Global Trade Research Initiative (GTRI).²⁶

To promote the flagship schemes like “Make In India” and “Atmanirbhar Bharat,” the Government has brought the imports of paper under compulsory registration from the 1st of October 2022. The import policy of major paper products, such as newsprint, handmade paper, wallpaper base, duplicating paper, coated paper, uncoated paper, map-Litho and offset paper, excluding currency paper, bank bonds and cheque paper and security printing paper, has been amended from ‘Free’ to ‘Free subject to compulsory registration under Paper Import Monitoring System’ by the Directorate General of Free Trade.²⁷

The Andhra Pradesh Limited (APL) will establish a facility in Kadiyam to produce paper and folding carton boards. APL and the state of Andhra Pradesh inked a deal in March`2023 to build a paper recycling plant to boost the economy. Through single-window clearances, the state government will expedite the implementation of the proposed project and provide the necessary assistance.²⁸ In October 2022, a project worth ₹ 20,000 crore of Sinar Mas Pulp paper manufacturing project in Raigad district was approved along with some other projects. The MoU (Memorandum of Understanding) for the project was signed earlier during the Maha Vikas Aghadi (MVA) Government.²⁹

In the pandemic year of 2021-22, the industry struggled with soaring prices for wastepaper and a paucity of coal at mills. The coal shortages reportedly led to the closure of numerous mills. Even though business conditions were uninspiring, the industry's project completions more than doubled to ₹ 11.9 billion. The majority of completed initiatives involved the production of packaging paper (CMIE, 2022). In the past five to seven years, more than five billion dollars have been invested in the paper industry for the development of cutting-edge infrastructure like Low Kappa pulping, ECF bleaching, Drum pulpers and efficient de-inking

systems in RCF, CTMP pulping in 1 wood-based mill, High consistency pulpers and de-inking systems in RCF, etc. Table 9 gives the details of the investment made in the past five years.

Table 9: Investments: Paper & Newsprint				
Year	Projects completed	Capacity addition		Outstanding capacity of paper
		Paper	Newsprint	
	₹ million	Tonnes	Tonnes	Tonnes
2018-19	237	229600	18000	13453725
2019-20	520	261089	0	13714814
2020-21	5240	39600	0	13754414
2021-22	11920	6055434	17000	14359958
2022-23 (F)	17842	231000	0	14590958

Source: CMIE

As per CMIE, in 2022-23, the paper and newsprint industry are anticipated to commission projects worth ₹ 17.8 billion. Of this, two projects, namely, Bakhli Kraft Paper Expansion Project and the Mondi Patti Mill Expansion Plan Project (Phase 1) by Tamil Nadu Newsprint & Papers, worth ₹ 14.7 billion were completed in 2022. In the coming year, the industry is anticipated to see the completion of the following projects:

1. JK Paper’s Ludhiana (Cycle Valley) Corrugated Packaging Paper Manufacturing Unit (for adding capacities for packaging paper)
2. The Sundargadh Kraft Paper Project by Rajmax Paper Ind LLP (for adding capacities for packaging paper)
3. The Bargur Industrial Park (Sipcot) Kraft Paper Manufacturing Plant Project (for adding capacities for packaging paper)
4. Mastenahalli Kraft Paper Manufacturing Unit Project by ANS Paper Mills (for adding capacities for kraft paper)
5. Valsad Tissue Paper & Kraft Paper Manufacturing Unit Project by Gayatri shakti Tissue (for adding capacities for kraft paper)
6. kraft paper manufacturing unit by Silvertan Papers (for adding capacities for kraft paper)

The Way Forward

In the future, the industry is expected to make a significant contribution to the Government's goal of reaching an overall increase of 8 per cent in manufacturing. The industry could achieve this by adopting a circular economy, beginning with the procurement of its own raw materials, followed by their use in production, distribution to the market, and reintroduction of waste into the system to produce new goods. This system is well adopted by new small retailers in terms of packaging. Tracking their products or refunding the amount of the packaging on return is exceedingly popular nowadays.

