

INDIAN PULP & PAPER TECHNICAL ASSOCIATION

AGM & SEMINAR – CHENNAI – FEB 05, 2010

Key Note Address:

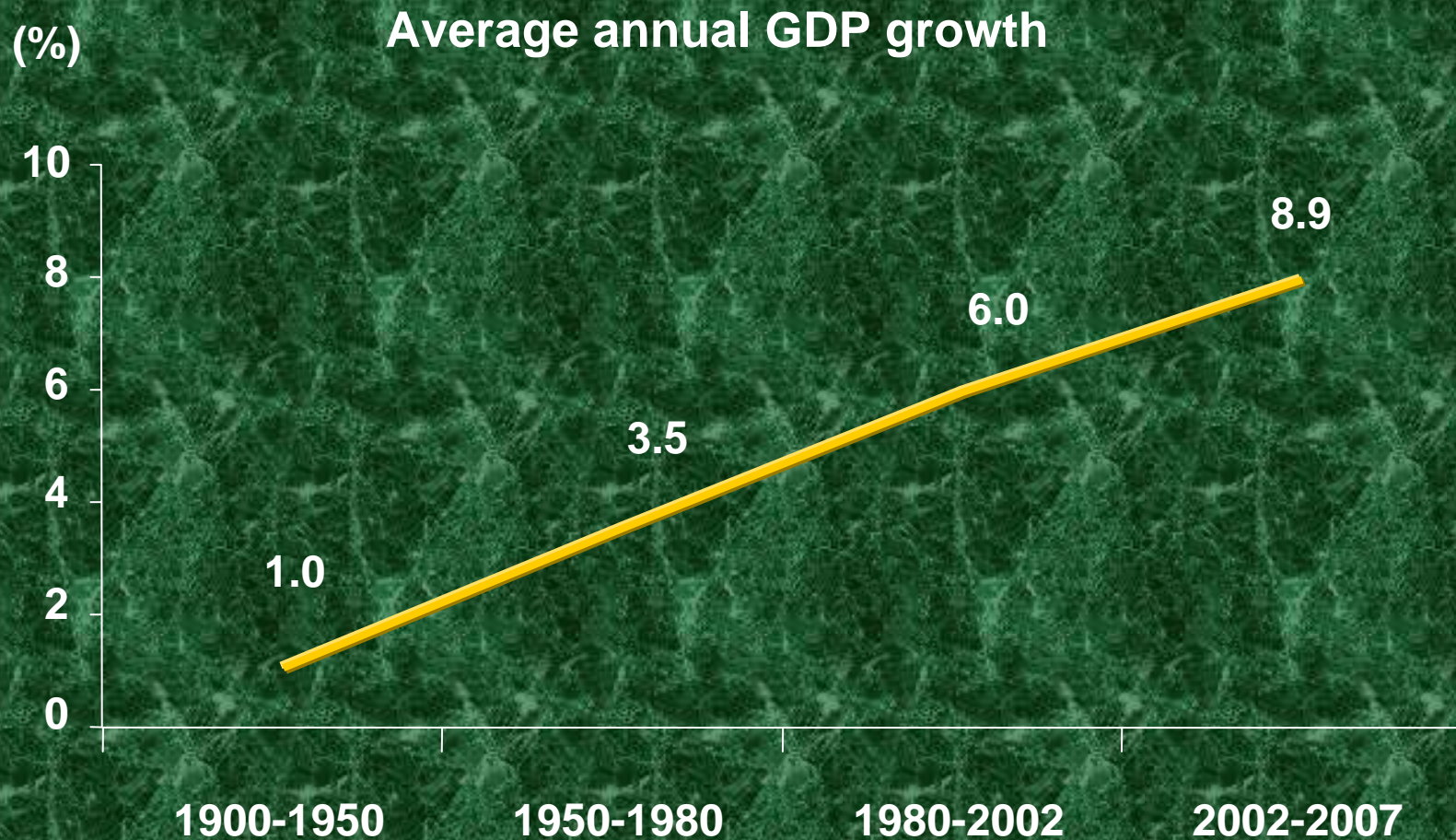
N GOPALARATNAM

**Chairman & Managing Director
Seshasayee Paper and Boards Limited**

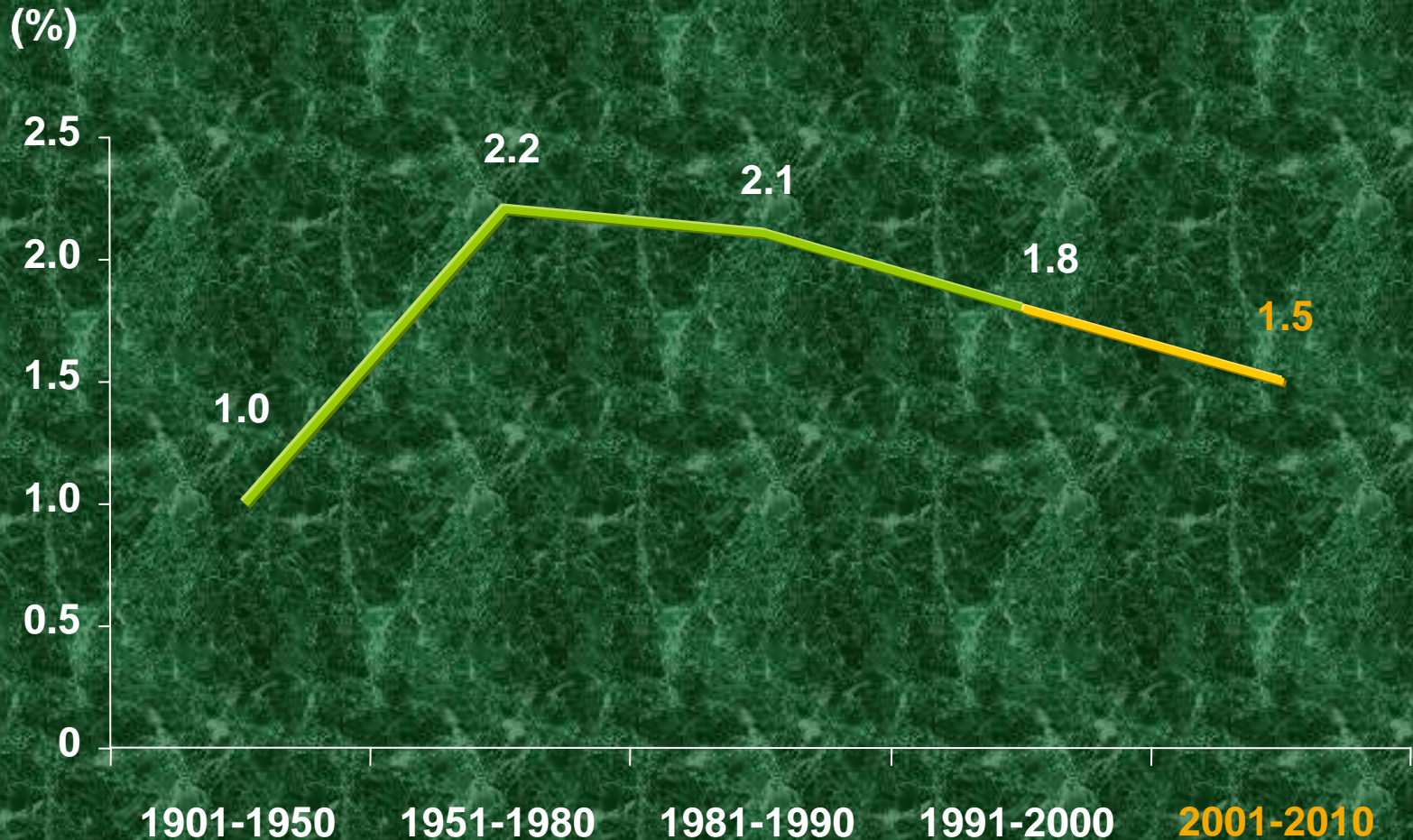
INDIAN PAPER INDUSTRY - A DECADE AHEAD

