

INDIAN PAPER INDUSTRY

A Bird's eye view

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Indian Paper Industry

From a modest beginning in 1832, it has now over 677 paper mills with an installed capacity of 7.8 million tonnes. 624 mills are operational. Indian Paper Industry is highly fragmented and domestic market oriented. Although exports are growing at a rate of 20% during this decade, only 5% of production is exported. India is a net importer of Newsprint and Wastepaper. The paper industry employs 0.3 million persons directly and 1 million indirectly.

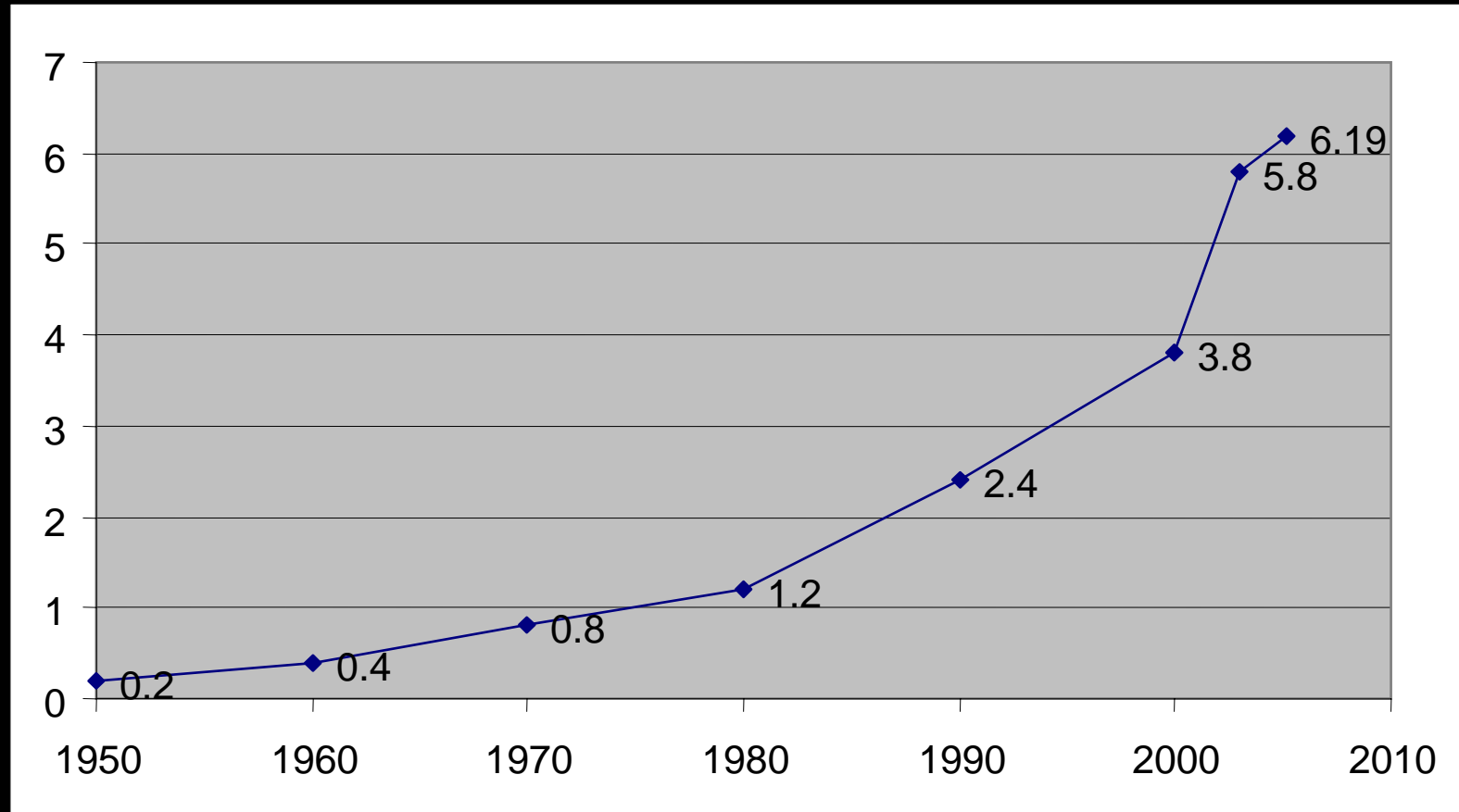
The per capita consumption is low. The industry has high potential to grow.

India	6.2 Kg
China	41 Kg
World average	50 Kg

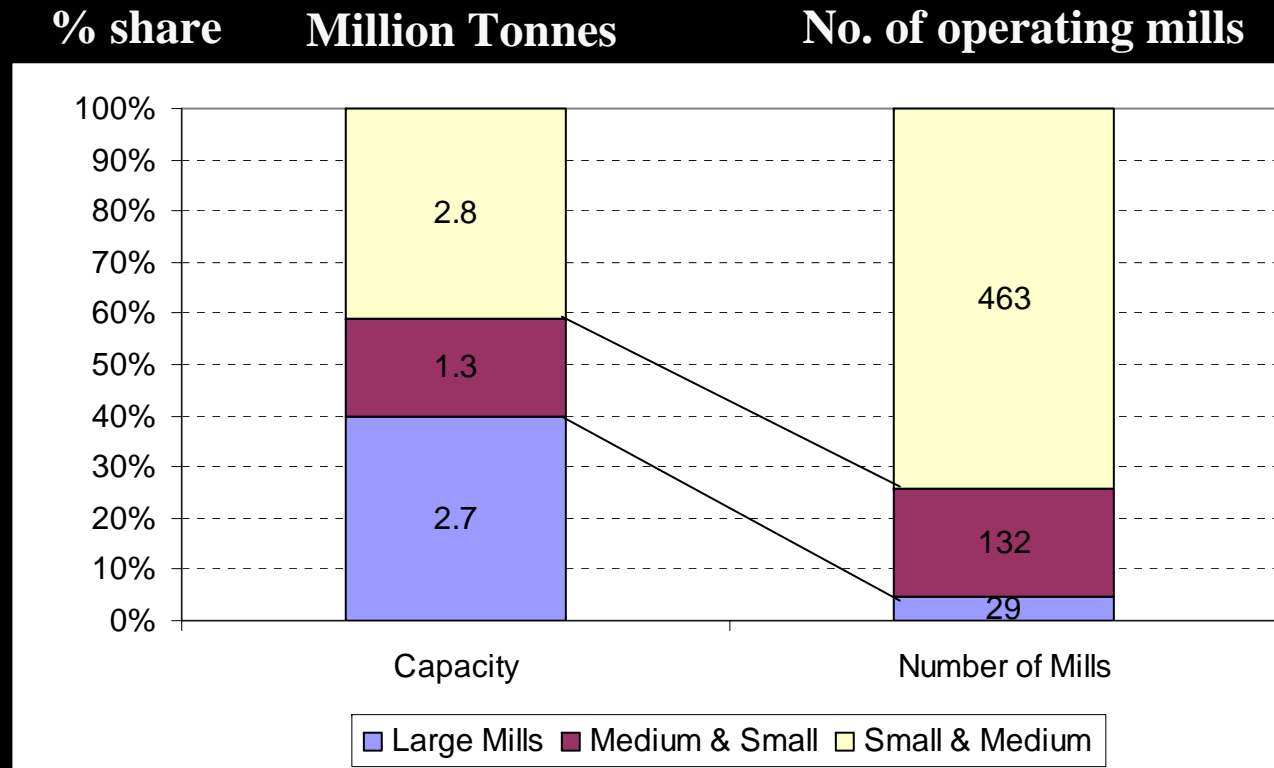
Historical Development of Indian Paper Industry

Million Tonnes

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Structure of Indian Paper Industry - 2005

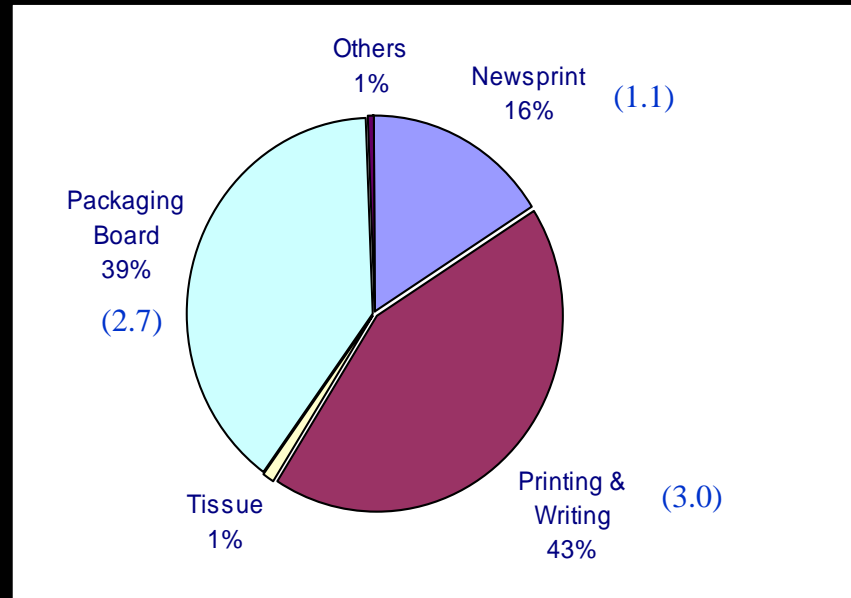


Recycled – 41%, Agro – 19%, Forest based – 40%

Total No. of operating mills - 624

Segment- wise consumption of Paper & Board

Million Tonnes

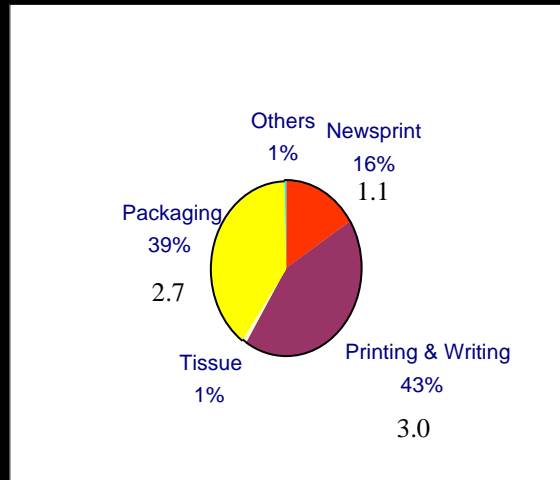


Year 2004 – Total consumption: 6.86

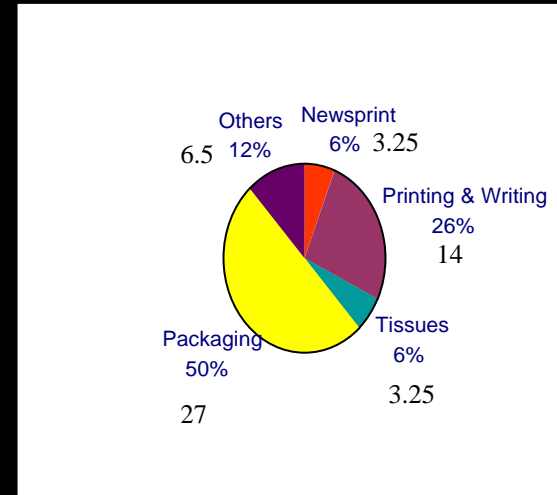
- Newsprint demand component of total Paper & Board is 16% higher than W.Europe (14%) and world average (11%)
- India with a daily newspaper circulation of 72 million copies is the second largest in circulation next to China (85 million copies)
- “The Times of India” is the World’s largest selling English language broad sheet daily (2.4 million copies)

Segment- wise consumption of Paper & Board

India – China Comparison



India – 2004 – Total Consumption 6.86 M. T.



