

Paper

On a roll

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Highlights

- ✓ Demand for paper to grow at a stable rate of around 6.3 per cent over the next 1-2 years
- ✓ Paper prices to increase by 5-6 per cent in 2006-07
- ✓ Raw material costs to increase; margins to remain stable over the medium term

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Executive summary

Paper industry on steady ground

In 2005-06, the paper industry witnessed steady growth in demand and higher prices across varieties. Although there was a marginal increase in input costs, all in all 2005-06 was a good year for the domestic paper industry.

Operating rates to remain high

The demand for paper is expected to grow at a stable rate of around 6.3 per cent over the next 1-2 years. Although a number of players are in the process of capacity additions, most producers are expected to operate at above 90 per cent capacity with healthy growth in demand and the demand drivers expected to remain strong.

Price momentum to continue

Paper prices are expected to increase on an average by 5-6 per cent during the year, as healthy growth in demand will ensure price momentum. Writing and printing (W&P) paper prices will increase at a faster pace as W&P producers have higher pricing power as compared with industrial paper producers who lack this flexibility due to the fragmented nature of this segment.

Raw material costs to increase, but margins to remain stable

Although raw material costs are expected to increase in the medium term with increase in prices and stability in demand, producer's margins and their credit profile are expected to remain stable.

Fibre – What lies beneath?

Does India have enough wood to sustain its wood-based industries? Will the domestic paper manufacturers be able to sustain their operations with increasing demand for wood and declining supply? Is the waste paper collection in India enough to meet its demand? Are agri-residues a good alternative to meet demand for fibre? These are some of the questions that we have tried to answer in our study on fibre, its availability and demand in domestic and global markets.

Paper industry: On a roll

The paper industry continues to be in a steady growth phase, with demand growing at a healthy rate. Although the industry is in an expansion mode with capacities not yet on stream, operating rates have remained high.

Demand drivers continue to remain strong

The paper industry's growth depends to a large extent on the country's economic growth. With the economy currently in a buoyant phase and expected to remain so in the medium term, CRISIL Research expects the domestic paper industry to grow at a stable rate of around 6.3 per cent over the next 2 years.

In addition, growth in end-user industries is expected to drive the paper industry's growth. Some of the demand drivers expected to drive growth in the paper industry are as follows:

- Promotion of education by the government (revenue allocation for education increased by 31 per cent to Rs 2,411.5 million in Union Budget 2006-07)
- Growth in offshoring in the publishing vertical
- Growth in exports of children's books
- Increase in exports of goods
- Healthy growth in the industrial segment, especially sectors such as pharmaceuticals, consumer durables and readymade garments.

Paper: Variety-wise demand forecast

Table 1

('000 tonnes)	2004-05	2005-06 E	% Growth	2006-07 F	% Growth	2007-08	% Growth
Writing and printing paper	2,178	2,307	5.9	2441	5.8	2583	5.8
- Uncoated paper	1,886	1,987	5.4	2091	5.2	2202	5.3
Creamwove	1,185	1,236	4.3	1288	4.2	1344	4.3
Maplitho (including unbranded copier)	574	605	5.4	634	4.8	665	4.9
Branded copier	127	146	15.0	169	15.7	192	13.6
- Coated paper	292	320	9.5	352	10.0	381	8.2
Industrial paper	3,376	3,589	6.3	3821	6.5	4068	6.5
Kraft	1,835	1,964	7.0	2102	7.0	2249	7.0
Duplex (including coated and uncoated)	966	1,037	7.3	1115	7.5	1201	7.7
Grey and white boards	274	284	3.6	294	3.5	304	3.4
MG poster	300	305	1.7	310	1.6	313	1.0
- Speciality	239	257	7.5	277	7.8	298.0	7.6
Total	5,793	6,153	6.2	6,539	6.3	6,949	6.3

E: Estimate; F: Forecast

Source: CRIS INFAC

With strong growth in the country's manufacturing sector, demand for industrial paper is expected to grow at a faster pace.

In the writing and printing segment, a higher quality paper such as coated and copier paper is expected to grow at a faster rate as compared with creamwove and maplitho due to higher demand for a high quality paper.

In the speciality paper segment, though demand is expected to grow at a CAGR of 7-8 per cent in the medium term, more than half of the speciality paper consumption is met through imports. With very few domestic manufacturers present in this segment, imports are expected to grow in the medium term with increase in demand.

Capacity expansions on the cards

With the paper industry currently in a steady state of growth, most players are in the process of modernisation of plants to meet the elemental chlorine free (ECF) deadline imposed by the government. Concurrently, players have embarked on capacity expansions, and most of these capacities are expected to come on-stream post 2007-08. A capacity addition of around 0.6 million tonnes is expected over the next 2 years with total capacity additions expected to be around 1.2-1.5 million tonnes till 2010-11.

Capacity expansions		Table 2					
(’000 tonnes)	2005-06	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Ballarpur Industries	462			150		150	
ITC Ltd	374						
Hindustan Paper Corporation	335			100		65	300
Tamil Nadu Newsprint and Paper Ltd	230						
West Coast	164						
Andhra Pradesh Paper Mills	154			46			
JK Paper	190			60			
Sirpur Paper Mills	84		50				
Star Paper Mills	71						
Shree Bhawani Paper Mills	21			23			
MBD Group	12		4	23			
Rama Newsprint	132					100	
Total			54	402	100	215	300

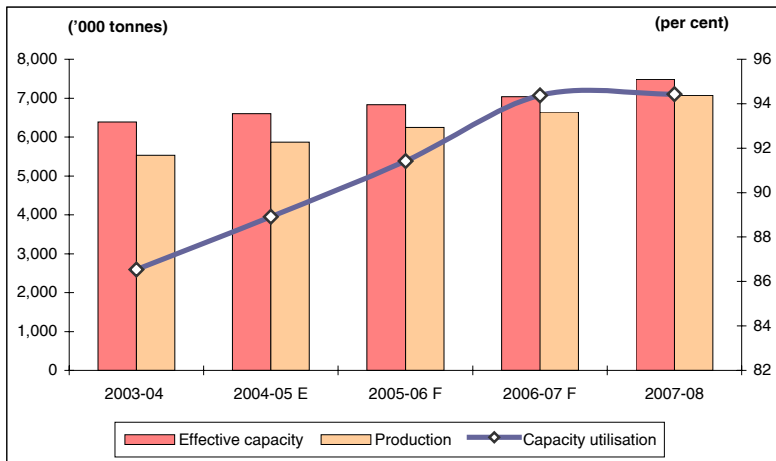
Source: CRIS INFAC

Operating rates to remain high

Although capacity additions are on the cards, domestic demand is expected to grow at a healthy rate with demand drivers expected to remain strong. Most producers are expected to operate at above 90 per cent capacity with growth in production of over 6 per cent. Production of large as well as small players is expected to increase in the medium term.