INDIA'S GROWTH STORY

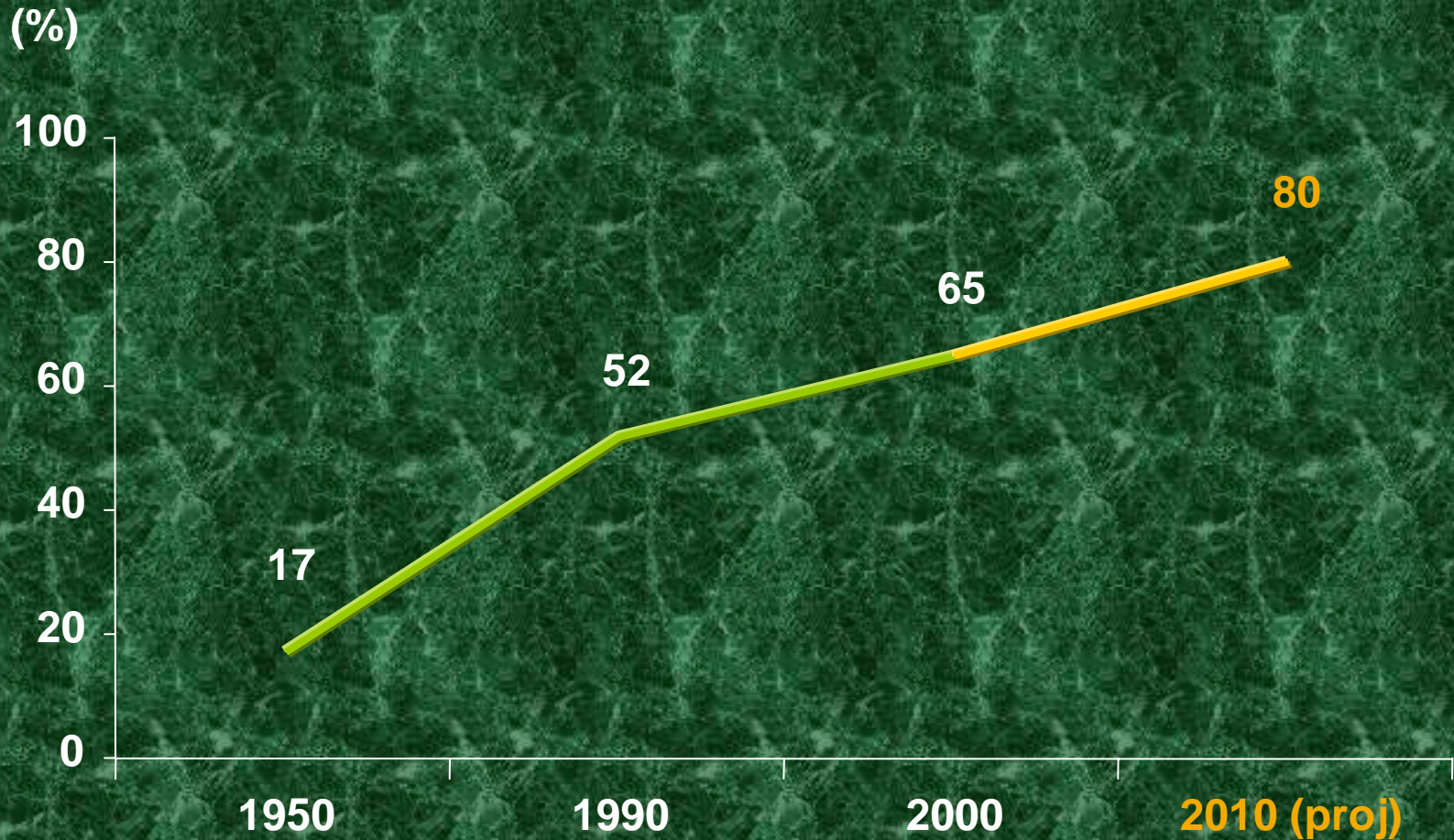
INDIA - 28 years of high growth



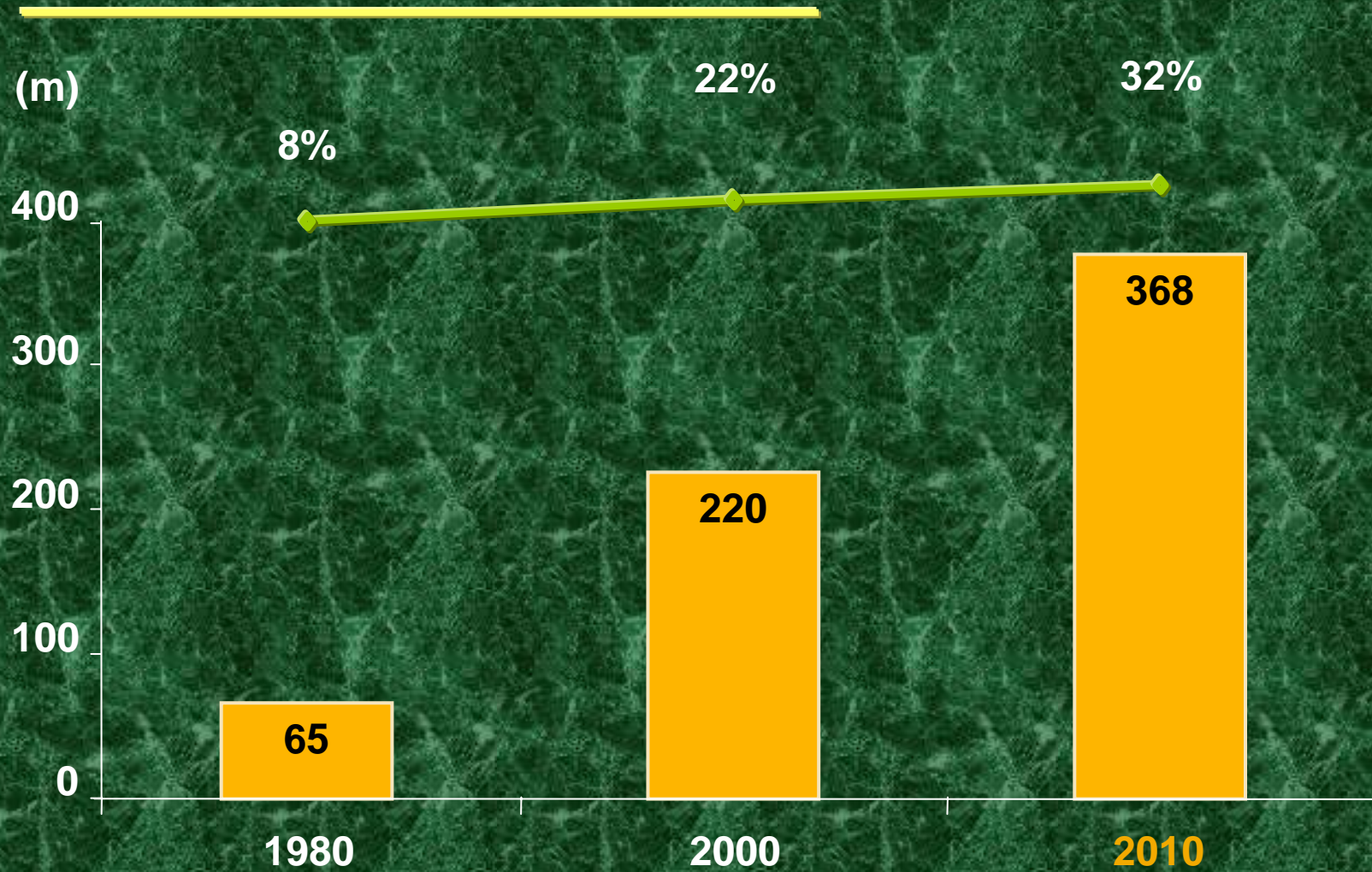
INDIA - Population growth is slowing



INDIA - Literacy is rising

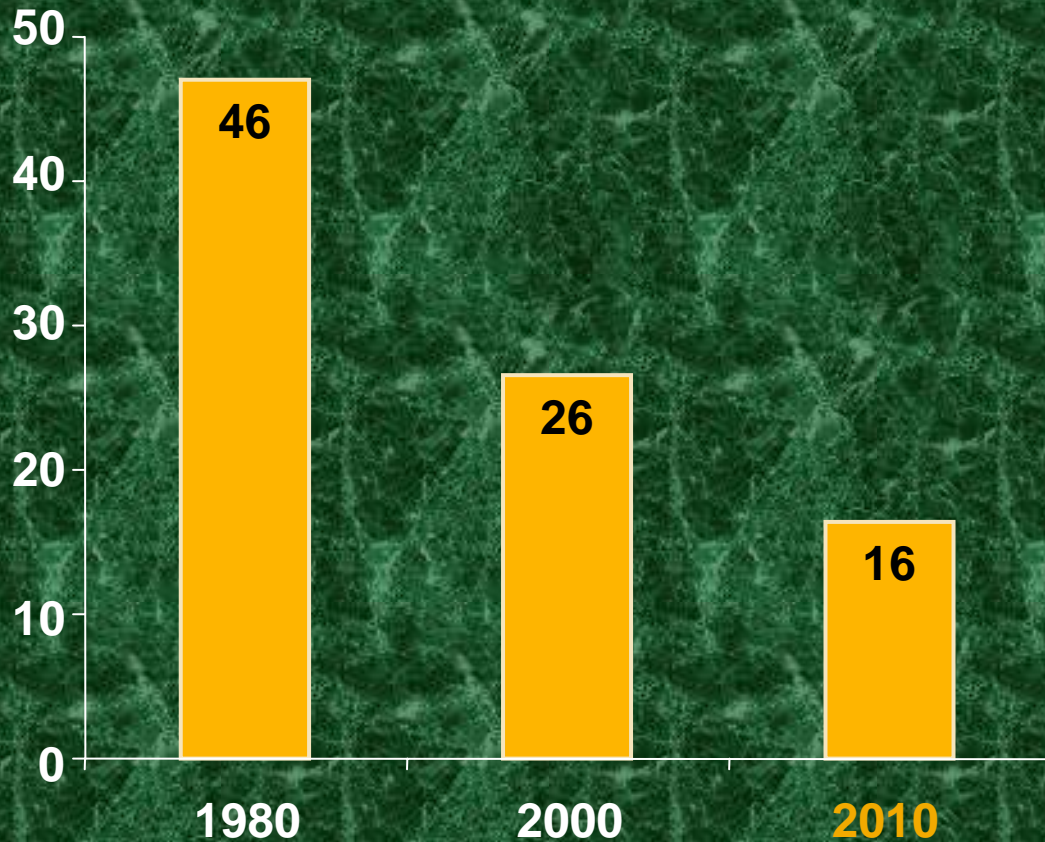


INDIA - - Booming Middle Class



INDIA - Poverty is declining

(%)

