

Growing in Leather World

India – China Paths



World of Leather: Has it Changed?

● In 1900

- Low material mobility
- More internal conversion
- Long process time
- Mobility of raw material was from developing to developed countries
- Products were used where made
- Less technology intensive
- Leather was a utility product

● In 2000

- High material mobility
- Conversion in cost effective Nations
- Short response time
- Mobility of raw materials is from developed to developing world
- Products are made somewhere, used elsewhere
- Leather is entering fashion world.



World of leather: Is it Growing since 1900?

- Raw material supply has not grown in plenty
- Demand of material has grown in plenty
- People are many. Wants are growing.
- Demand-supply chain in leather is weak and non-elastic
- Quantum increase in supply of leather is not feasible
- Non-leather has made strides.
- Conventional applications of leather are giving way to non leather supplements
- Leather is having to burrow holes in new material world.
- Value of leather has multiplied many fold

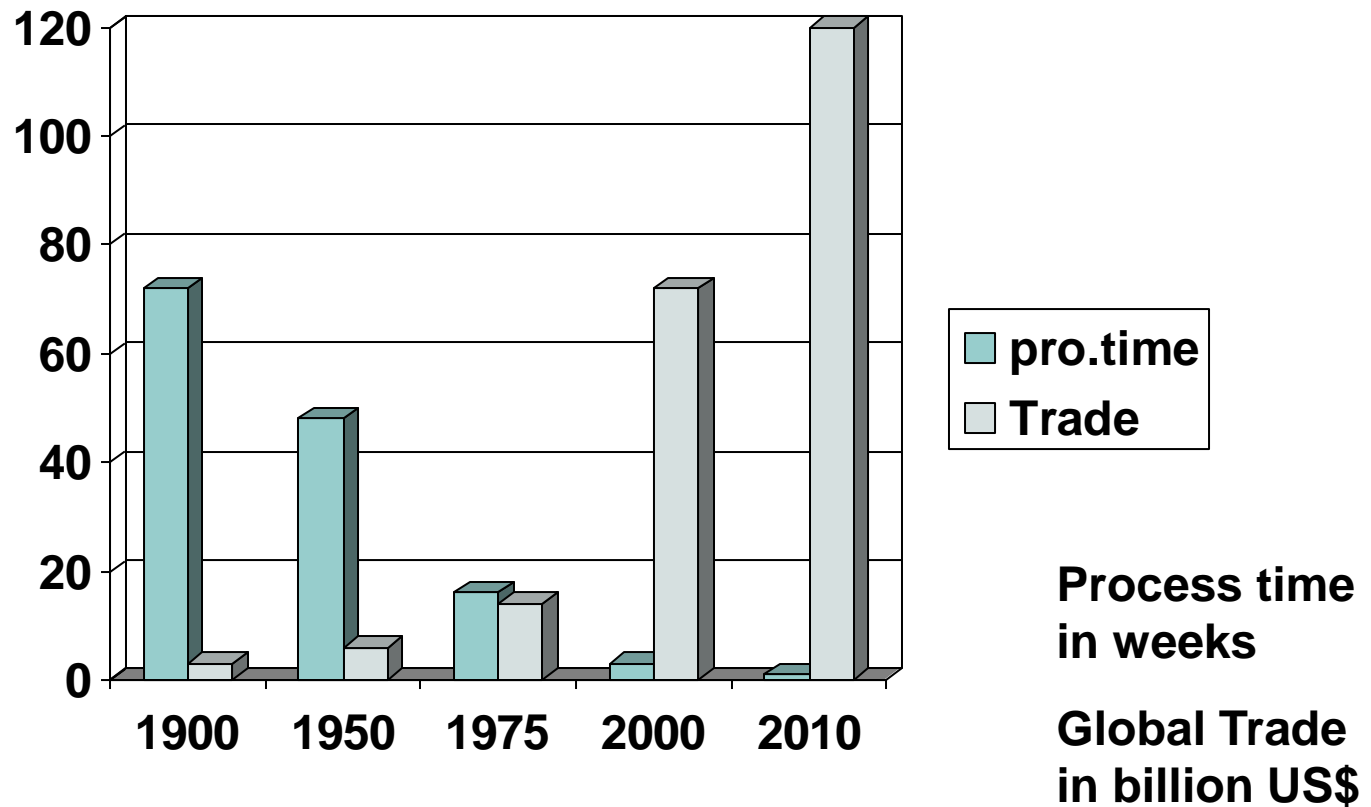


Technology Cycle Time in Leather

- Traditionally life cycles of technologies and products have been long. In some cases, products have remained in the market for as as many as 25 years. Silver Jubilee products in leather are not few. This is a killer of innovation movement
- Change bug has finally arrived in leather. Fashion market forces quick changes in many ways
- In 1900, average process time for leather manufacture was as short as 1.5-1.7 years. In 2000, average process time is reduced to weeks. What is in store for 2010? Less than a week?



Changing Phase of Leather World: In Manufacturing and Market





India and China: Their Growth paths in leather

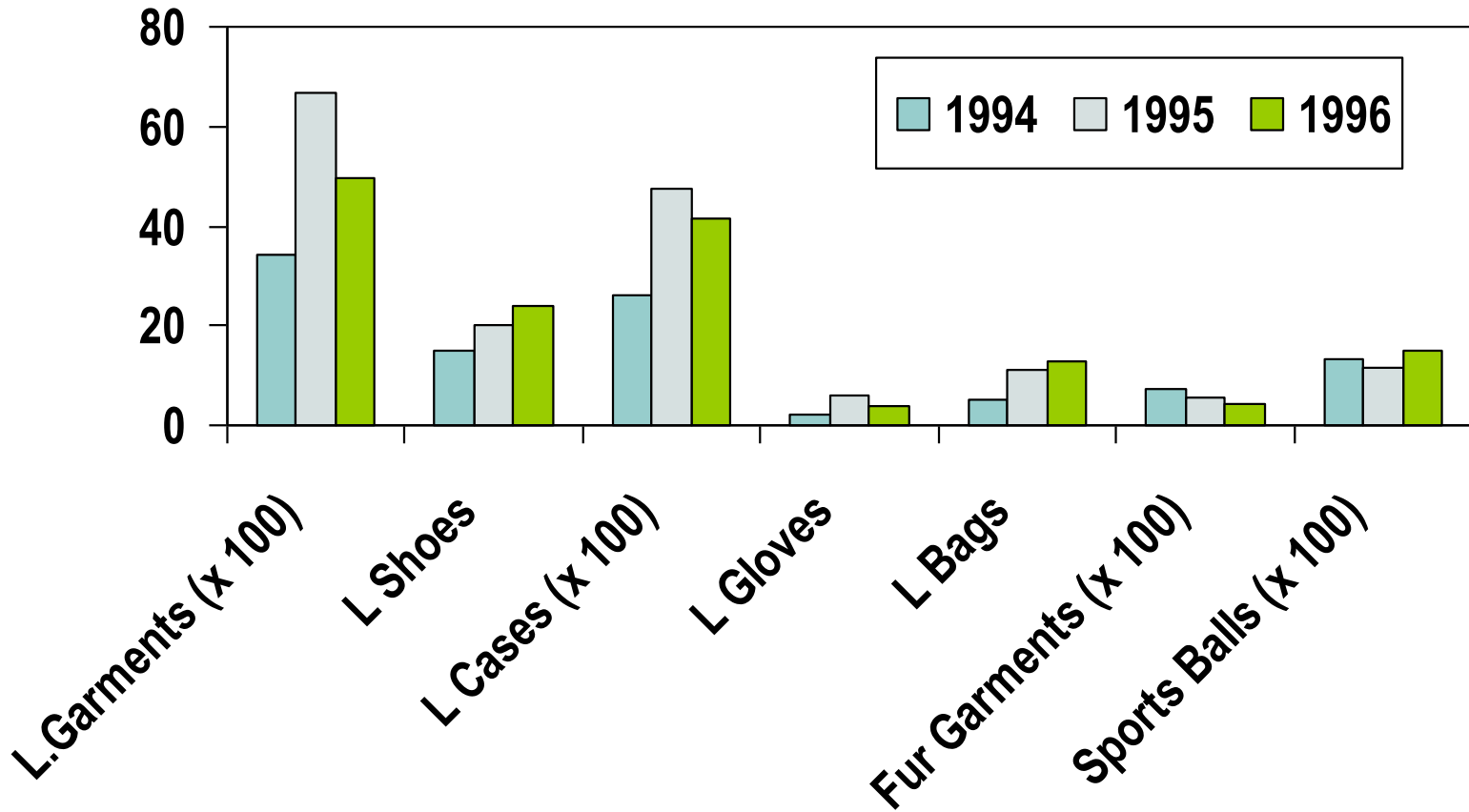
In 1983 export of leather sector of India and China was at par at US\$ 1 and 0.9 bn respectively. In 2002, India has grown to US 2 bn with the support of all. China's export has grown from US 9.5 to 19 bn in seven years since 1995. Exclusive of non leather shoes, this increase is 4.9 billion since 1995. How has this happened?

We chose different paths for growth. China turned global. We turned inward. China made integrated investments. We spread our efforts thin and wide.

FDIs and Large Scale path China chose. We relied on SME route and brand market products without brands