Stability in operating rate

Figure 1



Source: CRIS INFAC

In 2004-05, the overall production increased by around 6 per cent. Production of larger players increased by around 6.5 per cent, whereas that of smaller players declined by 8 per cent. In 2005-06, production of larger players increased by around 3 per cent, while there was a huge spurt in the growth in production of smaller manufacturers which grew at around 88 per cent from around 0.4 million in 2004-05 to 0.6 million in 2005-06.

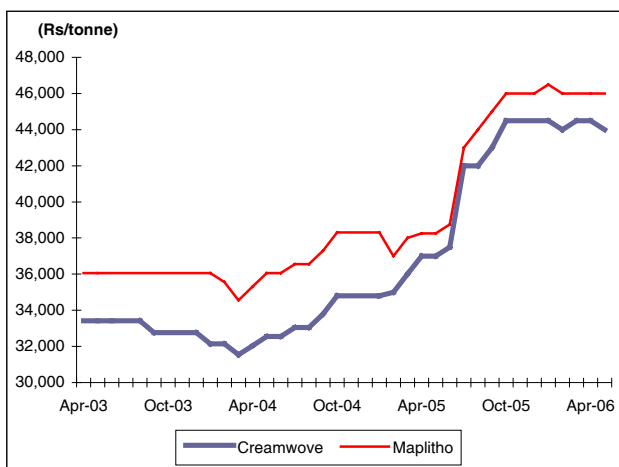
Prices and costs

Paper prices continue on their uptrend

The uptrend in paper prices continued throughout 2005-06, with prices on an average increasing by around 15 per cent as compared to 2004-05. Paper prices in the W&P segment increased by around 16 per cent with creamwove prices increasing by around 24 per cent, maplitho by 17 per cent and coated paper by 11 per cent.

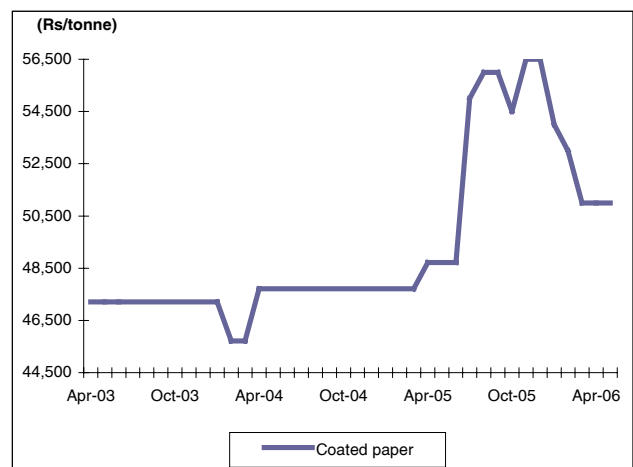
In the industrial paper segment, average prices increased by 12 per cent with prices of duplex boards increasing by 12 per cent and kraft paper prices increasing in the range of 3-8 per cent for different varieties.

W&P prices



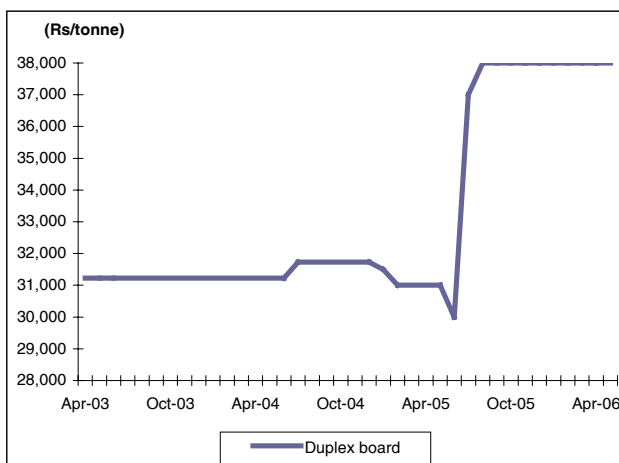
Source: CRIS INFAC

Figure 2



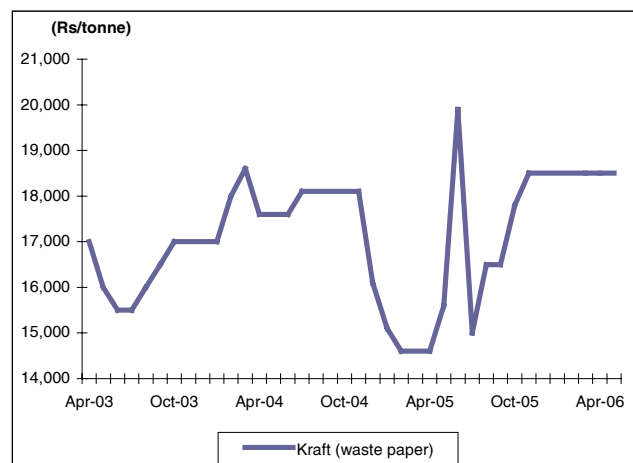
Source: CRIS INFAC

Industrial paper prices



Source: CRIS INFAC

Figure 3



Source: CRIS INFAC

Price momentum to continue, albeit at a slower pace

The price momentum witnessed by the paper industry over the last 2 years is expected to continue in 2006-07, but at a slower rate. Prices are expected to increase on an average by 5-6 per cent during the year, as healthy growth in demand will ensure continuity in price momentum. However, with an increase in supply, the growth in prices will be at a lower rate as compared with last year. In addition, in Union Budget 2006-07, the excise duty on paper was reduced from 16 per cent to 12 per cent, benefiting the domestic industry, as producers retained this duty cut.

On an average, paper prices are expected to rise by 5-6 per cent in 2006-07, with a healthy demand-supply scenario in the domestic market. W&P paper prices will increase at a faster pace, as W&P paper producers have higher pricing power as compared to industrial paper producers who lack this flexibility due to the fragmented nature of this segment.

Costs

Raw material costs on the rise

The highest cost component for the domestic paper industry is raw material. Over the years, this cost has been increasing due to higher demand for raw materials and limited supply. In 2004-05, input costs per tonne of paper were around Rs 26,000. Out of this, raw material costs accounted for around Rs 15,000 or 59 per cent of the total operating cost.

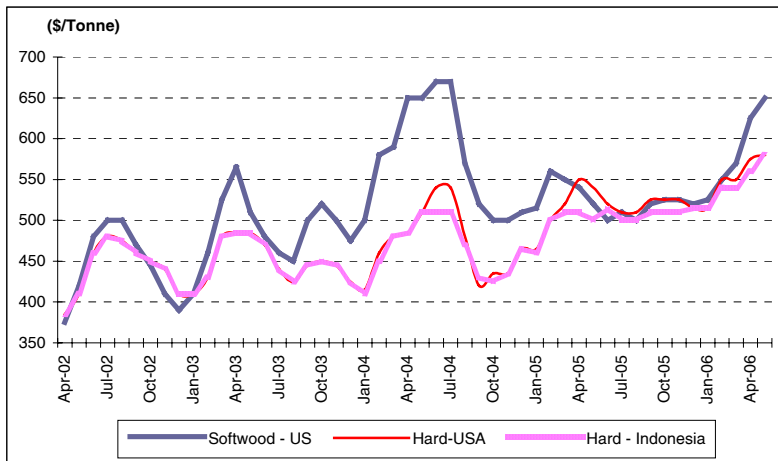
Softwood pulp prices, which were at their peak in early 2004-05, declined during 2005-06. They remained stable at \$500-525 from August 2005 to January 2006. On an average, they declined by 8 per cent in 2005-06 as compared to 2004-05. From February 2006, prices have started increasing and are currently around \$650 per tonne.