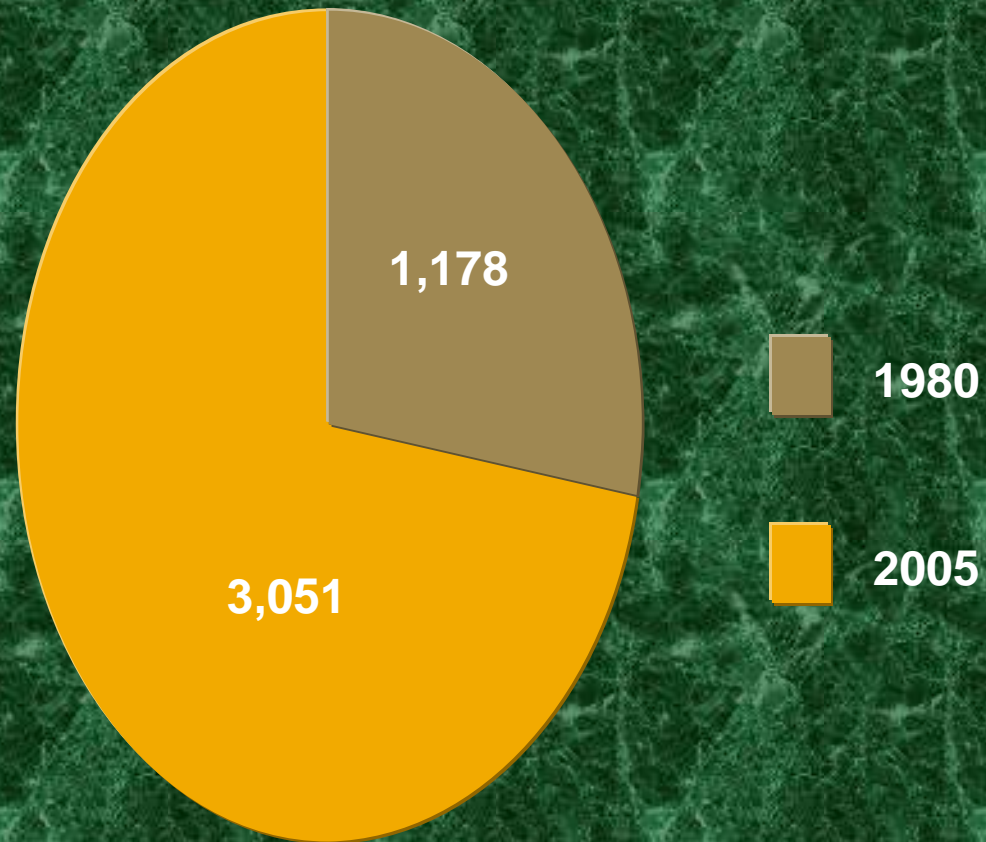


**1% of the people have
been crossing poverty
line each year for 25
years**

Equals ~ 200m

INDIA - Per capita income gains

US\$ ppp



India is now the 4th largest economy

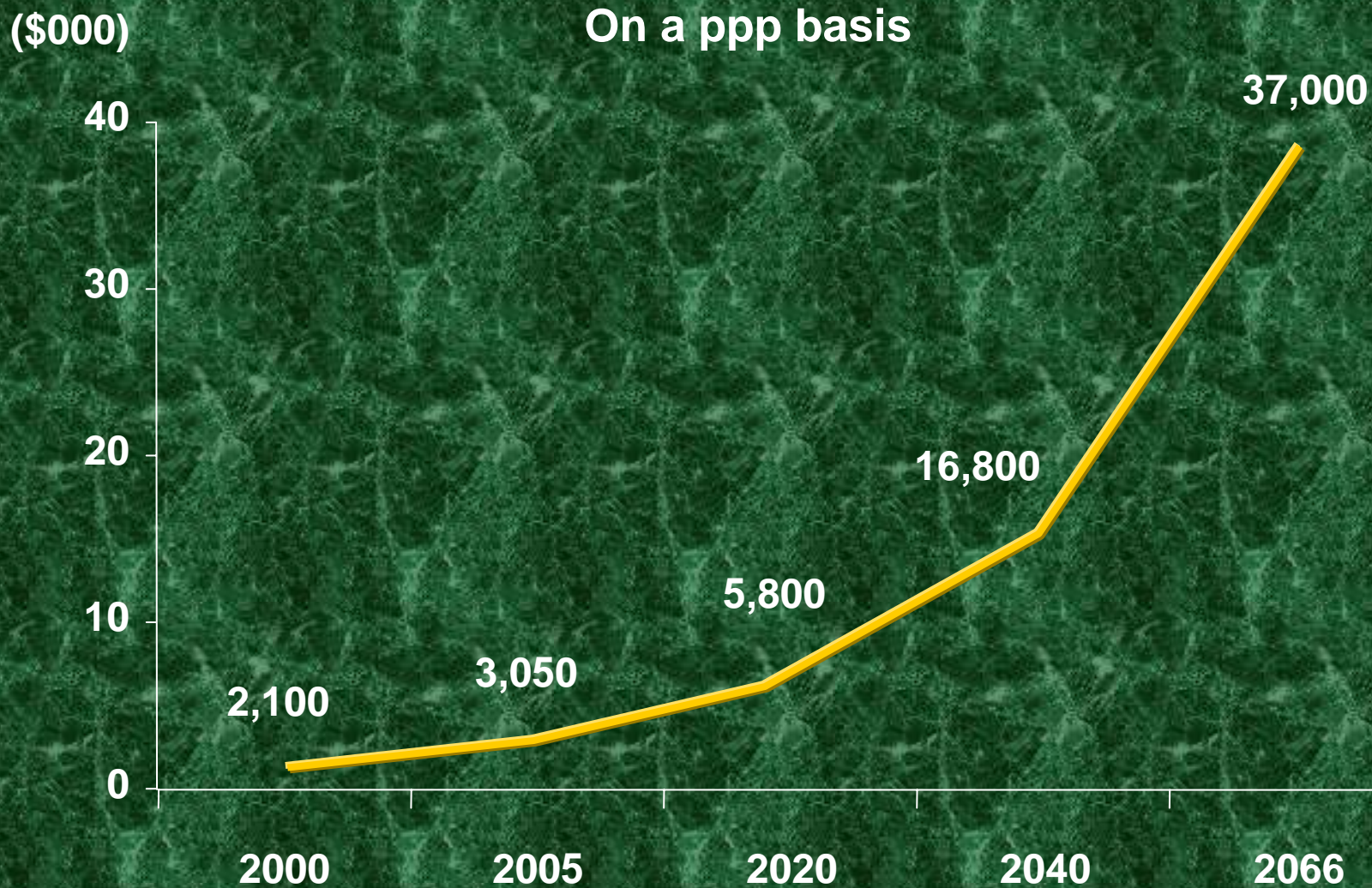
**It will overtake Japan
between 2012 and 2014
to become the 3rd largest
economy**

INDIA - Today

- Growth fell to 6.7% in 08-09; 7% in 09-10
- Pain has been less
- Competitive companies have recovered faster.
- Recovery has been ahead of the world