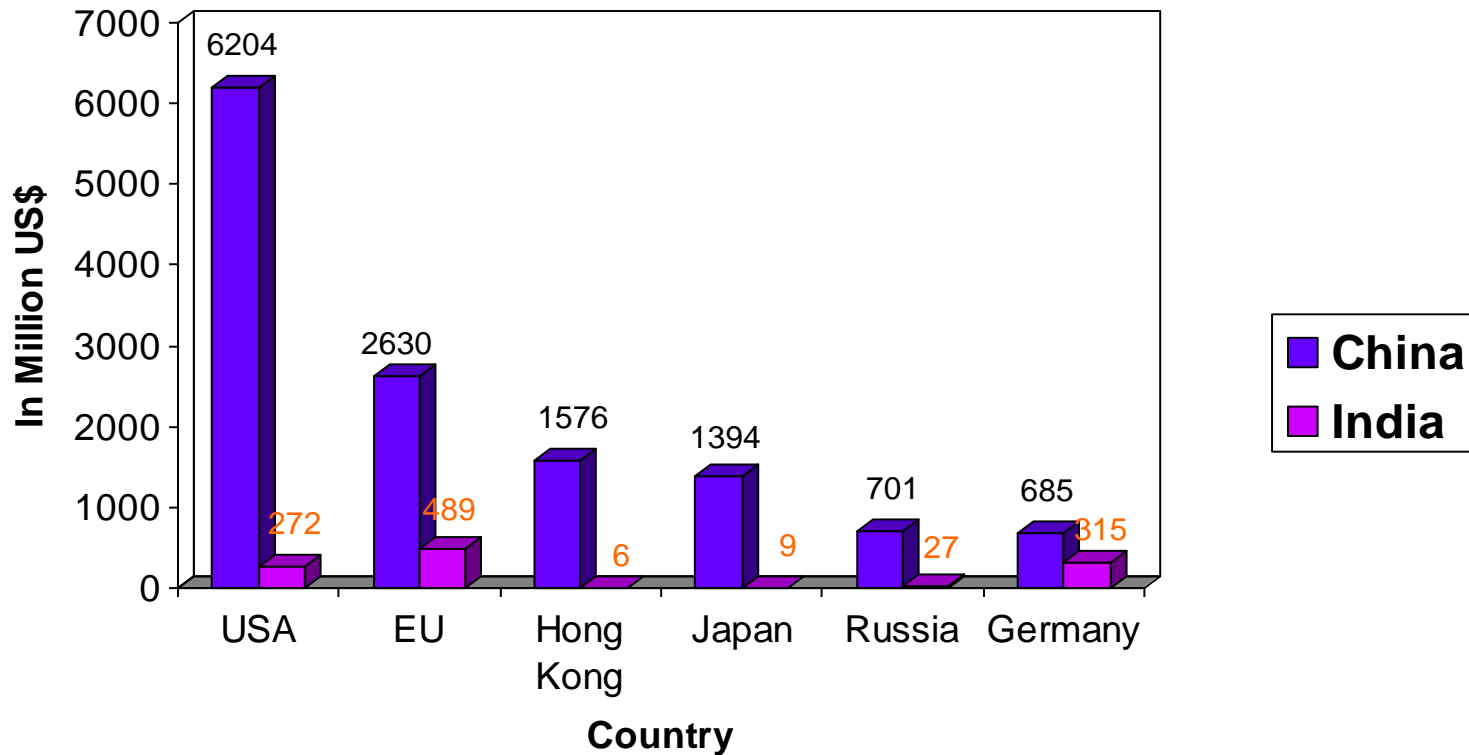


Output of China



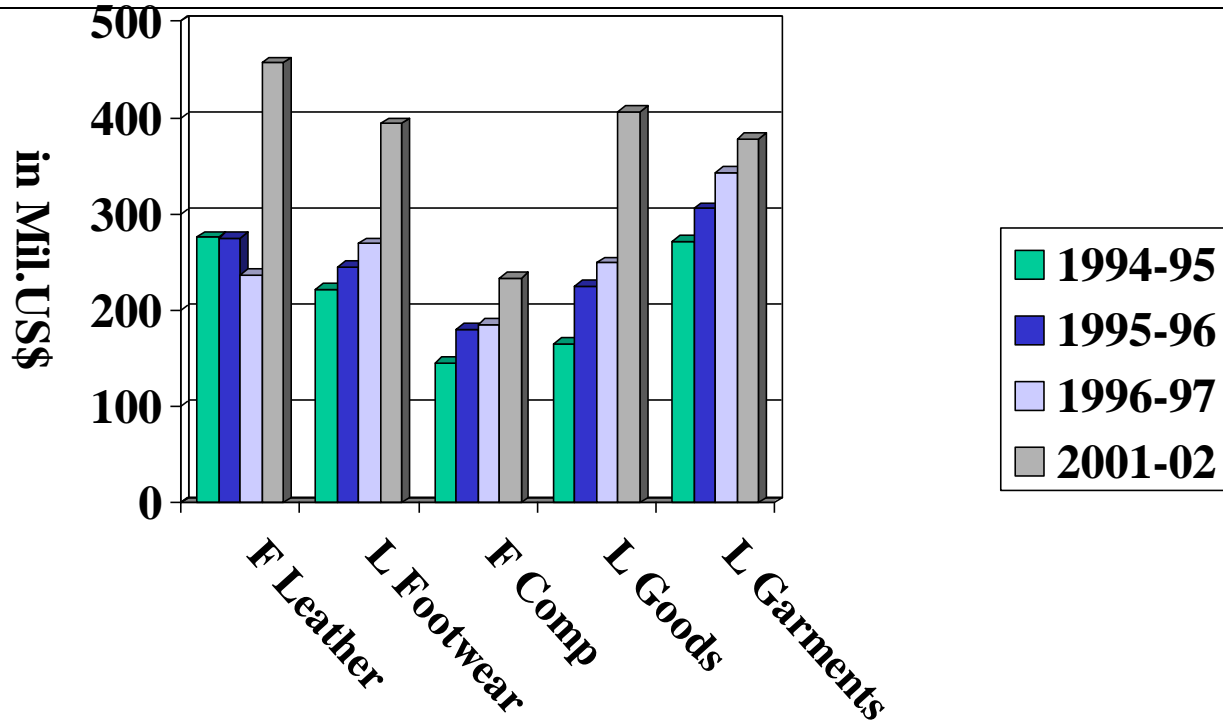


Exports From China vis-à-vis India





Output of India





Key leather market indicators: China path

- **Export of shoes are the leading product at US\$3.6 billion. It is ever increasing.**
- **The export market for leather garments reached US\$ 1.6 billion**
- **Annual growth rates of exports in leather related products registered 12- 27% during the last seven years. When chips are down in global leather garment trade with about 25% decrease over the last five years, China registers 8% growth during 2002.**
- **China attracted US 10 bn in investments in leather sector since 1990.**
- **Small sizes with non critical investments were phased out. Mass volume and cost conscious market is area of focus.**



World of Leather: Growth path of India

- India registered an annual growth of 16-26% during 1985-95. Then India stalled.
- Growth was not in volume, but in catering to small sized value market.
- India relied on Economy of scope; in catering to small orders of many sizes and color; but without the support of infrastructure for delivery for fashion market with short response time.
- Indian strength is based on technology, technologists, soft ware and all the skills with out a supporting investment climate and base.
- When Indians feared to invest in Indian leather sector, FDIs became a wish without hope.



Growth in China Unrelated to Resource Strength

- A weakness in China's leather industry is lack of raw materials, particularly quality skins
- The country has abundant pig skin resources but only 20% are peeled
- Quality was considered stale. Will it remain and Does it remain so? No. When challenged China will glow in quality too.
- Contributes to strong foreign imports of hides and skins.
- When combined with import and export data of Hongkong, China will have a staggering import share of leather merchandise estimated at 14 bn for leather with a net trade balance of US 1.9 bn in 2001.



Leather Sector in China - Some Possible Directions

- **China is a beneficiary of industry relocation and structural changes in Hong Kong**
- **China may well emerge to be a major importer of raw hides and leather. This may well be needed to sustain export growth rates especially when domestic demand for leather rises steeply**
- **Foreign investment in tanneries into China may increase significantly**
- **High volume and turnover in leather sector in China may well contribute to cost leadership**



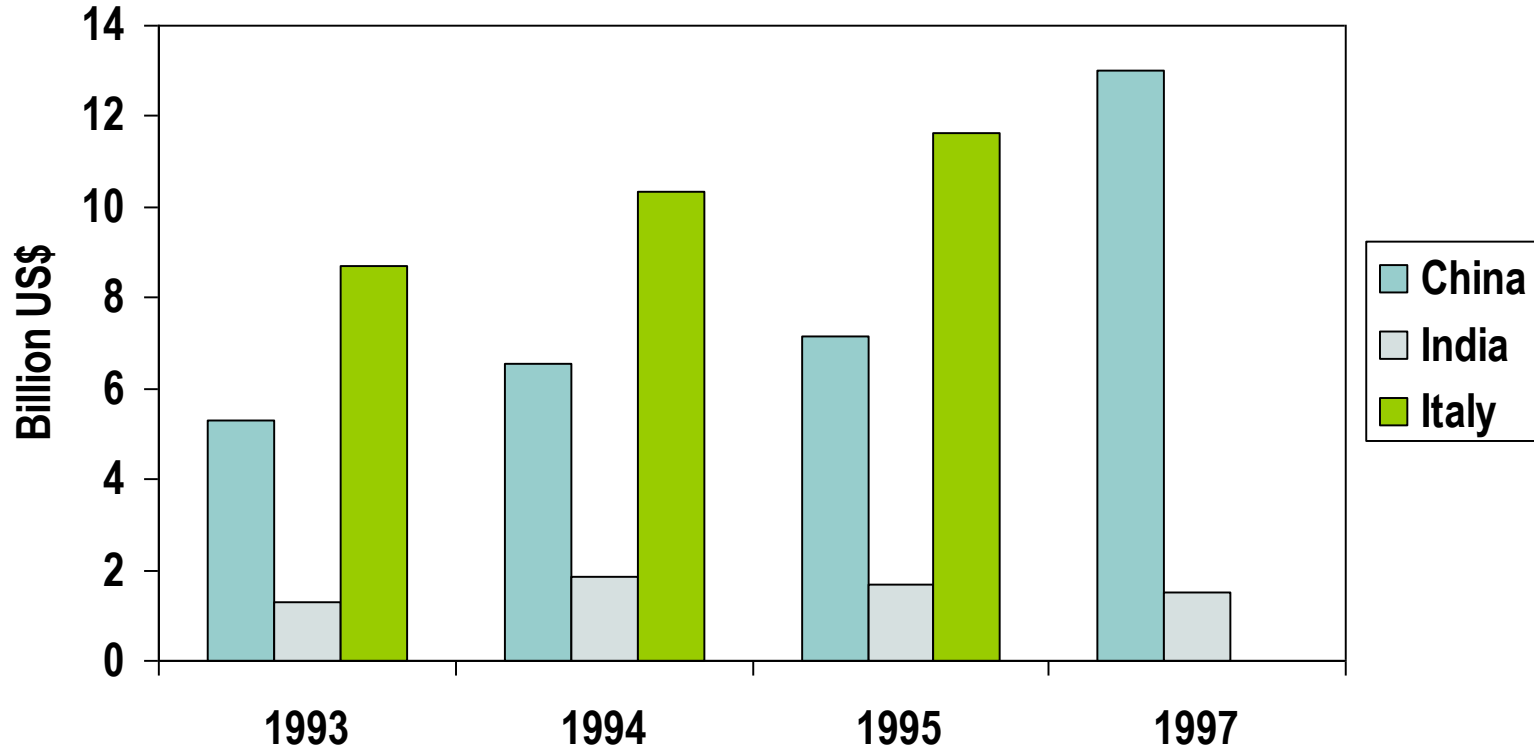
Random path of India in Leather

- India chose a path of **SME** and tried to grow in close heels along the grooves of Italy; but without the supporting brand image and permitting to be picky rode by others.
- In return we gained in technology, strength to shape our own destiny.
- Our average values of products are high. Value realization path of India is superior to china.
- We gained neither in cost nor in brand leadership in export trade.
- We divorced domestic and export segments strongly. This meant a random walk into the **WTO** world.