China – 2005 – total consumption 54 M.T.

- Graphic papers (newsprint & printing & writing) have a much larger share (59%) in India compared to China (32%) which is 10% points lower than the global average.
- Globally 33% of total paper & board is printing & writing paper.
- Packaging grades have a higher share in China (50%), compared to India (39%)
- In China consumption growth of packaging grades in last 4 years has increased from 10% to over 15%.

Demand, Production and import of Newsprint (1000 tonnes)

	2002-03	2003-04	2004-05
Demand	920	1,026	1,097
Production	538	576	560
Import	538	772	650

Source: Indian Newsprint manufacturers Association, DGFT& CRISINFAC

Newsprint growth rate in India is more than 8% during 1990-2002. In W.Europe it was less than 1.8% during that period. Per capita consumption of newsprint in U.S - 40 Kg.

More than half of Newsprint is met by imports.

Production and import figures do not match because a part of newsprint is used as writing & printing paper.

National Readership Survey – 2005

- Largest Survey of its kind

Covered	522 publications
	521 Dailies
	301 Magazines

Sample size 261, 212

Highlights

- Reach of print media increased by 12% from 179 million to 200 millions, in last 3 years.
- Reading time has increased from 30 minutes to 39 minutes
- Print media has increased its share of the day at the expense of TV
- Of 200 million readership, rural and urban areas share equally.

Ad Revenues in various media (2004)

Media	2004		2003/04
	INR crores	% share	% growth
TV	4350	46	6
Print	4100	43	12
Radio	150	2	20
Cinema	23	negligible	18
Internet	70	1	40
Outdoor	800	8	10
Total	9493	100	106

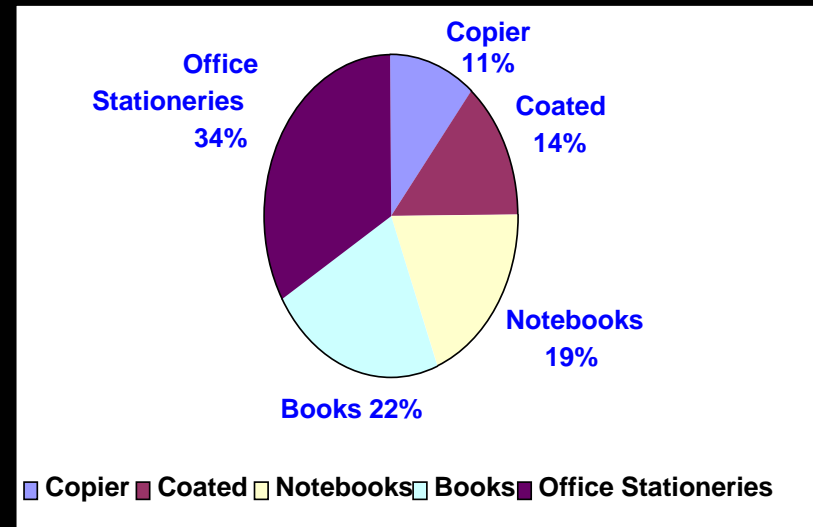
*1 crore =10 million

Pitch – Madison outlook survey - 2004

End use Segments of Printing & Writing Papers – 2004

% of total

Office stationeries	34
Books & Textbooks	22
Note books	19
Copier paper	11
Others (coated)	14
Total	100



Consumption - 2.95 million tonnes

India:-

- World's 3rd largest in publication of English Book, next to U.K & U.S
- 80,000 new books published each year in 24 languages.
- 15,000 publishers
- Publishing industry – US\$685 Million

The growth of printed documents may continue to outstrip the reduction in the percentage being printed.

Year	% Documents printed	Growth of Information Index	Printed Documents Index
1995	90%	100	100
2000	50%	275	140
2005	30%	675	200

Source : X plor International

”Printing papers will share with computer screens the business of displaying information, much as ground transport shares with aircraft, and in concert they will increase the volume of traffic. The effect on the paper industry over the next 20 years will be to increase demand for high quality papers of rigidly consistent quality, in ready to use packages”

Domestic Paper Sector on Capex Spree

Capex plan of key paper manufacturers – US\$ 1.5 bn

Company	Capex Rs mn	Current Capacity	Planned Expansion	Final Capacity	Project Highlights
AP Paper	6,350	155	22	177.0	Pulp+CPP+Product Mix
Ballarpur Indus#	12,600	464	322	785.6	Paper capacity
Century Textiles	3,850	122	70	191.9	Paper+CPP
JK Paper	2,350	180	60	240.0	Packaging board
Seshasayee Paper	3,500	115	30	145.0	Pulp
Sirpur Paper	2,950	84	55	138.3	Pulp + Paper
Star Paper Mills	850	71	29	100.4	Pulp+Paper+CPP
TN Newsprint	5,650	230	15	245.0	Pulp + Paper
West Coast Paper	8,200	164	110	273.8	Pulp+Paper
ITC Ltd	25,000	350	200	550.0	Pulp + Paper
Total	71,300	1934	913	2847	

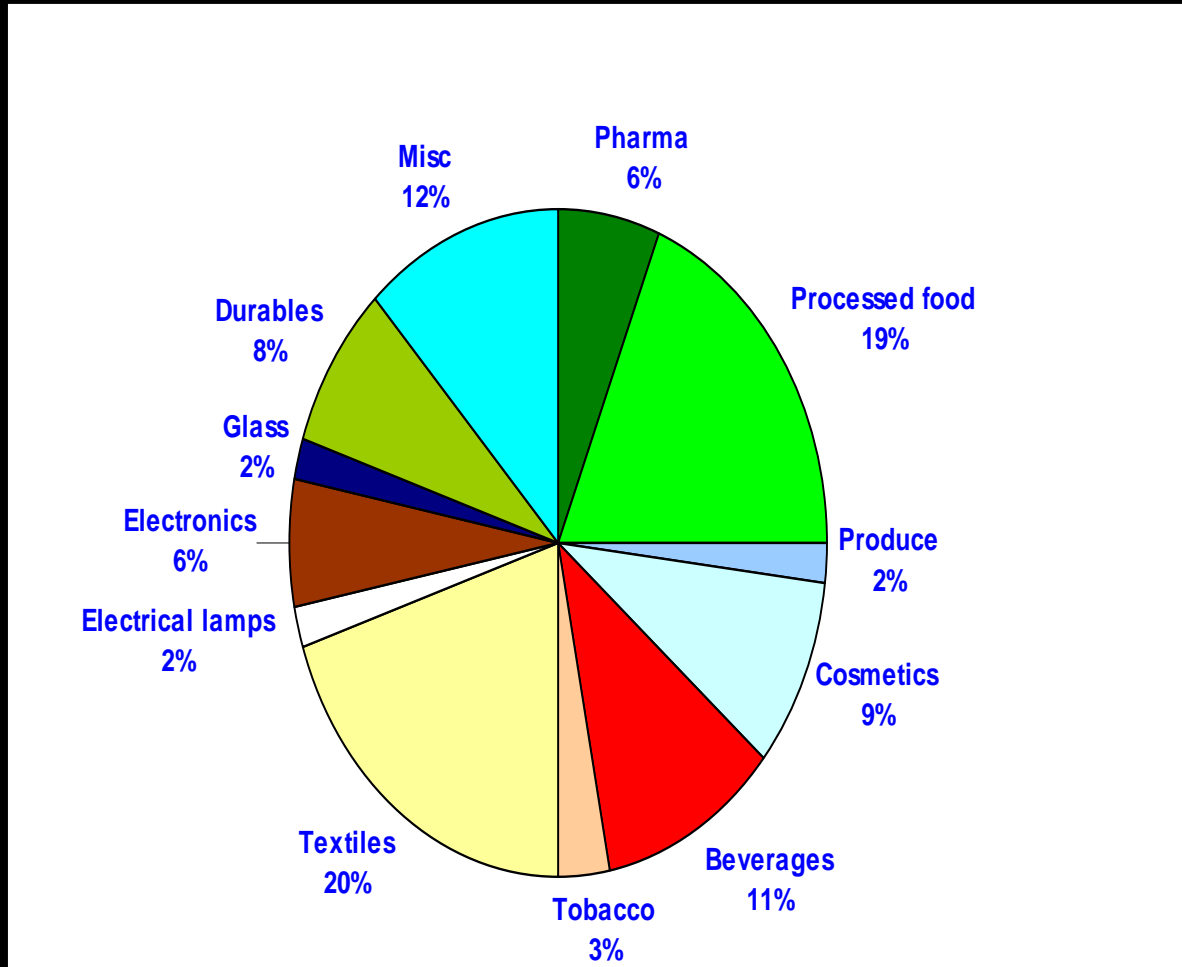
Additional capacity to come up by financial year 2007 – 1 Million Tonnes

- Capex – Capital Expenditure
- Capacity thousand mtpa
- CPP – captive power plant

Sabhah forest acquisition excluded

Source: Emkay Research Estimates Co.