INDIA - Per capita income

On a ppp basis

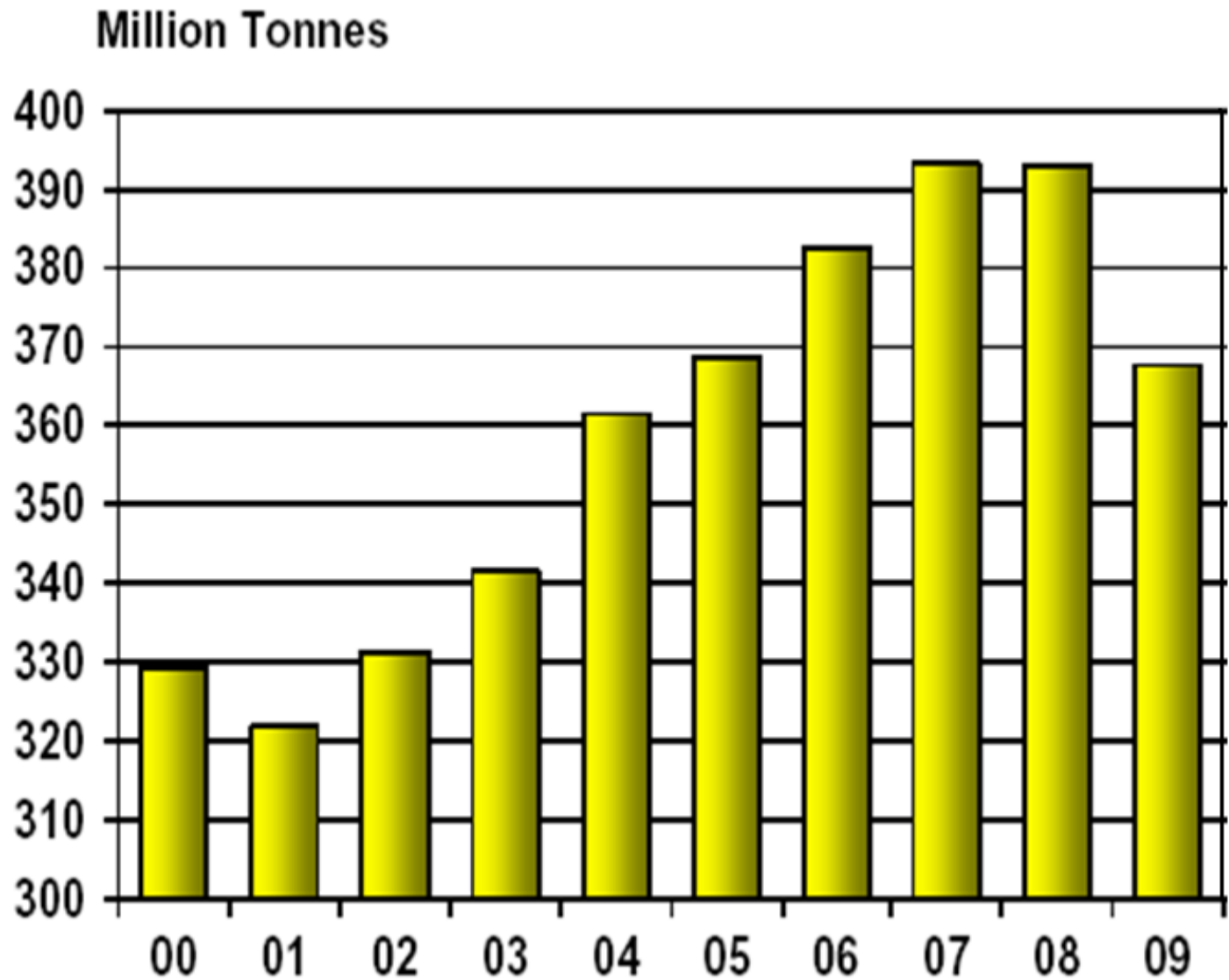


IMF Growth Forecast

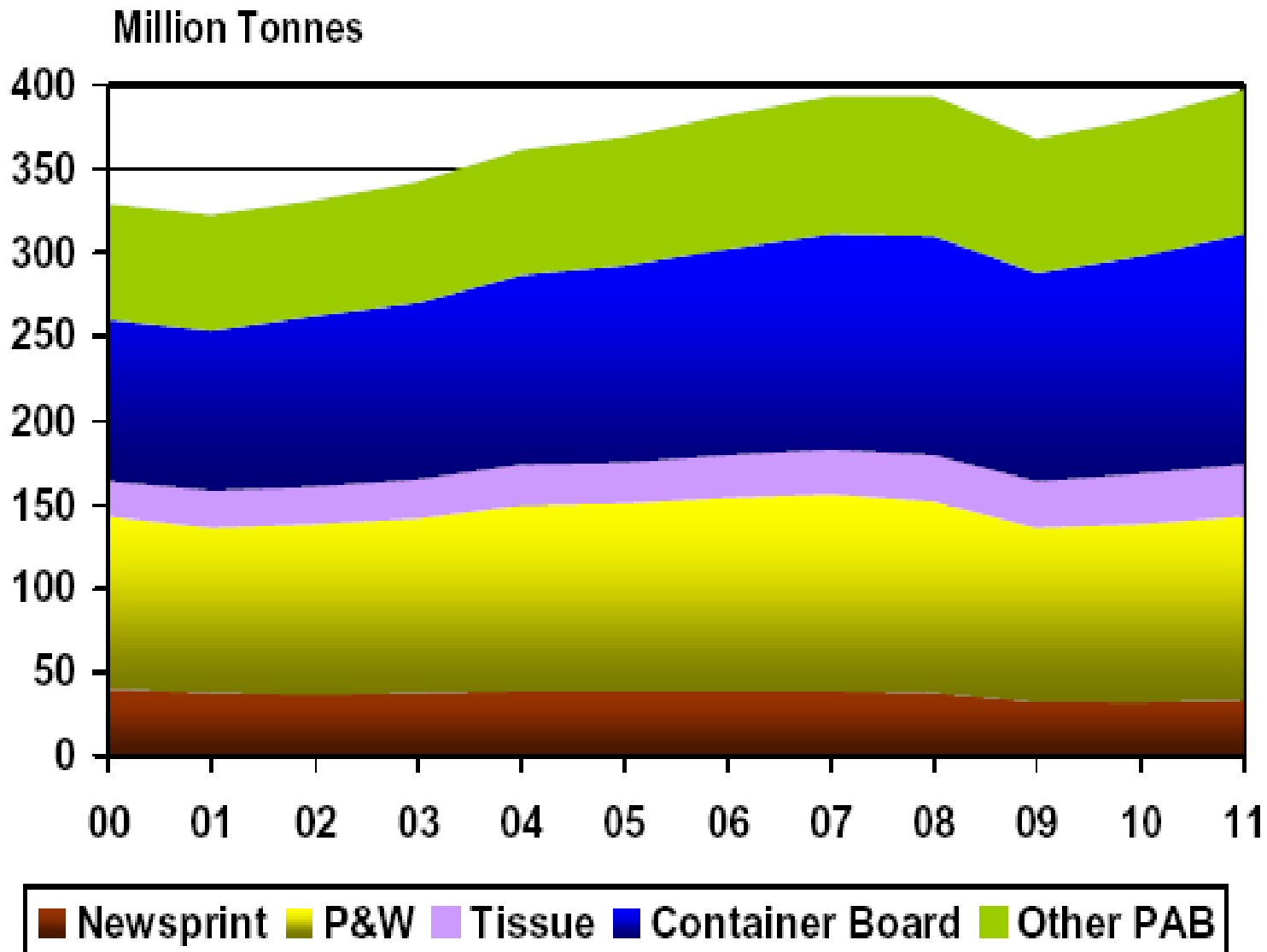
	2009	2010
US	-2.7	1.5
Euro Area	-4.2	0.3
China	8.5	9.0
Brazil	-0.7	3.5
India	5.4	6.4
South Africa	1.9	1.5

WORLD PAPER & BOARD INDUSTRY

World Paper and Board Demand – Down-turn in 2009



World Paper and Board Demand by Major Grade



Developed World Regions Just Starting to Emerge from Dramatic Downturn

- ▶ Paper and Board Demand Plunged in First Half
 - Led by Graphic Paper Grades
 - Partially due to Inventory Reductions
- ▶ General Economies Beginning to Show Improvement
 - Supported by Extensive Government Stimulus
 - Leading to a Modest Upswing in Paper and Board Demand

Paper and Board Demand in Developing World Has Continued Upward

- ▶ China Still Leading the Charge
 - Domestic Demand Supported by Government Stimulus
 - Surging Exports of Graphic Paper, Especially Coated
 - Inventory Rebuild after Drawdown in Late 2008

- ▶ Other Developing Countries Continue to Grow
 - Other Asian Countries Supported by China
 - India Still on Strong Growth Track
 - Middle East Benefiting from Energy Markets

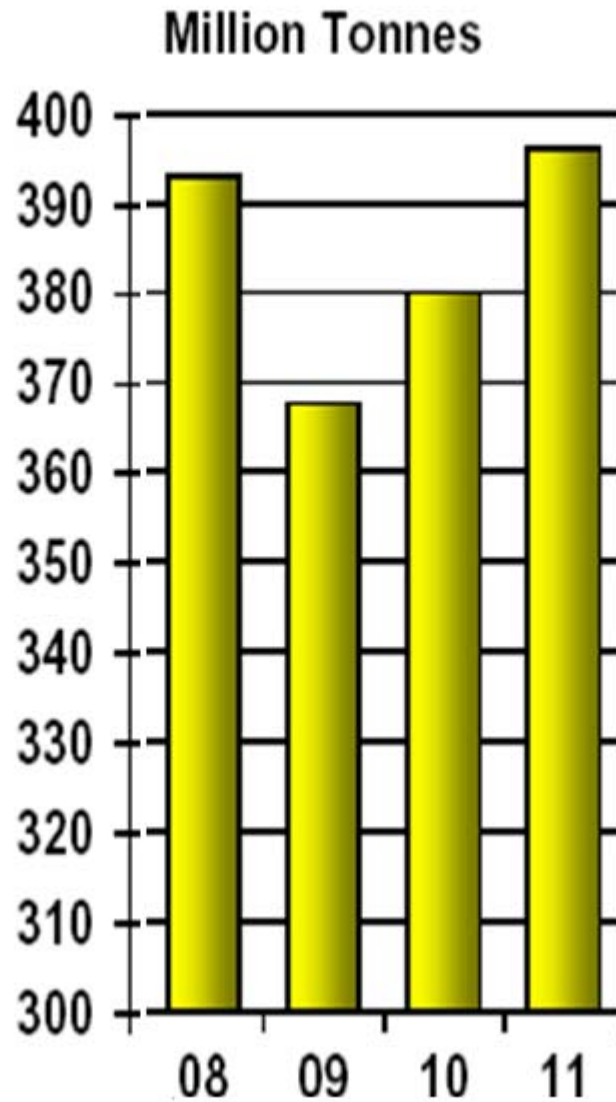
World Paper and Board Usage Will Return to Solid Growth in 2010-2011

- ▶ After Dropping Sharply in 2009
 - As a Result of the “Great Recession”

- ▶ Paper and Board Demand Will be Pulled up by:
 - Rebound in General Economy, Resulting from Large Government Stimulus Packages
 - Inventory Rebuilding by End Users
 - Competitiveness of Paper in Certain Markets

- ▶ World Usage Projected at 396 Million Tonnes in 2011
 - Only 3 Million Tonnes Above Last Year

World Paper and Board Demand – 2010 & 2011



Developing Regions Will Generate Virtually All of the Demand Growth

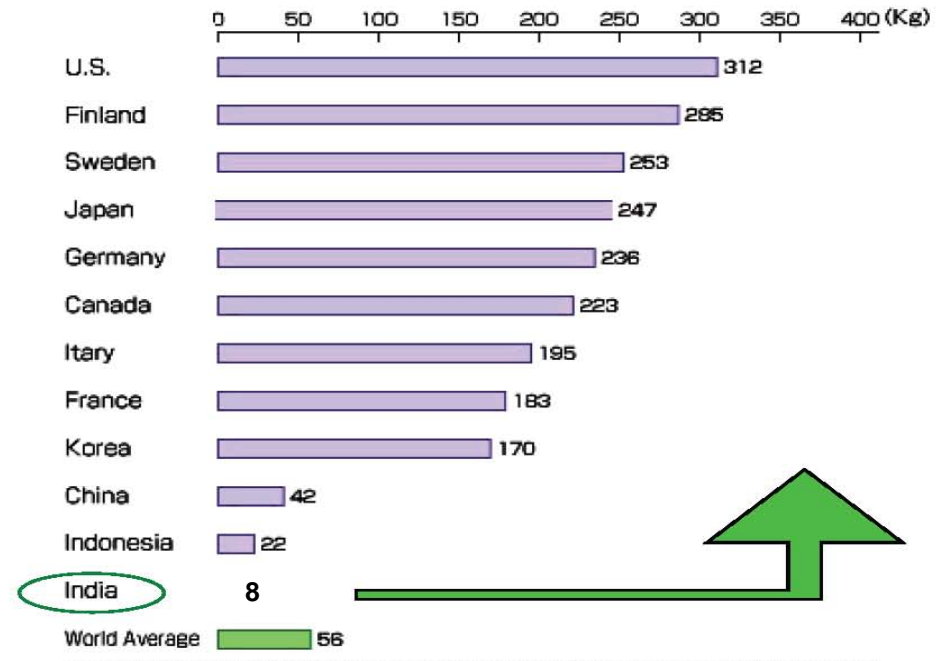
- ▶ Major Positive Factors Will Include:
 - Strong Economic Development, Led by China
 - Enormous Population, with Rising Middle Class
 - Rising Literacy Rates

- ▶ Developed World Demand Constrained by:
 - Already-High Penetration of Paper
 - Stable, to Even Declining, Population in Most Areas
 - Competitive Pressure from Developing World on General Economies
 - Strong Competition from Electronics

**INDIA –
PAPER & BOARD INDUSTRY**

Low per capita consumption – a tremendous growth opportunity

- Paper consumption per capita in India is lower compared to the world average.
- Indian market is now the fastest growing in the world.
- Several growth triggers now in place.
- Every increase in consumption per capita by 1kg increases the demand by 1 million tons.