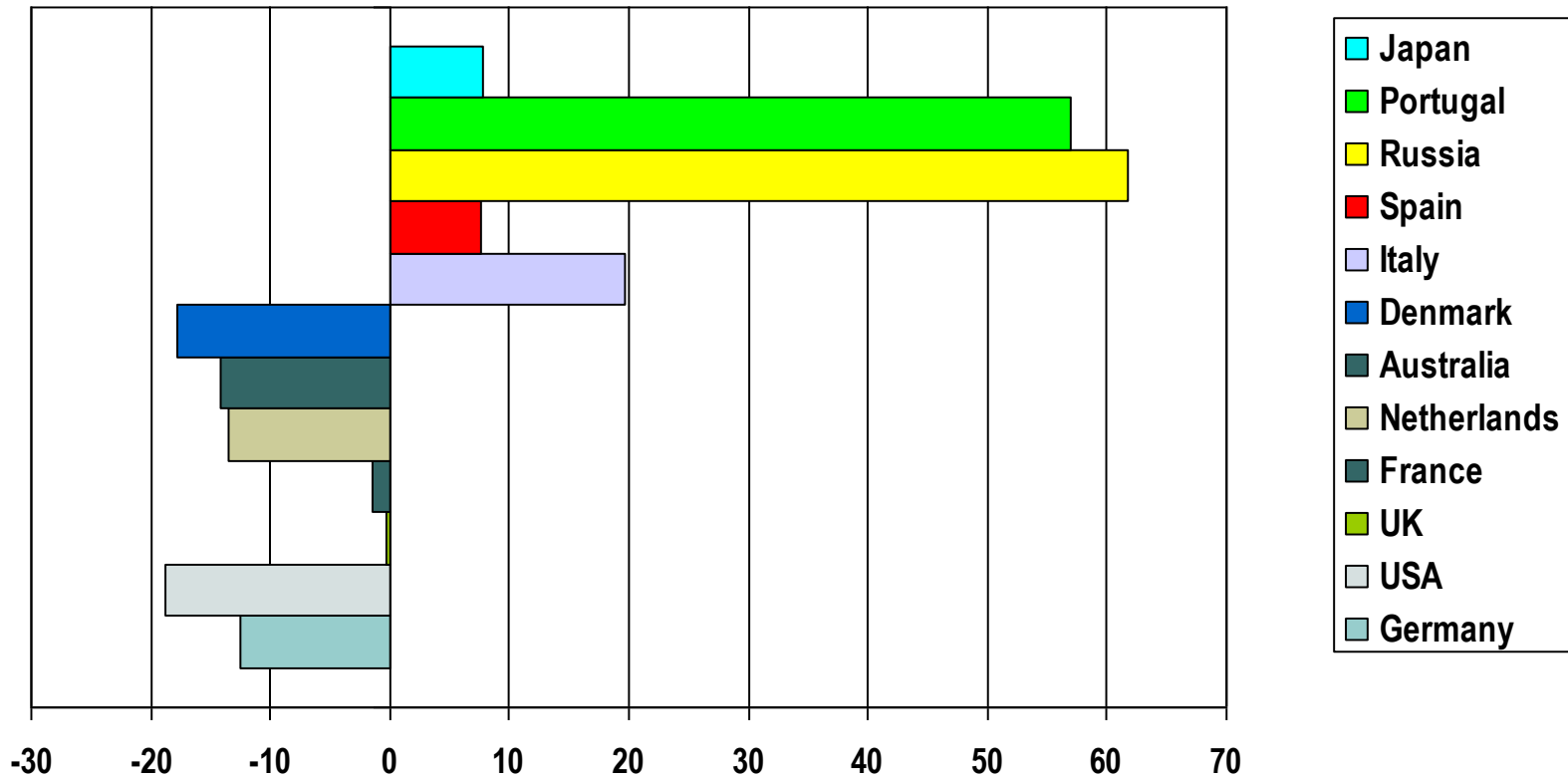
Global Scenario

India Vis-à-Vis Competitor Countries





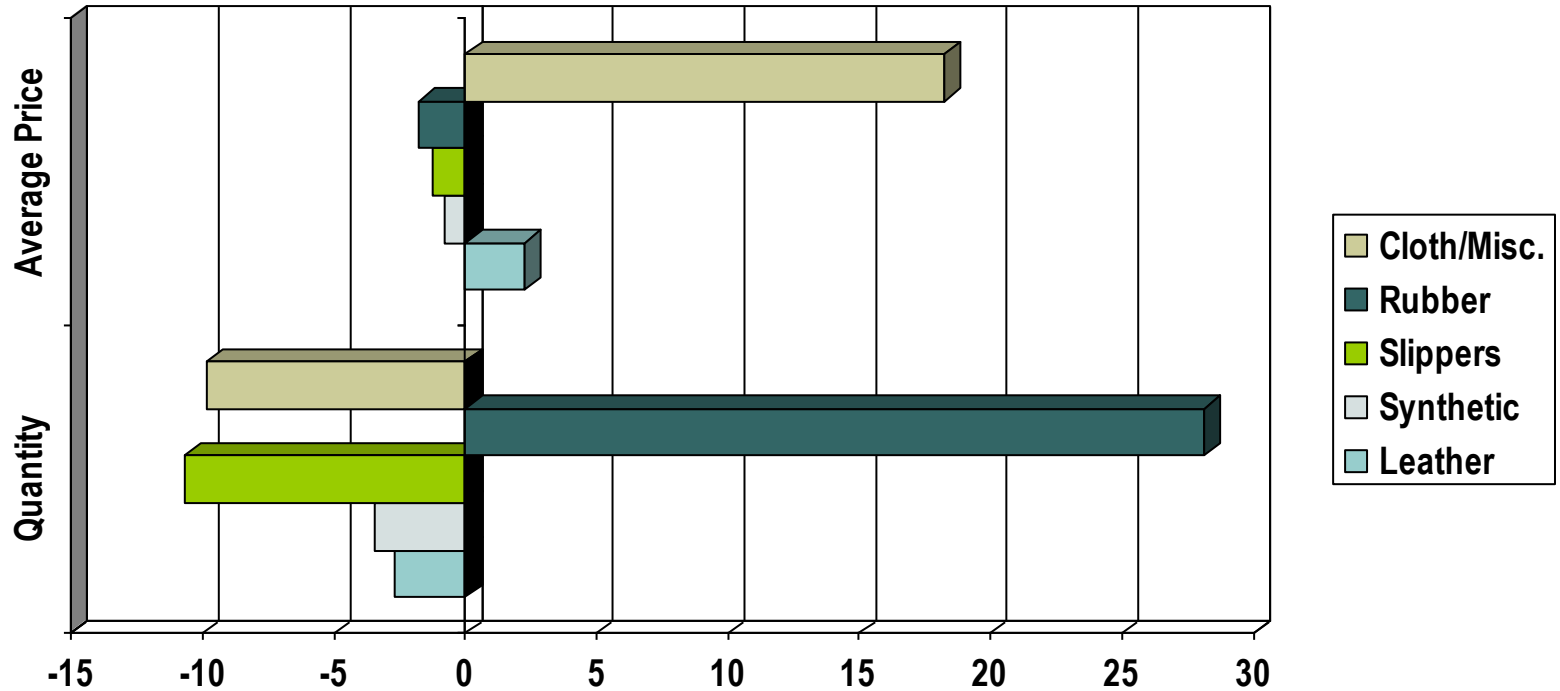
Analysis of Exports from India





Trends in Value Realization from Shoe Wear in Italy

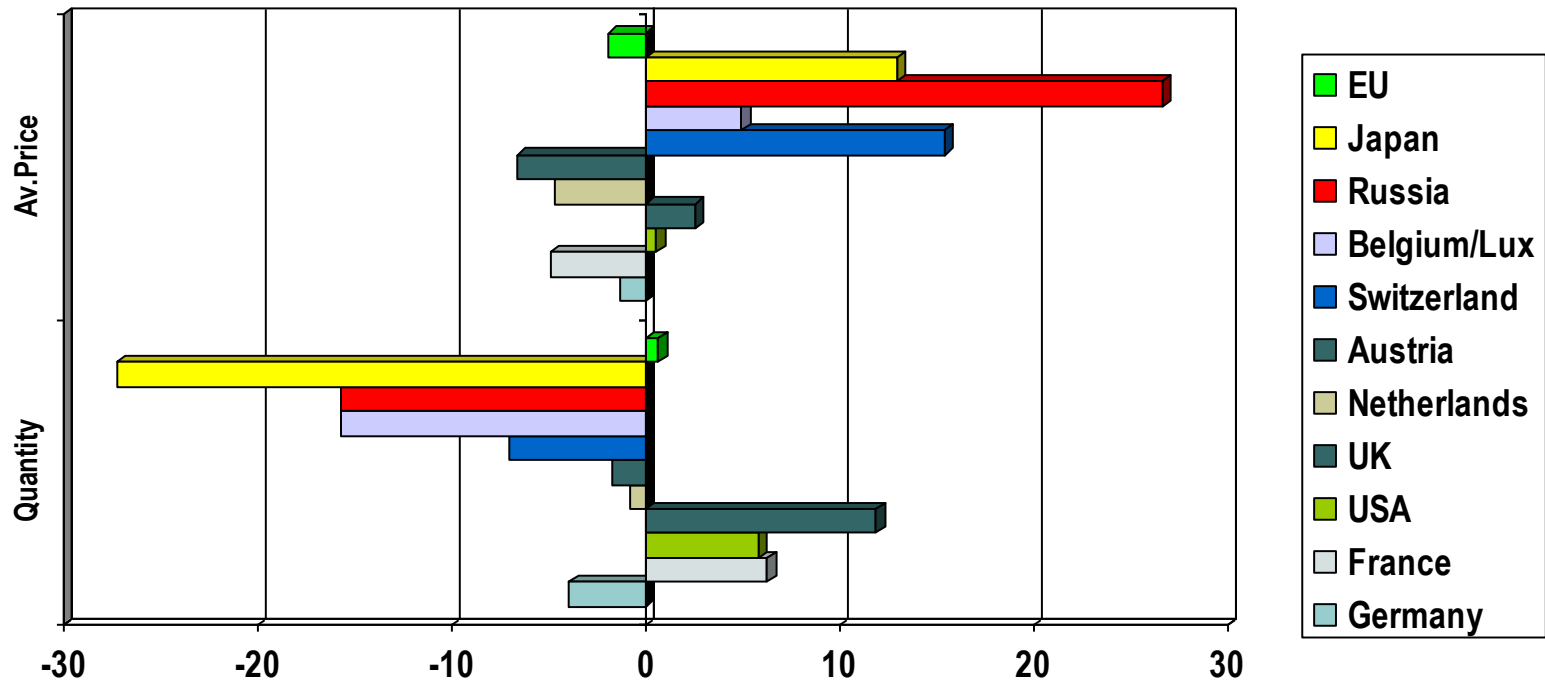
Variation % 97/96





Main Buyers of Italian Shoes : Trends

Variation % 97/96





Road Blocks to Indian Leather Sector

Current Challenges

- **Slower economy in main markets, currency collapse in competing countries leading to loss of competitiveness and falling export growth rates.**
- **Inadequate country image in medium and high price market and poor unit value realization**
- **Meeting short response time demands of global market when number of inputs are imported & tanning sector is unstable**

Possible Causes

- **China with large units and high productivity emerges strong in low priced market. Weaker currency Nations compete better in leather**
- **Brand equity for India is yet to be built. Large investment needs**
- **Weak tanning sector and footwear component industry.**
- **Threat from poor public image of tannery sector with respect to environmental sustainability**



Some Needed Measures: Short Term

Challenge

- Global Competitiveness with respect to weak currency competitors
- Long response time of product sector when inputs are imported and
- Internal instability due to poor public image of tannery sector

Needed Short term Measures

- Support systems to bridge current gaps in costs of production of footwear in countries in weak currency area
- Policy readjustments towards strengthening tanning & footwear sectors
- Funding improvements of environmental safeguards



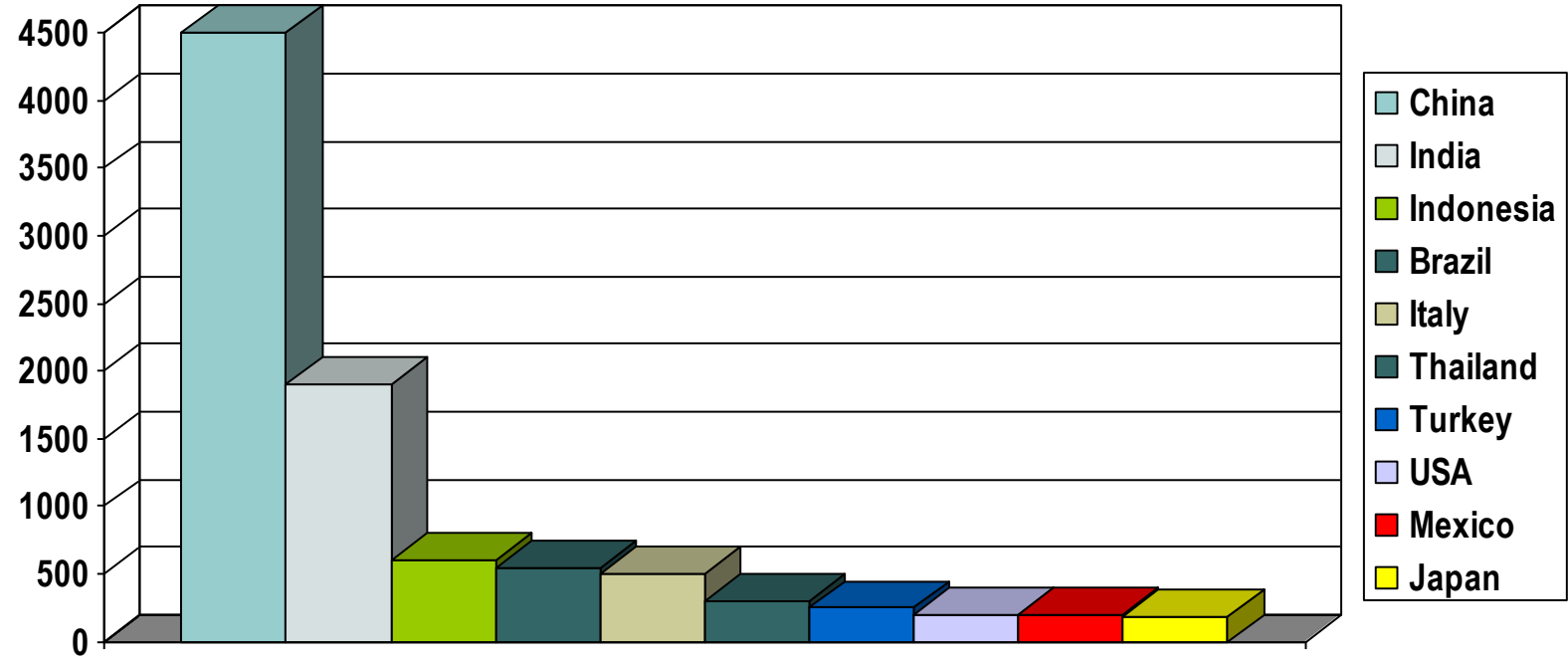
Shaping Indian Leather Sector 2010

- **Resource Strengthening (Needed Steps: Data base updating on quality and quantum of indigenous raw material base, better recovery of fallen carcass products for a potentially additional supply of 4.5 million hides per year, technological upgradation of decentralized sector in raw material management, tanning and ethnic footwear and Skill upgradation through HRD programmes to cover existing skill base).**
- **Increasing Unit Value Realization(needed Steps: Brand equity building through marketing initiatives, modernization of tannery sector through funding and policy supports, institutional strengthening for technology, training back up as well as fashion and design forecasting; capacity building in indigenous design development)**
- **Strategic Planning (Needed Steps: analysis of inter-sectoral priorities, identification of steps towards 20% annual growth rates and >10-14% global share in value terms**