Containerboard end Uses in India - 2004



Key Drivers:

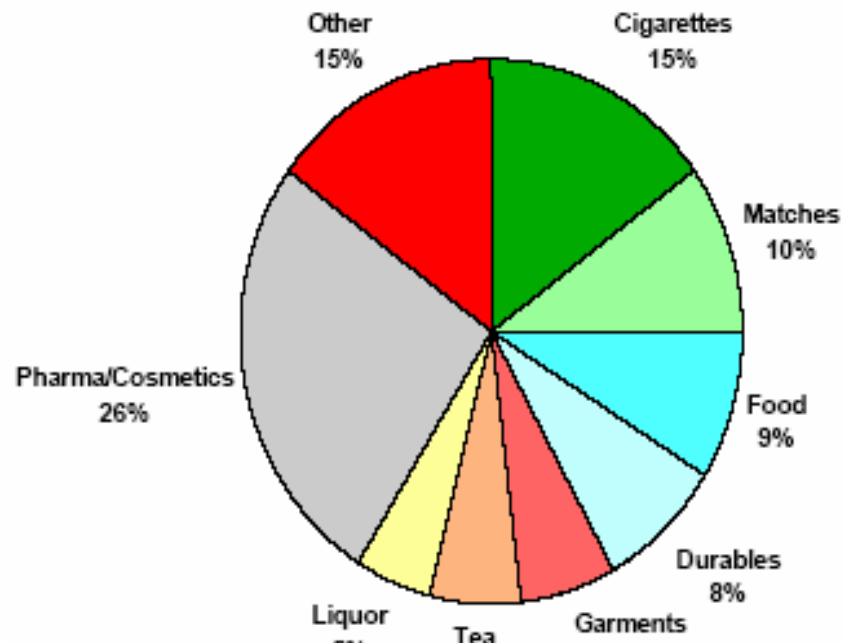
- Textiles
- Processed Food
- Drinks, FMCGs,

2004/05:

26% increases in cotton textile exports after abolition of quota

Total liner / fluting consumption : 1.2 million tonnes

Cartonboard consumption by end use - 2004



Total cartonboard consumption : 1.5 million tonnes

Total cartonboard consumption: 0.8 million tons

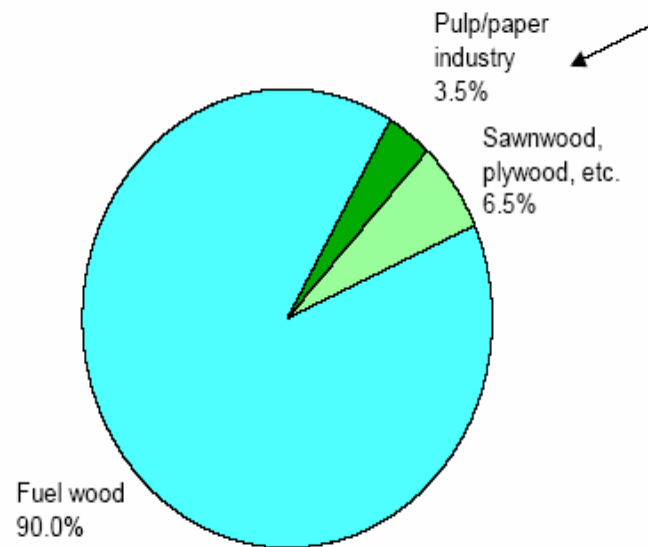
Key Drivers:

- Pharma / Cosmetics
- Cigarettes

Fibrous raw materials for Paper Industry

- Forest based
 - Tropical hardwoods (Eucalyptus mainly)
 - Bamboo
- Agro based and annual plants
 - Baggase, wheat and rice straw, reeds
- Recycled fibres
 - Waste paper,
 - Jute waste

Wood Consumption - 2000



- Wood is still the source of fuel for the rural folk.
- Industry uses only 10% of total wood.

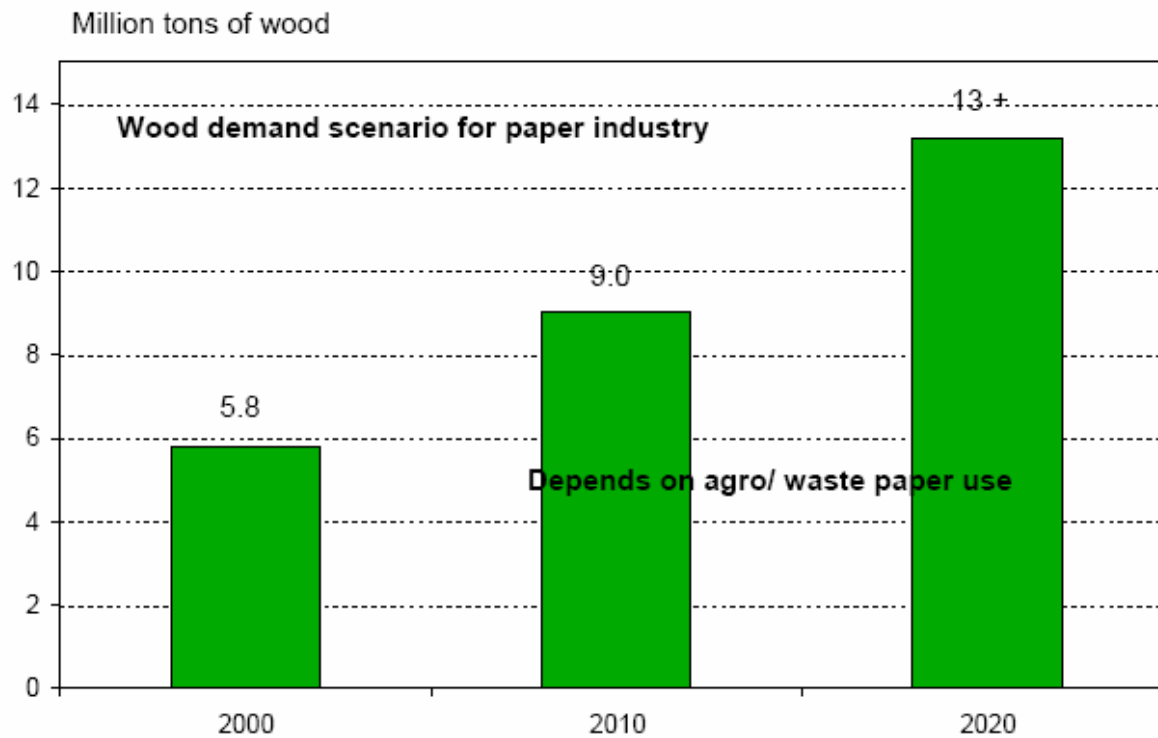
Source - IPMA

Pulpwood Availability

- 0.6 million hectares of forest land would be needed to meet the demand of paper.
- India's forest cover is 21% of total land area National target for forest cover is 33% . For plantation Forest land will not be available for any wood based industry.
- India has 32 million hectares of degraded forest land and 100 million hectare of wasteland.
- Government forest policy does not suit the paper industry.
- Paper industry has to depend on Agro Forestry and their own in-house plantation.

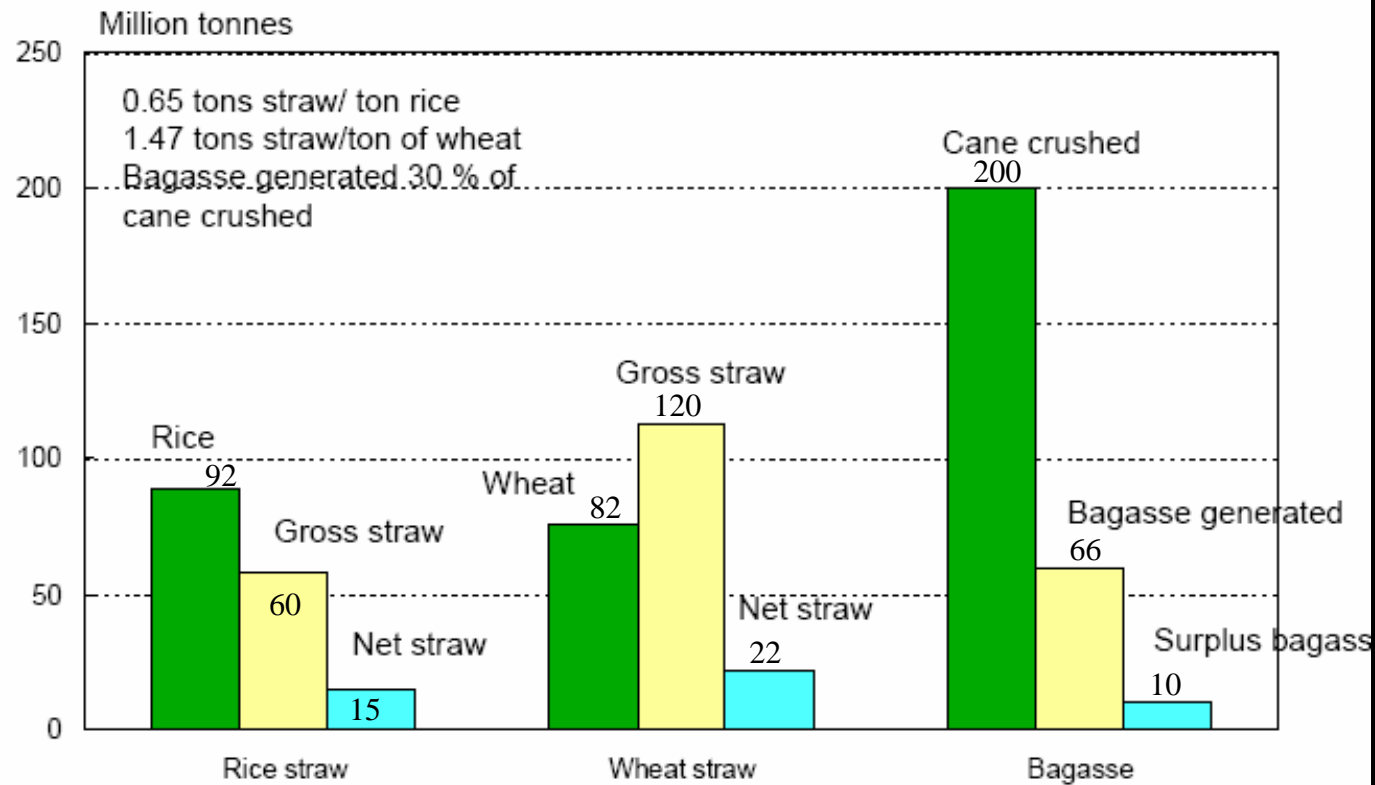
Industrial wood demand scenario for India

The paper industry's wood demand is expected to grow from 5.8 million tonnes to 9 million tonnes by 2010, and to over 13 million tonnes by 2020.



Source: Jaakko Poyry

Availability of agro residues in India 2001



Source: IARPMA

Potential Availability of Agro residues - 2001 Million Tonnes / Year

		Pulp equivalent
Bagasse	10	2
Wheat Straw	22	7
Rice Straw	15	5
Jute, Kenaf	2	-
Total	49	14

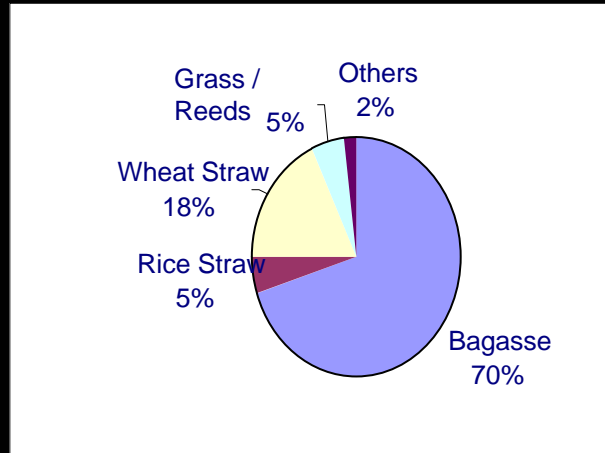
Source - IARPMA

Limitations:

