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The Future Trends and Expected Status of the World Leather and Leather Products Industry and Trade*

Working paper

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Contents

Tables

Figures

Foreword

This report assesses the worldwide prospects for the leather industry in the coming decade. It examines the major underlying trends of the leather industry in recent years and shows how these are expected to develop over the near to middle future. In trying to provide a thorough picture of the leather industry, this report covers various aspects: the availability of raw material for leather, the tanning industry, and finally, the manufacture of leather products such as footwear and other leather goods. This report is intended to help establish trends in the global trade and to aid in defining the role of organizations in the industrial development arena. The document is intended to be indicative rather than definitive and to form a basis for further research. Sources and references have been included to facilitate further studies.

This report arose out of the *UNIDO Leather and Leather Products Industry* Panel at its 16th session held in Brazil in May 2007. This panel recommended that UNIDO compile a comprehensive *study on the future development of the World leather based industry*: its demand, technology, production and trade. This study aims to provide an analysis of the contemporary demand for leather products (footwear, leather goods, gloves, leather garments, sports goods, upholstery, etc.), compared to the availability of resources (raw hides and skins, manufacturing capacities, skilled labour, knowledge, support industries, and services). This paper also provides information on other important aspects of the leather industry, namely: trade statistics, the geographic distribution of production, development of technology, physical infrastructure, environmental conditions, and the social aspects involved in the production of leather.

This report is intended as a follow-up to the comprehensive UNIDO study that was carried out in the 1970s titled *World-wide Study of the Leather and Leather Products Industry*: The report is intended to allow UNIDO to formulate future plans and to decide on areas where further study of various kinds might be appropriate.

For this type of study, it is no longer enough to track the trends of recent years and to predict them forward into the future. There are some distinct areas of potential discontinuity that need to be taken into account. One is the fact that the world population is still growing rapidly, and when this is combined with issues of climate change and other environmental concerns, it is clear that trends have to be predicted tentatively, taking into consideration possible drastic changes. Issues of population growth and climate change have inevitable implications for livestock, as eating habits change with development and land for rearing animals becomes scarcer. A second matter that needs to be taken into account is the rise of the BRIC economies of Brazil, Russia, India and China in the world's economy. Their dominium over the high labour content occupations of the textile and leather industries makes it difficult for new countries to develop in the same way that development took place in most Asian countries in the last 50 years. Although this report attempts to deal with these questions in some detail, some of the consequences of these changes are still unforeseeable. Nevertheless, the findings in this study are expected to make a contribution for those involved on how to set priorities for the years ahead and on how to deal with persisting problems and to tackle new problems as they emerge.

About the Authors

The report was prepared in the last quarter of 2007 by Robert Jones, Michael Redwood and Philippe Sinturel. Additional sections, along with some updated data, were added in the autumn of 2008. Some elements were updated in December 2009.

Robert Jones is a footwear expert,

Philippe Sinturel an expert on leather goods, with a long career in the international industry.

Michael Redwood, a leather chemist who has worked in technical, general and marketing management in the industry, prepared the other sections.

Explanatory Notes

NOTES ON STATISTICS AND SOURCES

A great deal of help has been offered in the preparation of this report in the short period of time that this data has been assembled. Sources are identified in the text and in the references. The main sources used in this report are identified in Annex 1.

The statistical compendium of the Food and Agriculture Organization (FAO) forms the foundation of the data upon which the majority of this report has been built. Additionally, material has been collected from the International Council of Tanners (ICT), the Confederation of National Associations of Tanners and Dressers of the European Community (COTANCE), the Shoe and Allied Trades Research Association (SATRA) and other national and international associations. Individual experts have also provided their views and findings and they have been acknowledged wherever necessary.

In spite of all these efforts in gathering accurate data, the complexity of an industry whose raw material comes from farms and homesteads throughout the world, and whose data is collected irregularly, or not at all, cannot be underestimated. In an industry where the raw material is measured – approximately – by weight and sold by area after various layers of matter have been removed, it is clear that measuring the leather production in the world and putting it accurately in context is not an easy task.

Many associations have data on import and export, but surprisingly little information on any other aspects of the business. Many marketing companies publish extensive surveys at the country level, but these reports are expensive and they tend to focus on sales and investment opportunities, rather than on the manufacturing industry.

It is almost impossible to get the full global data of the leather goods and clothing markets. For constraints of time, it was not possible to put together a complete picture of these markets. It might be possible to get a better sense for the total situation through the information on the imports and exports of the USA and the main European markets and to then compare these with the exports from the major exporters, such as India and China. Even then, the reporting categories fail to cover the leather items and the part-leather items accurately. There are also

some very good reports on individual markets from organisations such as the Market Information Database of the European Union (CBI). However this report does recommend some changes in the taxonomy and recording that would improve the available statistics for future use.

Many comparisons of the footwear production omit the 1 billion pairs of *chappals*, or thin leather sandals, manufactured and consumed in India. The *chappal* industry is both a significant consumer of leather as well as a lucrative enterprise both within India and abroad. In 2005 alone, the chappal industry made about $122 millions in exports in 2005. This report includes the manufacture of *chappals* in the global footwear production and its resulting calculations for market share, etc. Therefore, the numbers in this report might differ from those of other sources.

As stated above, more information is available on imports and exports than on production. There is also considerable confusion caused by trading of partly processed material. Smuggled goods are also an issue, mostly in finished products, but the practice now appears to be rising at all stages in the value chain. For example, in Africa and in South America, it is apparent that there is considerable illegal movement of raw material across borders.

Furthermore, the duties applied by the EU to China have lead to avoidance, which distorts the figures. Part processing, transhipping via Macau, and changes in product category have been quite common.

When this is combined with the inestimable, but substantial exchange of leather counterfeits and leather products in the black market, it becomes clear that figures are only estimates that still lack precise accuracy.

Nonetheless, the available data is still considered useful as it offers the industry and those interested, relevant information that is valid for decision making. Some inconsistencies will be noted in the data on total volumes and end-uses for leather, as different sources are used at different times. Although some figures vary from source to source, generally the scale remains the same and the conclusions drawn from them are considered valid.

Production statistics should be compared carefully since the statistical bases vary from country to country. However, this does not detract the veracity of the general ratios and trends indicated in the report.

This report was developed by three separate experts; therefore, in different areas some overlap was inevitable. For example each author approached the dominance of China and its implications in a slightly different way, albeit their conclusions are very similar. This creates a degree of repetition in the report and extends its length, but permits a better understanding of the issues and of how various sectors of the industry views them.

Annex 2 includes some information about clusters and their various associated terms. This is a complex subject with imprecise terms and definitions, but the report does wish to acknowledge the significant advantages that can be drawn from various types of agglomerations of similar industries.

This report has only considered the production of leather and leather products. Undoubtedly, there are many industries associated to the leather industry that also need to be considered. Significant changes have occurred in those industries supplying software, machinery, components and chemicals. Many of the “traditional” suppliers have ceased to exist, some are involved in joint-ventures with Asian companies, and some have downsized or moved their

operations to Asia. Simultaneously, new Asian - financed suppliers have assumed dominance in some areas. Some reference is made to this area in the discussions on new technologies, the location of research and environmental matters, but mostly they are not within the scope of this report. Nevertheless, the support industries have been subject to a similar degree of change as the industry that they are supporting**.**

LIST OF ABBREVIATIONS

AAFA	American Apparel and Footwear Association
ABICALCADOS	Brazilian Footwear Association
APICCAPS	Portuguese Footwear Manufacturers Association
APRISINDO	Association of Indonesian Shoe Manufacturers
BLC	BLC Leather Technology Centre LTD
BRIC	Brazil, Russia, India, and China
BSE	Bovine Spongiform Encephalopathy
BSLT	British School of Leather Technology, University of Northampton
CBI	Market Information Database of the European Union
CICB	Centre for the Brazilian Tanning Industries
CJD	Variant Creutzfeld- Jakob Disease
CLE	Council for Leather Exports, India
CLIA	China Leather Industry Association
CLRI	Central Leather Research Institute, India
CMT	Cut, Measure, and Trim
CNCC	Centre National du cuir et de la Chaussure, Tunisia
COMECON	Council for Mutual Economic Assistance
COTANCE	Confederation of National Associations of Tanners and Dressers of the European Community
CSIC	Spanish Council for Scientific Research
CTC	Comité Professionnel de développement cuir Chaussure Maroquinerie
DANIDA	Danish International Development Agency
EMLR	Egyptian Mathematical Leather Roll
ERRC	Eastern Regional Research Centre, Pennsylvania
ETP	Effluent Treatment Plan
EUROSTAT	European Commission Statistics
FAO	Food and Agriculture Organisation of the United Nations
FDI	Foreign Direct Investment
GTZ	German Development Cooperation
ICT	International Council of Tanners
ILO	International Labour Organisation
IMS	Automotive Interiors Worldwide
ISF	Indian Shoe Federation
ISO	International Standards Organisation
ITC	International Trade Center
ISTAT	Istituto Nazionale de Statistica
ITGLWF	International Textile, Garment and Leather Workers Federation
IULTC	International Union of Leather Technologists and Chemists
JALCA	Journal of the American Leather Chemists Association
JSLTC	Journal of the Society of the Leather Technologists and Chemists
LASRA	Leather and Shoe Research Association, New Zealand
LEFASO	The Vietnam Leather and Footwear Association
LLPTI	Leather and Leather Products Institute
LPDI	Leather Products Development, Pakistan
NILT	National Institute of Leather Technology, Pakistan
NMCC	National Manufacturing Competitiveness Council of India
OICA	International Organisation of Vehicle Manufacturers (“Organisation Internationale des Constructeurs d’Automobiles”)

PETA	People for the Ethical Treatment of Animals
RESTORM	Radical Environmentally Sustainable Tannery Operation by Resource Management
REACH	Registration, Evaluation, Authorisation, and Restriction of Chemicals
RFID	Radio Frequency Identification Technology
RMB	Chinese Currency Yuan (RENMINBI)
SATRA	Shoe and Allied Trades Research Association
SECEX	Secretariat of Foreign Trade in the Ministry of Development, Industry, and Foreign Trade, Brazil
TICC	Taiwan-India Cooperation Council
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
USDA	United States Department of Agriculture
USMEF	United States Meat Export Federation
WTO	World Trade Organisation
XINHUA	China's Official News Agency

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1. EXECUTIVE SUMMARY

Leather is one of the most widely traded commodities in the world. The industry of leather and leather products occupies a prominent role in the world's economy, with an estimated trade of around 100 billion US$ per year.