Leading Footwear Producing Nations

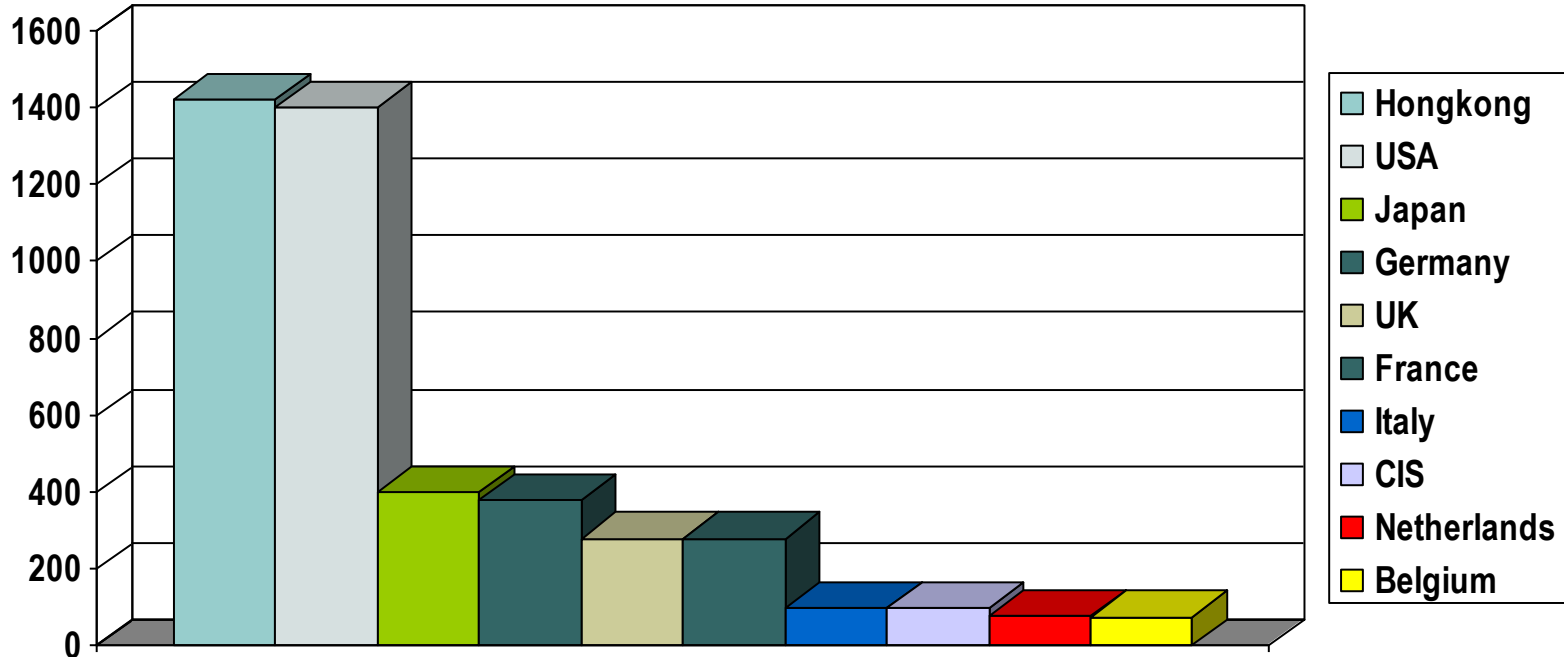
1996 (mprs)





Leading Footwear Importing Nations

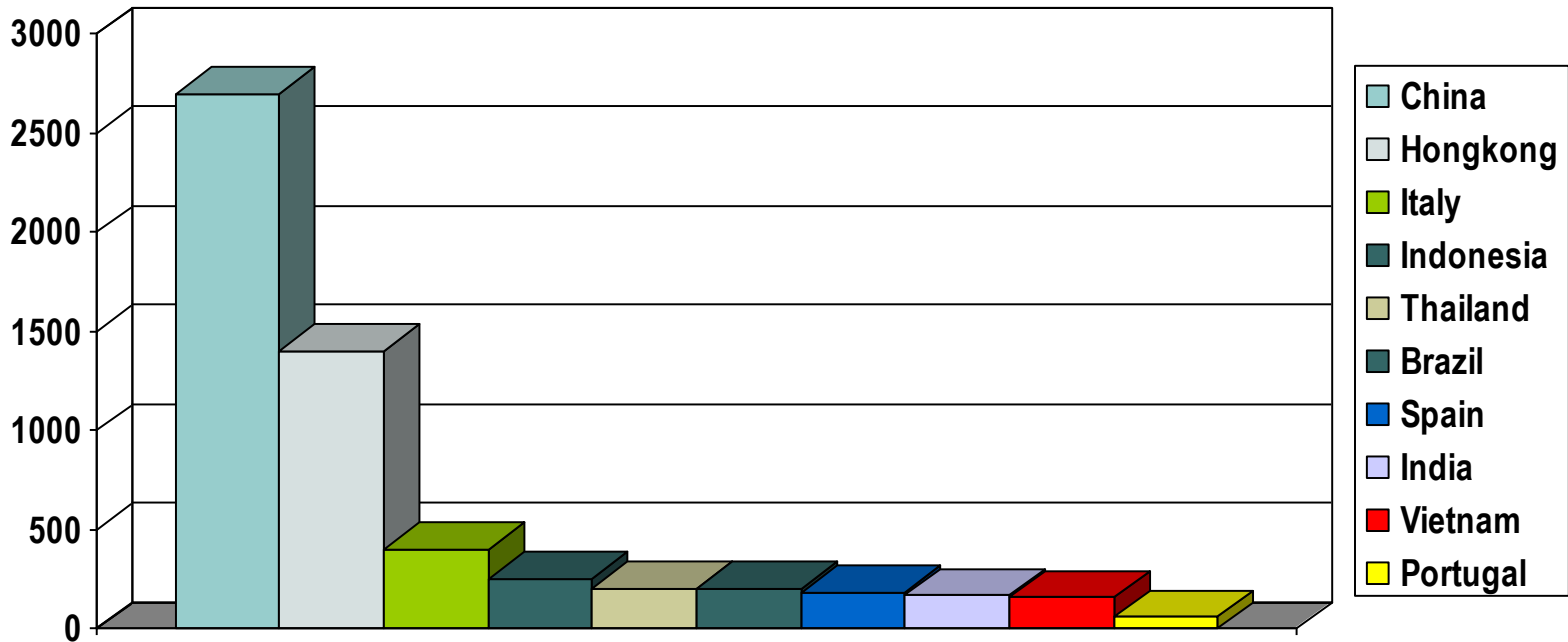
1996 (mprs)





Leading Footwear Exporting Nations

1996 (mprs)



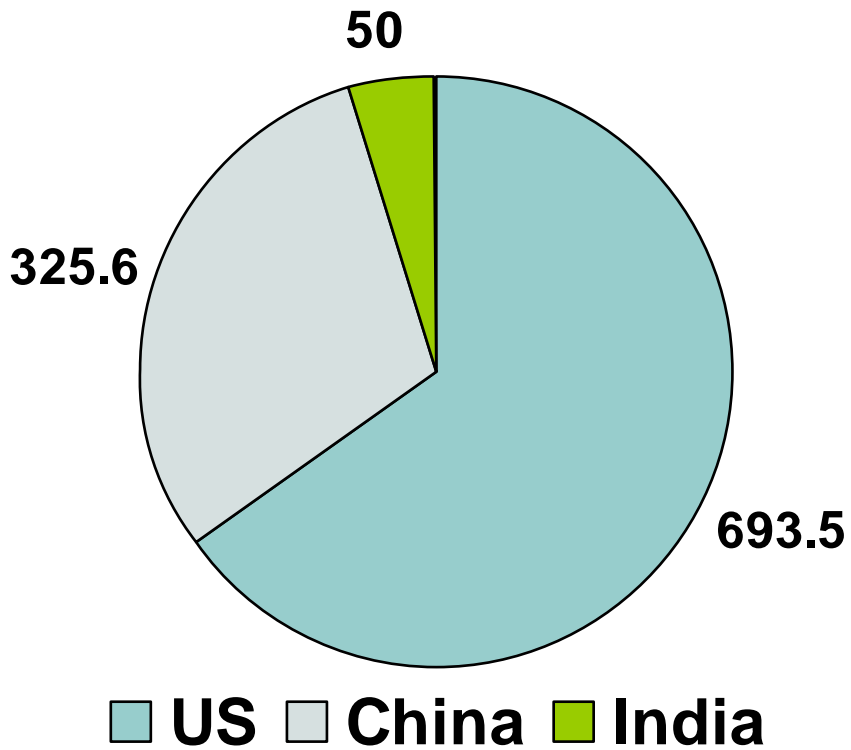


Performance of Nations in Global Trade

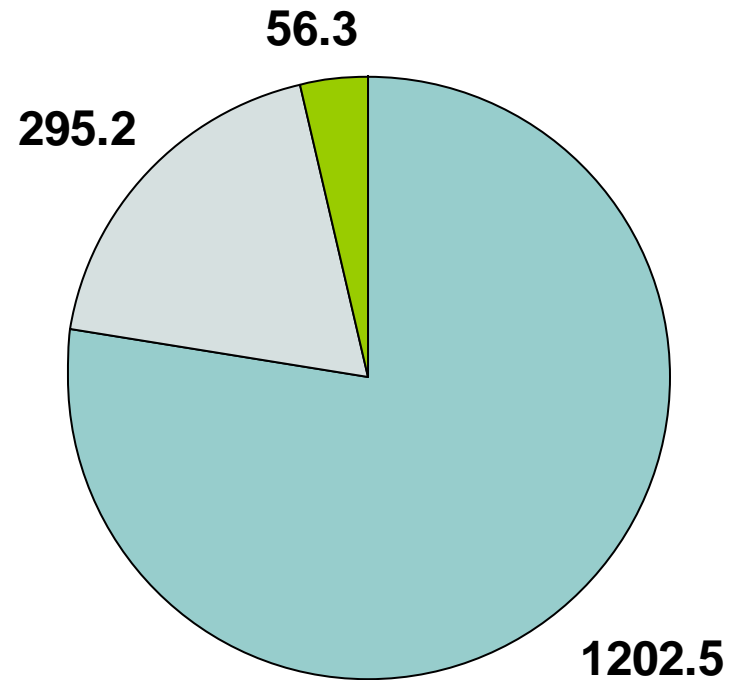
	Exports			Imports			Balance of trade
	Rank	Share in total (%)	Value (\$ billion)	Rank	Share in total (%)	Value (\$ billion)	
I Merchandise							
US	1	10.8	693.5	1	18.0	1202.5	-509
China	5	5.1	325.6	6	4.4	295.2	+30.4
India	30	0.8	50.0	24	0.8	56.3	-6.3
II Services							
US	1	17.4	267.8	1	14.3	218.4	+49.4
China	11	2.4	37.3	9	2.9	44.2	-6.9
India	21	1.3	20.7	27	1.0	15.5	+5.2