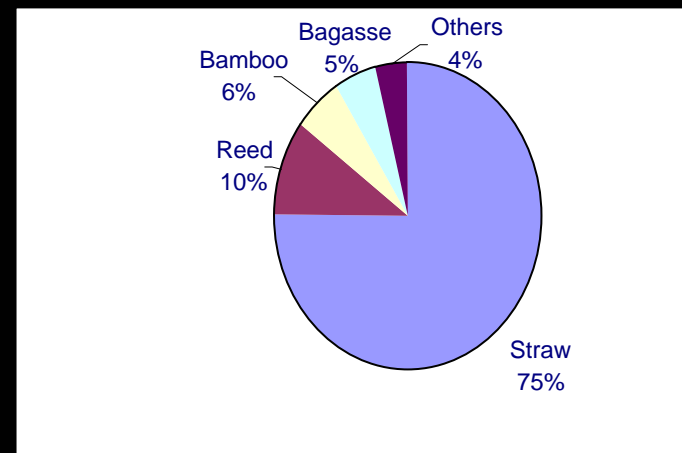
- Seasonal availability – high storage cost
- Bulky nature – high transport cost for long distance
- Technical limitations – weak fibres
- Govt. policy to promote bagasse as fuel for power generation

Agro Residues – 2004

India –China Comparison



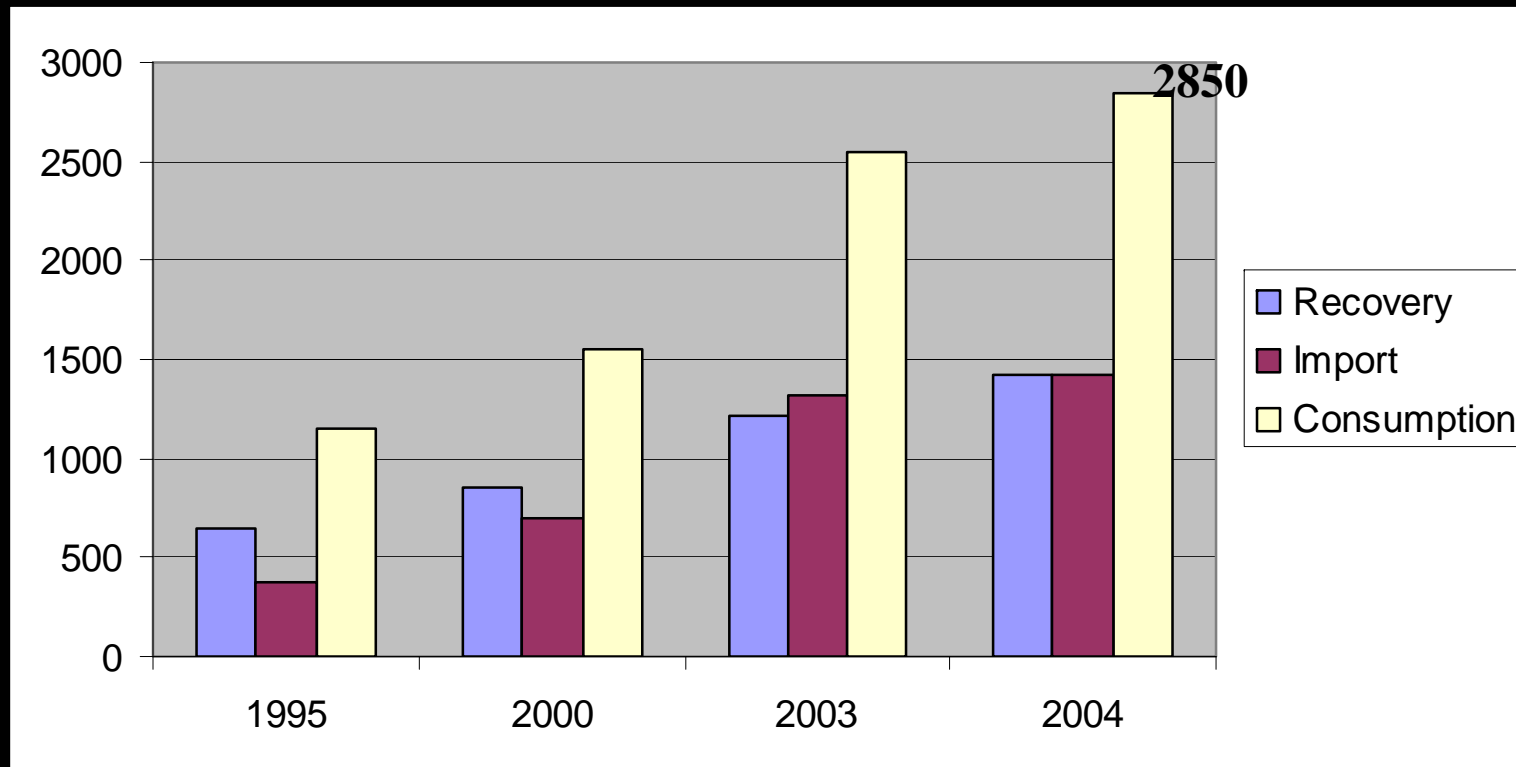
India: Total pulp production from Agro-residues fibres 1.1 million tonnes.



China: 11.55 million Tonnes of Pulp – Nonwood Fibres

- The agro residues for pulp & paper making are bagasse wheat straw, rice straw, reeds and waste jute.
- Bagasse pulp is mainly used for printing & writing grades and partly for unbleached grades.
- Wheat straw is mainly used to make fluting medium and kraft liner and partly for printing & writing grades, Rice straw for writing & Printing grades.

Waste Paper Recovery, Import & Consumption in India – 1995 – 2004 (1000 T/A)



Import of waste paper has increased significantly during 1995-2003 onwards, import exceeds recovery.

Waste paper Collection & Availability

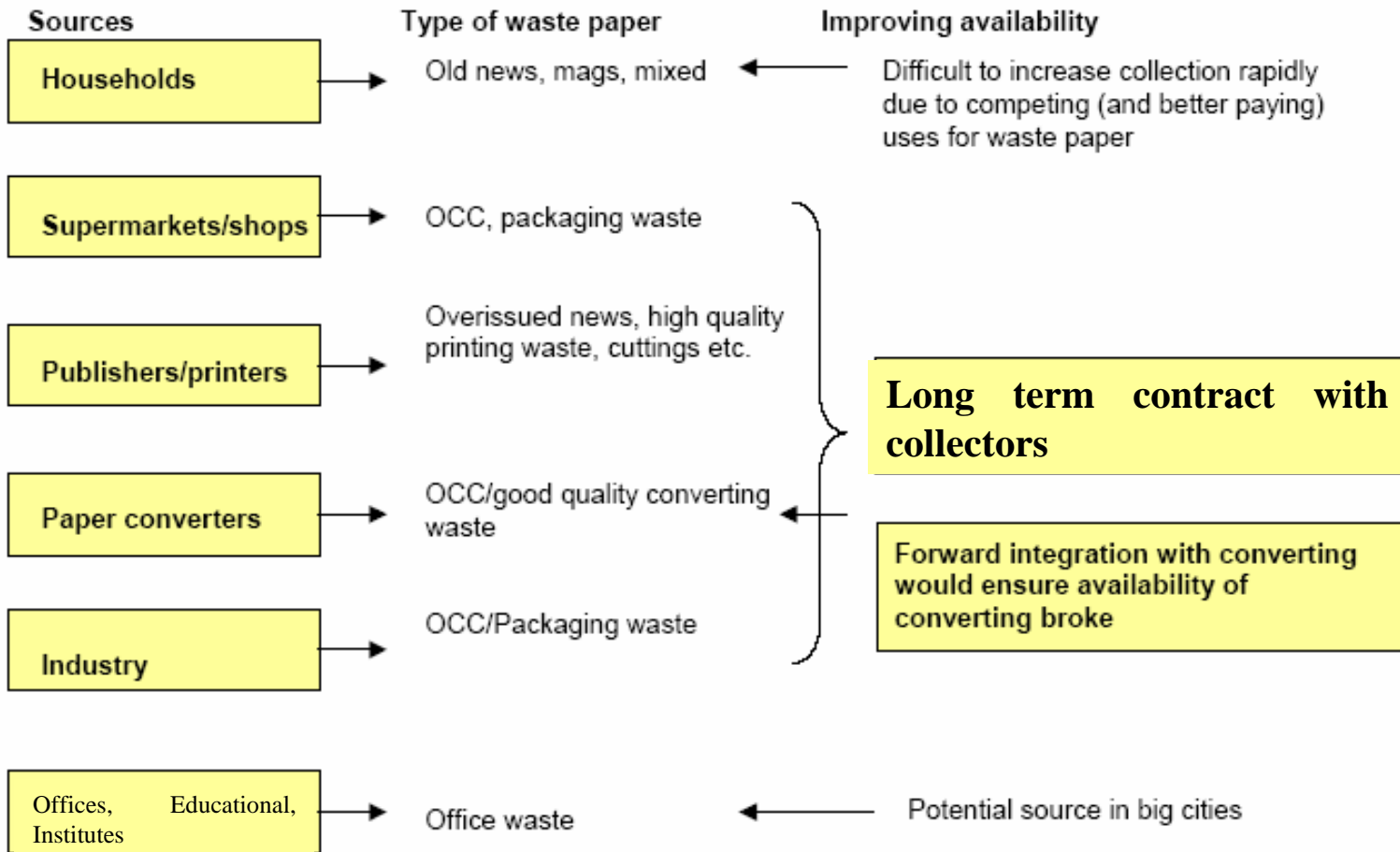
Total availability of waste paper is divided between geographical regions as follows:-

-Northern region	30%
-Eastern region	10%
-Southern region	20%
-Western region	40%

The main domestic waste paper grades available for recycling are –

-Old corrugated containers	40%
-Office refuse	20%
-Old newspapers and magazines	20%
-Mixed paper	20%

Source for waste paper in India



Waste Paper Utilization – India 2004 (1000 Tonnes)

	Mixed	OCC	Deink	HG/Ps	Total	Paper Production	RCF Utilization %
Newsprint	-	-	380	-	380	560	68
W & P Grades	-	-	-	345	345	2854	12
Tissue	13	-	14	12	39	60	65
Containerboard	135	550	171	50	906	1200	75
Carton board	360	308	270	232	1170	1500	78
Others	Not known		-	-	5	20	-
Total	508	858	835	639	2845	6194	46 %
Composition, %	18	30	29	23	100	--	--

Recovery rate – 23%

Av. Utilization rate – 46%

Recycling rate – 41.5%

Recovery rate = $\frac{\text{R.P. Recovered}}{\text{paper consumption}} \times 100$

Utilization rate = $\frac{\text{R.P. Consumption}}{\text{paper production}}$

Recycling Rate = $\frac{\text{R.P. Consumption}}{\text{paper consumption}} \times 100$

Italy:-

utilization rate – 57%

Recycling Rate – 48.3%

Demand for pulp and waste paper would grow close to 8 million and 12 million tonnes in 2010 and 2015 respectively.