The world's population grew very dramatically in the 20th century and this growth is continuing. With this growing population and the increase in wealth, the demand for meat has meant that the supply of raw material for leather per capita has remained constant. Predictions for the future show that the supply of raw material will continue to grow with the population, but that the high cost and the decrease in available land for raising cattle and for growing grains to feed the cattle, alongside an increase in pork and poultry in Asia and Africa, is now becoming apparent. At some stage, this may make supplies of leather tighter and it could raise the importance of minority raw materials such as camel, kangaroo and deer.

Steady development in the world has meant that raw materials have increasingly become available in the developing world, while a slowing in per capita consumption of red meat in the industrialised world has reduced the proportion of hides and skins coming from that sector. Now more than half of the world supply of raw material from the leather industry comes from the developing world and, increasingly, those countries with large supplies are wishing to process them through to finished leather articles.

About 65% of all produced leather comes from bovine material. Climate and husbandry means that the best bovine raw material generally comes from the developed countries. The change in the balance of raw material origins by country has led to a need for the industry to manage more hides with surface defects or other structural deficiencies. This trend is expected to continue. It has already led to changes in finishing techniques to disguise defects and to greater efforts to explain to consumers that some defect types are natural and should be accepted. The need for good quality hides for areas such as automobile upholstery has helped, at least up to date, to retain highly efficient upholstery leather tanning in the developed world.

Pigskin supplies over 10% of all the leather made currently in the world. China is now by far the dominant producer of pigskins and pig leather. Although this material could be an important element for the industry in the future, the structure and fat content of pigskin makes it very difficult to process. Additionally, of all the leather making materials, pig skin is the one most connected with the food industry. That is to say, that for cultural or cost reasons, the skin is often left on the carcass or sent for other uses such as gelatine.

At the same time more of our animals, especially pigs and poultry, are being intensively farmed in industrial units. This increases the danger of diseases and epidemics, such as the blue ear pig disease in China. These issues could have dramatic effects on supply and demand, and of course, in the prices.

The tanning industry is characterised by small or medium sized family businesses. The trend has been for the manufacture of leather products to move to where the labour has been cheapest and for tanneries to follow. Very often the countries with the fastest growing leather industries have been largely deficient in hides and skins – Korea, Taiwan, China, Indonesia and Vietnam – and they have had to import large quantities of these materials. New tanneries are being set up in these new countries in order to supply the demand. Therefore, most tanners in Europe, Japan and

the USA have closed down completely and new owners have set them up in the newer countries. This trend seems likely to continue.

Tanneries that have remained viable in the developed world, in places like Italy and Spain, have built clever business models, some of them moving to unique sets of international relationships and others becoming what might be termed “boutique units” with very high levels of creativity and quality.

On the other hand, many footwear businesses, even family ones, have been able to adapt to the closure of developed world manufacturing by changing their structure and moving to outsourcing or joint ventures. An important development has been the growing power of major brands and retailers, leading the industry to become more demand led rather than supply driven.

It has also been the case that countries with good raw material supplies, such as India and Brazil, have continued to grow their industries successfully all the way to the finished product stage. We expect that this trend will continue in many countries such as Ethiopia and Pakistan, who are joining the group of countries determined to build high level of competence and employment in the leather industry based on indigenous resources.

China has been, by far, the most significant player in all sectors of the leather industry. The country now dominates every category of manufacture by a considerable margin. In recent years, China has recognised that it has allowed development without proper environmental safeguards and is now starting to take actions against this. It has also reduced its support for footwear manufacture since it hopes to move to items with higher added value.

This does not mean that China’s dominance of the industry will end. It is expected that the Chinese industry will continue to grow, but at a slower rate and in a different way. More of its production of leather products, in particular footwear, will be used to meet the domestic demand rather than the export business. Along with these changes, increased costs in China have already created new opportunities for further industry development in Vietnam, Indonesia, Bangladesh and India. No country has the size or capability to replace China, but these changes have given a boost to many other aspiring nations.

Location changes have been affected by other matters that need to be taken into account. These include the many tariff and non-tariff barriers to trade that have increased as the leather industry has become even more global. These has sometimes led to more corruption and cheating, thereby damaging the industry and making the statistics unreliable. The trade in second hand footwear, while originating with the best of intentions, has created problems in many countries, particularly in Africa, where volumes of second hand articles far outweigh the local manufacture.

Historically, about 65% of leather has gone into footwear. This trend has been decreasing toward 50%. In 2008 for the first time, figures were indicating that less than 50% per cent of footwear was made of leather. On the other hand, upholstery and leather goods have been growing and leather has acquired new and innovative uses. The automobile sector has been exceptionally strong since around 1990. 2008 and 2009 have hit the automobile and upholstery sectors quite hard and the medium term outcome will not be clear for a few years.

There are now no sectors in which leather cannot be replaced by other materials and leather has to stand by its price/value proposition in terms of its beauty and its technical performance. As technical textiles develop further and *faux* or “synthetic leathers” improve, the challenges to leather increase.

As a consequence, research and development is of extreme importance. This is an area where, despite much being done in excellent institutes in Europe, Brazil, India, China and elsewhere, there is a definite decline in long-term research funding. The chemical supply companies have had to reduce their investment in fundamental research, and the traditional research institutes have lost income since tanneries have shifted location or seen reduced margins. Many of the most famous institutes have closed or evolved into test houses.

For the last hundred years, chrome tanning has been the dominant method for making leather. Efforts are being made to find alternatives and there has been some increase in the use of vegetable tanning material for footwear and leather goods. Non-chromium tannages have become quite popular with automobile companies. Nevertheless, a well managed chromium tanning remains the most efficient way to make leather, and while some further erosion of its market share can be foreseen, this is expected to remain the dominant tannage. At the same time, the industry will have to work harder to reduce water and energy consumption and to manage better its waste materials, particularly in the case of many developing countries, where industry development has not included waste treatment procedures.

Overall, the industry is expected to offer continued growth in many developing and newly industrialised countries, meeting the needs of not just the highly developed markets, but also the growing middle classes in these countries. To do so, the industry must look to quality, avoid commoditisation, be more creative, and deal more positively with environmental matters of all kinds.

In many developing world areas, a great deal of help is needed to achieve these goals, but the outcome could be the benefit of high numbers of employment based on a high quality natural renewable resource.

2. LEATHER INDUSTRY RAW MATERIAL

2.1 Summary

The raw material used to make over 95% of all leather made and used in the world comes from cattle (including buffalo, sheep, pigs and goats. These are bi-products of the meat and dairy industries and as demand for these products has grown so the supply of material for tanners has increased. Over the last few decades improving incomes in many developing countries has increased the demand for meat and dairy products and the supply of hides and skins has consistently increased by between two and three per cent per annum. For the foreseeable future this is likely to continue but the leather industry must now give consideration of some important developments arising from population increase and the changing climate.

Apart from some use for gelatine there is no significant alternate use for hides and skins other than for leather manufacture so if preservation and collection can be well organised nearly all the material should be available to the tanners.

The ratio of cattle populations (by far the biggest leather making raw material) and leather produced to the size of human populations has remained remarkably steady for the last hundred years and will only decline slightly towards 2030. Over the last decade China has become the largest hide producer in the world, followed by India, Brazil and the USA.

The FAO report *World agriculture: towards 2015/2030, An FAO Perspective* highlights the fact that animal products have increased in the human diet for the last three decade; this at the expense of crops and cereals.

For both hide and skin supply growth the majority will come in developing countries. Looking forward there are issues of land use, of raw material quality, and of the efficiency of farming all of which will have a big impact on the tanning industry.

Current data on agriculture highlights evidence of potential serious discontinuities, mostly related to land availability for keeping cattle and other ruminants. Cattle require large amounts of land both for grazing and for the production of feed. Land for the future expansion of herds is either not available, or it is quickly diminishing in many parts of the world. A number of flashpoint areas, most notably the Amazon Biome, have already been identified.

An old story, yet still an important issue, is that farming efficiency and the off-take and collection of hides and skins, including the quality of flaying and preservation techniques could be improved in many countries, most notably in Africa. Extensive efforts over many decades have shown this to be very difficult to achieve. More frequent droughts and floods have not helped.

As countries develop and people grow richer, the overall demand for meat and dairy products is growing, and are greater than some of the declines in demand that have been seen in Europe and the USA. In Africa, the Middle East and Asia, the requirement for more meat is increasingly being met by intensive industrial pig and poultry farming. In Latin America beef and other red meats are still more important.