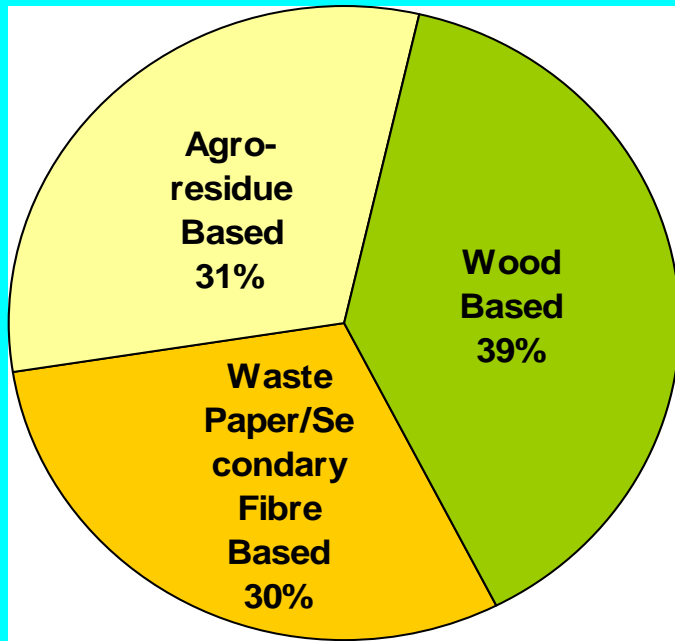


Source: Pulp and Paper International

Growth at an inflexion point

Composition & Structure

Paper, Paperboard & Newsprint



Operating Capacity

**9.3
Million
Ton**

Production

**8.0
Million
Ton**

Consumption

**8.90
Million
Ton**

Structure....

Geographical spread

Regional balance in consumption and production

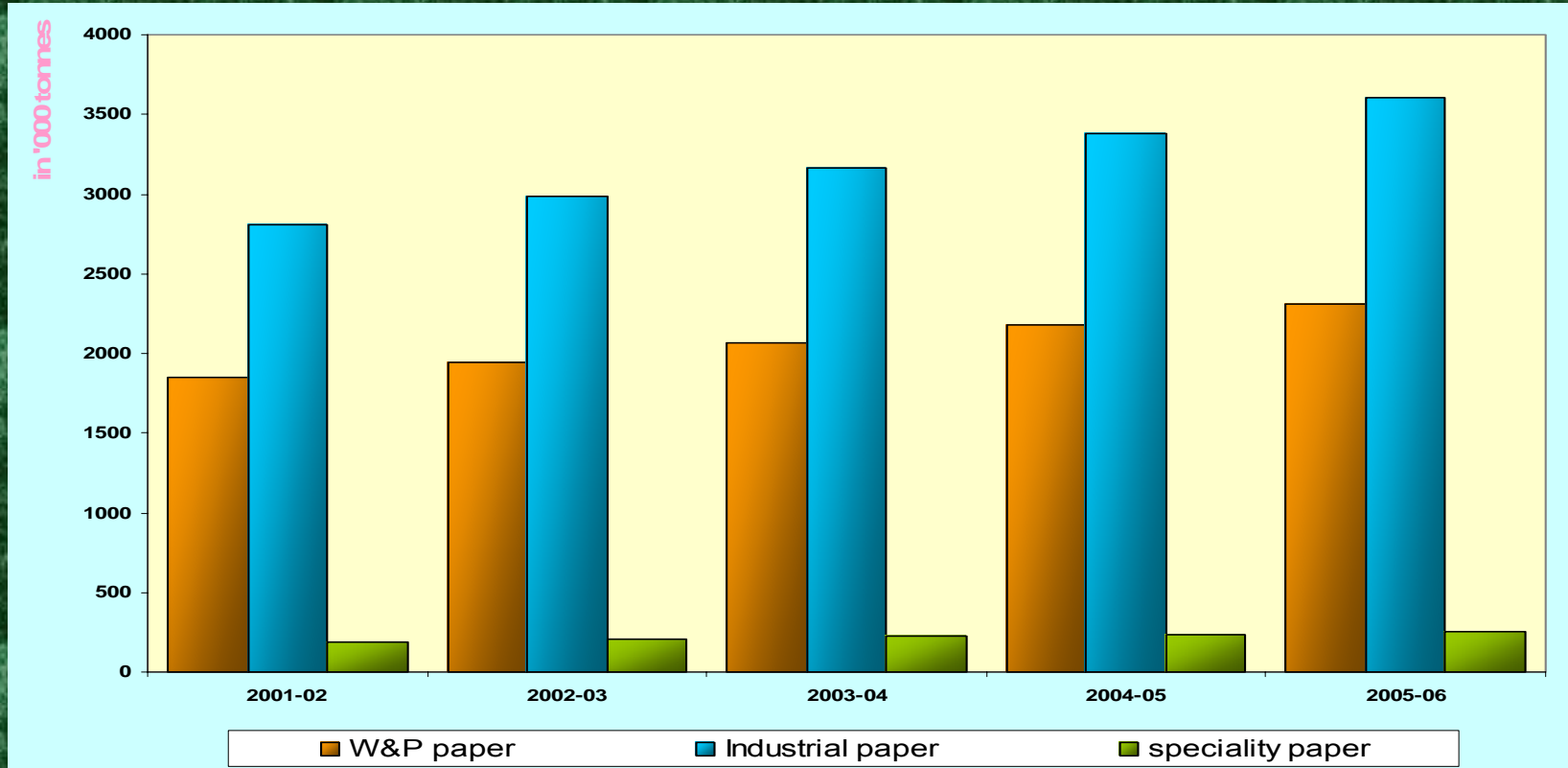
Relatively smaller capacity mills

95% of the mills have a capacity of less than 50,000 tpa

Newsprint production is concentrated

4 to 5 players account for 80% of the output

Variety-wise Paper Demand – last 5 years

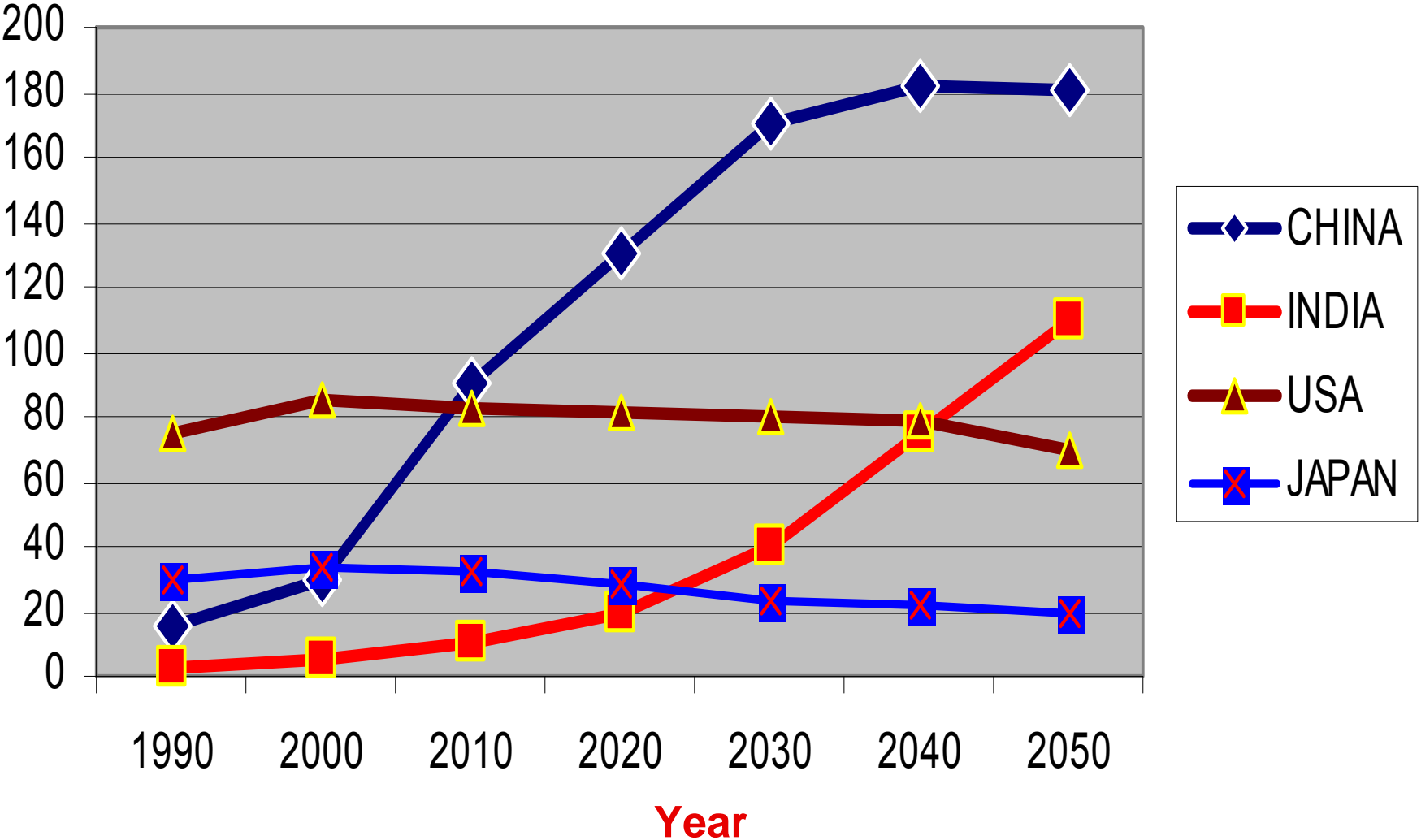


- Demand for W&P paper grew at 7% CAGR.
- Demand for Industrial paper grew at 7% CAGR.
- Demand for Speciality paper grew at ~5% CAGR.