PACKAGING – INDIA

- some facts

- Annual turnover of packaging material's Industry – US\$5 billion
- Per capita consumption of packaging Materials – US\$ 5 „
- 20% of population consume 80% of packaging production
- 80% of population consume 20% of packaging production
- Structure of Industry:
 - *Mix of very small to medium sizes in organized and unorganized sectors.*
- Growth rate 10%
 - *Significant modern segment growing at 15-20%*
- Investment in Food Processing Business
 - *expected growth rate – 15%*

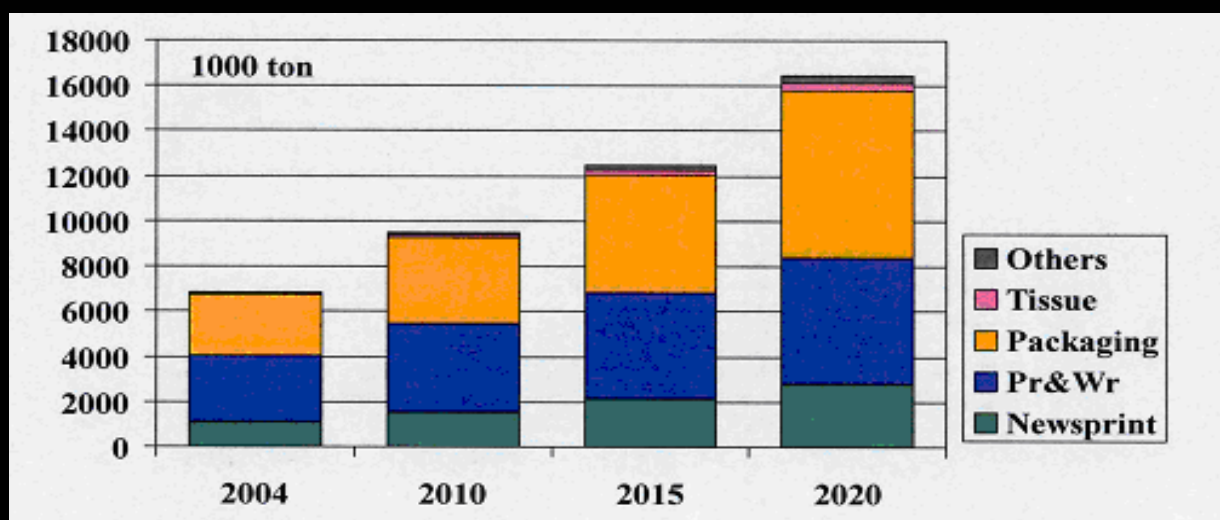
PACKAGING – INDIA

- *some facts*

- Investment in packaging Machinery
 - *expected growth rate 25%*
- Overall FMCG (Fast Moving Consumer Goods) is growing at double digit. While leading players are experiencing flat growth, the small FMCG companies, city players and regional players are growing at 20-40% annually. Small players have upgraded their quality and they focus on consumer needs and preferences.
- Retail stores and shopping malls are becoming popular. By 2010 there will be 600 shopping malls in India. With Wal-Mart coming to India, retailing formats will change. This augurs well for the packaging industry.

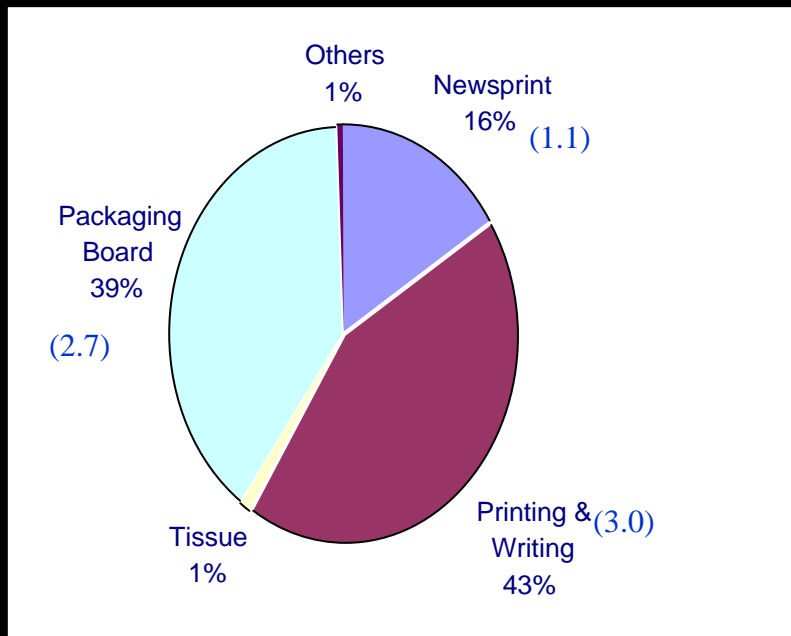
Paper & Board Consumption by 2020 - Forecast

	2004	2010	2015	2020
Newsprint	1098	1580	1937	3030
Pr & Wr.	2954	2950	4700	5600
Packaging	2700	3800	5200	7400
Tissue	65	130	220	330
Others	40	100	190	300
Total P & B	6857	9510	12247	16660



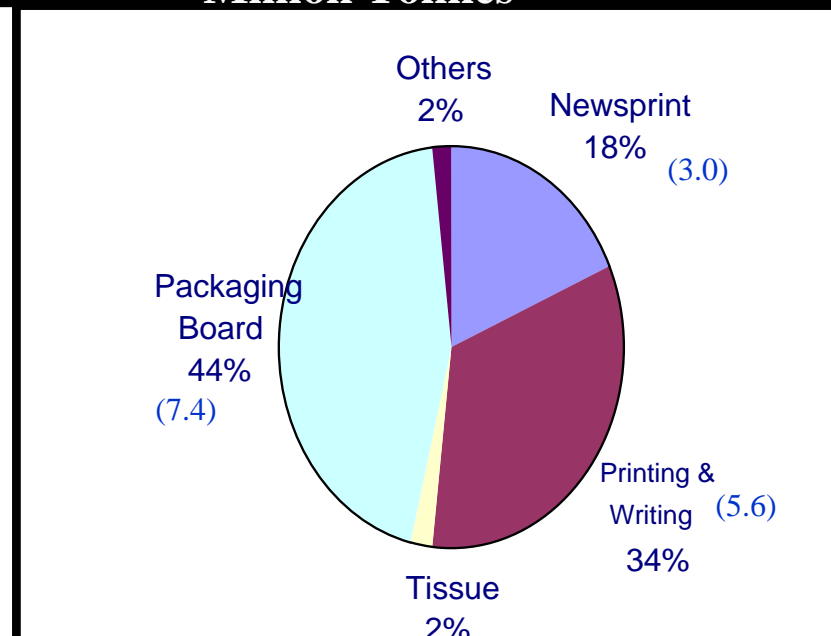
Segment -wise consumption of Paper & Board

Million Tonnes



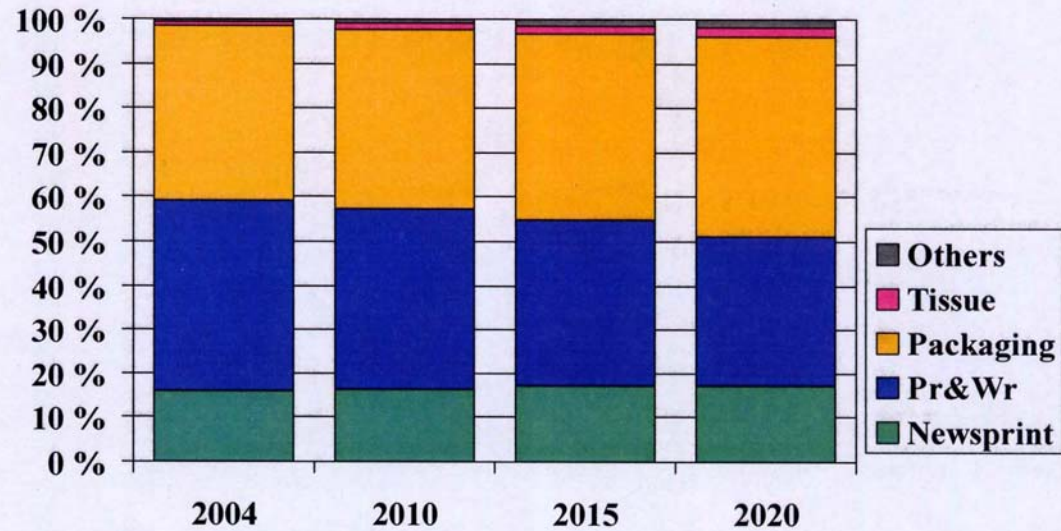
Year 2004 – Total consumption: 6.86 million tonnes

Million Tonnes



Year 2020 – (Forecast) 16.66 million Tonnes

Demand Forecast



Growth in the Indian paper markets till 2020 (% / year)

	2005-2015	2015-2020
Newsprint	6,7	5,9
Pr&Wr	4,6	3,6
Packaging	6,6	6,7
Tissue	12,2	9,3
Others	15,6	11,0
Total P&B	6,0	5,5

Conclusion

- **India has a ready market for newsprint suppliers and manufacturers**
- **Containerboard (kraftliner, top text liner, fluting, etc)**

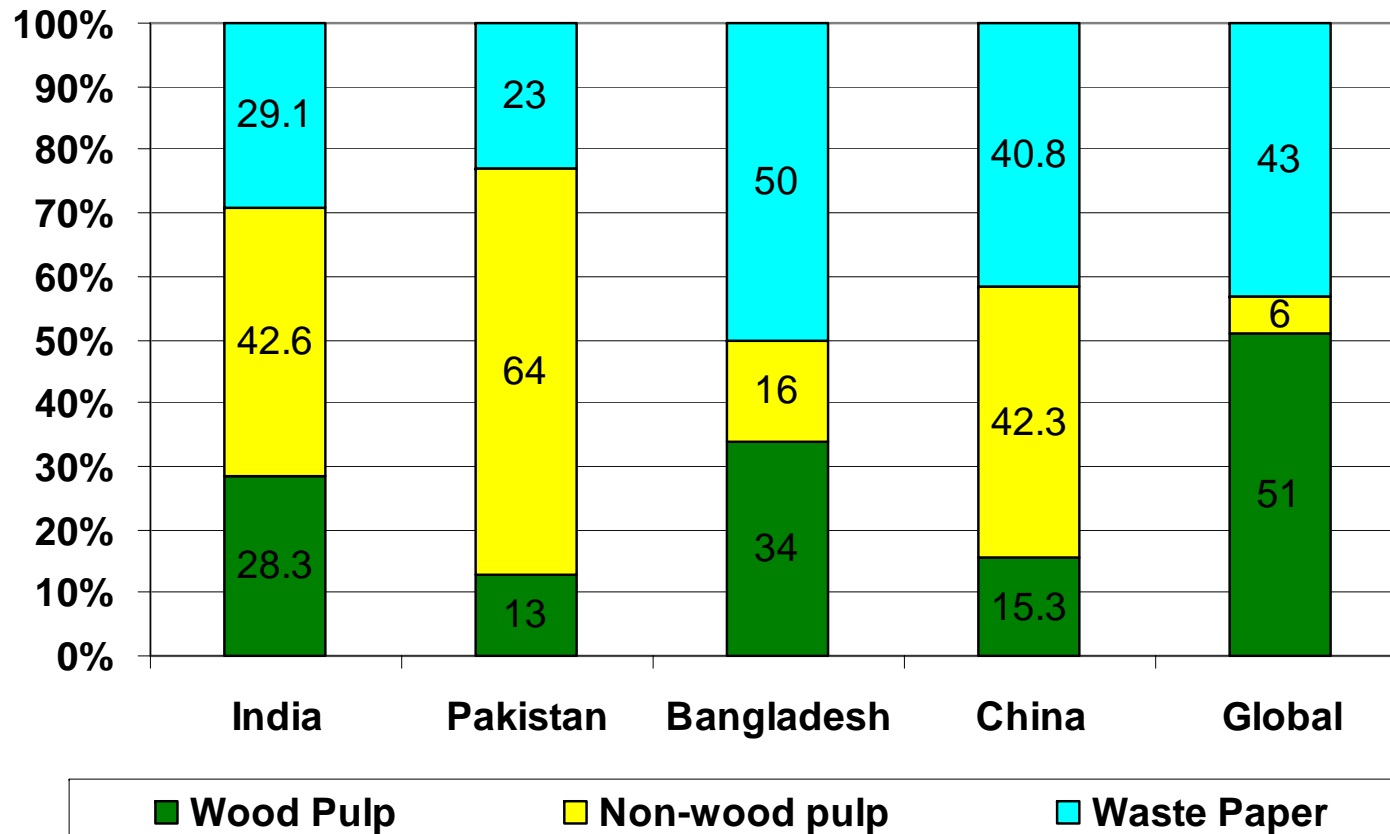
Market is expected to grow at 6-7% per annum due to growing demand of export packaging, quality linerboard is an area where import is inevitable. Local manufacturing offers immediate opportunities.