Pigskin used to be considered the biggest potential reservoir for future leather raw material, but its possibilities have diminished. The entry of pigskin into the leather market depends on price,

culture and technology. Not all pigs are skinned and much of the pig skin that is now goes for gelatine. When skins are available making good leather out of pig skin involves considerable technical challenges. Pig skin leather is estimated to make up 11% of the current world total leather produced, China being by far the major producer.

Overall, there is no chance that the basic raw material supply for tanners will grow faster than the rate seen in recent decades. Because of the reasons stated above, there could be possible declines in both the volume and the quality of the raw materials.

It is expected that other raw materials coming from animals such as camel, elk, yak, deer and kangaroo, which are available in limited or very small volumes, will become more important. Very rough estimates put these raw materials at around 1% of the world total, although a figure of 2% or 3% may well be more accurate.

2.2 Industry Trends

Over the years, the demand for leather has kept level with the available supply. As a by-product of the meat and livestock industries, leather supply has evolved roughly in line with the growth of both the human and the animal populations.

Table 1 shows how cattle populations have grown steadily and remained aligned with population growth:

Table 1 - Cattle numbers and the world's human population

Year	World population	Cattle stock	Ratio population/ cattle stock
	Millions	*millions*	
1910	1,686	0.482	0.29
1920	1,810	0.500	0.28
1950	2,504	0.663	0.28
1970	3,580	1.114	0.30
1980	4,432	1.344	0.30
1995	5,200	1.450	0.28
2000	6,100	1.580	0.26
2030	8,000	1.858	0.23
Growth p/a	2.9%	2.5%	

Source: Reich, et al 2007; FAO

The industry has long anticipated that the demand for leather would outstrip the supply for materials but this has not happened. In large part this is related to changing end uses for leather and to the introduction of more replacement materials. Overall, the position of leather has remained remarkably stable in spite of changes in world economics, farming, and technology.

The most obvious trend over the last few decades has been the faster growth of raw material supplies in the developing world. This has brought about some deterioration of the quality of raw material available to tanners. This is related to climate and husbandry.

As the world develops the demand for meat and diary products grows significantly; in the last few decades meat has grown at the expense of cereals and other staples in the human diet. Great imbalances have been seen as the consumption of meat has multiplied in many parts of the world, while it has remained flat in Africa. The growth of poultry and pig meat consumption has been stronger in many developing economies, including China. The increase in the consumption of pig meat has been almost completely related to the changes in China. ***Table 2*** gives an indication of the growth rate in meat consumption.

Table 2- World Meat Market

	2006	2007	2008	Change 2008/ 2007
	million t			*%*
Production	**271.5**	**274.7**	**280.9**	**2.3**
Bovine meat	65.7	67.2	65.0	1.1
Poultry meat	85.4	89.5	92.0	3.8
Pigmeat	101.7	98.8	107	1.8
Ovine meat	13.3	13.7	13	2

Source: FAO Food Outlook

China has emerged as the fastest growing producer and consumer of meat by a considerable margin. In 1995, we saw the developing countries overtaking the developed ones in meat production for the first time. It is anticipated that by 2050 developing countries will produce two times the meat produced in the developed world. It is thought that meat and dairy products will continue to provide an increasing share of the human diet, with poultry expanding at the fastest rate. By 2018 meat production is expected to reach 320 million tonnes.

The 2008/9 recession has impacted on the steady evolution of the production trends and it is expected to take until the end of 2010 for it to be clear how permanent the trends are. Mostly this relates to a move to cheaper cuts of beef or cheaper meats altogether as consumers in some areas have reduced disposable incomes. There has for example been a big growth in the first half of 2009 for poultry meat in Russia, up 10%, and for domestic pig, up 15%. Part of the pig increase is as a result of import bans related to swine flu.

Table 3 - World meat production

	Production '000t			Share in world %		
Countries	1979-1981	2004	2008	1979-1981	2004	2008
World	**136,219**	**260,098**	**279,953**	**100.00**	**100.00**	**100.00**
China	14,526	74,306	74,538	10.66	28.57	26.63
USA	24,325	38,891	43,171	17.86	14.95	15.42
Brazil	5,224	19,919	22,832	3.83	7.66	8.16
Germany	6,925	6,798	7,687	5.08	2.61	2.75
France	5,423	6,255	5,471	3.98	2.40	1.95
India	2,620	6,032	6,796	1.92	2.32	3.01
Spain	2,601	5,531	5,572	1.91	2.13	1.99
Mexico	2,535	5,040	5,631	1.86	1.94	2.01
Russia		4,981	6,136		1.91	2.19
Canada	2,514	4,592	4,494	1.85	1.77	1.61

Source: FAO

The relationship between meat consumption and the type of meat being eaten is important for tanners. Bovine material consistently supplies about two thirds of all the leather made in the world, making it by far the most important provider of leather making raw material. Pigskin is normally placed at approximately 11% (slightly more than 2.5 billion sq.ft./year), but this is the least well documented of the main raw material types. This reflects a niche position, difficult technology, and the changing balance between its use for leather and for food materials (left on the carcass or for gelatine).

Table 4 - Share of raw materials for leather

	%
Bovine	66
Sheep	15
Pig	11
Goat	7
Other	1-2

Source: FAO, ICT, authors' estimates

It is considered that the continued growth in demand for meat can and will be met, but that the negative environmental consequences of livestock development must be addressed. One important issue that needs to be taken into account is the industrialisation of livestock farming. Issues such as bird flu and the blue ear pig disease are indicative of the problems involved in this practice.

This is an area of great controversy that brings the livestock industry into dialogue with the development agencies, climate scientists, conservationists and pressure groups. Amongst a number of important papers mentioned below was the LEAD (Livestock, Environment and Development Initiative) and FAO document "Livestock's Long Shadow", published jointly in 2006. The key points from this can be summarised as follow:[1]

8% of water used by humans goes to livestock production
18 % of global greenhouse gas emissions are generated by the livestock sector
26 % of ice free land is occupied by livestock
30 % of land once home to wildlife is now occupied by livestock
33 % of cropland produces feed for livestock
37 % of anthropogenic emissions are generated by the livestock sector
37 % of pesticides are used in livestock production
50 % of antibiotics are used in livestock production
55 % of anthropogenic nitrous oxide emissions comes from the livestock sector
70 % of agricultural land is occupied by livestock
70 % of deforested land is converted to pastures

This report has had a great deal of influence on the public sector and it has been widely publicised to support a number of causes. There is doubt about some of the numbers and calculations and an ongoing debate continues. It would appear that, due to errors in the calculations for deforestation, the 18% of global greenhouse gas emissions would more correctly be 12%. In Latin America, grazing on land cleared from rainforests creates soil erosion and further deforestation. In the spring of 2009 this was highlighted in a report by Greenpeace which has led to a number of major footwear brands adjusting their supply policy. In semi-arid

[1] Cows, pigs and sheep: Environment's greatest threats? 12 December 2006 by Catherine Brahic *New Scientist*

environments, overstocking during dry periods frequently brings risks of desertification. The significance of this cannot be underestimated as the area of concern supplies about 20% of Brazil's annual hide production or some 8 million hides per annum.

Relatively high levels of meat consumption have already been reached in the developing world and slowing population growth along with obesity and food safety concerns after incidents of bovine spongiform encephalopathy (BSE) and variant Creutzfeldt-Jakob disease (vCJD) is reducing growth in meat consumption. Over the last decade, meat consumption has risen by only 1.3%/year in the industrial countries. This is in contrast with the developing countries, where demand for meat has grown at 5.6% a year over the last twenty years. Some projections indicate that this growth will slow by up to half over the next two decades. The reasons cited by the FAO for this decrease are:

- Slower population growth.
- Countries such as China and Brazil have now reached fairly high levels of consumption and therefore have less scope for further rises.
- The growth of meat consumption in India may be limited by cultural factors, and many people in the country are likely to remain vegetarians.
- In sub-Saharan Africa, slow economic growth will limit increases in both meat and dairy consumption.

Herd development is also expected to decrease as better husbandry leads to larger animals and therefore to more meat and milk per animal. The proportion of beef grazed on pasture is about one third of the total and on current trends this is expected to fall further. Long term pasture bred beef is argued to be healthier than grain fed and pasture based methods are part of system that locks up large amounts of carbon in the soil, more than negating the greenhouse gas issues arising from methane produced by cattle. The full implications of increasing pasture fed and reducing grain fed beef have not been calculated and remain the subject of debate.

Growth in hide and skin production for bovine, ovine and caprine material is more directly related to leather production and gaps between the kill and the tannery consumption essentially relate to issues of hide and skin collection. ***Table 5 sh***ows the percentage growth per annum on each of these categories since 1986. In terms of meat production, it should be noted that cattle, sheep and goat are more often grazed, whereas pigs and poultry are industrialised.

Table 5- Hide and skin production growth

Unit: %/year

1986-2003 average			
	Bovine	Sheep	Goat
WORLD	0.8	0.3	3.6
Developing countries	3.2	2.5	3.7
Latin America	2.5	0.1	0.2
Africa	1.6	1.8	1.3
Near East	1.8	0.6	3.6
Far East	4.8	5.3	4.4
Industrialised countries	-1.4	-1.5	1.2
North America	-0.4	-2.7	-2.7
Europe	-1.9	-0.5	0.5

Former USSR	-3.3	-5.7	2.1
Oceania	1.0	-0.9	5.8
Others	-0.8	-0.5	0.8

Source: FAO

As indicated above, the demand for meat will continue to grow, and so will the populations of cattle, sheep, goat and pig. However some discontinuities must now be expected, most particularly in the growth of bovine production, as a combined result of changing diets and the various abovementioned environmental pressures related to land.

Some counterbalance to this comes from the potential for better husbandry and from more intensive farming close to the growing conurbations in the world. Yet, demand for meat is increasingly being met by growth in poultry and pigs rather than with cattle.