Hardwood pulp prices more or less follow the trend of softwood prices and are priced slightly lower than softwood pulp. However, with softwood pulp prices being very high, a number of players started using hardwood pulp, resulting in higher demand and consequently higher prices. In 2005-06, hardwood prices were in the same range as that of softwood prices, and in some of the months, hardwood prices were higher than softwood prices due to higher demand.

In 2005-06, hardwood prices increased by around 9 per cent as compared to 2004-05. Hardwood prices, too, have started increasing over the last 2 months and are currently around \$580 per tonne.

Pulp prices

Figure 4



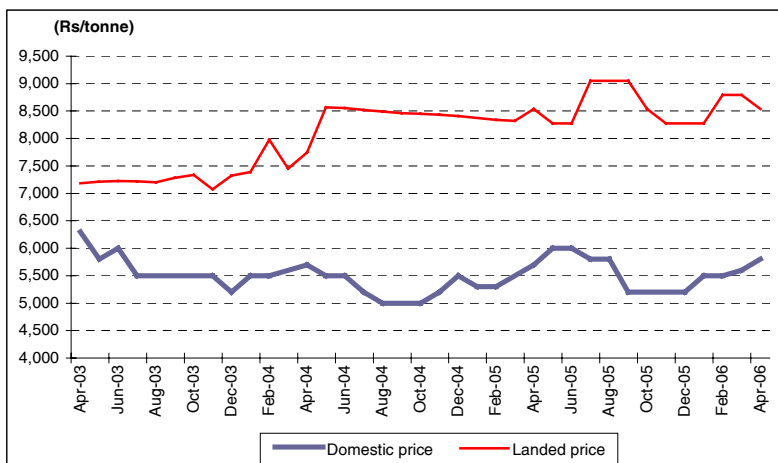
Source: CRIS INFAC

Going forward, pulp prices are expected to increase with higher demand. Currently, sellers across the world are in the process of increasing prices on contracts of pulp, especially of softwood. Although they have been facing resistance from buyers, price increases are expected to go through with lower inventories and higher demand.

Waste paper prices increased marginally by 2-3 per cent in 2005-06 as compared to 2004-05. Prices have remained steady over the last few months, but are expected to increase over the next few months, especially in Asia as Asian producers, particularly Chinese paper makers, have started buying waste paper to build inventories after the end of holidays in May.

Waste paper prices

Figure 5



Source: CRIS INFAC

Apart from raw materials, other input costs such as power and chemicals have also been on the rise in the last few years. Average prices of caustic soda grew by around 27 per cent in 2005-06, whereas chlorine prices declined by 2 per cent. Power costs, too, have been increasing with a rise in prices of fuel due to a shortage of coal and other inputs required to generate power.

Financial performance and credit profile

Key financial indicators	Table 3				
	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05
Operating margins	20.2	18.3	17.6	17.6	17.9
Net margins	7.5	13.4	5.4	6.5	6.8
RoCE	14.2	18.6	11.6	11.3	10.5
Interest coverage	2.6	4.1	3.2	3.9	4.3
Debt-equity	1.7	1.5	1.2	1.0	1.0
Current ratio	1.5	1.5	1.8	2.2	2.1
Raw material and stores days	112.5	115.3	119.1	103.3	99.1
WIP holding days	2.3	2.9	2.8	2.8	3.8
Finished goods	15.0	15.0	12.2	12.9	11.0
Debtors days	43.8	50.9	43.4	40.6	35.9
Creditors days	62.7	60.5	58.6	54.1	51.4
No. of companies	10.0	10.0	10.0	10.0	9.0

Source: CRIS INFAC

Stability in financial performance in 2004-05

In 2004-05, the industry witnessed a moderate improvement in its financial performance, despite the huge expenditure incurred on capacity additions and modernisation. Average operating margins increased from 17.6 per cent in 2003-04 to 17.9 per cent in 2004-05, whereas the net margin remained stable at around 6.8 per cent. In spite of the increase in borrowings, the interest coverage ratio rose from 3.9 to 4.3 times.

(Rs million)	Table 4											
	2004-05	% of	2005-06	% of	2004-05	% of	2005-06	% of	2004-05	% of	2003-04	% of
	Q3	net sales	Q3	net sales	9 M	net sales	9 M	net sales	net sales	net sales	net sales	
Net sales	12239.9	100.0	13154	100.0	36401.1	100.0	38,909.8	100.0	49,167.0	100.0	49,413.3	100.0
Total expenses	10104.4	82.6	10653.8	81.0	29768.4	81.8	31488.3	80.9	40,285.0	81.9	40,415.1	81.8
Raw material consumed	5294.1	43.3	5463.8	41.5	15088.7	41.5	16090.5	41.4	20,499.1	41.7	17,983.7	36.4
Change in stock	107.1	0.9	203.7	1.5	1157.6	3.2	808.5	2.1	1,152.6	2.3	2,154.9	4.4
Staff cost	1113.5	9.1	1163.8	8.8	3196.7	8.8	3382.2	8.7	4,315.9	8.8	4,302.1	8.7
Other expenditure	1802	14.7	1909.9	14.5	5314.5	14.6	5,701.0	14.7	7,306.7	14.9	7,359.7	14.9
Power and fuel	1631.1	13.3	1749.6	13.3	4548.1	12.5	5,010.0	12.9	6,394.8	13.0	8,050.7	16.3
Selling & distribution expenses	156.6	1.3	163	1.2	462.8	1.3	496.1	1.3	615.9	1.3	564.0	1.1
OPBDIT	2135.5	17.4	2500.2	19.0	6632.7	18.2	7,421.5	19.1	8,882.0	18.1	8,998.2	18.2
Interest	462.6	3.8	448.9	3.4	1575.8	4.3	1,390.4	3.6	2,114.3	4.3	2,290.0	4.6
OPBDT	1672.9	13.7	2051.3	15.6	5056.9	13.9	6,031.1	15.5	6,767.7	13.8	6,708.2	13.6
Depreciation	808.6	6.6	846.6	6.4	2394.4	6.6	2,504.9	6.4	3,202.6	6.5	2,965.7	6.0
OPBT	864.3	7.1	1204.7	9.2	2662.5	7.3	3,526.2	9.1	3,565.1	7.3	3,742.5	7.6
Other income	212.3	1.7	169.2	1.3	451.7	1.2	520.7	1.3	856.8	1.7	848.0	1.7
Exceptional income	-30.4	-0.2	-39.5	-0.3	-32.3	-0.1	-37.7	-0.1	-43.0	-0.1	-145.4	-0.3
PBT	1046.2	8.5	1334.4	10.1	3081.9	8.5	4,009.2	10.3	4,378.9	8.9	4,445.1	9.0
Current tax	152.7	1.2	178.6	1.4	356.9	1.0	567.2	1.5	462.1	0.9	332.6	0.7
Deferred tax	90.1	0.7	136.7	1.0	428.9	1.2	379.8	1.0	530.6	1.1	898.2	1.8
Net profit (+)/Loss (-)	803.4	6.6	1,008.0	7.7	2,296.1	6.3	3,035.7	7.8	3,386.2	6.9	3,214.3	6.5

Q3: October to December; 9M: April to December

Source: CRIS INFAC

In the first 9 months of 2005-06, the paper industry's net sales increased by around 7 per cent, with healthy growth in volumes and strong growth in realisations. Its operating margins were around 19 per cent. Raw material costs remained stable, but total costs declined marginally. The net margin was around 8 per cent with a decline in depreciation and interest costs.