- **Waste paper consumption in 2015 and 2020 is estimated at 5 million and 8 million tonnes respectively.**
- **India's recovery rate stands now at 23% lower than in China 36% and much lower than in developed countries (70%)**
- **Waste paper recovery and trading are still in unorganized sector.**
- **India like many other countries in the Indian subcontinent will remain a fibre-deficit area for a long time.**
- **India's Democracy rule of law, intellectual property rights scenario, growing demand & English language are favourable factors for investors.**

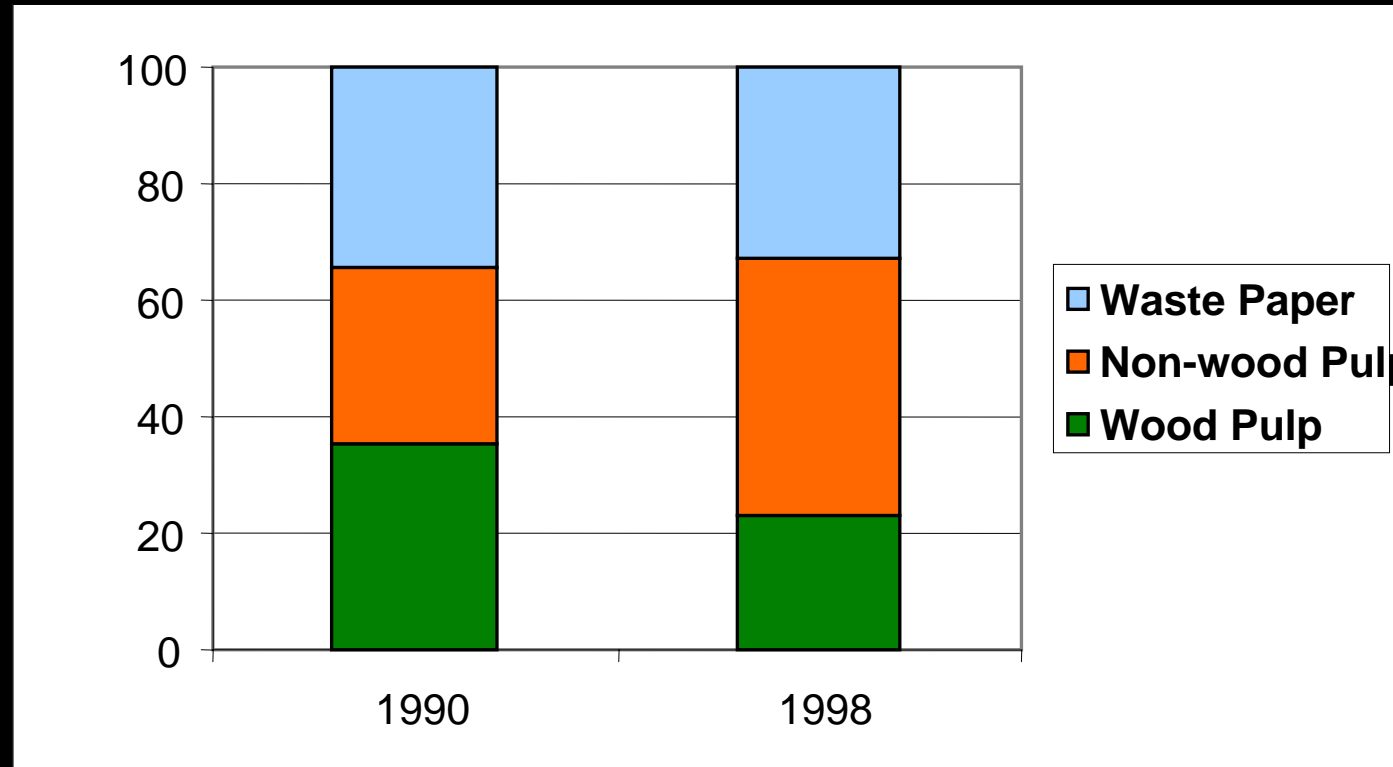


THANKS

Paper Furnish Structure in Indian Subcontinent and China

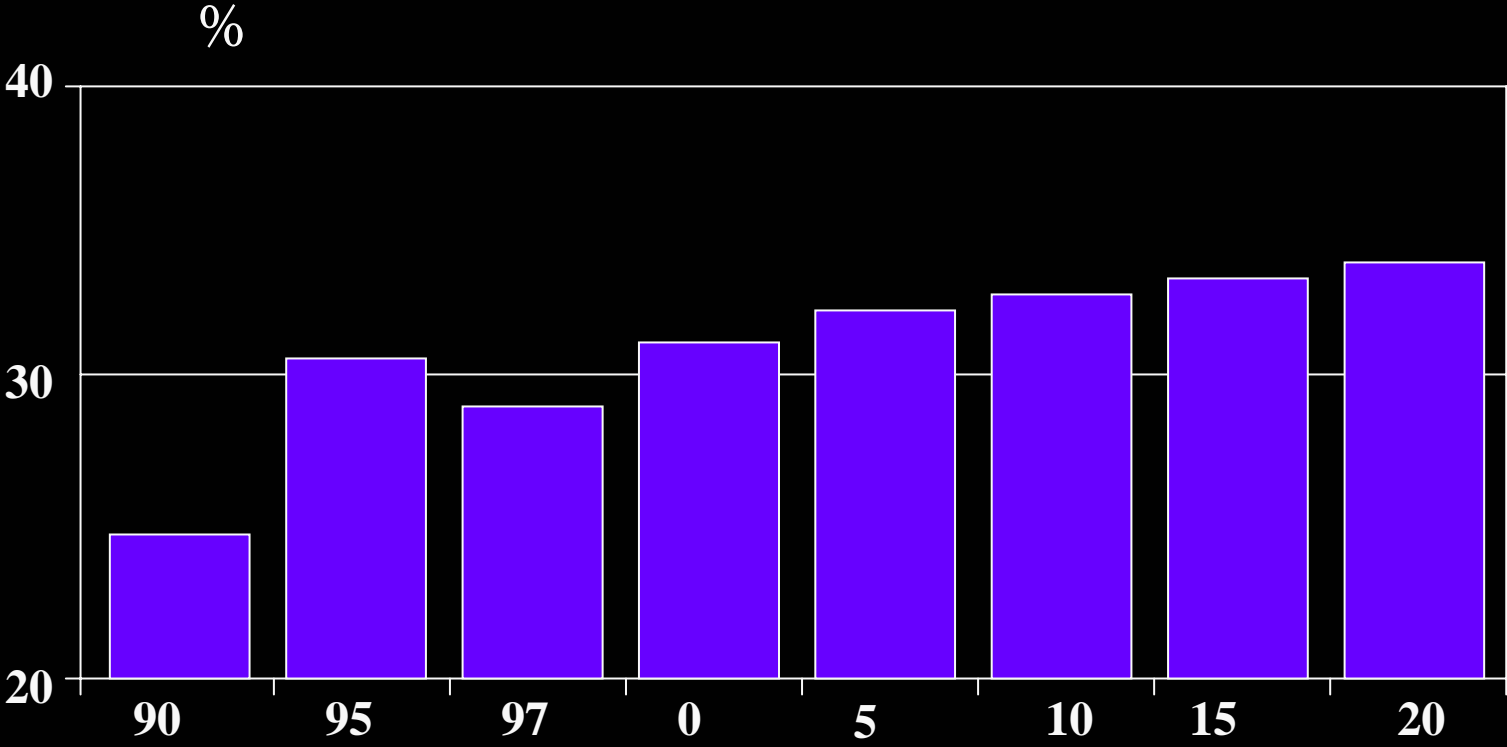


PAPER MAKING RAW MATERIAL CONSUMPTION IN INDIA

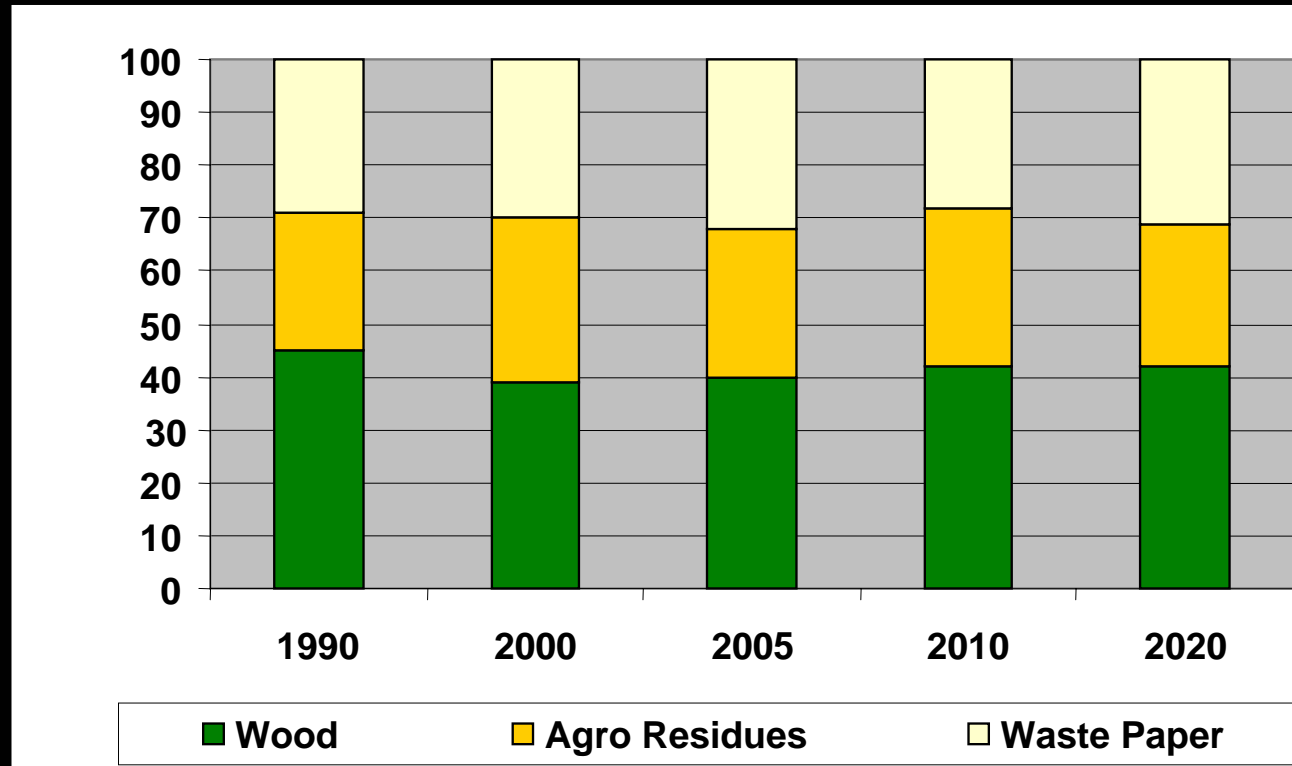


- During the 90s share of non-wood fibres has considerably increased. Share of waste paper has remains constant. Share of wood fibre has decreased to 27%.
- Pulp wood is not available in sufficient quantity for the paper industry. Its price is relatively higher.