The issues that the beef industry is dealing with globally, most of which apply to all meats, include animal diseases, trade issues such as free trade areas and other barriers to trade (often related to animal health), nutrition, obesity and hunger, animal welfare and environmental issues.

Over the last twenty years the shifts in beef production globally have been impacted by changes in Russia as well as growth in Asia. Global changes shown in ***Table 6*** have been quite dramatic.

Table 6 - Cattle Herds in major countries

Unit: million

	2005	2006	2007	2008	2009 (Oct)
USA	133	134	134	134	134
Brazil	218	220	223	224	227
EU-27	121	120	120	120	118
China	195	198	199	202	202
Argentina	65	65	67	67	70
India	339	339	339	340	339
Mexico	35	35	34	34	35
Australia	37	38	38	38	38
Russia	29	28	26	25	25
Canada	20	20	19	19	19
Others	94	94	92	85	85
World total	**1288**	**1297**	**1304**	**1307**	**1307**

Source: USDA, (http://www.fas.usda.gov/dlp/circular/2009/livestock_poultry_04-2009.pdf)

According to figures from the FAO and ICT, from 2000 to 2030 it is expected that consumption of meat per capita in developing countries will increase from 25.5 to 37 kg/person per annum, compared to an increase in the industrial countries from 88 kg/person to 100 kg/person. Continued regional changes are expected to meet these demands for meat. Beef production in both Brazil and China is expected to grow aggressively by 2015, while the figure in the USA and most other developed countries are expected to grow only slowly or to remain flat. Production in the EU is expected to decline slightly and, while it is difficult to predict what will happen in Russia, the assumption is that it will follow the same trend line of developing countries.

Cattle slaughter figures show that in the 21st century both China and Brazil have passed the USA. USDA and the FAO data shown in ***Table 7*** indicate that the slaughter in Brazil, China and India

are very considerably larger (more than 10m per annum) than some previously published FAO figures.

Table 7- Cattle Slaughter

Unit: Millions

Country	**1997**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Argentina	12.8	12.4	11.4	11.5	12.3	12.6	14.4	14.4	15.0
Australia	8.4	8.6	9.0	8.6	9.2	8.8	8.9	8.4	9.0
Brazil	26.2	31.1	33.5	34.5	35.5	36.5	36.5	36.5	37.6
Canada	3.6	3.8	3.7	3.8	3.5	3.9	4.1	4.2	4.0
China	32.9	39.7	41.3	44.1	47.1	50.7	53.9	53.9	56.8
Colombia	3.8	3.8	3.1	3.0	2.9	3.2	3.2	3.7	3.7
Egypt	2.9	3.1	2.5	2.6	2.9	3.2	3.1	3.1	3.3
Ethiopia	2.5	2.7	2.8	3.3	3.1	3.0	3.1	3.1	3.1
France	6.2	5.5	5.6	5.8	5.7	5.4	5.3	5.1	5.3
Germany	5.0	4.3	4.4	4.3	4.0	4.1	3.8	3.8	3.9
India	39.2	40.1	40.5	40.8	41.2	41.6	41.8	41.8	43.2
Indonesia	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0
Iran	2.6	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.5
Ireland	2.4	1.9	1.9	1.8	1.9	1.8	1.7	1.8	1.8
Italy	4.6	4.4	4.3	4.3	4.2	4.2	4.1	4.1	4.2
Kazakhstan	2.7	2.0	2.1	1.9	2.1	2.2	2.3	2.3	2.3
Mexico	6.3	6.6	6.7	7.1	7.2	7.5	7.7	7.8	7.8
Netherlands	2.5	2.2	1.7	1.9	1.9	2.0	2.0	1.8	1.9
New Zealand	3.8	3.3	3.4	3.5	4.1	4.1	3.8	3.8	4.0
Nigeria	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2
Pakistan	5.7	6.1	6.2	6.3	6.5	6.7	6.9	6.9	7.0
Russian Federation	15.5	12.2	11.6	11.8	12.1	11.7	10.7	10.7	10.4
South Africa	2.2	2.7	2.2	2.5	2.5	2.7	2.8	3.1	3.1
Spain	2.3	2.5	2.6	2.7	2.8	2.7	2.8	2.6	2.7
Sudan	2.3	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.8
Tanzania	1.8	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.2
Ukraine	7.6	5.7	4.5	4.7	5.4	4.4	3.1	3.1	3.0
U.K.	2.9	2.9	2.7	2.8	2.8	2.9	2.8	2.7	2.7
USA	38.1	37.6	36.6	37.0	36.7	33.8	32.5	33.9	34.4
Uzbekistan	2.3	2.3	2.2	2.1	2.3	2.8	2.9	2.9	3.2
Total 30 countries	**253.0**	**258.7**	**257.5**	**264.0**	**271.4**	**274.1**	**275.8**	**277.2**	**285.1**
Rest of the World	**58.3**	**57.3**	**55.1**	**56.4**	**56.2**	**56.3**	**57.2**	**58.0**	**58.9**
Total World	**311.3**	**316**	**312.6**	**320.4**	**327.6**	**330.4**	**333.0**	**335.2**	**344.0**

Source: FAO via ICT (http://www.tannerscouncilict.org/ict%20stats2008.pdf)

While beef will remain dominant going forward, growth in pork will be stronger. There are wild swings in different regions according to history and culture, with the major growth in China's meat eating habits likely to be in pig and poultry, and in Brazil mostly in bovine red meat. There is some "wait and see" with regards to Brazil as the industry adjust to some fairly massive restructuring and international concern about the Amazon Biome. South Asia (excluding India) will see the strongest growth in poultry and East Asia (excluding China) in pig. Sub-Saharan Africa is not expected to change from its low levels, whereas North Africa and the Middle East

will develop more poultry than anything else. In India domestic growth in demand for buffalo meat has become quite strong in recent years.

It is highly unlikely that the basic raw material supply for tanners will grow faster than the rate seen in recent decades. The industry has many reasons to expect a slowing in the growth of supplies, and this will be allied with a continued decline in the quality as an increasing proportion of the growth comes from areas with poorer climate and husbandry.

Sheep (***Table 8***) and goat (***Table 9***) skin supplies also continue to rise steadily but there has been a big shift in geography from the traditional major supplies such as Australia and New Zealand. China, Iran, Pakistan are all seeing larger growth in production in Asia and in Africa there is growth in a number of countries such as Morocco and the Sudan

Table 8- World Kill of sheep and lamb

Unit: Million Pieces

Country	**1997**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Afghanistan	7.5	7.5	6.5	5.5	4.5	4.5	4.5	4.5	4.5
Algeria	9.4	9.7	9.7	9.7	9.7	10.1	10.5	10.9	11.0
Argentina	4.4	4.6	4.6	4.5	4.5	4.5	4.6	4.6	4.6
Australia	51.7	43.3	41.7	32.0	30.6	27.1	28.8	30.5	28.0
Brazil	4.4	4.5	4.5	4.3	4.3	4.8	4.8	4.8	4.4
China	85.6	100.3	107.2	114.8	129.6	146.5	161.3	168.2	179.4
Ethiopia	8.1	7.8	7.0	6.2	4.9	5.5	6.0	6.8	7.0
France	7.8	7.4	7.4	7.0	7.2	5.5	5.3	5.3	5.6
Greece	7.7	7.4	7.3	7.5	7.5	8.7	8.6	8.6	9.1
India	21.2	20.7	20.6	20.4	20.2	20.1	19.9	19.8	19.9
Iran	39.9	32.1	26.4	21.6	21.6	21.6	21.6	21.6	21.7
Italy	7.7	7.0	6.7	6.3	6.3	6.6	6.5	6.6	7.0
Kazakhstan	8.3	4.9	5.1	5.2	5.2	5.5	5.9	5.9	6.1
Mongolia	4.1	4.3	3.9	3.7	3.1	3.2	3.3	3.4	4.1
Morocco	6.5	6.5	6.5	6.2	6.2	7.8	8.5	8.5	8.5
New Zealand	32.9	30.7	31.8	29.4	30.6	28.5	29.4	29.4	30.0
Nigeria	7.9	8.6	8.6	8.8	9.0	9.2	9.2	9.2	9.2
Pakistan	9.4	9.6	9.7	9.8	9.8	9.9	10.0	10.0	10.2
Romania	6.5	5.1	4.6	4.0	6.1	5.2	5.1	5.5	6.1
Russian Federation	10.7	6.3	6.0	6.1	6.3	6.5	7.0	7.0	7.0
Somalia	3.1	2.7	3.3	3.1	3.7	3.7	3.7	3.7	3.7
South Africa	7.6	8.5	9.0	9.0	9.2	8.9	9.0	9.0	9.1
Spain	19.9	20.5	20.8	21.0	20.8	20.2	19.4	19.7	20.9
Sudan	8.3	9.0	9.0	9.0	9.0	9.0	9.0	9.3	9.3
Syria	8.2	10.2	9.4	10.2	11.5	11.5	11.5	11.5	10.4
Tunisia	4.9	4.2	4.0	4.0	3.7	3.7	3.9	3.9	3.9
Turkey	20.6	20.3	19.2	18.1	16.9	17.3	17.2	17.2	17.2
U.K.	16.7	18.4	13.0	15.0	15.0	15.2	16.3	16.3	17.3
Uruguay	3.7	3.2	3.2	1.9	1.6	1.6	1.8	1.8	1.8
Uzbekistan	3.8	4.5	4.1	3.6	3.8	3.6	3.9	3.9	3.7
Total 30 countries	**438.3**	**429.9**	**420.9**	**407.8**	**422.4**	**435.8**	**456.5**	**467.4**	**480.7**
Rest of the World	**81.6**	**84.4**	**86.1**	**87.7**	**87.1**	**89.9**	**89.2**	**89.3**	**90.7**
Total World	**519.9**	**514.3**	**507.0**	**495.5**	**509.5**	**525.7**	**545.7**	**556.7**	**571.4**