(Source: Crisinfac)

Paper & Board Demand Prospects

Million t



(Source: Mr. Hannu Oinoen - Finland)

CHALLENGES

Challenges - Competitiveness

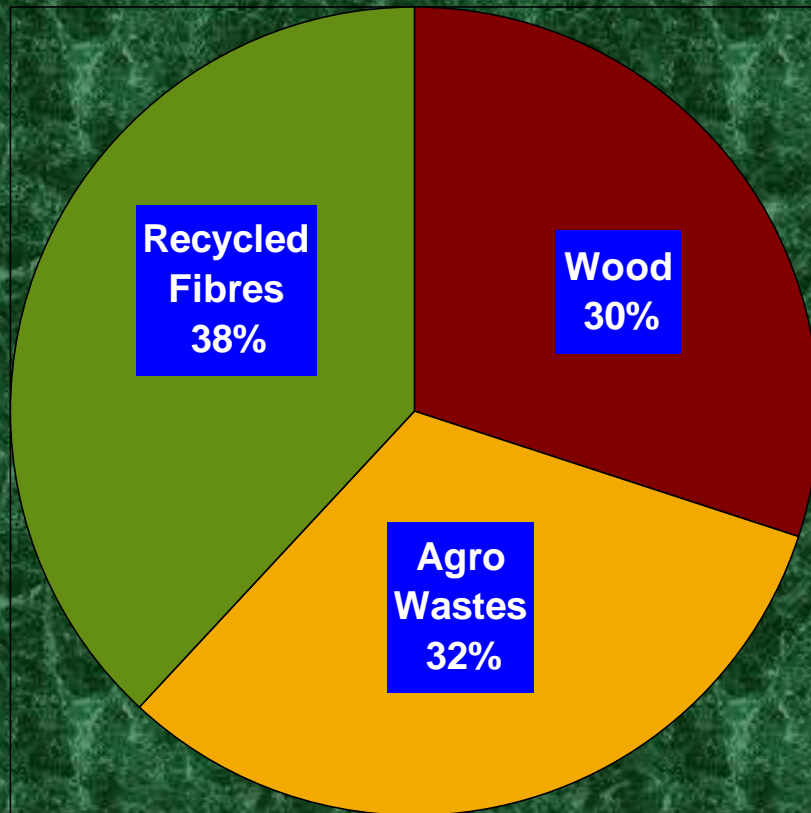
- Quality
- Cost
- Environmental Foot-print
- Delivery
- Services.

Challenges - Sustainability

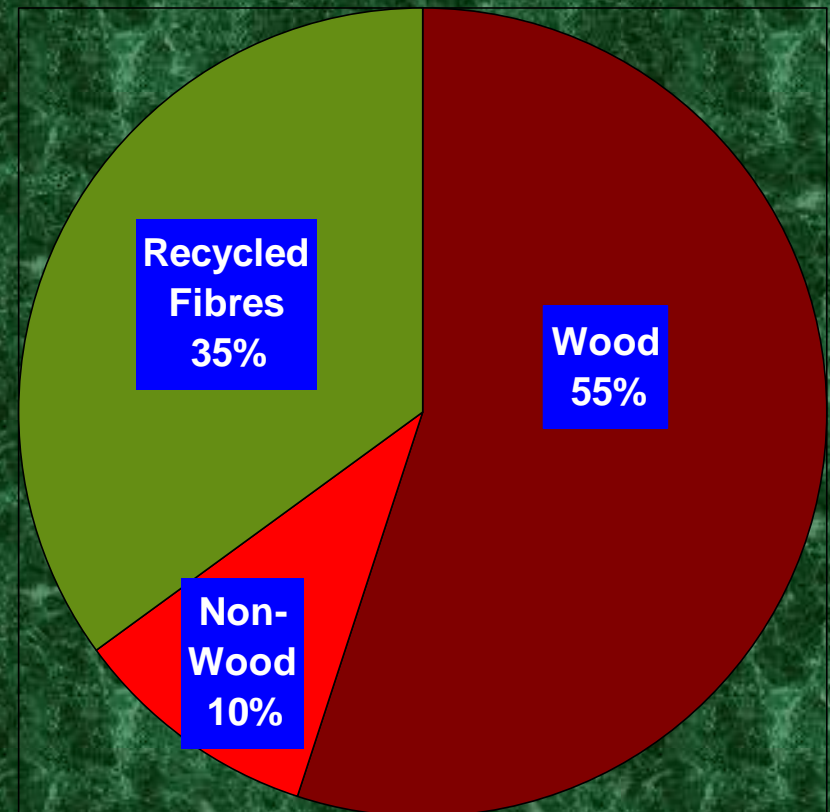
- Should aim at meeting today's needs without abridging the rights of tomorrow's generation to meet their needs
- Any development strategy that is socially desirable, economically viable and ecologically sustainable