Waste Paper Recovery in China



Papermaking Fibres in India



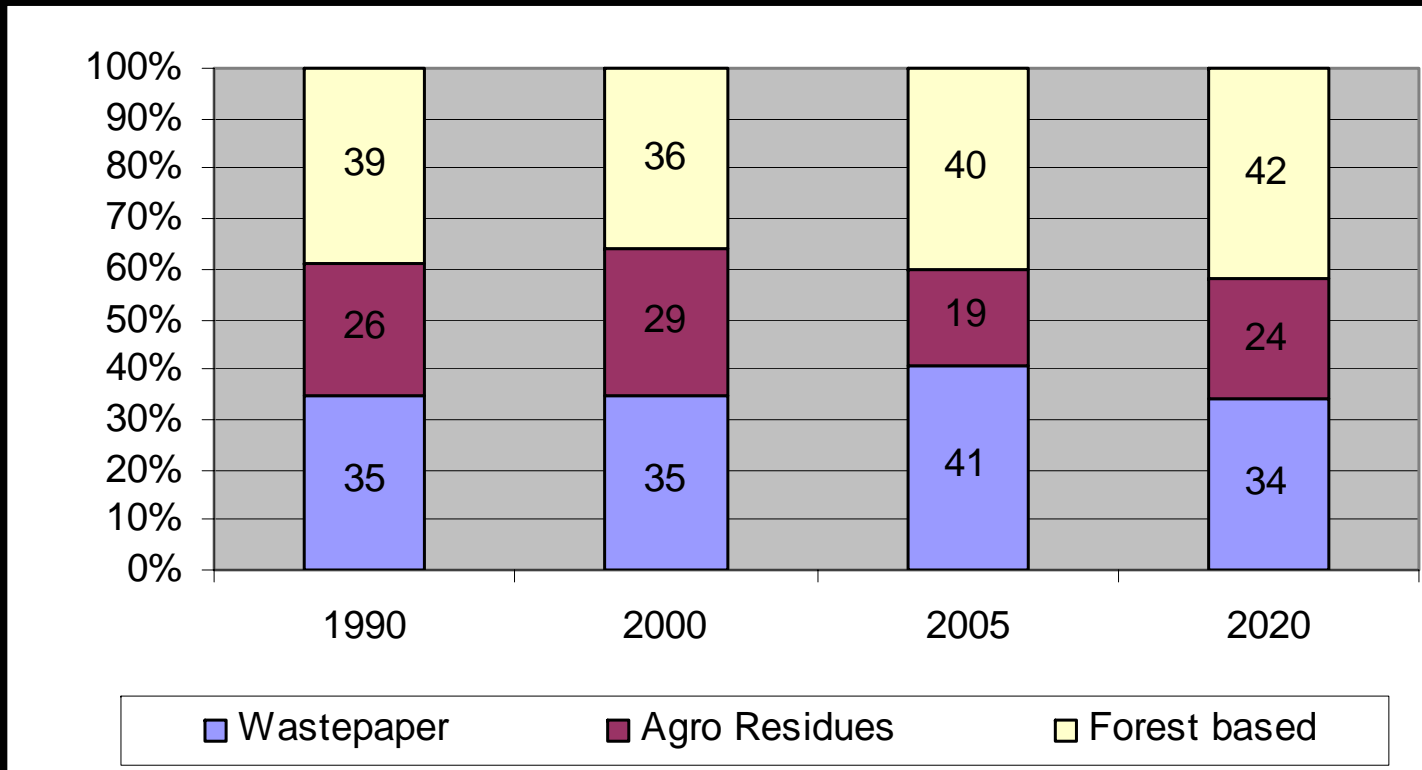
During 90s' share of Non-wood fibres had significantly increased. Share of waste paper has increased during early 2000: 1st decade, pulpwood would likely to increase and its share will remain constant in 2010 – 20.

Paper and Board Demand in India upto 2020 - forecast

X1000 tonnes

	2005		2010		2015		2020	
	Con.	Prod.	Con.		Con.		Con.	
Newsprint	1098	560	1580		1937		3030	
Printing & Writing	2954	2854	3900		4700		5600	
Packaging	2700	2700	3800	Writing	5200		7400	
Tissues	65	60	130		220		330	
Others	40	20	100		190		300	
Total	6857	6194	9510		12.247		16660	