Source: FAO via ICT (http://www.tannerscouncilict.org/ict%20stats2008.pdf)

Table 9- Goatskin production

Unit: Million pieces

Country	1997	2000	2001	2002	2003	2004	2005	2006	2007
Afghanistan	2.8	2.5	2.1	3.0	2.5	2.5	2.5	2.5	2.5
Bangladesh	17.6	18.4	18.4	19.6	19.6	19.6	19.6	19.6	19.6
Brazil	2.4	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.4
Burkina Faso	2.7	2.9	2.9	2.9	3.2	3.3	3.4	3.4	3.5
Cameroon	1.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5
Chad	1.4	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9
China	74.1	104.6	110.2	118.1	131.7	137.1	150.5	156.4	166.8
Egypt	1.7	1.4	1.4	1.4	1.1	0.9	1.0	1.0	1.0
Ethiopia	7.4	7.5	4.0	5.0	4.0	4.0	5.0	5.7	5.8
Greece	4.6	4.5	4.3	4.5	4.2	5.7	5.6	5.6	5.9
India	45.8	46.7	47.0	47.0	47.0	47.0	47.2	47.5	47.7
Indonesia	6.5	4.5	4.9	5.8	6.1	5.7	5.4	5.1	5.2
Iran	7.5	7.8	7.9	7.5	7.5	7.5	7.5	7.5	7.5
Kenya	3.1	2.8	3.1	3.1	3.3	3.3	3.3	3.3	3.3
Mexico	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5
Mongolia	1.8	2.4	1.9	1.5	1.3	2.4	2.5	2.7	3.0
Morocco	1.5	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0
Nepal	3.1	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.7
Niger	1.9	2.1	2.1	2.1	2.1	2.1	2.4	2.4	2.4
Nigeria	10.5	11.0	6.7	6.2	7.4	5.2	5.3	5.6	5.6
Pakistan	17.6	18.8	19.3	19.7	20.3	20.9	21.8	21.8	22.3
Philippines	2.5	3.2	3.2	3.3	3.3	1.9	2.0	1.9	1.9
Saudi Arabia	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.6	1.6
Somalia	2.4	2.5	2.5	3.0	3.3	3.3	3.3	3.3	3.3
South Africa	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.5
Spain	1.8	2.0	1.8	1.8	1.7	1.6	1.9	1.3	1.4
Sudan	9.4	9.1	9.4	9.7	9.7	10.5	12.0	13.3	13.3
Tanzania	2.2	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6
Turkey	3.5	3.4	3.1	3.0	2.9	2.9	2.9	2.9	2.9
Yemen	2.1	2.3	2.4	2.5	2.5	2.5	2.5	2.6	2.6
Total 30 countries	**245.5**	**279.2**	**278.0**	**290.5**	**304.5**	**310.3**	**328.2**	**336.0**	**348.2**
Rest of the World	**33.5**	**35.3**	**37.7**	**38.6**	**39.0**	**40.0**	**39.2**	**39.3**	**39.7**
Total World	**279**	**314.5**	**315.7**	**329.1**	**343.5**	**350.3**	**367.4**	**375.3**	**387.9**

Source: FAO via ICT (http://www.tannerscouncilict.org/ict%20stats2008.pdf)

Data for pigs is far less reliable from the point of view of leather making material since it depends on whether the skins are removed or scalded on the carcass. A major producer omitted from the USDA's figures is Vietnam with around 27 million pigs. The EU is a big producer; current estimates are: for Germany 27 million, Spain 25 million, Poland 16 million, France 15 million and Denmark 12 million.

Table 10 - Swine population and kill for selected countries

Unit: '000 heads

		2004	2006	2008	2009 Oct
Total beginning stock	China	413,818	433,191	439,895	446,662
	EU-27	158,970	159,115	160,006	158,000
	USA	60,444	61,449	68,173	67,200
	Brazil	32,081	32,938	32,797	32,870
	Russia	17,200	16,550	18,187	19,520
	Others	*99,811*	*102,508*	*54,455*	*48,301*
	World Total	**782,324**	**805,751**	**773,513**	**772,553**
Production (pig crop)	PR of China	583,062	605,823	600,000	615,000
	EU-27	256,108	259,158	259,000	257,000
	USA	102,781	105,618	115,139	114,700
	Russia	35,000	37,000	41,700	44,440
	Brazil	30,015	33,304	35,080	36,040
	Others	*164,206*	*173,172*	*92,425*	*85,704*
	World Total	**1,171,172**	**1,214,075**	**1,143,344**	**115,3884**

Source: USDA

Data is less accessible for other individual EU countries since the expansion of the EU; without a doubt, there has been a big loss of skins to the tanning industry from the central European countries in the last fifteen years. It is not clear how much of their exceptional tanning skills in pig skin leathers has been retained.

FAO figures tend to be a little higher and indicate a global population of 896.4 million in the year 2000 and a rising to 960.3 million in 2005. Nevertheless, these figures need to be taken cautiously since China has recently revised it numbers for the first six years of the current decade. Chinese figures are also affected by a big cull in 2007 of some 1 million after the outbreak of the Porcine Reproductive and Respiratory Disease followed by 2008 snow storms which killed some 800,000 pigs in smaller operations.

In the USA one major brand was pivotal in the utilisation of the skins in the tanning industry. They developed and owned the skinning machines that were put in the abattoirs in the USA, trading on those skins that were surplus to requirements. Outside the USA, skill in handling pigskins has developed primarily in China and in the central European countries. The period from 2007 onwards has been affected by the blue ear pig disease in China and to a lesser extent in Vietnam. Worldwide around 44% of gelatine produced is made from pig skins and over 80% of edible gelatine made in Europe is also made from this material. This market has also had to change as a result of the introduction of digital photography. Photography was formerly the primary outlet for top grade gelatine. This has now shifted to foodstuffs, raising religious and cultural issues as a consequence. Pig skins are also increasingly being examined for use in sausage skins.

2.3 Off-take and Husbandry

Better husbandry with larger animals and better off-take is expected to be a characteristic of the future meat industry. Around the world different farming methods, climates and animal types

have led to very varied off-takes. Some of this variation is logical but generally we must expect that increasing demand for meat and diary products will lead to higher levels of efficiency in the industry. The off-take in Africa has consistently been both poor and varied despite many efforts to improve matters. Strikingly, the overall cattle off-take rate in Africa is estimated at approximately 12%, compared with the USA at nearly 40% and Australia at 35%.

Ethiopia has Africa's largest raw material supplies and off-take/kill rates there are lower for cattle, but higher for sheep and goats: with 6-7% for cattle, 33% for sheep, and 32% for goats.

A special case in the complex story of off-take is India where, due to cultural reasons, although the cattle population is currently around 200 million, the annual production of cattle hides is just over 20 million.

Table 11- Off-take rate for different regions and raw materials types

	Bovine including buffalo			Sheep and lamb skins			Goat and kid skins		
	Share	Off-take	Average weight	Share	Off-take	Average dry weight	Share	Off-take	Average dry weight
	%	*%*	*kg/pc*	*%*	*%*	*kg/pc*	*%*	*%*	*kg/pc*
World	100.0	21.5	18.52	100.0	48.9	0.77	100.0	48.8	0.70
Developing	78.3	17.6	16.34	65.3	47.9	0.63	95.6	48.5	0.70
Latin America	24.6	18.6	21.80	7.9	26.5	0.87	4.3	30.0	0.59
Africa	11.0	12.0	12.73	15.7	34.2	0.71	22.8	31.3	0.53
Near East	4.9	15.8	17.63	18.0	42.4	0.71	13.6	30.8	0.75
Far East	37.0	19.0	13.35	23.8	68.1	0.53	54.8	61.7	0.73
Industrialised	21.7	35.6	22.41	34.7	50.7	1.02	4.4	54.5	1110.78
North America	7.4	36.7	24.66	0.7	51.3	0.90	0.2	46.2	1.00
Europe	6.6	33.7	23.98	11.8	64.1	0.91	2.0	66.9	0.68
Former USSR	4.0	42.3	18.75	5.3	51.6	0.66	1.1	35.7	1.00
Oceania	2.5	34.1	18.27	14.0	43.5	1.32	0.3	95.5	1.00
Others	1.2	20.5	22.66	2.8	28.8	1.04	0.9	36.4	0.75

Source: FAO
Notes: data based on average 2001-3, bovine wet salted, sheep and lamb dry weight without wool, and goat dry weight.

The livestock off-take rates for Africa are the most variable and the numbers are maintained in detail by the FAO. ***Table 12*** highlights a number of the countries with the largest raw material supplies. Off-takes are widely different from country to country and they reflect cattle off-take that run from 8 to 23%, sheep from 9 to 45% and goat from 7 to 37%.