In the fourth quarter of 2005-06, too, margins and credit profile are expected to remain at current levels.

Margins to remain stable in the medium term

With a rise in prices and stability in demand, producer's margins and their credit profile are expected to remain stable in the medium term. However, with the ongoing capacity expansions, the return on capital employed (RoCE) is expected to decline marginally. Most players in the industry are expected to operate at higher operating rates, resulting in better performance. Operating and net margins are expected to improve for larger players in the medium term.

Fibre – What lies beneath?

The domestic paper industry uses the following three main sources of fibre:

- 1 Wood/Bamboo
- 2 Recycled/Waste paper
- 3 Agri-residues

Wood accounts for around 36 per cent of production, while waste paper and agri-residues account for 32 per cent each.

Raw material scenario

Table 5

(million tonnes)	2005-06 E		2006-07 F		2007-08 F	
	Paper Prodn	Fibre req	Paper Prodn	Fibre req	Paper Prodn	Fibre req
Wood/bamboo	1.9	4.7	2.0	5.0	2.1	5.3
Agri-residues	2.0	8.4	2.1	8.9	2.3	9.5
Domestic waste paper	1.1	1.4	1.1	1.5	1.2	1.6
Imported waste paper	0.9	1.1	1.0	1.2	1.1	1.3
Imported pulp	0.4	0.3	0.4	0.4	0.4	0.4
Total	6.2	15.9	6.6	16.9	7.1	18.0

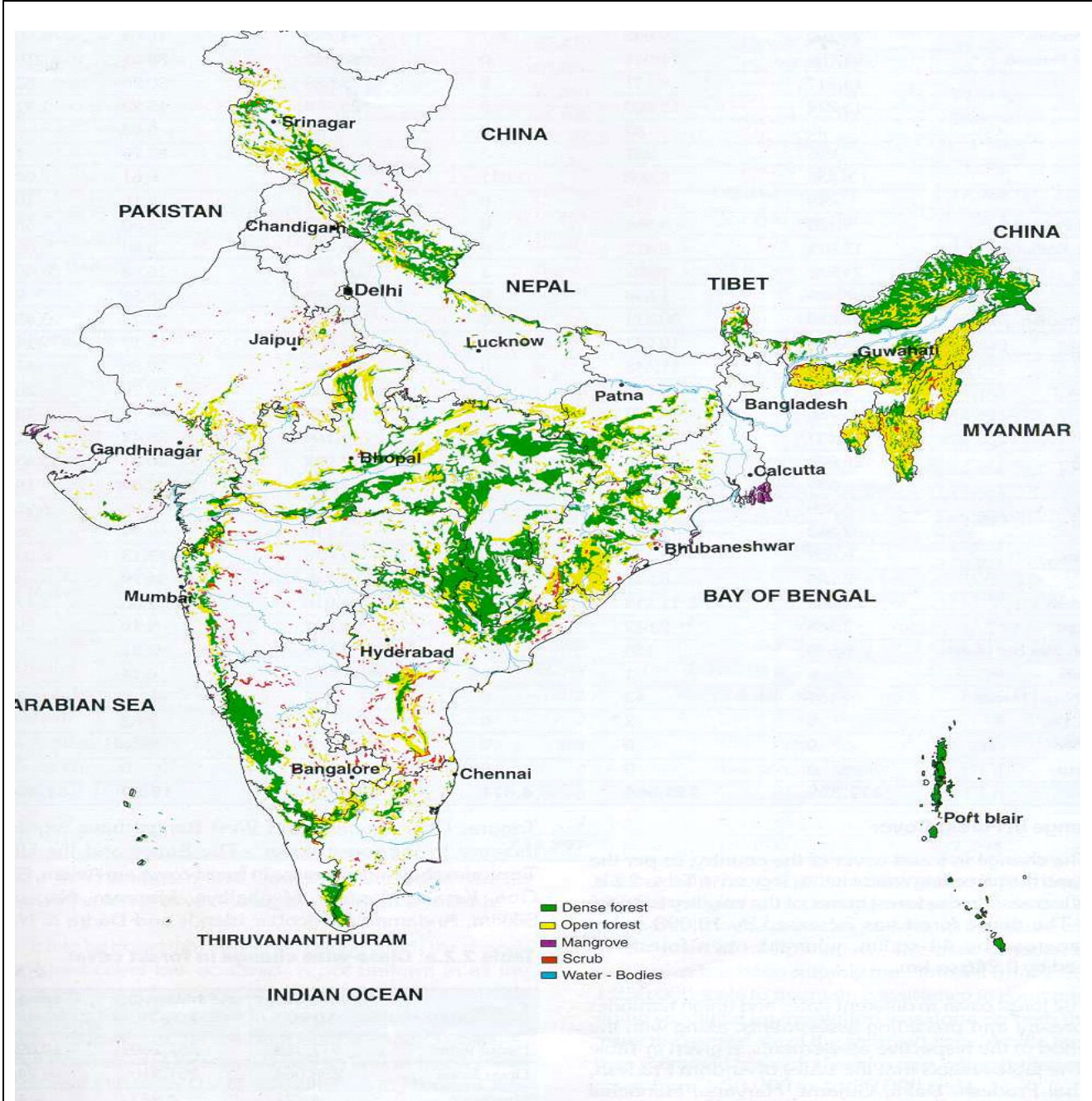
(million tonnes)	2008-09		2009-10	
	Paper Prodn	Fibre req	Paper Prodn	Fibre req
Wood/bamboo	2.3	5.6	2.4	6.0
Agri-residues	2.4	10.1	2.5	10.4
Domestic waste paper	1.3	1.7	1.2	1.6
Imported waste paper	1.1	1.4	1.3	1.6
Imported pulp	0.5	0.4	0.6	0.5
Total	7.5	19.1	8.0	20.0

Source: CRIS INFAC

Wood

Wood is considered the backbone of the paper industry as most of the higher grades of paper are manufactured using wood. On an average, around 2.5 tonnes of wood is required to manufacture 1 tonne of paper. In 2005-06, the demand for wood from the paper industry was around 5 million tonnes. However, in addition to the paper industry, there are a number of other industries competing for wood, resulting in lower availability.