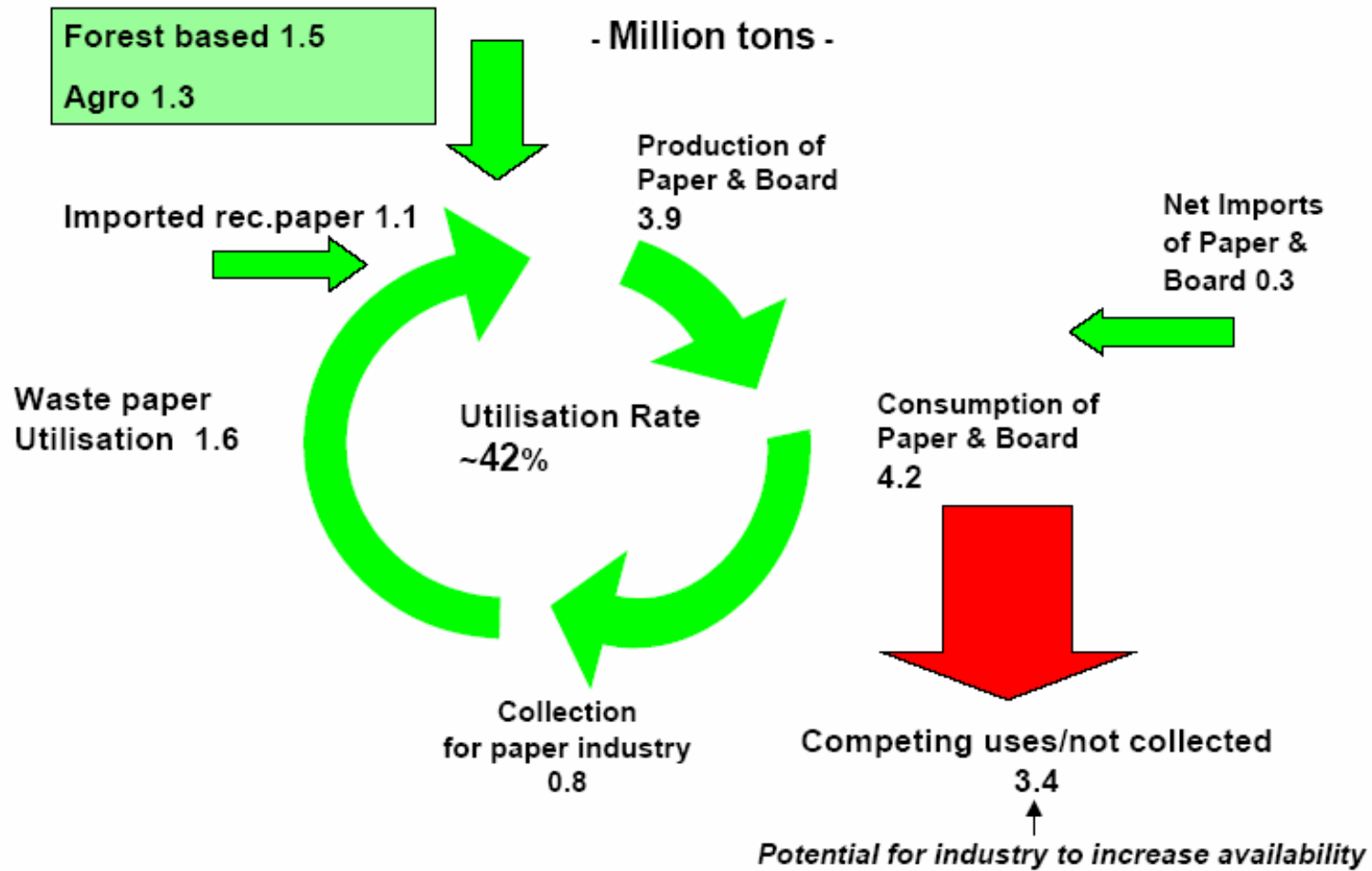
Domestic Papermaking Fibres in India

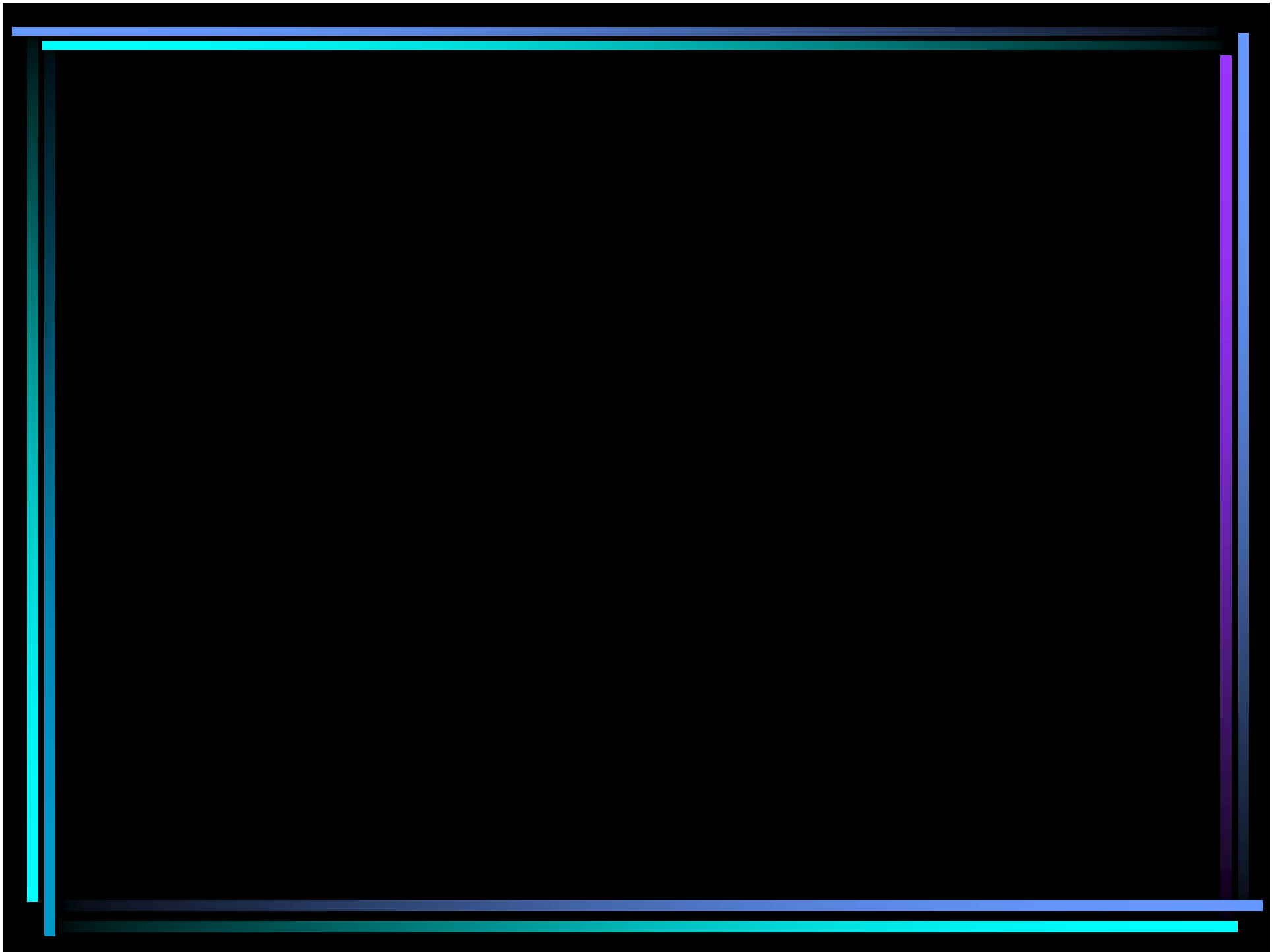


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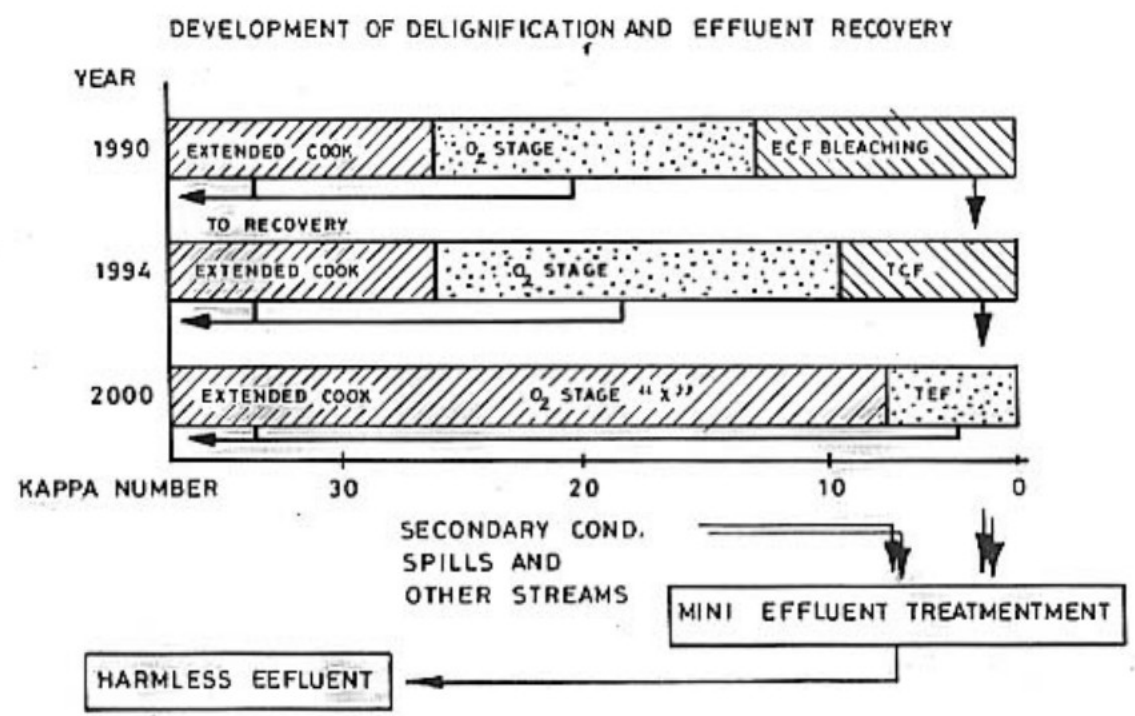
Fibre flows in Indian paper production

Project Number 52A008





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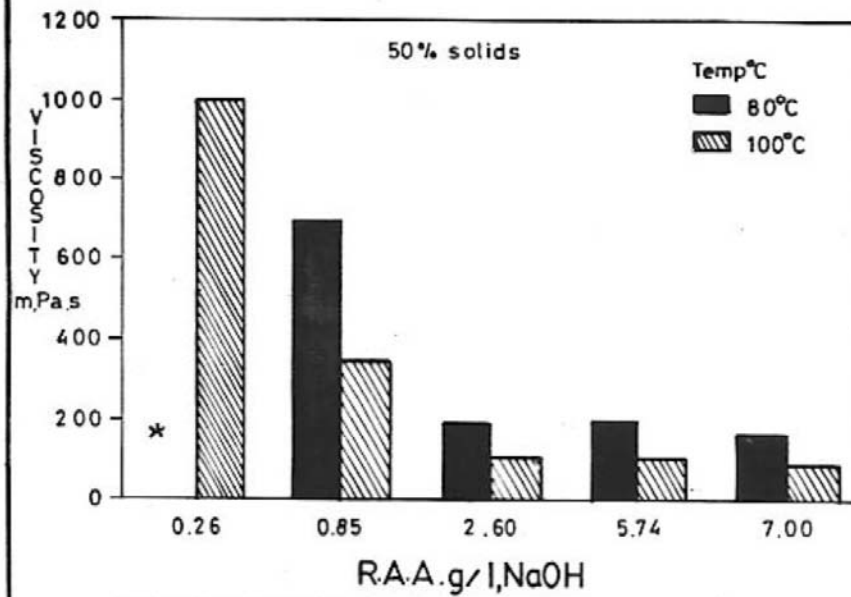


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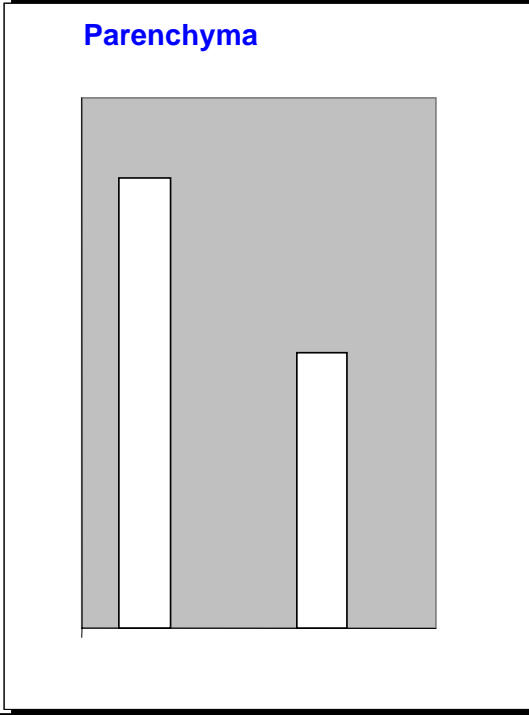
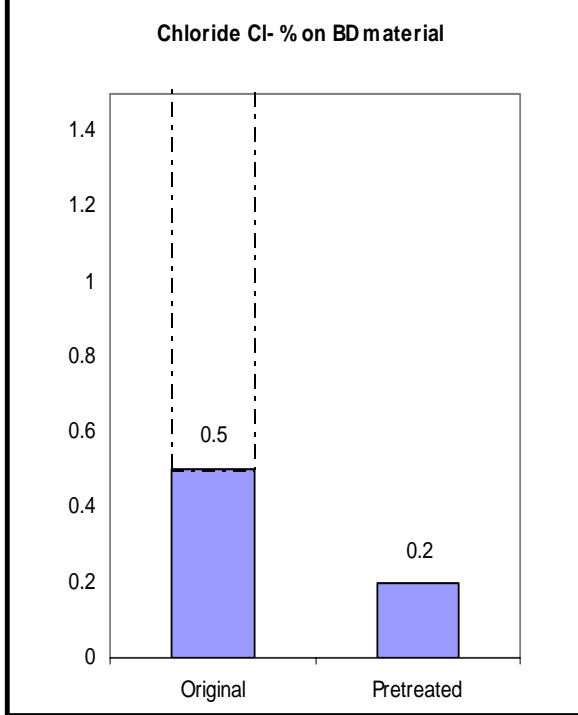
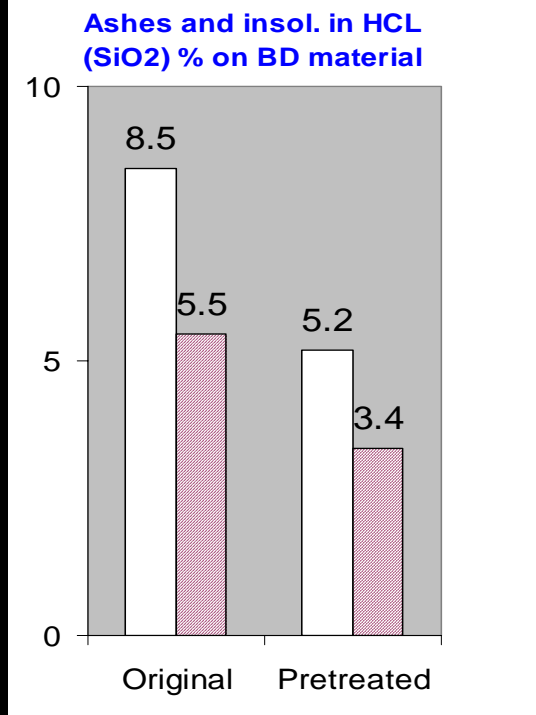
SHEET OF

Relation between RAA, viscosity & temperature
in rice straw black liquor



* Could not be measured

R.A.A. = Residual Active Alkali



Wet washing of Straw

- Lower Ash and SiO₂ in straw
- Lower chlorides
- Lower parenchyma cells