Merchandise Import-Export Trade



Merchandise - Exports

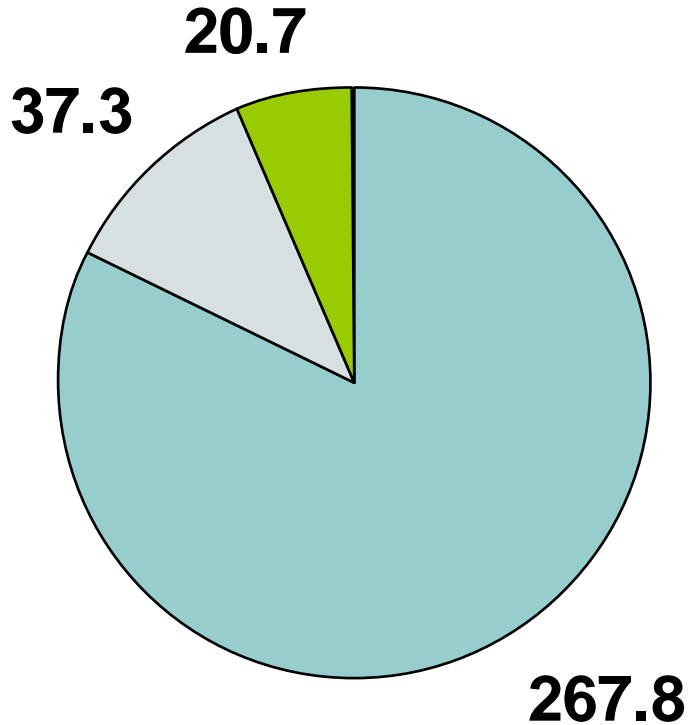


In US\$ billion

Merchandise - Imports

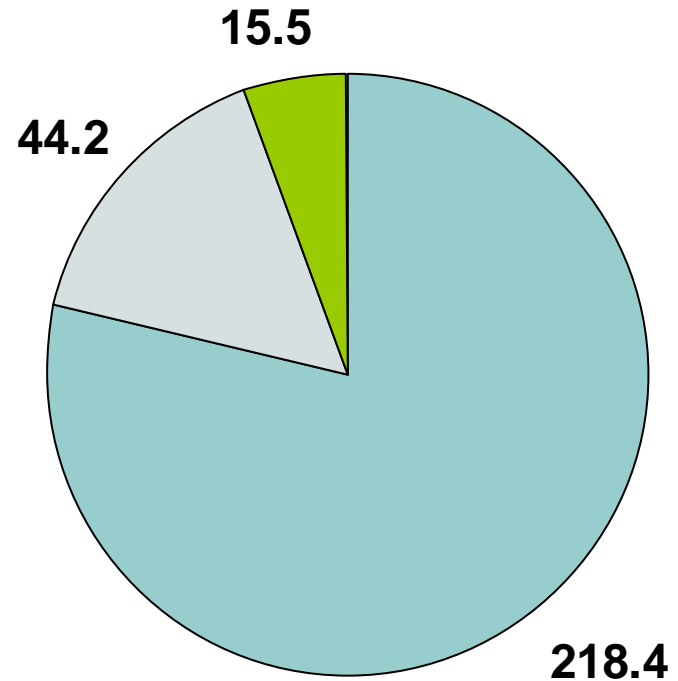


Service Export/Import Trade



■ US ■ China ■ India

Services - Exports



In US\$ billion

Services - Imports



Global Leather Trade: Some Recent Trends

	World			India's share
	1994	1999		
● Leather	36%	34% ↓		1.1
● Footwear	35%	39% ↑		1.2
● F.Comp	7%	6% →		5.2
● Garment	12%	11.5% →		11.7
● Goods	7%	6% →		7.7
● Saddlery	0.4%	0.5% ↑		8.7
● Gloves	1.6%	1.5% →		8.1

Leather : Non-leather
1994 = 1: 0.37
1999 = 1:0.40



Top Destinations (Footwear with Lea.Uppers)

● China

US↑

Hong Kong↓

Russia↑

Japan ↑

Germany ↓

Kazhaksthan ↑

Canada ↑

UK ↑

Australia ↑

France ↑

◆ India

UK ↑

Germany ↓

Russia ↑

France ↓

US ↓

Italy↑

Australia ↓

Finland ↓

◆ Italy

Germany ↓

US ↑

France ↓

Austria↑

UK ↑

Russia ↓

Japan ↑

Sweden ↑



Top Destinations (Footwear with Lea.Soles)

● China

US↑

Hong Kong↓

Japan ↑

Germany ↓

Russia ↑

Canada ↑

Australia ↓

UK ↑

Taiwan ↓

Netherlands ↓

◆ India

US →

UK ↑

Germany ↓

Russia ↓

Australia ↓

Italy ↑

France ↑

Canada→

◆ Italy

Germany ↓

US ↑

France ↓

UK ↑

Russia ↓

Netherlands ↓

Belgium ↓

Switzerland ↓



Top Destinations (Leather Garments)

● China

US →

Russia ↑

Germany →

Hong Kong ↓

Japan ↓

Netherlands ↑

Korea ↓

Canada →

◆ India

Germany →

US ↓

Italy ↑

UK ↑

France →

Netherlands ↑

Denmark ↑

Spain ↑

◆ Italy

Germany ↓

US ↑

Greece ↑

Japan ↑

Switzerland ↑

France ↑

UK ↑

Austria ↓



Top Destinations (Leather Belts)

● China

Hong Kong ↑

Italy ↑

Taiwan ↑

Japan ↑

US ↑

Thailand ↑

Germany →

Chile →

◆ India

Germany →

Italy ↑

France ↑

Spain ↑

Netherlands ↑

UK ↑

US ↑

Austria ↑

◆ Italy

UK ↓

France ↓

Germany ↓

US ↓

Portugal ↑

Switzerland ↓

Spain ↓

Turkey ↓



Top Destinations (Leather Gloves)

● China

US ↓

Hong Kong ↑

Japan ↓

Germany ↓

Canada →

Netherlands ↑

Sweden ↓

Finland ↓

◆ India

US ↑

Germany ↑

France ↑

UK ↑

Canada ↑

Sweden ↓

Russia ↓

Italy →

◆ Italy

US ↑

France ↓

Japan ↓

Germany ↓

UK ↑

Switzerland ↑

Spain ↓

Russia ↑



Top Destinations (Leather Handbags)

● China

Japan ↑
US ↓
Hong Kong ↓
Germany ↓
Korea ↑
France ↑
Canada ↓
UK ↓

◆ India

Germany ↓
US ↓
UK ↑
Australia →
Russia ↑
Netherlands ↑
France ↓
Canada →

◆ Italy

Japan ↓
US ↓
Germany ↓
Switzerland ↑
France →
Hong Kong ↓
UK ↓
Korea ↓



Top Destinations (Leather Suitcases)

◆ China

US →

Hong Kong ↓

Japan ↓

Germany ↓

UK ↑

Canada ↑

France ↑

South Africa ↑

◆ India

US ↓

Germany ↓

UK ↓

Australia ↓

France ↓

Russia ↓

Canada →

Norway ↓

● Italy

Japan ↓

US ↓

France ↓

Germany ↓

UK ↓

Switzerland ↑

Korea ↓

Hong Kong ↓



The Exports of Leather – Relative Performance

Country	1998 (in \$ million)
Italy	3075
Korea	2328
Brazil	1308
China	669
India	265
Bangladesh	208
Indonesia	128



Leather & L.Products Industry Perspective

- **High product yield for unit weight averaged resource**
- **Line balancing for optimized productivity**
- **Optimized turnover/ plant and equipment ratios for tannery/ footwear/ leather garments and goods**
- **Cycle time optimization and minimization of inventory costs**
- **Containing raw material input to less than 50% of product value**



India and China – A Comparison

Structure and Substance of Industry

India

- Strong domestic base
- Specialty skins-goat, calf and sheep
- Tanning based on domestic investment only
- Small and medium tanners dominating

China

Depend equally on import
Strong in pigs, strength in goat is building
FDIs dominated sector.
Gained from Relocation and overseas technology base
Consciously phased out SSI sector through policy



India and China – A Comparison of capacities to produce

Production capacities	India	China
● Leather(s.mt)	● 180 mn	● 300 mn
● Footwear (prs)		
● Leather	● 0.88 bn(0.07 bn)	● 2.3 bn.
● Non-leather	● 0.96 bn	● 4.3 bn.
● Lea.Garments (pcs)	● 18 mn.	● 70 mn.
● Lea. Goods (pcs)	● 60 mn.	● 6 bn.



India and China – A Comparative perception of organized sectors

	India	China
Wage levels – avg.	● US\$ 60 PM	● US\$ 80 PM
Productivity		
● Shoes (men)	● 2.4-4 prs	● 4-6 prs
● Shoes (women)	● 8-12 prs	● 10-15 prs
● Garment -jacket	● 1.5-2 pcs	● 2.5-5 pcs
● Bags (ladies)	● 6-8 pcs	● 8-10 pcs
● Wallets	● 10-12 pcs	● 12-15 pcs



India and China – A Comparison

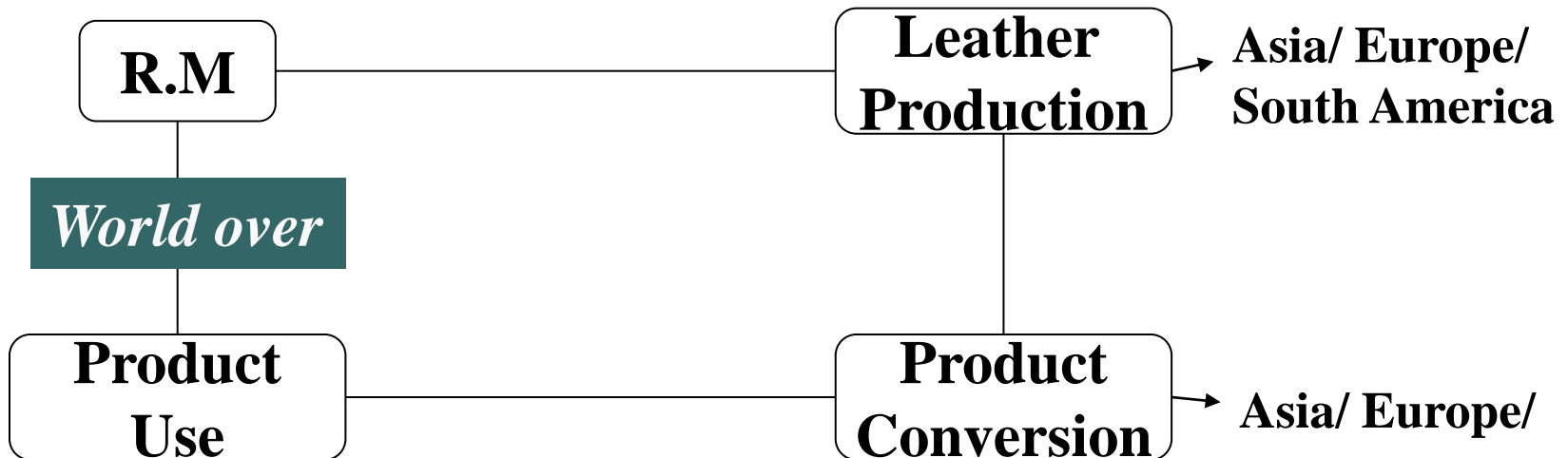
	India	China
Fashion Design	<ul style="list-style-type: none">● Caters to overseas brand market and curbed on disclosure of Indian origin	<ul style="list-style-type: none">● Depends on buyer's design and is equipped to serve non brand cost conscious market
Pattern making and fabrication	<ul style="list-style-type: none">● Developed superior competence based on internal strength	<ul style="list-style-type: none">● Developed superior competence with Korean technical support

Predictable Patterns of Trade in Deregulating Markets

- Monopoly : In Controlled Regime
- Reforms Emerge : Competition begins
- Identity crisis : Competition heats up
- Refocus : Competition shake out
- Dynamic competition : Market competition
 - In the frame work of this analysis, the export segment of the leather sector was initiated in the reform mode prior to 1991. Finished leather segment has entered dynamic competition stage already. Domestic footwear segment is vulnerable

Global Leather Trade

- Raw material supply *world over*
- Leather conversion *Asia/ Europe/ South America*
- Product conversion *Asia/ Europe*
- Product use *US/ Germany/ world over*



Global leather trade : US\$ 70 billion

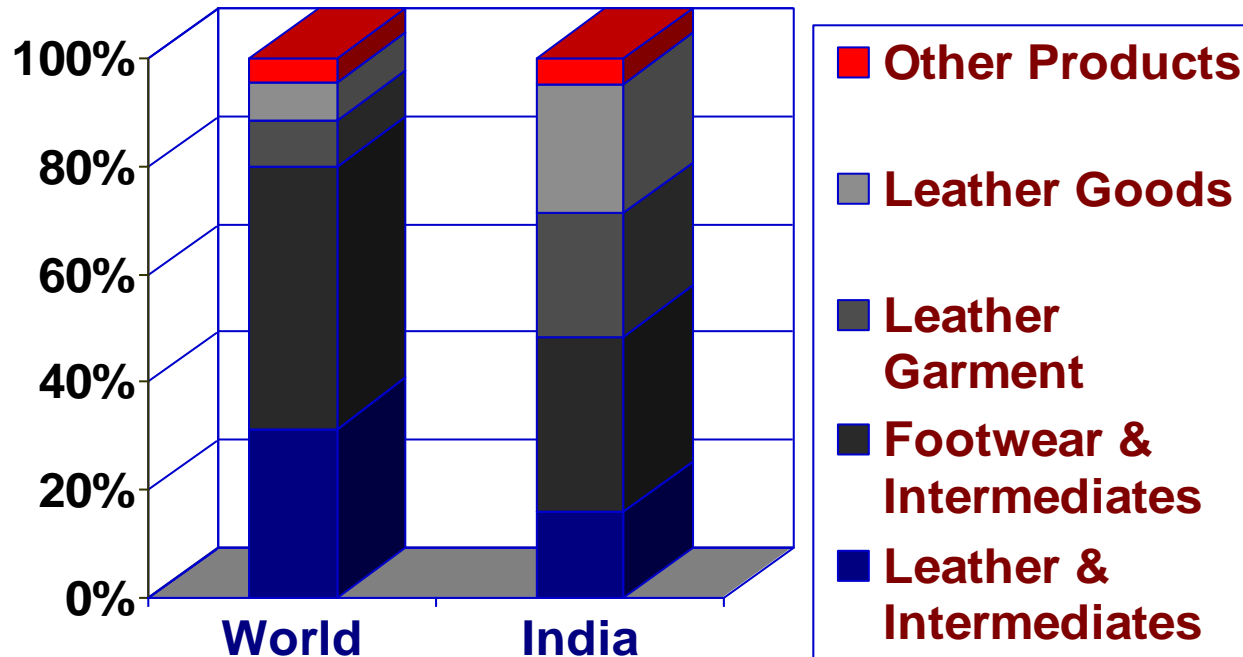
Balance of trade : Favor of developing countries