Challenges – Raw Materials

Raw Material sourcing
for Indian Pulp and
Paper Industry

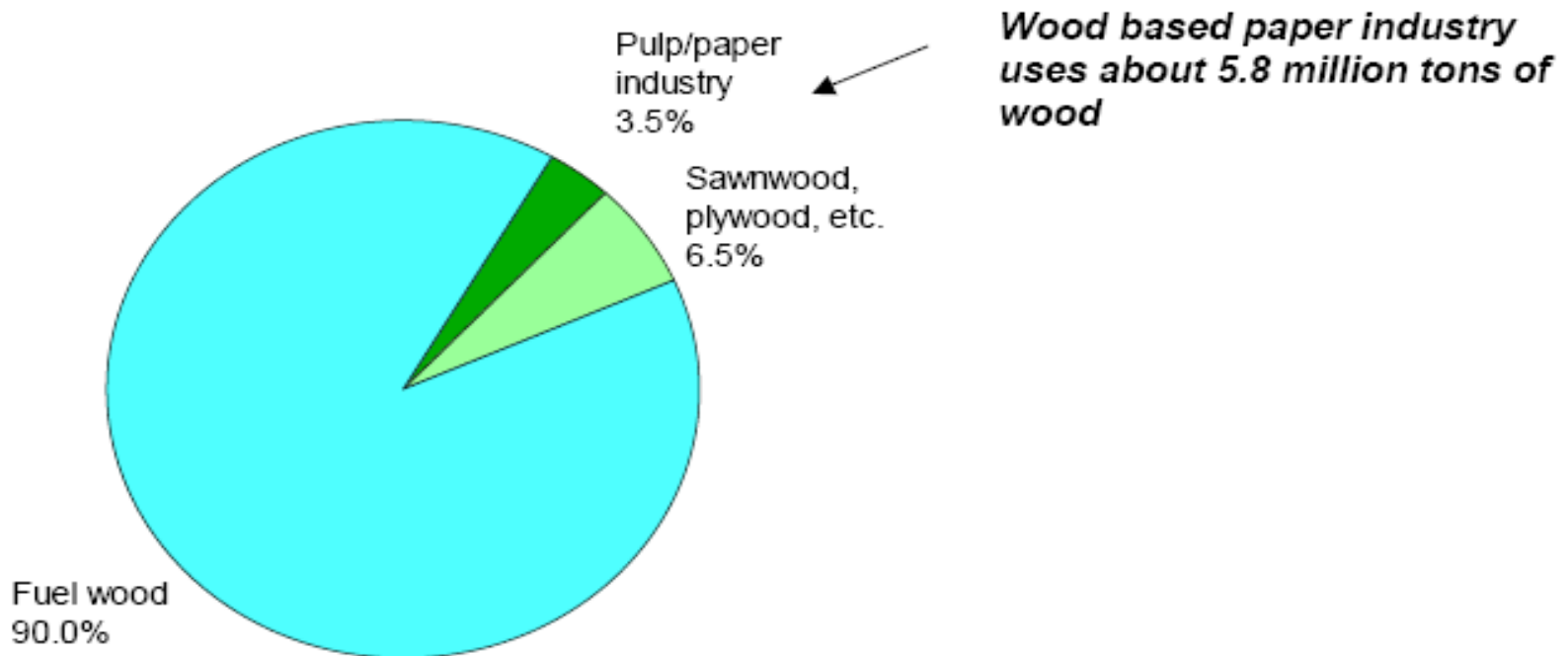


Raw Material sourcing
for World Pulp and
Paper Industry



Challenges- Raw Materials (contd) - wood consumption in India

Pulp and paper industry uses only 3-4 % of total wood in India

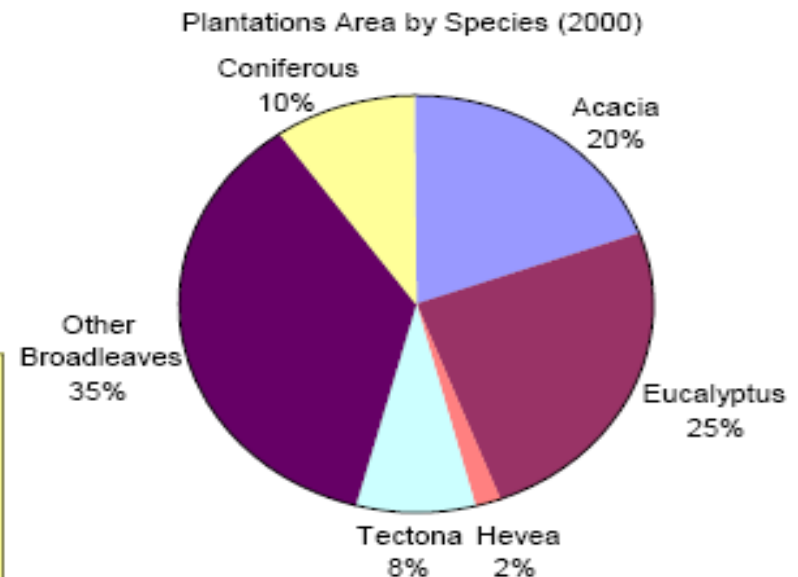


Challenges- Raw Materials (contd) – Securing Future Wood Supply

- Current forest plantations in India are 32.5 million ha, of which 90 % is based on hardwood, mainly eucalyptus and acacia.
- The state of the current plantations and their potential for pulp mills should be carefully analysed.
- The paper industry's needs for wood is expected to grow from 5.2 million tons in 2000 to 13.2 million tons by 2020.

– About 0.6 million ha land for plantations would be required to meet the paper industry's wood demand. India has about 100 million ha of waste land and 32 million ha of degraded forest land, small part of which could be allocated for plantations.

Forest plantations in India



Total 32.5 million ha

Source: JP Consulting

Challenges- Raw Materials (contd)

Agro Residues

- Bagasse
- Wheat & Rice Straw
- Kenaf / Mesta
- Jute, Grass, Cotton Stalks

Threats

- Environmental Foot-print
- Power Generation

Challenges- Raw Materials (contd) – Recovered Paper

- Recovery Rate for Indian Paper Industry is 20%
- Thailand 42%
- China 33%
- Germany 71%

Challenges – Raw Materials (contd)

Recovery and Trading – unorganised

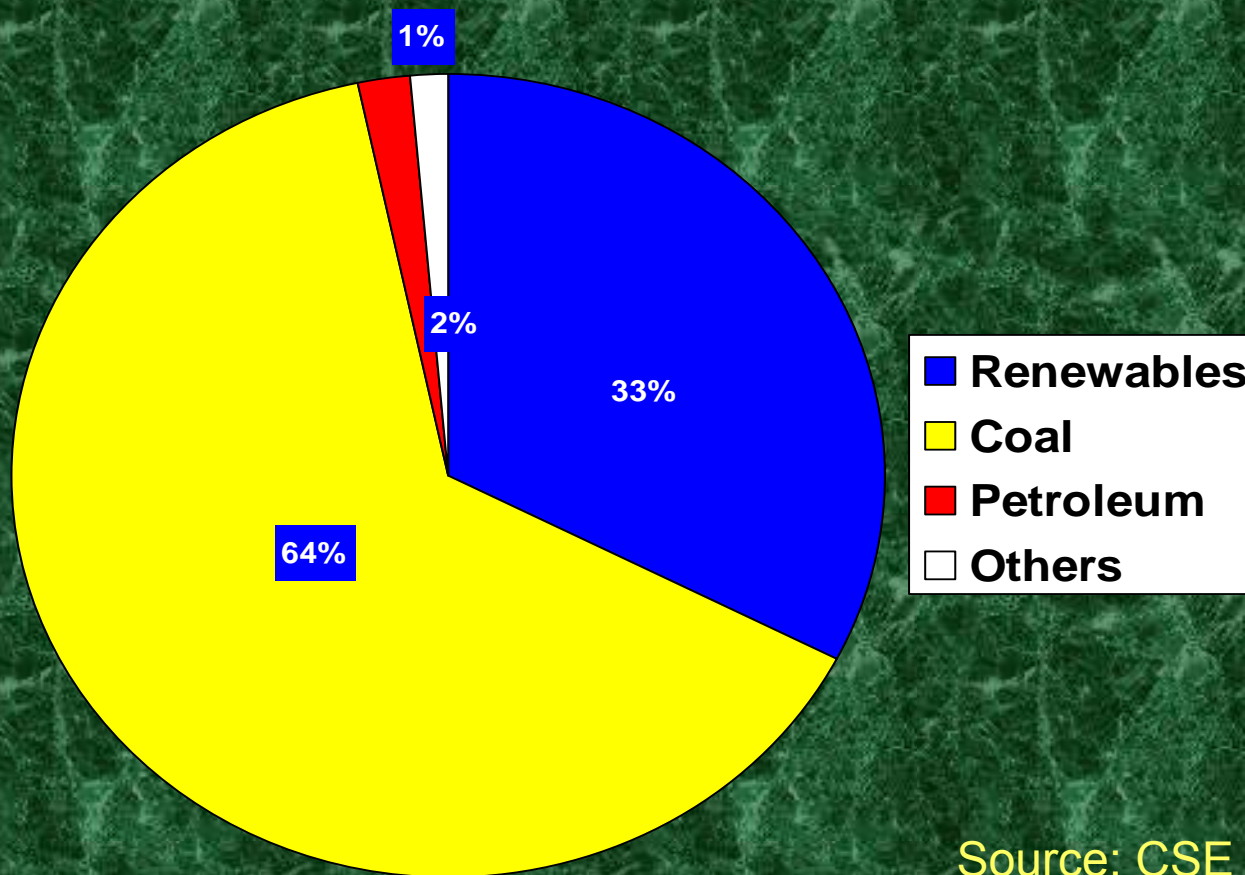
- Recovery not keeping pace with recycled paper utilisation
- Hence increase in imports

Challenges- Raw Materials (contd) –

- Increasing the recovery of paper is a “Must” and is driven by:
 - Increasing consumption of paper
 - Increasing urbanization
- A concerted action plan involving Govt and Industry is long overdue

Challenges - Energy

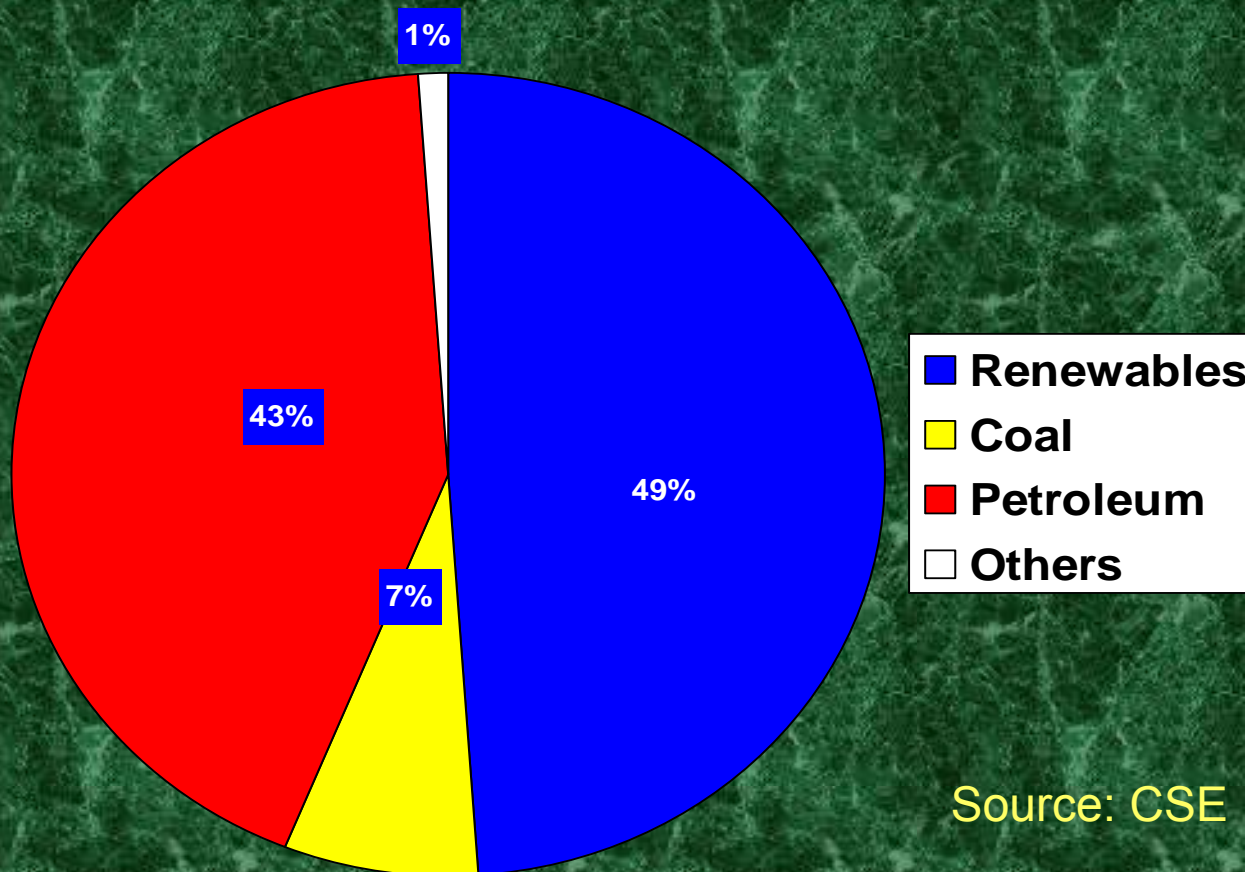
Energy Sourcing: Indian Mills – Large Category