Scarcity of wood Chart 1



Source: CRIS INFAC

India has a total land area of 328 million hectares, of which around 68 million hectares is covered by forests. Out of this, around 35.5 million hectares is covered by natural forests, while the remaining 32.5 million hectares are plantations. Out of the 35 million hectares of natural forests in the country, several of the forest areas are protected and hence are not available for wood consumption.

Industrial plantations account for around 37 per cent of the total plantations, while the rest are non-industrial and cater to fuel wood requirement. The wood collected from forests is used mainly for industrial use (furniture, plywood, construction, pulpwood, etc) and as fuel wood. India being an agricultural country and a large part of its population living in villages, the use of wood as fuel forms the largest part of demand.

In 2005, the demand from the industrial sector was estimated at around 83 million m³, whereas the demand from households was 300-325 million m³. Out of the total demand for fuel wood, plantations meet around 49 per cent and natural forests the remaining 51 per cent. However, the huge quantity of wood removals every year is unsustainable, as this has resulted in depletion of forests.

However, wood received from natural forests for industrial use is around 12 million m³, which is very less as compared to wood used for fuel purposes. Plantations and imports meet the remaining requirement. In 2005, the output from plantations for industrial use was estimated to be around 53 million m³.

Demand-supply scenario: Wood		Table 6		
	1985	1996	2001	2006
DD from industrial segment	50	64	73	82
Output from forests	24	12	12	12
Plantations		41	47	53
Deficit	26	11	14	17

Source: National Forest Commission

Demand from the industrial segment is expected to increase to around 95 million m³ in the next 3-4 years. The output from plantations is expected to increase to around 58 million m³, whereas the output from forests is expected to remain stagnant at around 12 million m³, resulting in a deficit of around 25 million m³.

The current rate of wood removal from forests is not sustainable as apart from the reported logging, a large amount of illegal logging takes place every year, resulting in faster depletion of forests. Around 90,000 m³ of wood is lost every year due to illegal felling of trees. In addition, forest fires also cause large losses of wood. Although 31 per cent of the natural forests are declared as protected, felling of trees for industrial and fuel wood purposes has resulted in depletion of these forests as well. All these factors have contributed to faster erosion of forest resource in our country.

Paper industry's wood requirement

In the domestic paper industry, there are around 30 companies using wood as the primary raw material. In addition, there are a number of paper manufacturers who use wood pulp to some extent in their raw material mix. In 2005-06, the domestic paper industry used around 5 million tonnes of wood pulp. However, wood pulp available from domestic sources was around 4.5 million tonnes and around 0.5 million tonnes of wood pulp was imported.

With increase in production, the demand for wood pulp is expected to rise. However, no commensurate increase in domestic supply is expected. By 2010, the demand for wood pulp is expected to reach around 6.5 million tonnes from the current level of 5 million tonnes. Hence the next alternative available to producers is to import wood pulp. Over the last few years, imported pulp has accounted for 6-7 per cent of domestic production.

Are imports sustainable?

Wood is a scarce commodity not only in India, but also in many parts of the world. Only a few countries have surplus wood that they export. Countries such as the US, Russia, Brazil and Indonesia have surplus wood.

Worldwide the total forest area is around 3,953 million hectares, with Russia having the largest forest area of around 851 million hectares, followed by Brazil 412 million hectares, Canada 245 million hectares and the US 226 million hectares.

Russia

The Russian Federation, with its largest land area in the world, accounts for around one-fifth of the world's forest area. Out of the 851 million hectares of forests in Russia, around two-third are available for wood supply. The country is the largest producer and exporter of industrial roundwood.

Canada and US

North America (the US and Canada) accounts for around 12 per cent of the world's forest reserves. Both export a large amount of wood and timber. While Canada is the largest exporter of wood and pulp, the US accounts for 15 per cent of the total world trade and is the largest consumer of wood.

Brazil

Brazil has the largest expanse of tropical forests in the world. It accounts for 2 per cent of the global market for pulp and paper, 3.5 per cent for plywood, 8 per cent for veneer and 2 per cent for chipboard. Around 70 per cent of Brazil's forests are privately owned.

In addition to these countries, a few other countries that have surplus of wood or pulp and contribute to world trade include Indonesia, Finland and Malaysia, among others.

China has become a key player in the global wood and wood products trade as it imports nearly half of the global wood surplus to meet its growing industrial need for wood. Although it has around 197 million hectares of forests, the country is increasingly becoming a wood products exporter. It accounts for more than 30 per cent of the world's furniture market and is a significant player in other wooden products trade. Chinese wood products are low in cost, and hence the demand for these products has been growing at a faster rate in countries such as the US, Japan and Hong Kong.

To meet its ever-increasing need for wood, China has been importing mainly from Russia, Malaysia, Indonesia, Papua New Guinea (PNG) and Canada. However, in several countries forests have been depleted, thanks to the growing demand for wood.

Problems of illegal logging and unsustainable cutting of trees have plagued countries such as PNG, Indonesia and Malaysia who have been mainly exporting to China. A number of these countries such as Indonesia and Malaysia have now made strict regulations to stop illegal felling of trees.

However, due to large-scale felling and cutting of trees, the surplus of wood available globally has been shrinking and is expected to decline in the future, resulting in lower availability of wood.

Global paper – pulp equation

Globally, various regions have different levels of pulp consumption, and hence demand for pulp differs in these regions as follows:

Region	Paper production	Pulp consumption	Pulp as % of paper
Europe	109.3	54.7	50.1
Latin America	17.4	8.7	49.9
North America	103.9	69.4	66.8
Africa	4.0	2.2	53.5
Asia	120.9	50.3	41.6
Australasia	4.1	2.5	61.7
Total	359.6	187.8	52.2

Source: PPI & CRIS INFAC

On an average, the pulp consumption as a per cent of paper consumption varies between 40 to 60 per cent. Global trade for pulp amounts to around 42 million tonnes per annum, out of which, Asia imports the largest quantity. In 2004, total imports were around 42 million tonnes, out of which Asia imported around 16 million tonnes. Within Asia, China is the largest importer. In 2004, its wood pulp imports were around 7 million tonnes. India's imports were around 0.5 million tonnes.

North America is the largest exporter of wood pulp followed by Latin America. European trade, though large is mostly regional in nature.

(million tonnes)	Pulp production	Pulp consumption	Pulp exports	Pulp imports
Asia	37.1	50.3	2.9	16.2
North America	80.0	0.0	16.1	5.5
Europe	50.6	54.7	13.4	17.6
Latin America	15.0	8.7	7.8	1.5
Africa	2.9	2.2	1.0	0.3
Australasia	3.0	2.5	0.9	0.4
Total	188.5	118.4	42.1	41.4

Source: PPI

Over the years, there has been a spurt in demand for pulp from China due to its fast-growing paper industry. In 2004, China's paper production was around 47 million tonnes, whereas its consumption was 51 million tonnes. Over the next few years, its demand for paper is expected to grow at 8-9 per cent, and this will result in further demand for pulp.