Case of Indian Leather Sector :Rural – Urban Linkages

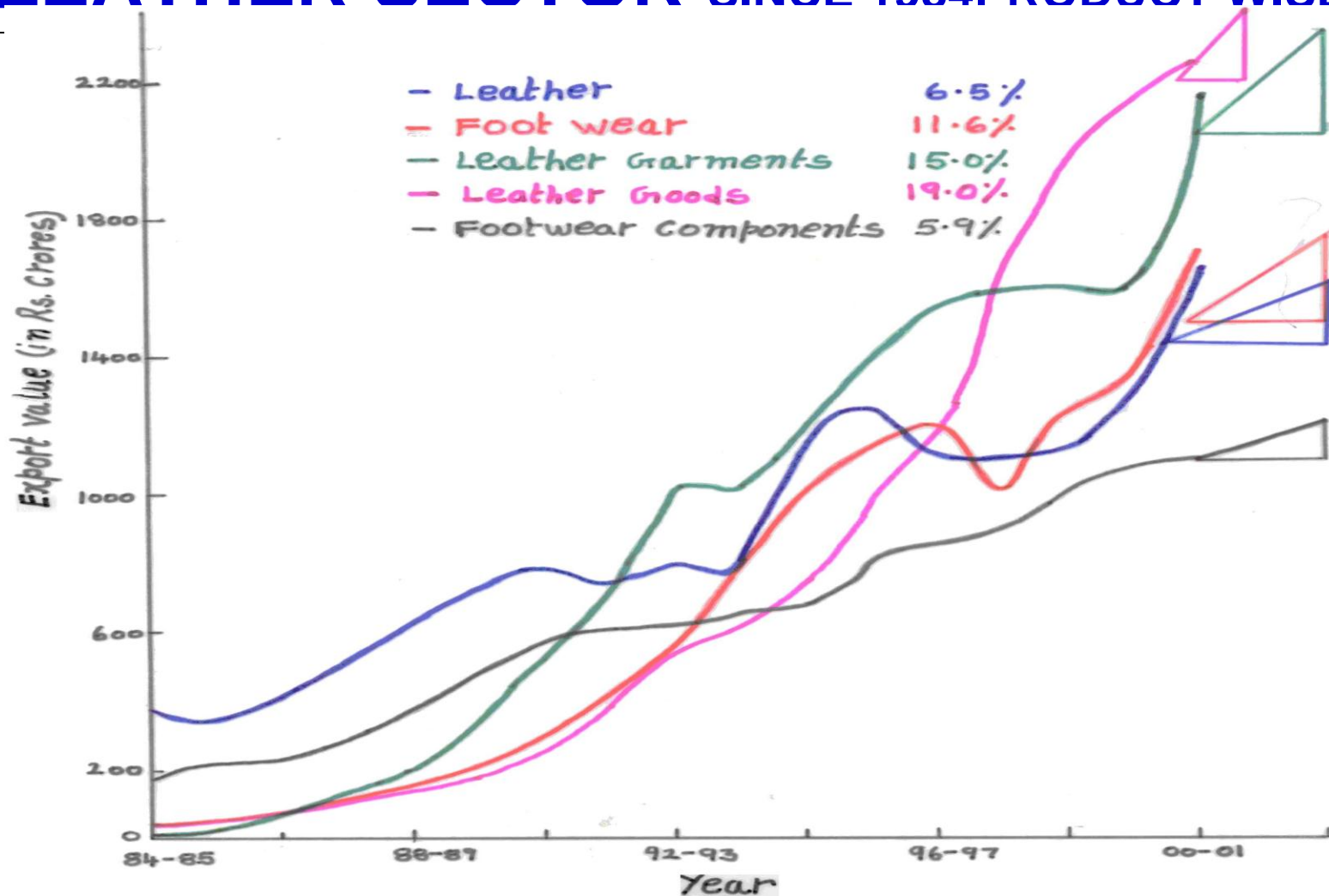
- Of 220 million cattle, 90 million buffalo, 130 million goat and 50 million sheep, 90% live in rural India
- Of 40 million hides and 120 million skins, 85% originate annually from rural India
- Of 2.5 million people engaged in the sector, 1.0 million reside in rural India, 0.8 million in semi-urban India
- Value of raw hides/skins at tannery level is Rs10,000 crores p.a
- Rural income gained from R.M. trading is Rs 500 crores p.a.
- Turnover is Rs 20000 p.a. and export is Rs 10000 crore p.a.

Intercomparison of World vs. India

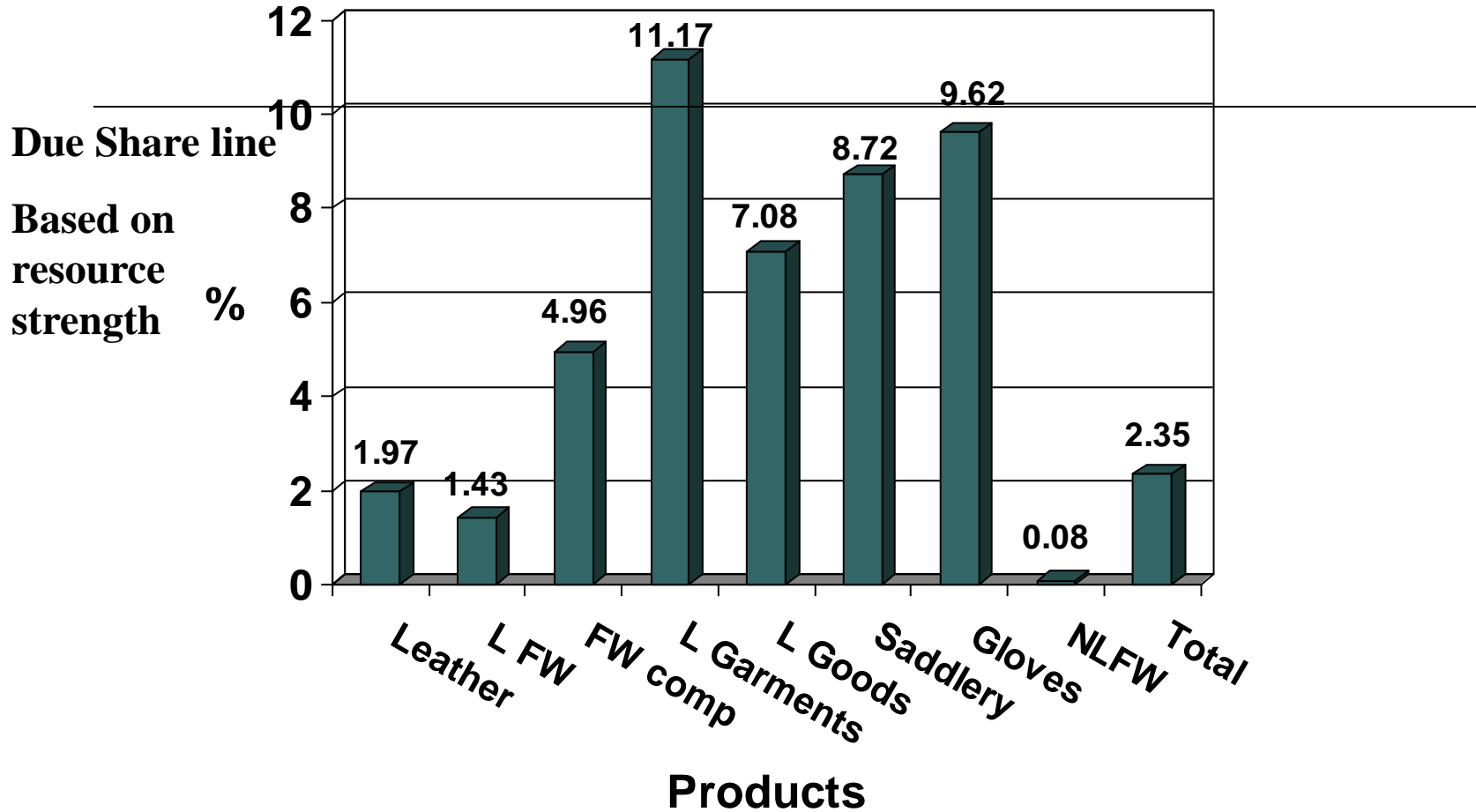
Product Segmentation



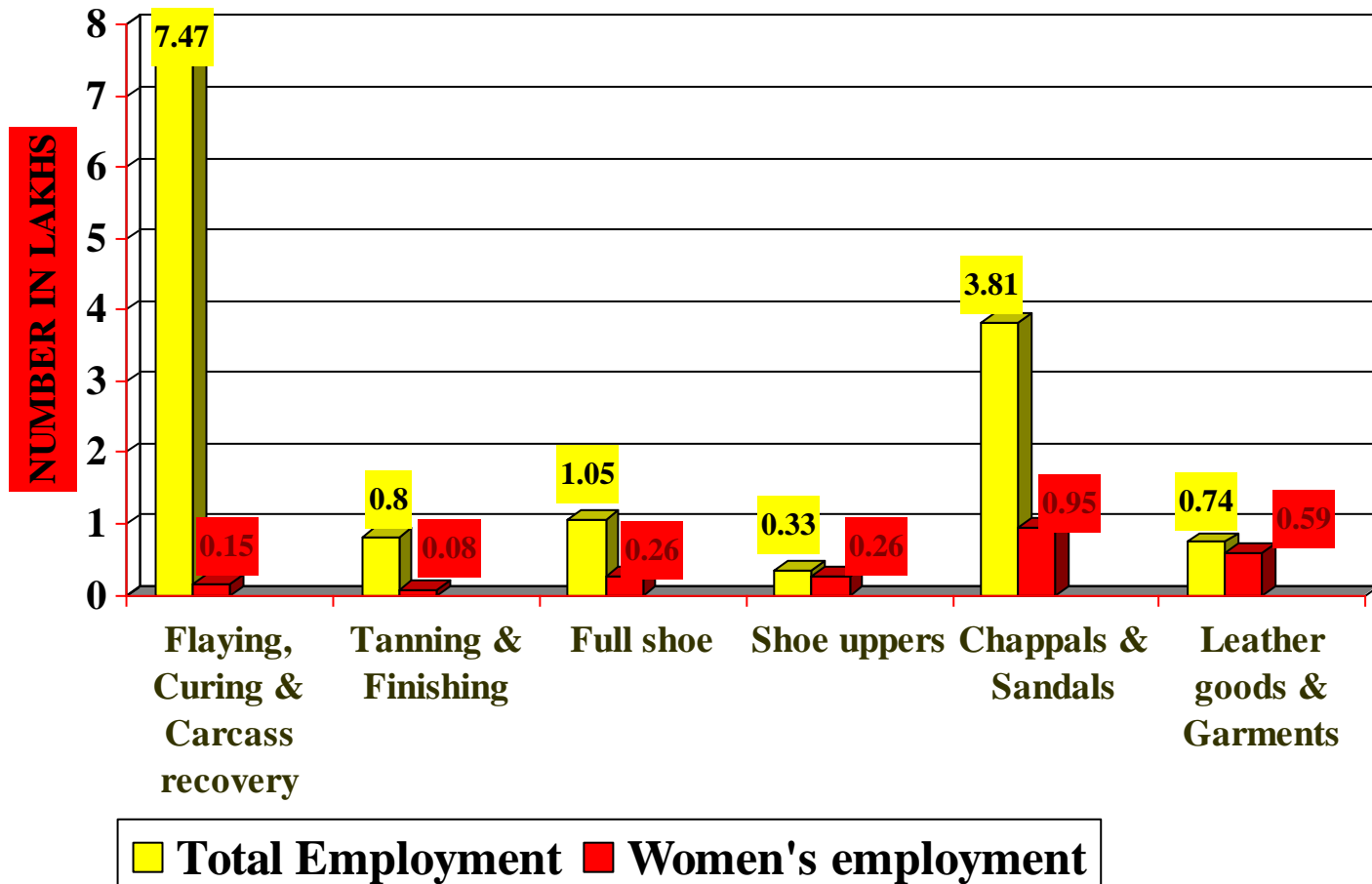
EXPORT PERFORMANCE OF INDIAN LEATHER SECTOR SINCE 1984 PRODUCT WISE



India's Share in World Leather Trade



Women Employment In Leather and Allied



Leather Sector: Preparation for WTO Regime

- Organized sector has been export driven for long. Readjustments to deregulated market are easier.
- Decentralized sector has been driven by protected domestic market needs. Challenges could be serious when import of products is permitted.