Table 12- African livestock and off-take rates

	Unit	Burkina Faso	Chad	Ethiopia	Kenya	Mali
Cattle	*'000 heads*	7,607	7,154	41,000	14,727	7,532
Sheep	*'000 heads*	7,710	2,864	25,000	10,829	8,403
Goat	*'000 heads*	10,647	6,726	23,000	12,442	12,000

Cattle off-take	*%*	12	13	8	10	10-12
Sheep off-take	*%*	26	25-30	33	28	28-30
Goat off-take	*%*	32	25-30	37	33	28-30

	Unit	South Africa	Sudan	Tanzania	Uganda
Cattle	*'000 heads*	14,000	39,760	17,700	6,500
Sheep	*'000 heads*	25,000	48,910	3,500	1,100
Goat	*'000 heads*	6,400	42,179	12,500	6,800
Cattle off-take	*%*	25-30	20	10	17
Sheep off-take	*%*	30-35	45	15	20
Goat off-take	*%*	30-35	37	15	35

Source: FAO and ITC at http://www.intracen.org/Appli2/Leather/AfricanPlatformNote: For Kenya, the off-take rate taken is about double the officially recorded figure
Chad (2005) Zimbabwe (2002,) others not identified

The 2002 UNIDO report (Jabbar, et al) is one of many studies over some decades to argue that perhaps the most significant factor influencing production of hides and skins are "cultural factors" in livestock rearing that discourage commercial farming/slaughtering and lay emphasis on numbers of animals maintained by a farmer as a sign of wealth.

According to the FAO, there are substantial differences between regions and countries in terms of husbandry. FAO measures productivity by the amount of meat or milk produced per animal per year. In sub-Saharan Africa the increase in cattle numbers in the last decade of the twentieth century was greater than the growth in meat production, indicating a decline in meat productivity. In Asia, where land is scarce, growth in herd size for cattle and buffalo was much lower than the growth in output of meat, indicating that intensification and increased productivity were relatively more important and that progress can be made. Sub Saharan Africa has not been helped by more frequent droughts and floods. Greater demand for meat and dairy products has led to considerable improvements in Pakistan.

One of the areas that currently shows a strong leather industry development is Ethiopia. The industry will be watching closely to see if a larger domestic leather industry, rather than one that exports only pickle and wet blue, will pull more hides and skins into the tanning industry, perhaps increasing the off-take rate.

FAO statistics show that 38% of the outputs of raw hides were traded internationally during 2001-3, which is up by over a third of the figure for the 1980s. Sheepskin trade dropped 47% in the same period, with Europe now being the main export area. Goatskin exports also decreased as more countries held on to their own domestic supplies for processing. These figures are only indicative, as they have to be adjusted by changing the proportions of leather shipped in the pickle, blue and crust stages.

Table 13 shows how the FAO views the future for herd size through to 2030 world wide for all meat types.

Table 13- Meat production and herd size

	Carcass weight			*growth rate%/year*			*kg/animal*		
	1967/69	1997/99	2030	1969-99	1989-99	97/99-2030	1967-69	1997-99	2030
World									
Cattle and buffaloes	1,189	1,497	1,858	0.8	0.5	0.7	174.0	198.0	211
Sheep and goats	1,444	1,749	2,309	0.9	-0.1	0.9	14.0	14.0	17
Pigs	566	873	1,062	1.4	0.3	0.6	65.0	78.0	84
Poultry	5,585	15,067	24,804	3.8	3.4	1.6	1.3	1.6	1.8
Developing countries									
Cattle and buffaloes	799	1,156	1,522	1.3	1.3	0.9	150.0	163.0	188
Sheep and goats	862	1,323	1,856	1.6	1.5	1.1	13.0	13.0	16
Pigs	297	581	761	2.2	1.6	0.8	49.0	73.0	82
Poultry	2,512	10,544	19,193	5.6	5.5	1.9	1.2	1.4	1.8
Industrial countries									
Cattle and buffaloes	263	254	243	-0.5	0.2	-0.1	212.0	284.0	308
Sheep and goats	397	341	358	-0.1	-2.2	0.2	16.0	17.0	20
Pigs	172	210	220	0.7	0.4	0.1	75.0	85.0	89
Poultry	2,167	3,612	4,325	1.8	2.2	0.6	1.4	1.8	2.1
Transition countries									
Cattle and buffaloes	127	87	94	-1.0	-6.4	0.2	144.0	155.0	170
Sheep and goats	185	85	95	-1.9	-9.3	0.3	14.0	15.0	18
Pigs	97	81	82	-0.5	-6.2	0.0	77.0	82.0	84
Poultry	906	920	1,287	0.4	-6.9	1.1	1.3	1.4	1.6

Source: FAO

2.4 Expected Future Trends

It is already clear that the global demand for meat will need to find a balance with the problems of supply arising from a wide range of issues. In addition to the studies already mentioned, the FAO study on agriculture (Bruinsma ed. 2003), when discussing livestock production notes: "Livestock production is the world's largest user of land, either directly through grazing or indirectly through consumption of fodder and feed-grains. Globally, livestock production currently accounts for some 40 percent of the gross value of agricultural production. In industrial

countries this share is more than half. In developing countries, where it accounts for one-third, its share is rising quickly; livestock production is increasing rapidly as a result of growth in population and incomes and changes in lifestyles and dietary habits".

Land use issues are already apparent in China where some restrictions on development have been put in place and pig farming has increasingly become industrialised. In Brazil, a number of papers (e.g. Caviglia-Harris 2005) have demonstrated that demand for ranching land for small and medium sized farmers has been a reason for deforestation in the Amazon. The more recent development of interest in crops for bio-fuels can only increase the pressure on land use.

These changes introduce a number of issues related to health, food safety, the environment as well as poverty alleviation. A number of arising trends have started to become apparent and are identified in the FAO report:

- An increasing proportion of livestock production will originate in warm, humid and more disease-prone environments.
- There will be a change in livestock production practices, from a local multipurpose activity to a more intensive, market-oriented and increasingly integrated process.
- Pressure on and competition for common property resources such as grazing and water resources will increase.
- There will be more large-scale industrial production, located close to urban centres, with associated environmental and public health risks.
- Pigs and poultry will increase in importance compared with ruminants.
- There will be a substantial rise in the use of cereal-based feeds.

From this, many issues arise for those involved in the leather industry:

- What further help can be given to improve the efficiency of farming in Africa in order to improve the off-take and collection of hides and skins?
- What needs to be done to improve and manage the quality issues in the raw material in all stages through farming, slaughter and tanning?
- Africa appears to be one place where land remains available. Is the continent and climate suitable for a growth in herds to make up for land deficiency elsewhere?
- Hides and skins from camels, kangaroo, deer, yak and other less mainstream animals are likely to be more prevalent in the leather supply chain. The industry needs to learn how to manage both the technical issues and the potential environmental problems arising from the usage of these materials.
- Final product design for footwear, bags, automobile seats etc. will need to accommodate hides and skins with surface damage, which are otherwise of excellent quality.

Overall those involved in all aspects of the leather industry can be expected to spend more time ensuring that they have secure raw material supplies.

3. THE TANNING INDUSTRY

3.1 Introduction

This section looks at the tanning industry. Tanning of leather, excluding fur, has always been essentially a bi-product industry dependent for its raw material on the keeping of animals for meat and dairy purposes. For over 95% of all the leather made in the world this remains true and is likely to do so in the future. Some of the trends we have seen in the industry are as follows:

- China has become the dominant location but unlike footwear where over 60% is made in China less than 30% of the world's leather is made in China
- Of the "older" tanning countries Italy has proven remarkably resilient and has retained a large production of finished leather. Quite a lot of the output is based on imported semi processed (wet blue and crust) raw material;
- A new sector of boutiques tanneries has evolved out of the older large industry in Europe and the USA. Some work on niche sectors such as chamois, industrial leathers, or parchment but other make very high quality leathers for premium brands and designers
- Increasing urbanisation and concern about water quality has impacted on the location of tanneries within countries and created a trend towards "leather industry parks" with common effluent treatment plants.
- Footwear remains the dominant use for leather although from 1990 onwards upholstery for furniture and automobile has been the fastest growing use
- There are no end uses where leather cannot be substituted by other materials
- Chrome tanning remains the dominant tannage but the use of alternates, mostly in the automotive sector, is thought to have reduced chrome from being the tannage for 95% of all leather to about 80% over the last ten years. This slow erosion of chrome tanning's market share is expected to continue
- Environmental issues have become very much more important and regulations are becoming tighter and more rigorously enforced
- Many tanneries have been built in the last 30 years with inadequate or no waste disposal facilities and this is growing into a major issue
- Pressure groups concerned about animal rights, global warming and other issues have become much more influential. The leather industry has no united voice to manage this or to counteract inaccurate statements
- Many claims are being made for environmentally friendly leathers which are not based on sound scientific evidence. These include tag lines such as "organic", "using natural dyes" and "chrome free".
- Environmental compliance issues such as REACH have become a major new cost and are impacting on innovation and research
- Fears related to VI (Cr^{VI}) do not appear to be based on good science or a total view of the tanning process
- The last quarter of 2008, after Lehman Brothers Holdings Inc. filed for bankruptcy protection in the U.S, there was a quite sudden collapse in demand for raw material, leather and most leather products.
- Towards the end of 2009 matters were recovering in most sectors but up-to-date world wide statistics are not yet available to understand the detail of what has actually happened. The automobile sector was probably the most seriously interrupted

The most dominant theme of the last fifteen years has been the very fast growth of the industry in China. It would be easy to assume that China has the scale, labour and market to retain and continue growing its leather business to the detriment of all other locations. Yet, there are a number of major items on the horizon that will certainly impact on the future of the Chinese industry and will perhaps re-open the rest of the world to opportunities in both tanning and the manufacture of leather products. However dominant China remains, there are now good reasons to look at how the leather industry will develop elsewhere.