Source: CSE

Challenges – Energy – (contd)

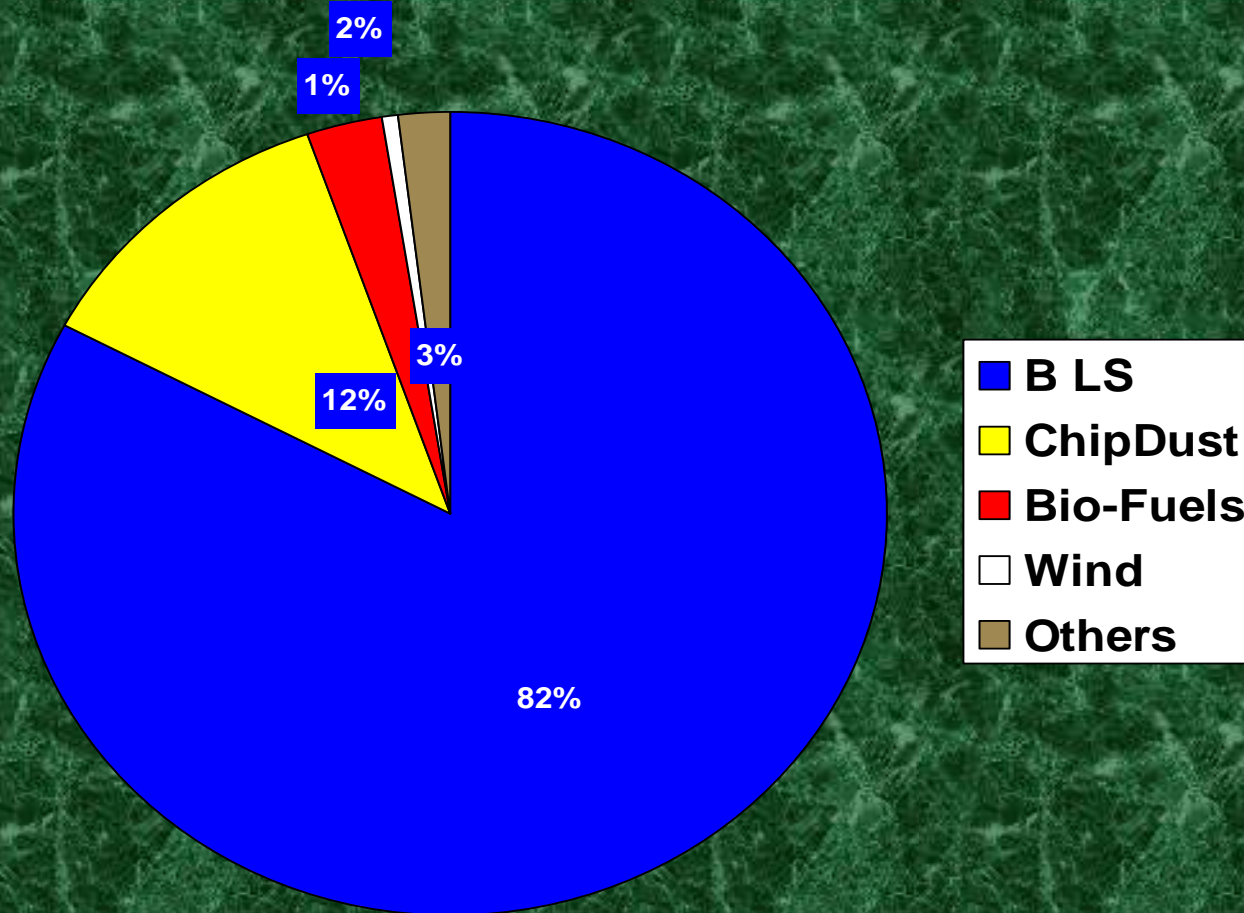
Energy Sourcing: European Mills



Source: CSE

Challenges – Energy – (contd)

Sourcing of Renewable Energy



Source: CSE

Challenges – Energy – (contd)

Energy Consumption in Large Mills

- Specific Energy: 33.7 GJ/ t to 47.7 GJ/t

Average in 1987 60.0 GJ/t

Average in 2002 51.0 GJ/t

Average (now) 40.0 GJ/t

- Specific Energy (BAT) 23.0 GJ/t

Challenges - CO2 Emission

- Average Emission – 2.5t CO2 /t of Paper
- High - compared to BAT
- Dependence on Fossil Fuel High and should be reduced
- High pressure co-generation
- Process upgradation and optimisation

Challenges - WATER

- Excessive water usage is yet another adverse characteristic of Indian Paper Industry.
- Current consumption varying from 50m³/t to 100m³/t for integrated Mills.
- Needs 'water closure' within the process loops to achieve consumption of 50m³/t or lower

Challenges - Paper Vs Pixels

- More and more people are communicating with electronic media
- Are they the most effective environmental choice?
- Whether we email or send a letter, we consume energy and resources
- There are environmental tradeoffs in every choice we make
- A Careful examination of entire lifecycle will reveal the full impact and performance of both electronic media and paper

Challenges - Paper Vs Pixels – (contd)

Paper Industry is sustainable

- “There are not many industries around the world that can aspire to becoming genuinely sustainable. The Pulp and Paper Industry, however, is one of them. It is inherently sustainable.”

(Mr. Jonathan Porritt,
Chairman,

UK Sustainability Development Commission)

Challenges - Paper Vs Pixels – (contd)

Raw Material - Paper

- Its primary raw materials are renewable.
- Paper Industry, worldwide, plants 1.7 million trees every single day, more than 3 times what is harvested.
- As per US Dept of Energy, carbon sequestered on forest lands in 2006 was greater than the carbon released from harvesting wood over the same period

Challenges - Paper Vs Pixels – (contd)

Raw Material - Electronic

- Making a computer requires the mining and refining of dozens of minerals and metals including gold, silver and palladium as well as plastics and hydro carbon solvents
- Life span of computer is short and electronics have become the fastest growing waste stream in the world

Challenges - Paper Vs Pixels – (contd)

“Down to Earth” Insight:

- Paper is truly sustainable, with waste fully recoverable, ready for recycling into new paper.
- When people use more paper, landowners plant more trees.
- Electronic devices don't grow on trees. The electronic industry continues to grow rapidly.
- Based on current non-renewable raw materials and escalating energy demands, this growth is unsustainable.

Challenges - Paper Vs Pixels – (contd)

Energy Consumption: is it efficient?

Paper

- Pulp and Paper industry is one of the biggest users of low carbon energy in the world.
- 60% of Energy used to make paper (in the USA) comes from carbon neutral renewable resources produced at Mill site.
- Combined Heat and Power (HP) system are used which are 80% - 90% efficient

Challenges - Paper Vs Pixels – (contd)

**Energy Consumption: is it efficient?
Electronics**

Electronics Industry, on the other hand,
uses more than 90% of fossil fuels based
energy purchased from Grid

Challenges - Paper Vs Pixels – (contd)

End of life – How does it break down?

Paper

Paper is biodegradable, recyclable and reusable. Nearly 60% of all paper in the U.S. is recycled.

Challenges - Paper Vs Pixels – (contd)

End of life – How does it break down? Electronics

- Only 18% is currently recycled.
1.84 million tons of these devices were disposed of in the U.S. as landfills in 2006.

Challenges : Paper Vs Power

- Increasingly both wood and bagasse are getting diverted to green power production which enjoys favourable power tariff in the Power Market
- This is adding to the weak Raw Material position of the Paper Industry

Challenges: Free Trade Agreements

- Paper Industry should be wary of Trade Agreements being signed with least developing countries, non-least developed countries, ASEAN etc, which permit import of Paper into India at concessional / nil Import Duty

BIO-TECH INTERVENTIONS

Bio-Tech Interventions:

- DNA based finger printing for cataloging clones.
- Micro propagation / Tissue culture
- Enzymatic pre-bleaching of pulp
- Enzymatic stickies control
- Enzymatic refining of pulp

Bio-Tech Interventions: (contd.)

- Waste water treatment using microbial consortium
- Enzymatic deinking of recycled paper
- Slime Control

CARBON TRADING

Carbon Trading:

- **Clean Development Mechanism**

GOVT SUPPORT - NEEDED

GOVT SUPPORT - NEEDED

- China today is the second largest producer of Paper & Boards.
- From 13 million tonnes in 1990, industry has grown to 68/70 million tonnes in 2009.
- Will overtake U S A shortly
- China is set to reach 130 million tonnes in 2020 & 170 million in 2030.

GOVT SUPPORT NEEDED – (contd)

- This steep growth feasible only because of Govt's preferential support.
- "Paper Industry is agro / agro forestry based. Has strong rural linkages."
- Improves the green cover of the Nation besides providing huge job opportunities to rural poor - Hence Merits Govt Support

SUMMING UP

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- Indian Economy and the Paper Industry set for higher growth trajectory
- Industry must improve its competitiveness (quality – Price – Environmental Footprint – Service)

SUMMING UP – (contd)

- Access to sustainable source of raw materials is the key issue
- Collection and recovery of used paper – urgent necessity
- High dependence on coal, high energy consumption, has contributed to higher CO₂ emission. This needs to be addressed

SUMMING UP - (Contd)

- Paper Manufacturing is a truly sustainable process and hence no need to fear competition from Electronic Media whose environmental performance is poor.
- Govt support needed to accelerate the growth of the Industry
- Growth prospects are bright – but short term ‘over’ supply’ position will have to be overcome

Thank You