Monopoly

**Decentralized
Production**

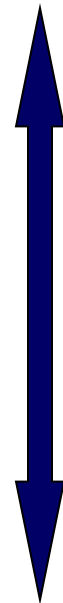
**Competition
sets in**

**Competition
heat**

**Competition
Shake out**

**Entry to Dynamic
competition**

**Export
Segment**

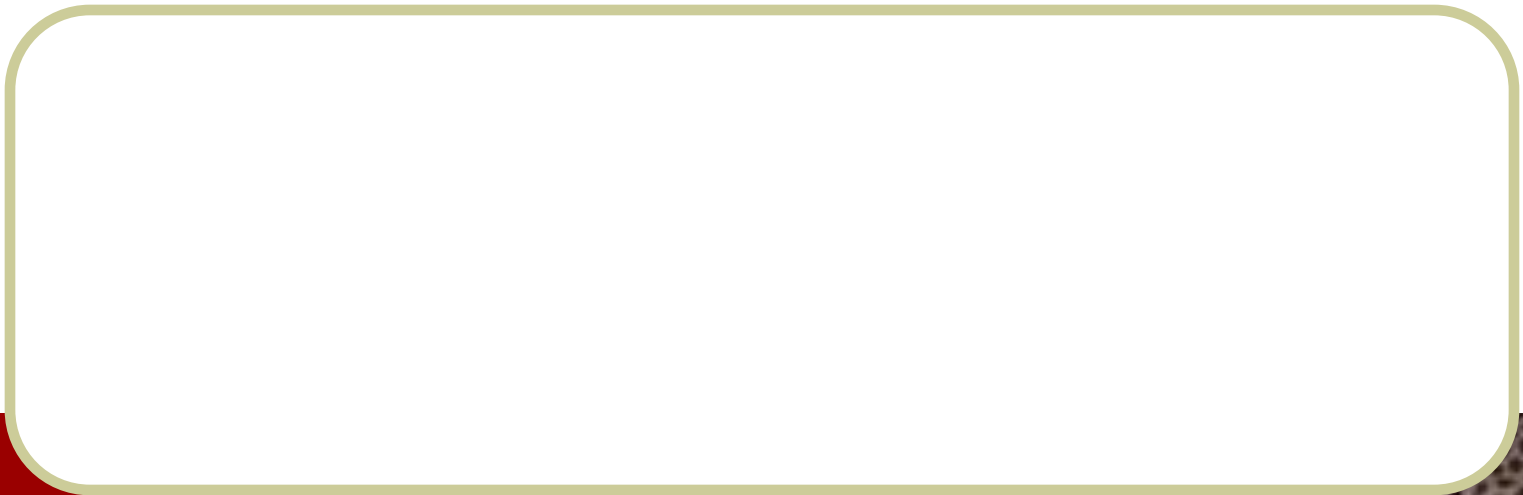


EMS in SME: Special Challenges: As We Learnt

- **Small and medium enterprises with limited access to technologies and ability to adopt and adapt technological changes on the one hand and limited ability in social engineering as well as the technology management capabilities on the other needed for EMS face new challenges**
- **Size matching of technologies as well as external help in adopting and adapting technological changes on the one hand and assistance in social engineering and in building confidence for increasing transparency of actions are needed**
- **Indian leather industry has been enabled along these directions. CLRI has part-taken in providing size matched technologies and assisted in unit level adaptation to a large group of 764 tanneries by training also human resource to adopt technology changes. This has led to confidence building in the sector as evidenced from their openness to work with international agencies like CDG.**

Team India

In Leather Sector





Directions of Change in Global Leather Sector

Consumer preference

Consumer Enforced

Society Enforced

Environment
Live Stock policy

Change Agents Demanding Strategic Actions

Price Value

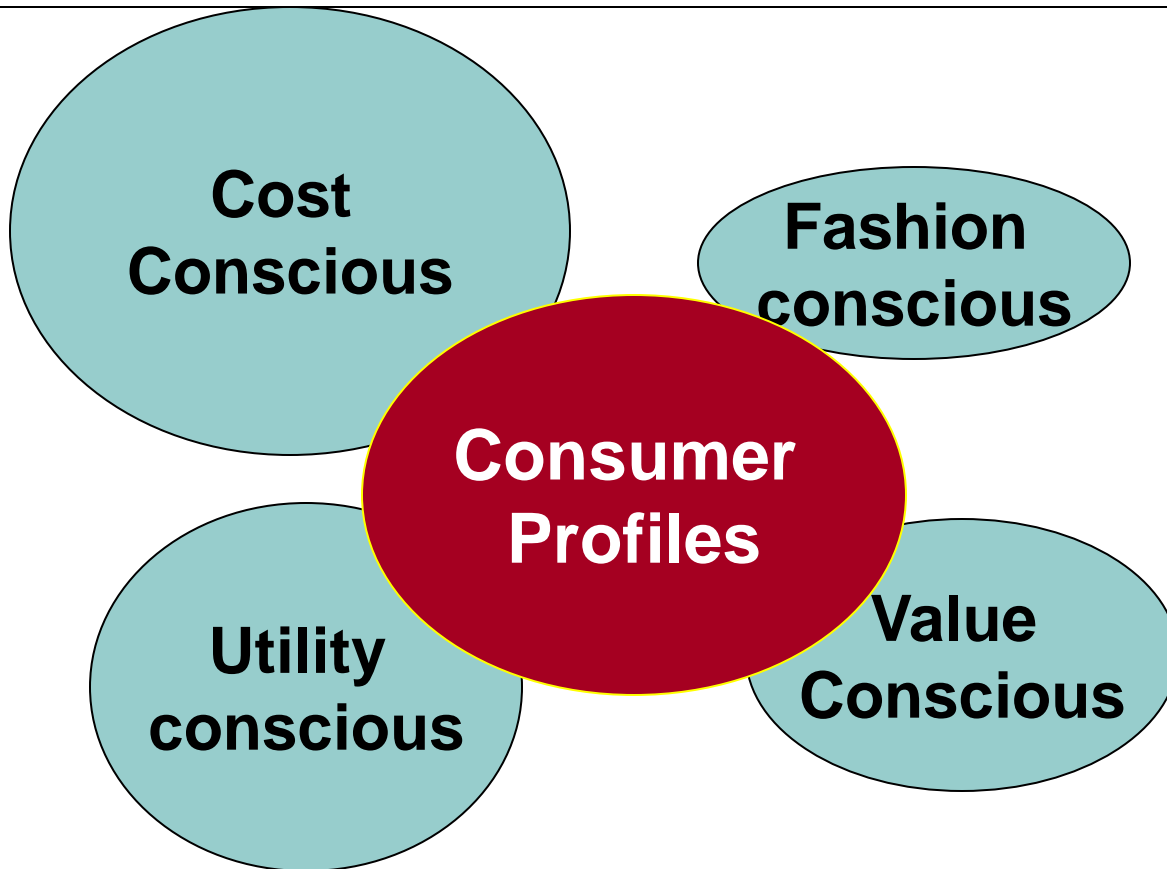
Market/business Enforced

Competition Enforced

China

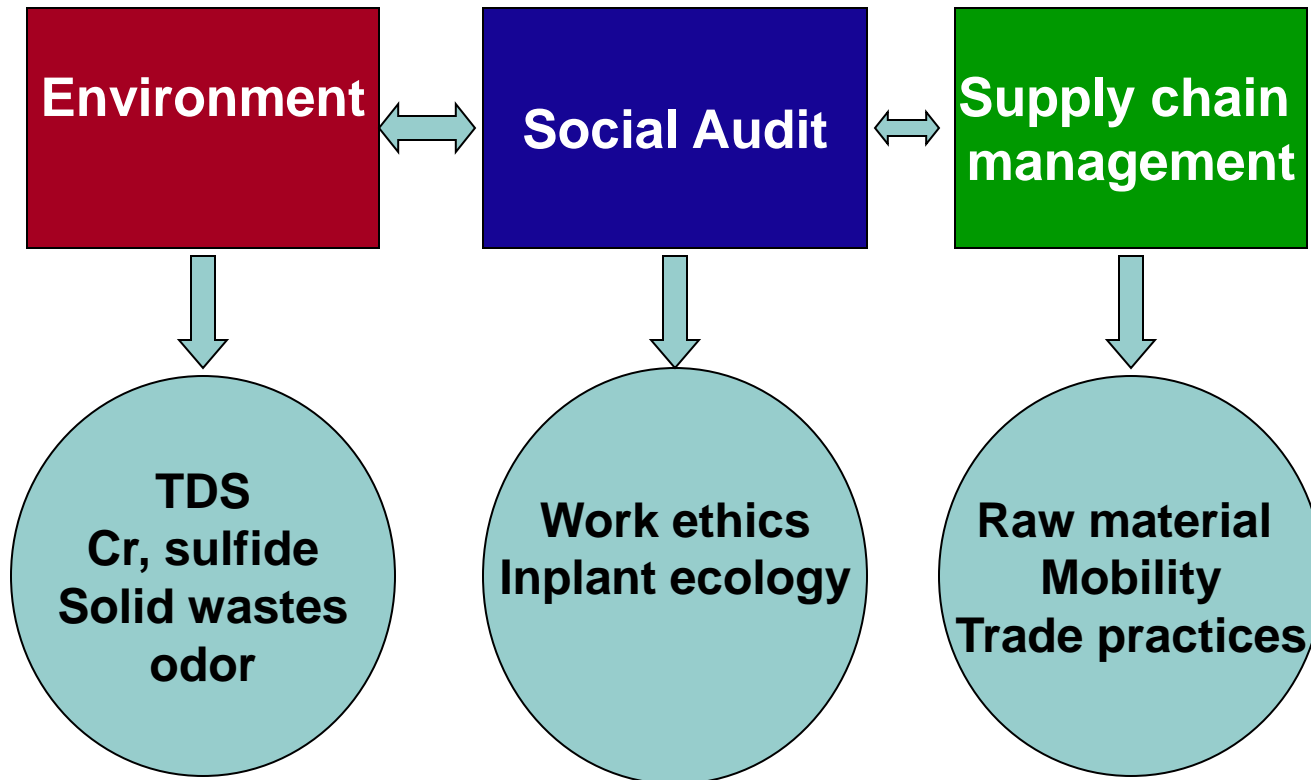


Consumer Enforced Changes: In Global Leather Sector





Society Enforced Changes





Competition Enforced

Cost and brand leaderships provide the basis for positioning countries in deregulated market.

China factor and cost leadership of the country and potential impact on India have come to be discussed. Competition from China is a major factor

Italy/ France enjoy brand leadership. Challenges in catering to brand market and building brands are known.

Strategic approaches are needed for a mixed model for large volume countries like India



New Initiatives for Ponder: Biotechnology for Leather

- **Ambient preservation of skin or hide: Bio-control routes for degrading microbes.**
 - **At 35°C and 60-65% moisture level**
- **Transition from enzyme assisted to enzyme dehairing**
 - **Sulfide and lime free removal of hair and flesh**
- **Fibre opening without osmotic forces**
- **Manipulating fibre weave structure by removal of matrix components**



Understanding process logic: Seed for Innovations

- **Leather processing suffers from do-undo process logic**
- **Chemicals are added first and removed later**
- **pH is alternated widely. This leads to the the formation of nearly 35% of salt in waste waters. TDS problem dominates**
- **Optimization of chemical inputs is not common**
- **Breakthroughs in leather processing are the demand of the sector.**



pH Alternation and Do-Undo Logic in Leather Processing

pH profile of leather processing

Soaking	8.0	Liming	12.5
Deliming	8.5	Pickling	2.5
Tanning	4.0	Post tanning	5.5

•pH alternations lead to the formation of 35% of neutral salts. Could we process leather at near neutral pH?