Table 14 - World leather production by major country

Million square feet (sq ft)

Country	**1998**	**2000**	**2002**	**2003**	**2004**	**2005**	**2006**
China	3286	4139	4525	4894	6124	6383	6599
Italy	1982	2055	2013	1935	2218	2219	2147
India	1378	1448	1460	1459	1234	1248	1739
Brazil	691	829	863	883	1327	1433	1647
Korea	1369	1286	1394	1368	1660	1642	1446
Former USSR	918	1061	1361.	1613	1640	1652	1225
Argentina	423.7	509.4	468.3	508.3	653.2	690.5	712.7
Mexico	683	719.8	756.9	780.9	535.1	555.9	591.8
Turkey	448.9	420.1	502.4	616.8	557.3	584.6	547.7
USA	845.7	862.6	786.2	813.6	563.2	475.0	477.0
Spain	534.8	542.2	528.5	521.9	484.4	464.0	442.0
Pakistan	288.8	327.3	357.1	358.2	336.0	357.2	363.0
Japan	282.5	280.9	262.6	270.7	398.8	318.3	315.1
Germany	266.3	316.8	287	280.4	288.0	253.0	280.9
Iran	128.3	133.6	146.3	158.2	323.5	265.0	250.2
Thailand	292.5	314.4	324.2	298.4	243.3	236.9	220.8
Uruguay	140	138	136	142.5	163.4	169.3	172.0
New Zealand	99.1	167.4	149.6	137.7	167.2	161.7	164.2
Egypt	117.3	147	163.4	167.8	155.3	156.1	155.5
Bangladesh	148.1	150.1	157	157.6	148.1	148.1	148.0
France	185.8	160	133.5	131.5	149.5	169.2	143.7
Sudan	82.4	91.1	90.9	89.2	130.4	136.2	139.2
Indonesia	121.2	132.7	135.5	140.6	139.0	135.0	138.5
United Kingdom	150	156.2	163.0	152.0	137.0	133.0	137.8
Australia	167.4	189.9	156.9	159.8	173.8	160.2	134.4
Colombia	96	99.54	93.68	95.12	101.2	102.1	115.5
Nigeria	112.1	118.5	103.8	108.4	99.7	99.8	102.7
Algeria	69.3	82.9	84.8	83.5	87.1	89.5	92.5
Morocco	88.9	89.04	86.58	84.08	79.9	83.1	80.7
Poland	89.5	92.7	88.9	90.6	83.9	79.6	79.6
Top 30 Countries	**15485**	**17061**	**17707**	**18436**	**20356**	**20545**	**20808**
Others	**3084**	**3255**	**3370**	**3487**	**1681**	**1762**	**1892**
World Total	**18569**	**20316**	**21078**	**21923**	**22037**	**22307**	**22701**

Source: FAO and ICT 2008 (http://www.tannerscouncilict.org/ict%20stats2008.pdf)

For comparison reasons, figures from the FAO are used as the basis of most of the analysis in this document. As mentioned earlier in the document, the FAO has not covered pigskin leather, which estimates put at about 11% of the world total of leather produced. Nor does it cover production of kangaroo, ostrich, camels and the many "other" (fish, reptile etc.) materials used, which generally are classed as only 1% but are probably over 2% (and growing) of the total production. ***Table 14*** does not include these marginal materials but does include an estimate for pigskin of about 2.8 billion square feet. Nearly all of this is from China with some from Korea and Japan.

Variations in the statistics via misreporting, confusion on the handling of splits and the large amount of semi processed material traded makes the interpretation and accuracy of data suspect, but the major trends appear consistent. The data can be approximated and presented to show the dominance of, not only China, but a small group of countries. Yet ***Tables 14, 15,*** and ***16*** can only be approximations as they do not show where the beamhouse work is taking place, or how much leather might be counted twice or more, as semi processed leather and footwear moves from country to country. Furthermore, the informal sectors are sometimes estimated and sometimes ignored. Despite the dominance of selected countries, leather and its user industries provide important employment in nearly every country in the world, and its use of labour makes it an important or potentially important source of light industry in developing countries worldwide.

Table 15 - Breakdown of bovine supply, world leather production and footwear production by country

Country	Raw material (bovine m pieces)	Leather production	Shoe production
	% of total	*% of Total*	*% of total*
Argentina	*4.4*	*3.1*	*0.4*
Brazil	*10.9*	*7.3*	*5.0*
China	*16.5*	*29.4*	*63.7*
India	*12.6*	*7.7*	*12.5*
Italy	*1.2*	*9.5*	*1.5*
Korea	*0.2*	*6.4*	*0.8*
Mexico	*2.3*	*2.6*	*1.1*
Pakistan	*2.0*	*1.6*	*1.5*
Spain	*0.8*	*1.9*	*0.8*
Thailand	*0.4*	*1.0*	*1.7*
Turkey	*0.5*	*2.4*	*1.1*
USA	*10.0*	*2.1*	*0.2*
12 countries	**62% of the world total bovine production**	**75% of the world total leather production**	**90% of the world shoe production**

Source: (FAO) (leather production - bovine, buffalo, sheep and goat only), SATRA 2007

Indian footwear includes 1.02 billion pairs partial/non leather footwear and excludes 100 million pairs of shoe uppers

Pakistan footwear includes at least 150m pairs of sandals/thongs

Table 15 highlights the ongoing trends in the balance between bovine raw production, leather production and footwear production. Tanning is much less labour intensive than footwear and other leather using industries. The leather industry that has remained in the US and the EU has a larger content of upholstery leather for automobiles and aviation and leather goods than the rest

of the world. To some extent, the table also demonstrates that, since tanneries working from the raw require much more capital and equipment in terms of large drum installations and effluent treatment facilities, it is much harder for a tannery to move than for, say, a shoe factory. It is logical, therefore, that tanneries in countries like Italy, which has close links to European fashion houses, should remain and work on imported material rather than move overseas. The Korean tanning industry, which grew in order to serve a strong growing domestic market, has also chosen to remain and to build exports as its customers move overseas.

The elements that support a leather industry include:

- a strong manufacturing base that requires leather as a basic raw material, which normally implies a large low cost labour force;
- a good supply of locally available raw material;
- less pronounced environmental constraints/costs (e.g. availability of water and suitable recipient of wastewater, but also lax enforcement of environmental legislation).

Taking these views from Koppany (2004), who laid out these fundamentals, China, India and Brazil are likely to dominate the global leather scene with other countries in the world fighting for scraps. This is a simplification of Koppany's comments, but it does define the basis upon which each country or region has to decide the role it will play. Italy's continued strength is believed to be based on tradition and outstanding skills, its position as a fashion leader as well as on synergies of operations in specialised clusters. Environmental laws have become quite similar throughout the world and inconsistency of enforcement is the bigger variable. Increasingly vocal citizen groups have lead to tighter enforcement world wide in recent years.

3.2 Location of Tanning

The major end use of leather, footwear, has not stayed with the raw material but moved to locations where it can be best produced for its target markets at the best prices and is still moving, to a degree, with countries like Vietnam becoming strong players in the last few years. The tanning industry has moved much less, being inclined to stay with the raw material unless there is a good reason (shipping cost, lead times etc.) for it to move. This pressure has lead to even higher proportions of hides and skins being part processed to pickle or wet blue, and lately to crust, in the country of origin.

We have seen the leather industry move in stages from the developed to the developing world, but now the leather industry question is how to combat China's sheer might. Among the strategies being adopted are duty protection, seeking to joint produce with China, or finding a niche a position. ***Table 15*** indicated that the movement of the industry has not been totally smooth and structural adjustments to the industry are the consequence of a complex mix of factors.

Table 16 below is adapted from the FAO data and indicates the major countries involved in the manufacture of leather based on sheep/goat and bovine/buffalo raw material. The dominance of China is apparent, but other points to be noted are the absence of Africa – although the Mediterranean region plus Egypt has grown in significance - the staying power of Italy, growth in Brazil, and the re-emergence of Russia.

Table 16 - Leather manufactures in major countries

Unit: million square feet

Country	Bovine	Sheep/Goat	Total
Total	**14,041**	**4,663**	**18,704**
Developing	***8,830***	***3,653***	***12,483***
China	2,262	1,438	4,000
Italy	1,750	289	2,039
Brazil	1,600	54	1,654
Russia	1,327	217	1,544
India	647	471	1,118
Korea	1,072	18	1,090
Argentina	621	34	655
Mexico	547	23	570
Turkey	78	450	528
Spain	310	120	430
USA	350	67	417
Pakistan	172	187	359
Germany	258	20	278
Thailand	210	1	211
Japan	199	4	203
Indonesia	98	36	134
Egypt	120	12	132

Source: FAO 2006 bovine, buffalo, sheep and goat only

As the location of the leather using industries has moved, so has the tanning industry. Semi-processing to pickle, wet blue and crust has increased at the same time. Tanning countries benefit by participating in international trade rather than by trying to stay isolated, and this has implications for the ongoing DOHA tariff round. Yet, as we have seen from ***Table 15,*** the transfer has not been perfect, with the US and the EU retaining a big portion of the industry to tan leather goods and upholstery leathers from their higher quality domestic hides.

Taking Koppany's approach, one can look at the major countries in brief and consider them mainly in terms of raw supply, domestic markets, labour cost and the environment:

China

- very large leather footwear, garment, leather goods and upholstery production with demand for just in time or rapid leather delivery to reduce lead times;
- very large (but not adequate) domestic raw material supply that is growing;
- large fast growing domestic market – for footwear, premium leather goods and upholstery;
- very large imports of leather from places like India, Korea and Italy;
- potential limitations in water and energy supply;
- major environmental issues arising;
- the world's largest pigskin supply and pigskin tanning industry: impacted in 2007 by disease
- current government policy is to close smaller tanneries and those without effluent treatment. How this will impact final volumes produced is unclear.