Higher demand to lead to lower surplus

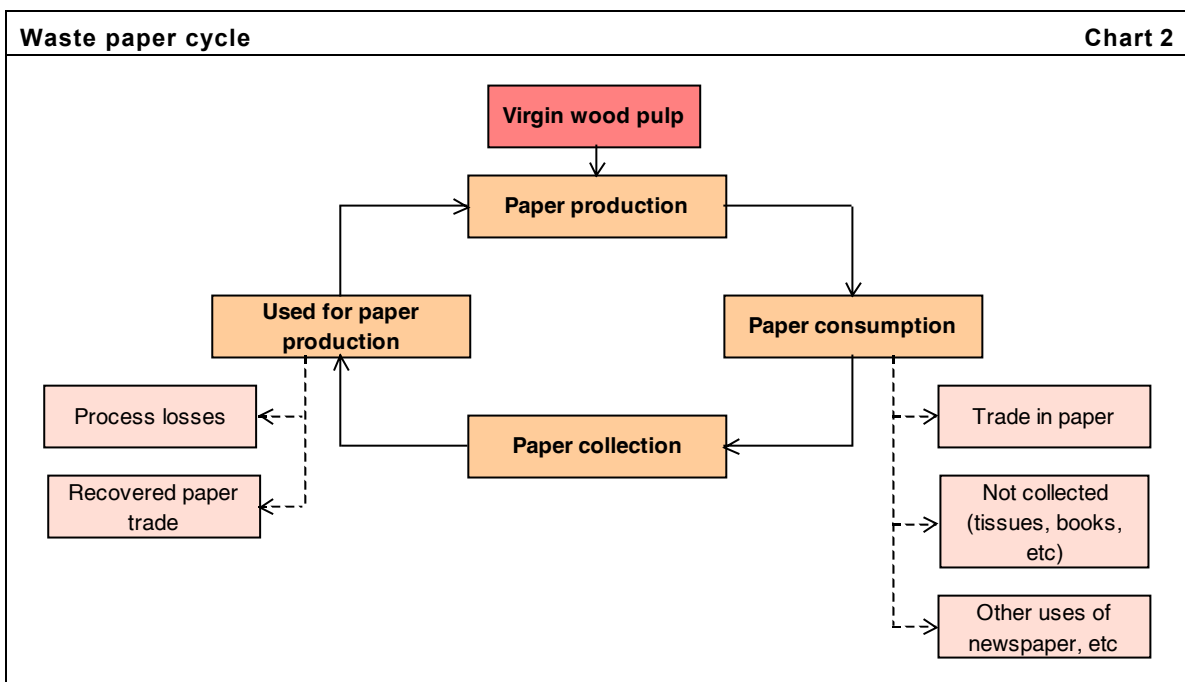
Thus, with demand for wood and pulp expected to increase in the future with no corresponding increase in supply, prices are expected to continue to rise. Although few countries such as Brazil and China are in the process of expanding their plantations, this will not be able to meet the ever-growing demand for wood and will result in a demand-supply gap. In addition, faster depletion of forests in many countries will result in lower surplus over the years.

Recycled/Waste paper

Recycled paper accounts for around 32 per cent of paper production in India. Although this is a good source of non-wood fibre presence of a good collection and utilisation, infrastructure determines the availability of this raw material.

Lower rate of collection results in lower availability in India

India does not have a well-developed waste paper collection mechanism. The waste paper recovery rate in the country is around 20 per cent, resulting in lower availability of domestic waste paper.



Source: CRIS INFAC

From the time of paper production to the time it is collected for reuse, a lot of paper is lost or not available for reuse as indicated above. In addition to process losses, the quality of fibre decreases over time, and hence the quantity of recycled paper available declines over a period of time.

As India’s domestic availability of waste paper is not enough to meet its demand, domestic producers rely on imports to meet demand. Waste paper imports account for around 15 per cent of domestic production.

However, China’s imports growing faster, resulting in lower availability

As in the pulp segment, in the waste paper segment too, China plays a key role due to its huge volume of imports. The global trade of waste paper was around 37 million tonnes in 2004, with Asian imports being around 21 million tonnes. Out of these, China imported around 12.5 million tonnes. Most Asian countries, except Japan, import waste paper due to higher demand and lower availability. Japan is a net exporter of waste paper and has the highest rate of recovery of waste paper of around 65 per cent, followed by Europe 58 per cent and the US 50 per cent. The US is the largest exporter of waste paper. In 2004, its exports amounted to around 14 million tonnes. In Europe, the trade is more regional in nature.

Most of the countries exporting waste paper have reached saturation levels in their waste paper production. Hence, with an increase in waste paper-based paper production, waste paper demand is expected to far exceed supply.

Agri-residues

Agri-residues include agricultural waste products such as bagasse, rice husk, wheat and rice straw, maize stalk and other such agricultural wastes. India being an agricultural country, these agri-residues are available for use.

The most widely used agri-residue in the paper industry is bagasse. It is obtained from sugarcane, and out of the total quantity of sugarcane crushed around 30 per cent is obtained as bagasse. However, bagasse is being increasingly used as fuel in generation of power, resulting in lower availability for the paper industry. Around 90 per cent of bagasse is used as fuel.

In addition, a number of other factors that result in lower feasibility of this raw material include the following:

- Agri-residues are seasonal in nature
- Availability is regional (as all crops are not produced in all parts of the country)
- Lower yield (input/output norms vary from 2.5 tonnes to 5.0 tonnes per tonne of paper)
- Cost of transportation is high due to the bulky nature of agri-residues
- Quality of paper made from this raw material is inferior.

Non-wood fibre: Characteristics

Chart 3

	Abundance	Availability throughout the year	Concentration of distribution	Determination in stage	Fibre quantity	Competitive uses
Bamboo	High	High	High	Low	High	Very high
Bagasse	Very high	Very low	Low	Very high	High	Very high
Rice straw	Very high	High	Very low	Very low	Low	High
Wheat straw	Very high	High	Very low	Very low	Low	Very high
Straw (other cereals)	High	Low	Very low	Low	Low	High
Cotton stick	High	Very low	Low	High	High	Low
Maize stalk	Low	Very low	Low	High	Low	Low
Mustard stick	Low	Low	Very low	Low	Very low	Low
Cajanus cajan stick	Low	High	Low	Very low	Low	Low
Jute stick	High	Low	High	Low	High	Low
Pulses straw	High	Very low	Very low	Low	Low	Low
Mestha	Very low	Very low	High	Very low	Very high	Very low
Diancha	Very low	Very low	High	Very low	Very high	Very low

Source: FAO

Measures to sustain domestic availability of fibre

In order to sustain the country's wood-based industries, including the pulp and paper industry, it is very important to sustain India's forest resources, in addition to increasing other non-wood resources to meet the ever-growing demand for wood and pulp in the country. Some of the ways to achieve this objective are as follows:

- Improvement in the collection mechanism of waste paper
- Stoppage of illegal felling of trees
- Increase in farm/social forestry
- Increase in plantations to improve forest cover
- Improvement in availability and quality of agri-residues.