Additionally, there is an urgent need to make the business more viable and effective overall by consolidation, economies of scale, modernization of mills, quality benchmarking, greater competitiveness, and greater compliance with environmental and regulatory norms. Of late, there has been a significant level of investment from the paper industry in areas such as technology enhancement, capacity expansion, and, more recently, in corporate social responsibility (CSR) initiatives. Several initiatives have been implemented to address the shortage of raw materials, including shifting from bamboo to eucalyptus, wattle, and

mulberry wood, recycling the fiber, and making paper production environmentally favorable. As bamboo cultivation has become unprofitable, unorthodox raw materials have been utilized.

The Indian paper industry is in a good position compared to western industry leaders. As In India, the growth cycle of tropical plantations is 6-7 years, whereas conifers require 50 years to mature. The Indian paper industry has trained personnel at all levels, and therefore, it is able to produce high-quality paper with appropriate technology at relatively low labor costs, relative to the West. The paper industry's growth is expected to be sustained over the medium term because of 15 kg. per capita consumption, economic growth, and structural transformation, transforming demographics, thrust on education and literacy by the Government, increased corporate activity and lifestyle changes and rising demand for improved quality paper.

Technological innovation is a pre-requisite to the development of the paper industry. Hence, there has been investment in plantation R&D leading to the development of high-quality tree clonal saplings, which are disease and drought resistant and can be grown in a variety of agro climatic conditions. Technical extension services are being imparted to the farmers over a gestation period of 4-5 years to improve agro / farm forestry output. But it also needs a substantial capital investment from private actors, which is not always readily available. As an outsize proportion of bagasse is used as fuel in the sugar industry and is unavailable to the paper industry, its prudent use should be encouraged. Sugar refineries should be encouraged to use coal-fired furnaces rather than bagasse-fueled ones. The Bagasse is utilized for each of the major categories of paper, including packaging and cartons, printing and writing, photocopier paper, tissues, newsprint, etc. As a major sugarcane producer, India has enormous potential in this regard.

The present demand for pulpable wood by the paper industry is 11 million tonnes per annum (TPA) while domestic availability is 9 million TPA. The domestic demand is projected to reach 15 million TPA by 2024-25. This is why in conformity with the avowed socio-economic objective of salubrious development of agroforestry, the industry and over five lakh farmers have worked together as partners in development with 12 lakh hectares being brought under agro / farm forestry. Given that most of small-scale mills in India rely on agro-waste and wastepaper, the roadmap ahead must stress cost-effective and affordable technologies, new procedures for the exploitation of raw materials, better recycling and waste disposal practices with the recovery proportion estimated at 38 per cent, enhance efficiency of resource use, sustainability, manufacturing excellence, productivity, development of different grades of pulp, design and engineering of suitable machineries and more funding for research into new and better varieties. Alternatives to forest products, e.g., sugarcane waste bagasse, also need to be incentivized.

Further, the ban on the sale of some types of wastepaper for environmental reasons will drive players to reclaim more local wastepaper. This needs serious thought, but there are no national efforts to boost home wastepaper salvage, except for a few firms and groups.³⁰

In sum, there are diverse forces and factors playing out in the paper industry. These factors are reminiscent of the powerful observation made in Charles Dickens' novel *A Tale of Two Cities*, "it was the best of times, it was the worst of times." While the demand for newsprint papers and printing writing has plummeted because of the winds of change and the inexorable forces of digitization, there have been tailwinds for the paper industry in general and the packaging paper segment in particular with ascendant demand for packaging from eCommerce, food, and food products, FMCG and the pharmaceutical sector. This is clearly reflected in both enhanced installed capacity in packaging paper and planned capex in the near term. But to place the industry on a firm footing, measures like provision of fiscal incentives, e.g., excise duty cuts and formulation of a basic policy regarding raw material consumption and sourcing would be helpful.