•Do-Undo process logic leads to process inefficiency



Demands of Paradigm Shifts in Technologies for Leather

- **Leather processing methods need to be analyzed from first principles to cause paradigm shifts in technology practices**
- **Physical and chemical changes in skin brought about by chemical processing need to be analyzed for beneficial and negative influence**
- **Bio- rather than chemical- processing of leather as a concept is to be analyzed for both opportunities and challenges**



What Ails Chemical Processing of Leather?

- **Loss of recoverable leather area**
- **Sub-optimal utilization of inputs**
- **Environmental constraints**
- **Loss of (skin) bio-substances due to chemical contamination**
- **pH alternation, swelling/deswelling phenomena in chemical processing represent an inefficient process logic**



Bio-processing of Leather: Challenges and Opportunities

- **Clean-up operations of skin could in principle be made more selective, brute force treatment of skin could be avoided. Treating skin with care is not impossible. Realization of recoverables from skin:
These are opportunity areas**
- **How to control the bioprocesses? How to make them idiot-proof? Will skin render itself to bioprocessing as a strategy?
These are challenges**



Leather Making Processes: Needed Change Areas

- **Curing of skin/hide without salt and drying/dehydration**
- **Beam-house employs too much chemicals; uses little, alternates pH, generates salt, applies brute force, non-selective routes, high water intensity**
- **High exhaustion of chemical inputs**
- **Use degradable materials**
- **Safe disposable wastes and leathers**



Paradigm Shifts in Leather Processing: On the Anvil

- **Chemical to bio processing seems the driving force.**
 - **Could leather chemical sector adapt to these changes?**
 - **Could leather chemicals match bio-processing in every segment?**
 - **Could brute force method of beam house become more selective through chemical routes?**
- **Meeting the challenge of eco-benign processing is the challenge ahead for leather chemical sector**



Challenge Ahead: For Leather Sector

- **Avoid pollution at source**
 - BoD less than 300 mg/lit
 - CoD less than 2000 mg/lit
 - TDS less than 2100 mg/lit
 - Cr less than 2 mg/lit
- **Recover valuables from leather**
 - Flesh based
 - Hair based
- **Avoid solid wastes**
 - Solid wastes to be reduced to 100 kg/ton from 750 kg/T
- **Conserve water**
 - Less than 10 lit per Kg of hide (Current level 22 – 40 lit)



Areas of Coverage

Product Sector

- **Fashion / design forecasting**
 - Footwear
 - Leather garments/ bags/ valets
- **Product positioning: Cost conscious and fashion/Value conscious markets**
 - Different strategies
 - Different product design protocols

	Mass Market	Niche Market
Shoes	6US\$	30US\$
Garment	30-35US\$	>75US\$
Leather	-	>3US\$/Sq.ft



Areas of Coverage Product Sector

**Group
Consultation**

● Products for Mass Market

- Material Selection
- Defect removal
- Productivity optimization
- Time/motion
- System integration

● Products for Niche Market

- Design innovation
- Value addition
- Value optimization
- Advance insight
- Expertise augmentation

**Customized
Support**



Fashion Forecasting/ Design Trend Analysis

At Modeurop, India leads. Germany seeks to buy the Modeurop, They request CLRI to prepare the shade card(commercial proposition); India may consider buying based on merits and benefits.

Design Trend Analysis includes shoes, bags, purses etc.

Fashion Studio for Shoes:

The Central Leather Research Institute has entered a new era, donning the role of a Fashion Designer of shoes. A state-of-the-art hi-tech studio for shoe styling and range building has been established in CLRI. This studio has facilities comparable to those in any well known International fashion studio. This new initiative will strengthen further the link between CLRI and the shoe industry.

Five arms of the CLRI Fashion Studio :

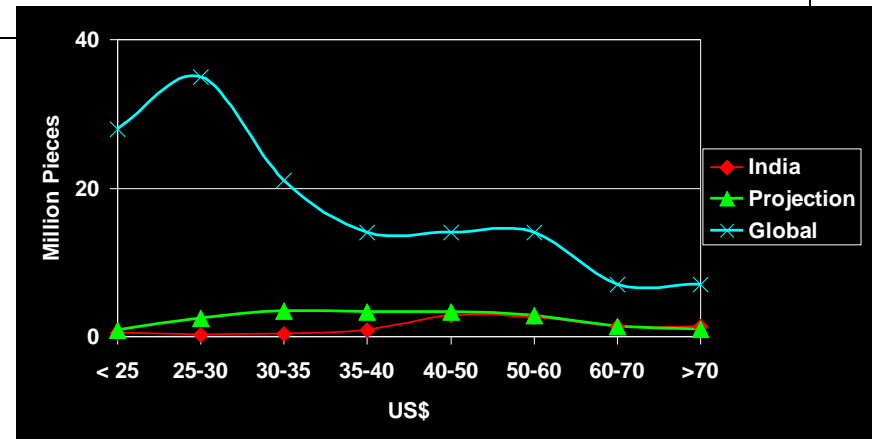
- Resource Room:** Display room for resource material planning with imaginative display of shoe components, accessories, fashion leathers, dressing aids etc.
- Customer Service Unit:** Offers exclusive design service for customers under strict confidentiality of their information.
- Sample Shoe Workshop:** With latest mini shoe fabrication facility.
- Information Cell:** To document all shoe designs with computer linked multi-media facility. Access to audio visual presentation of new designs.
- Creative Design Station:** Computer aided designing including sketching, colour and texture incorporation possibilities and excellent in-built editing facilities.

This total package from CLRI combines the best in design, information and technical excellence. It is on par with international standards.



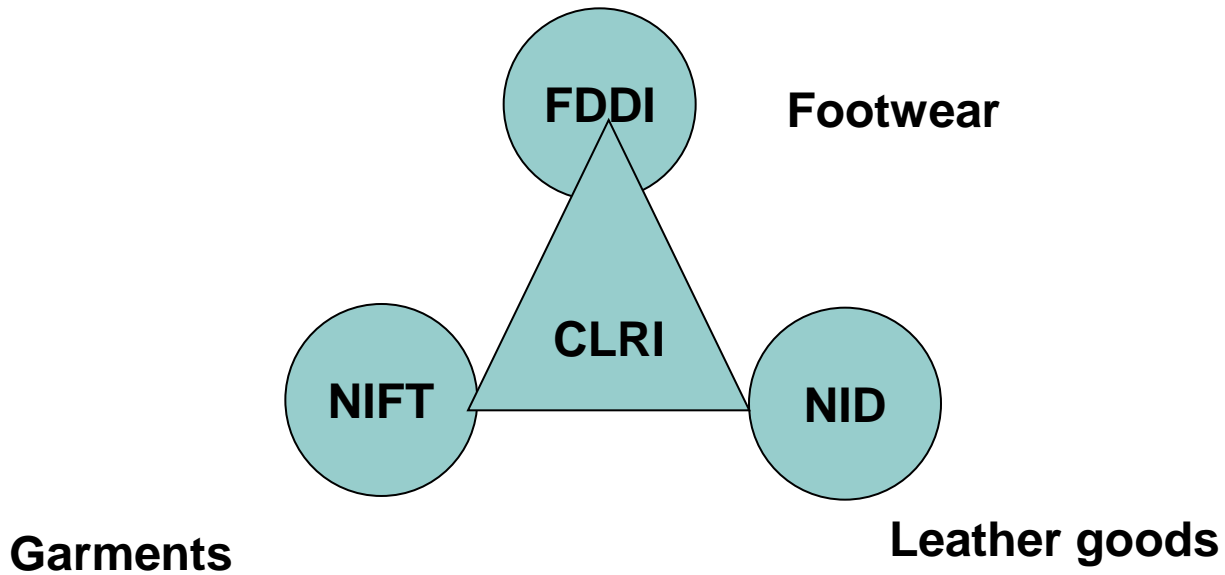
New Product Innovation: CLAD Outputs

- CLRI has attempted to produce a 35\$ garment by
 - Using imported sheep nappa leathers
 - Admixing leather with wool or jute
 - Use of split suedes
 - Use of upgraded leathers (transfer foil)
 - Patch work garments
- A range of garments would be made using above strategy and the designs would be disseminated to the industry





Design consortium in Leather





Thank you

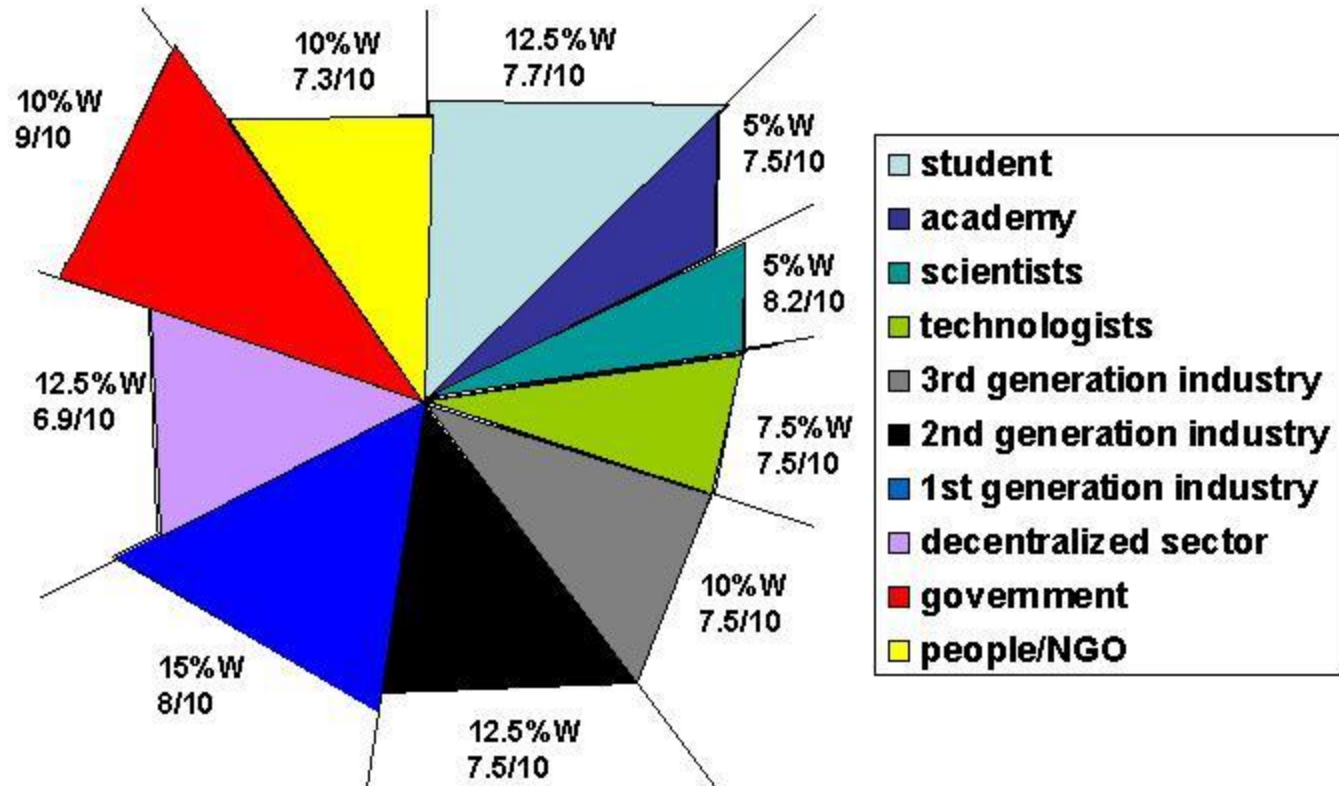
Central Leather Research Institute



Stake Holder Values of CLRI

Applied for Outcome

CLRI feels a part of Indian Leather sector. Our outcome is assessed



180 people were contacted. 134 responded. 90% industry responded



Innovation Funnel: In Leather Sector

- **Global leather industry has been mostly material and market driven for long. Value addition of raw materials has been limited. Inversion of innovation funnel had demanded creative approaches to cut costs, strategically source and save on costs of materials and locate new markets.**
- **Leather has slowly moved up in the value chain and is emerging a product of fashion chain and quality circle. Substitutes are driving leather sector to innovate and gain product and process niches.**
- **In the years to come leather will become largely technology and innovation driven.**