A number of domestic paper producers such as ITC Ltd, Ballarpur Industries, J K Paper, West Coast Paper and Andhra Paper have already implemented social/farm forestry schemes, through which they aid farmers in their vicinity to plant and grow trees. This not only helps the companies to obtain wood, but also helps the farmers to earn a livelihood. Such initiatives need to be encouraged to achieve sustenance of fibre in India.

Andhra Pradesh Paper Mills Ltd
Table 9

(Rs million)	2004-05	% of net	2005-06	% of net	2004-05	% of net	2005-06	% of net	2004-05	% of net
	Q3	sales	Q3	sales	9 M	sales	9 M	sales	FY	sales
Net sales	1,071.0	100.0	1,196.3	100.0	3,276.1	100.0	3,492.8	100.0	4,433.9	100.0
Total expenses	928.4	86.7	1027.8	85.9	2808.8	85.7	2977.8	85.3	3834.6	86.5
(Increase)/decrease in stock	-63.2	-5.9	13.5	1.1	-29.0	-0.9	70.4	2.0	43.0	1.0
Consumption of RM	394.1	36.8	410.2	34.3	1,130.2	34.5	1,135.1	32.5	1,477.2	33.3
Staff cost	109.3	10.2	109.5	9.2	325.3	9.9	326.9	9.4	448.3	10.1
Power & fuel	153.0	14.3	151.2	12.6	420.7	12.8	447.7	12.8	559.1	12.6
Consum of stores & spares	210.1	19.6	224.3	18.7	609.3	18.6	650.1	18.6	816.5	12.6
Other expenditure	118.7	11.1	115.4	9.6	336.3	10.3	336.6	9.6	469.0	10.6
Def revenue expenditure	6.4	0.6	3.7	0.3	16.0	0.5	11.0	0.3	21.5	0.5
OPBDIT	142.6	13.3	168.5	14.1	467.3	14.3	515.0	14.7	599.3	13.5
Interest	19.2	1.8	30.5	2.5	91.6	2.8	90.9	2.6	128.4	2.9
OPBDT	123.4	11.5	138.0	11.5	375.7	11.5	424.1	12.1	470.9	10.6
Depreciation	51.4	4.8	52.7	4.4	153.7	4.7	154.8	4.4	206.3	4.7
OPBT	72.0	6.7	85.3	7.1	222.0	6.8	269.3	7.7	264.6	6.0
Other income	22	2.1	9.2	0.8	39.0	1.2	65.4	1.9	74.6	1.7
PBT	94.0	8.8	94.5	7.9	261.0	8.0	334.7	9.6	339.2	7.7
Current tax	23.0	2.1	8.0	0.7	52.0	1.6	28.2	0.8	77.5	1.7
Deferred tax	3.8	0.4	12.8	1.1	18.6	0.6	28.9	0.8	7.7	0.2
Fringe benefit			1.4	0.1		0.0	2.7	0.1		
Net profit (+)/Loss (-)	67.20	6.3	72.30	6.0	190.4	5.8	274.9	7.9	254.0	5.7

Q3: Oct - Dec; 9 M: Apr- Dec; FY:Apr- Mar

Note: Year ending is March.

Source: CRIS INFAC

Ballarpur Industries Ltd
Table 10

(Rs million)	2004-05	% of net	2005-06	% of net	2004-05	% of net	2005-06	% of net	2004-05	% of net
	Q2	sales	Q2	sales	H1	sales	H1	sales	FY	sales
Net sales	5,077.7	100.0	4,363.2	100.0	9,995.0	100.0	8,722.0	100.0	17,906.4	100.0
Total expenses	3,940.7	77.6	3,198.8	73.3	7,751.0	77.5	6,412.0	73.5	13,403.2	74.9
Amortisation of deffered rev exp	29.5	0.6	29.2	0.7	55.9	0.6	58.6	0.7	116.8	0.7
(Increase)/decrease in stock	171.2	3.4	225.8	5.2	413.6	4.1	377.6	4.3	1,097.9	6.1
Consumption of RM	1,108.9	21.8	1,014.8	23.3	2,112.5	21.1	2,061.8	23.6	4,313.3	24.1
Staff cost	295.6	5.8	315.9	7.2	596.1	6.0	638.1	7.3	1,233.5	6.9
Power & fuel	1,128.1	22.2	536.7	12.3	2,189.2	21.9	1,096.3	12.6	2,251.6	12.6
Consum of stores & spares	893.6	17.6	763.7	17.5	871.8	8.7	1,548.9	17.8	3,146.6	17.6
Other expenditure	313.8	6.2	312.7	7.2	618.3	6.2	630.7	7.2	1,243.5	6.9
OPBDIT	1,137.0	22.4	1,164.4	26.7	2,244.0	22.5	2,310.0	26.5	4,503.2	25.1
Interest	277.6	5.5	230.1	5.3	562.6	5.6	480.7	5.5	1,104.0	6.2
OPBDT	859.4	16.9	934.3	21.4	1,681.4	16.8	1,829.3	21.0	3,399.2	19.0
Depreciation	361.2	7.1	367.7	8.4	723.0	7.2	734.2	8.4	1,430.9	8.0
OPBT	498.2	9.8	566.6	13.0	958.4	9.6	1,095.1	12.6	1,968.3	11.0
Other income	21.1	0.4	20.3	0.5	36.2	0.4	40.7	0.5	96.5	0.5
PBT	519.3	10.2	586.9	13.5	994.6	10.0	1,135.8	13.0	2,064.8	11.5
Current tax	40.7	0.8	55.4	1.3	78.0	0.8	95.6	1.1	159.2	0.9
Deferred tax	45.5	0.9	57.5	1.3	82.5	0.8	113.3	1.3	220.2	1.2
Fringe benefit		0.0	6.0	0.1	0.0	0.0	10.9	0.1	4.5	0.0
Net profit (+)/Loss (-)	433.1	8.5	474.0	10.9	834.1	8.3	916.0	10.5	1,680.9	9.4

Q2: Oct - Jun; H1: Jul - Dec; FY:Jul - June

Note: Year ending is June.