References

- ¹ <https://unacademy.com/content/railway-exam/study-material/general-awareness/how-is-paper-manufactured-in-india/#:~:text=Ltd.%2C%20etc.,Ans.,from%20which%20paper%20is%20manufactured.>
- ² https://www.linkedin.com/pulse/glimpse-indian-paper-industry-ankit-ahuja?trk=read_related_article-card_title
- ³ <https://lotusarise.com/paper-industry-upsc/>
- ⁴ <https://www.businesswire.com/news/home/20190510005140/en/Indias-Paper-Paper-Products-Market-2019-2024-Applications-Raw-Materials-Competition-Forecast-Opportunities---ResearchAndMarkets.com>
- ⁵ <https://theprint.in/india/news-but-no-paper-india-has-a-huge-newsprint-problem-but-its-been-brewing-for-a-while/955829/>
- ⁶ <https://tuewas-asia.org/wp-content/uploads/2021/10/Pulp-Paper-Sector-Study.pdf>
- ⁷ <https://knowindia.india.gov.in/profile/literacy.php>
- ⁸ <https://www.thehindubusinessline.com/markets/commodities/post-pandemic-paper-sector-on-the-path-to-recovery/article35093670.ece>
- ⁹ <https://tuewas-asia.org/wp-content/uploads/2021/10/Pulp-Paper-Sector-Study.pdf>
- ¹⁰ <https://www.printweek.in/features/supply-chain-disruption-and-the-paper-industry-in-india-55674>
- ¹¹ Bergquist, A. K., & Söderholm, K. (2018). The greening of the pulp and paper industry: Sweden in comparative perspective. *Technological Transformation in the Global Pulp and Paper Industry 1800–2018: Comparative Perspectives*, 65-87.
- ¹² <https://www.statista.com/statistics/955980/india-distribution-of-ghg-emissions-by-sector/#:~:text=The%20electricity%20and%20heat%20sector,from%20coal%2Dfired%20power%20plants.>
- ¹³ <https://www.iea.org/fuels-and-technologies/pulp-paper>
- ¹⁴ <https://www.outlookindia.com/international/report-at-cop27-india-records-highest-emission-increase-among-top-global-contributors-news-236452>
- ¹⁵ Korhonen, J., Pätäri, S., Toppinen, A., & Tuppurä, A. (2015). The role of environmental regulation in the future competitiveness of the pulp and paper industry: the case of the sulfur emissions directive in Northern Europe. *Journal of Cleaner Production*, 108, 864-872.
- ¹⁶ Dobers, P. (1997). Strategies for environmental control: a comparison between regulation and centralized control in Germany and reforms leading to decentralized control in Sweden. *Business Strategy and the Environment*, 6(1), 34-45.
- ¹⁷ Harrison, K. (2002). Ideas and environmental standard-setting: a comparative study of regulation of the pulp and paper Industry. *Governance*, 15(1), 65-96.
- ¹⁸ Thollander, P., & Ottosson, M. (2008). An energy efficient Swedish pulp and paper industry—exploring barriers to and driving forces for cost-effective energy efficiency investments. *Energy Efficiency*, 1, 21-34.
- ¹⁹ Söderholm, P., Bergquist, AK. & Söderholm, K. Environmental Regulation in the Pulp and Paper Industry: Impacts and Challenges. *Curr Forestry Rep* 5, 185–198 (2019). <https://doi.org/10.1007/s40725-019-00097-0>
- ²⁰ <https://papermart.in/paper-industry-is-expected-to-show-better-financial-performance-with-economic-recovery/>
- ²¹ <https://ippta.co/wp-content/uploads/2021/01/IPPTA-182-73-77-Indian-Paper-Industry.pdf>
- ²² <https://tuewas-asia.org/wp-content/uploads/2021/10/Pulp-Paper-Sector-Study.pdf>
- ²³ <https://ipmaindia.org/wp-content/uploads/2021/06/Myths-versus-Realities-26-5-21.pdf>
- ²⁴ <https://taxguru.in/custom-duty/changes-custom-duty-budget-2022-detailed-analysis.html>
- ²⁵ <https://papermart.in/a-s-mehta-president-ipma-budget-reaction-2022/>
- ²⁶ <https://www.livemint.com/economy/import-duty-changes-in-budget-2023-affect-2-of-indian-imports-in-value-terms-gtri-report-11675602123264.html>
- ²⁷ <https://newsonair.gov.in/Main-News-Details.aspx?id=441684>
- ²⁸ <https://www.printweek.in/news/apl-to-start-new-paper-unit-in-andhra-pradesh-57316>
- ²⁹ <https://indianexpress.com/article/cities/mumbai/govt-clears-rs-20000-crore-pulp-paper-manufacturing-unit-in-raigad-8221870/>
- ³⁰ <https://papermart.in/paper-industry-is-expected-to-show-better-financial-performance-with-economic-recovery/>