Source: CRIS INFAC

Seshasayee Paper and Boards Ltd

Table 11

(Rs million)	2004-05	% of net	2005-06	% of net	2004-05	% of net	2005-06	% of net	2004-05	% of net
	Q3	sales	Q3	sales	9M	sales	9M	sales	FY	sales
Net sales	916.0	100.0	1045.8	100.0	2755.3	100.0	3067.4	100.0	3855.6	100.0
Total expenses	856.0	93.4	936.7	89.6	2566.9	93.2	2728.7	89.0	3564.9	92.5
(Increase)/decrease in stock	-22.9	-2.5	-16.4	-1.6	-94.4	-3.4	-52.8	-1.7		
Consumption of RM	388.6	42.4	424.9	40.6	1,127.2	40.9	1,217.8	39.7	1,498.6	38.9
Staff cost	79.5	8.7	73.6	7.0	205.0	7.4	234.1	7.6	281.3	7.3
Power & fuel	189.1	20.6	178.2	17.0	576.6	20.9	499.0	16.3	774.2	20.1
Consum of stores & spares	103.8	11.3	130.4	12.5	341.0	12.4	376.6	12.3	456.1	20.1
Other expenditure	117.9	12.9	146.0	14.0	411.5	14.9	454.0	14.8	554.7	14.4
OPBDIT	60.0	6.6	109.1	10.4	188.4	6.8	338.7	11.0	290.7	7.5
Interest	15.4	1.7	15.0	1.4	56.3	2.0	51.5	1.7	66.6	1.7
OPBDT	44.6	4.9	94.1	9.0	132.1	4.8	287.2	9.4	224.1	5.8
Depreciation	30.0	3.3	39.8	3.8	90.0	3.3	119.3	3.9	112.8	2.9
OPBT	14.6	1.6	54.3	5.2	42.1	1.5	167.9	5.5	111.3	2.9
Other income	0.6	0.1	1.0	0.1	2.7	0.1	4.6	0.1	4.7	0.1
PBT	15.2	1.7	55.3	5.3	44.8	1.6	172.5	5.6	116.0	3.0
Current tax	1.1	0.1	4.6	0.4	3.4	0.1	15.0	0.5	9.0	0.2
Deferred tax	4.2	0.5	14.8	1.4	12.3	0.4	46.0	1.5	41.2	1.1
Fringe benefit		0.0	0.9	0.1		0.0	1.4	0.0		
Net profit (+)/Loss (-)	9.90	1.1	35.00	3.3	29.10	1.1	110.1	3.6	65.80	1.7

Q3: Oct - Dec; 9M: Apr- Dec; FY: Apr- Mar

Note: Year ending is March.

Source: CRIS INFAC

Tamil Nadu Newsprint & Papers Ltd
Table 12

(Rs million)	2004-05	% of net	2005-06	% of net	2004-05	% of net	2005-06	% of net	2004-05	% of net
	Q3	sales	Q3	sales	9M	sales	9M	sales	FY	sales
Net sales	1,806.4	100.0	2,040.5	100.0	4,912.0	100.0	5,864.4	100.0	6,712.8	100.0
Total expenses	1658.0	91.8	1671.4	81.9	4245.6	86.4	4737.0	80.8	5811.9	86.6
(Increase)/decrease in stock in trade	127.8	7.1	-8.9	-0.4	133.8	2.7	-18.8	-0.2	149.2	2.2
(Increase)/decrease in stock of raw materials	-4.9	-0.3	21.9	1.1	248.4	5.1	129.1	1.8	-124.8	-1.9
Raw materials and chemicals	658.6	36.5	610.8	29.9	1,453.8	29.6	1,753.8	19.5	2,140.0	31.9
Staff cost	150.1	8.3	123.1	6.0	872.7	17.8	379.5	4.4	535.8	8.0
Power & fuel	353.1	19.5	483.4	23.7	384.9	7.8	1,204.8	12.3	1,433.1	21.3
Repairs and maintenance	97.7	5.4	108.7	5.3	324.9	6.6	333.4	3.8	424.1	21.3
Other expenditure	275.4	15.2	332.4	16.3	827.1	16.8	955.3	10.6	1,254.5	18.7
OPBDIT	148.4	8.2	369.1	18.1	666.4	13.6	1,127.4	19.2	900.9	13.4
Interest	20.2	1.1	60.8	3.0	119.5	2.4	146.9	2.5	162.1	2.4
OPBDT	128.2	7.1	308.3	15.1	546.9	11.1	980.5	16.7	738.8	11.0
Depreciation	153.8	8.5	157.2	7.7	458.6	9.3	467.2	8.0	618.8	9.2
OPBT	-25.6	-1.4	151.1	7.4	88.3	1.8	513.3	8.8	120.0	1.8
Other income	78.3	4.3	39.0	1.9	184.7	3.8	138.4	2.4	271.7	4.0
PBT	52.9	2.9	190.1	9.3	273.0	5.6	651.7	11.1	391.7	5.8
Current tax	43.6	2.4	74.6	3.7	67.5	1.4	253.5	4.3	86.8	1.3
Deferred tax	-25.6	-1.4	-33.4	-1.6	18.4	0.4	-46.9	-0.8	-74.6	-1.1
Fringe benefit			2.4	0.1			5.8	0.1		
Reversal of excess tax provision			-20.4	-1.0			-20.4	-0.3		
Net profit (+)/Loss (-)	34.9	1.9	146.5	8.9	187.1	3.8	459.7	7.8	379.5	5.7

Q3: Oct - Dec; 9M: Apr- Dec; FY:Apr- Mar

Note: Year ending is March.

Source: CRIS INFAC

West Coast Paper Mills Ltd

Table 13

(Rs million)	2004-05	% of net	2005-06	% of net	2004-05	% of net	2005-06	% of net	2004-05	% of net
	Q3	sales	Q3	sales	9 M	sales	9 M	sales	FY	sales
Net sales	1136.7	100	1338.14	100	3431.1	100	3973.8	100	4662.4	100
Expenditure	1012.4	89.1	1182.3	88.4	3029.8	88.3	3491.0	87.9	4057.2	87.0
Raw materials/trdg goods	435.2	38.3	510.8	38.2	1305.9	38.1	1461.7	36.8	1761.3	37.8
Change in stock	-66.4	-5.8	29.7	2.2	-121.1	-3.5	115.0	2.9	-140.9	-3.0
Personnel cost	112.7	9.9	113.4	8.5	339.5	9.9	340.4	8.6	438.2	9.4
Other expenses	530.8	46.7	528.5	39.5	1505.6	43.9	1573.9	39.6	1998.5	42.9
PBDIT	124.4	10.9	155.8	11.6	401.2	11.7	482.8	12.1	605.2	13.0
Interest	23.0	2.0	15.7	1.2	65.2	1.9	53.7	1.4	86.1	1.8
PBDT	101.4	8.9	140.1	10.5	336.1	9.8	429.0	10.8	519.1	11.1
Depreciation	47.0	4.1	44.7	3.3	141.0	4.1	145.2	3.7	189.2	4.1
PBT	54.4	4.8	95.4	7.1	195.1	5.7	283.8	7.1	329.9	7.1
Other income	24.0	2.1	31.4	2.3	51.8	1.5	78.6	2.0	45.8	1.0
PBT	78.4	6.9	126.9	9.5	246.9	7.2	362.4	9.1	375.6	8.1
Current tax	6.4	0.6	11.7	0.9	12.4	0.4	20.4	0.5	29.5	0.6
Deferred tax	20.9	1.8	9.5	0.7	41.9	1.2	15.3	0.4	39.5	0.8
Net profit (+)/Loss (-)	51.1	4.5	105.7	7.9	192.6	5.6	326.7	8.2	306.6	6.6

Q3: Oct to Dec; 9M: Apr- Dec; FY: Apr- Mar

Note: Year ending is March.

Source: CRIS INFAC