Italy

- strong innovation content;
- Italy has a large dependence on imported raw materials;
- high levels of flexibility and versatility;
- sizeable domestic (and regional – East Europe, North Africa) market;
- Italy's tanning industry grew in 2006 and 2007 despite high labour and other costs of doing business in the EU;
- strong international connections;
- good international image and fashion orientation;
- much of Italian production comes from wet blue and other semi processed material, which distorts the figures;
- figures are also impacted by utilisation of adjacent countries such as Romania, Bulgaria, the former Yugoslavia and North Africa for both parts of the tanning process and the manufacture of a variety of finished leather products.

Korea

- industry survives as a legacy of huge export oriented footwear and garment production based on earlier cheap labour;
- the industry is supported in part by ex-patriot businesses that have moved footwear, garment and leather goods production elsewhere in Asia;
- the Korean leather industry has a high dependence on imported raw materials.

India

- strong raw material base and tradition in the industry;
- good benefits of clustering and industry investment;
- recent change from second hand to new machinery in investment policy;
- growing domestic market;
- some limitations on water supply and environmental issues in some regions.
- strong government regulations on the water discharge being imposed
- despite significant growth in recent years its tanning industry is bigger than its domestic consumption;
- India has a sizeable production of leather goods and leather clothing.
- Increasing domestic meat consumption

Russia

- historically strong sector with associated domestic culture that likes wearing fur and leather garments, gloves etc.;
- rapidly declined in the 1990s but in the 21st century has been growing at about 20% per annum;
- recovering domestic market;
- Although there is much doubt about the figures from Russia, it is expected that both domestic raw material supply and footwear manufacture will steadily increase.

Brazil

- strong domestic raw material supply and supply from neighbouring countries;
- strong domestic footwear and leather (especially travel) goods industry;
- built good links to USA for selling footwear, but the industry has been weakened until recently by the gaining strength of the domestic currency;
- highly active in world export markets and in the process of integrating into overseas leather industries;
- tanners are specialized and effective.

Mexico

- strong history of leather production;
- historical isolation and protection against imports meant that the footwear industry entered the new millennium less efficiently than its main international competitors;
- less successful in selling product to the USA than its location would imply;
- benefited from automobile production;
- some limitation in water supply.

USA

- industry sustained by large-wet blue exports from its domestic hide supply;
- significant manufacture of upholstery leather
- automobile industry has required large amounts of leather upholstery but trade has been complicated by the problems in the big three US motor companies.
- Affected by auto industry decline since the autumn of 2008 and in the reduced demand for wet blue and raw hides

Turkey

- steadily increased market share in world leather garment business;
- significant importer of raw materials;
- good international reputation for quality garments;
- uneven results reflect the fact that this is one of the cyclical areas of leather consumption, and what was called the “carry trade” with Russia when for a number of years Russian buyers arrived with cash for goods.

Spain

- access to European raw material, especially Spanish sheep;
- high level of design and innovation;
- significant local manufacture of products using leather, especially if contracting to North Africa is added in;
- some water shortage issues.

Argentina

- reasonably large local hide supply of good quality;
- strong tradition of exports of quality leather, both crust and wet blue;
- efficient leather goods manufacturing sector and recovering shoe industry.
- Badly impacted by decline in automobile business in late 2008

Pakistan

- good supply of raw material;
- well established tanning centres in Karachi and Lahore with strong exports;
- some clusters for gloves and garments (Karachi and Sialkot);
- lower grade garments made from imported lower grade African raw materials;
- some significant environmental issues.

Table 17 - Production and trade in leather in the major producing countries in 2006

Unit: million sq.ft.

Country	Output	Export	Import	Available
China	2,262	5336	8,715	5,941
Korea	1,072	545	533	1,060
Italy	1,750	2,066	1,078	762
USA	350	550	422	222
Mexico	547	144	168	571
India	647	120	55	582
Spain	310	137	197	370
Germany	258	245	233	246
Japan	199	42	43	200
Argentina	621	497	19	143
Thailand	210	184	103	129
Brazil	1,600	1,554	78	124
Indonesia	98	48	58	108
Pakistan	172	85	20	107
Turkey	78	40	28	66
Egypt	120	49	0	51
Developing	8,830	9,104	10,609	5,983
Total	**14,041**	**13,456**	**13,552**	**14,137**

Source: FAO (bovine, sheep and goat only)

China

There is no doubt that China has the scale, the labour and the market to retain and continue growing its leather business. So while the leather industry in China will continue to grow it is now expected to see a decrease in the level of growth; it is also expected that exports will level out or even fall in some respects, as more of the business of leather in China services the growing domestic demand.

China's size and its large population combined with the growing disposable income per capita means that this country will be dominant for some decades to come in most areas of leather manufacture. The Chinese industry is closely integrated and tanneries often work closely with shoe or garment factories. Examining the leather industry in China requires an understanding of this overlap.

Despite the leather's industry's size and rapid growth in China, the China Leather Industry Association (CLIA) classed the industry as being in a declining mode as a result of increasing costs for labour and raw material plus government policy adjustments over the last two year,

which have reduced tax rebates and benefits for the industry. Two fundamental elements lie behind some of the government's approach. These are: a) to reduce the environmental load from the leather industry by slowing the amount of production from the raw and b) to encourage the industry to move towards higher value added exports rather than to continue solely with exports of footwear, garments, and gloves. With the onset of the recession there was some relaxation of these negative moves for the industry in order to diminish rapid growth in unemployment as a result of the big drop in Chinese exports but this is seen as only temporary.

Labour cost rises relate to a mix of the steady development of the country and a new social contract that gives workers greater security of employment and payment rights. Labour costs are expected to rise by 20% as a result, on top of what have been high annual rises of between 25 % - 40% annually in some of the export oriented coastal region.

The Chinese leather industry comprises well over 20,000 enterprises, with about 5.5 million employees; of these, over 2,900 are leather-making enterprises. The numbers are currently changing dramatically with some hundreds of tanning and shoe plants closing in 2008 and 2009 as a joint result of these increased costs and decreasing overseas demand.

According to CLIA figures, which indicate larger outputs than those suggested by the FAO, in 2007 China produced about 680 million square metres of light leather (7.75 billion sq.ft.), over 9 billion pairs of shoes and over 65 million leather garments. Exports of main leather commodities amounted to US$ 39 billions, accounting for 4% of the total value of national commodity exports, while the import of main leather commodities was US$ 7.67 billions by value, an increase of 14% over the previous year. 2008 saw continued growth in all sectors until the last quarter with footwear showing a growth in value rather than quantity, responding to the government objectives. At the end of the year the leather industry situation is best shown by the fact that leather garment exports had dropped by 35% in Volume (23% in value) and footwear by 14% but increased nearly 3% in value. China exports little finished leather. In the first three quarters of 2009 all sectors had seen exports drop by between 20 and 30%. The tanning industry was thought to have done much better than the exports indicated in the first two quarters with domestic demand continuing to grow and replacing some of the volume lost to declining exports. The automobile industry in China also grew quite quickly in the first half of 2009.

China has been steadily importing not just raw material, now increasingly in wet blue form, but also finished leather, footwear and other leather goods. The Indian and the Italian leather industries have a good record of exporting to China in recent years

It is also anticipated that the imports of raw hides, finished leather, footwear accessories and environmentally friendly chemicals, all geared to higher quality, will be further increased in the next 5 years. Technology and equipment for environmental protection are needed by Chinese tanneries. As the consumer market for cars and house related purchases is now steadily increasing in Chinese cities, the processing technologies for upholstery leather are also in demand.

Domestic demand for quality and fashionable shoes will continue to increase at a steady pace as the middle class grows year by year. Other key factors are increased urbanisation and the policy of expanding domestic demand and consumption. More and more rural people have moved to work in the cities and they will also contribute to the growth of consumption, including consumption of shoes.

India

India has a strong domestic raw material base; it is currently doubling its production capacity in finished leather, footwear and leather goods and it will play a leading role in years to come. Given the advantages that India had in terms of raw material, international leather industry connections, and English language skills, it was a surprise to see how quickly China was able to draw past India in volume production in nearly every sector of the industry. In the last years, India has been working to catch up with China.

Table 18 - India's export of leather and leather products for five years

Unit: million US$

Category	2002-03	2003-04	2004-05	2005-06	2006-07
Finished leather	508.83	555.71	607.73	636.27	688.05
Leather footwear	423.30	553.04	657.78	807.81	950.90
Footwear components	175.07	161.27	179.21	182.58	212.65
Leather garments	272.08	301.08	329.44	333.30	308.98
Leather goods	335.36	403.20	466.95	521.79	690.66
Saddlery & harness	43.66	52.71	61.71	77.52	81.85
Leather gloves	90.04	136.01	118.77	138.38	*
Non-leather footwear	26.88	53.42	73.78	54.85	48.69
Total	**1,875.21**	**2,216.45**	**2,495.37**	**2,752.50**	**2,981.79**

** included in Leather Goods*
Source: DGCI & S (no separate data available)

Installed tanning capacity in India is estimated at about 2.5 billion sq.ft. This is quite a bit above the 1.8 to 1.9 billion actually made. About 55% is produced in larger or medium sized plants with 35% in small units and about 10% estimated as coming from the "household" sector. There are significant centres for tanning in Tamil Nadu, Kolkata and Kanpur. The industry has been a key export earner for India and by 2008/9 these had reached US$3.59 billion (flat with 2007/8) of which $673m or 19% was for leather (footwear 43% leather goods 23% and leather garments 10%).

The large domestic raw material supply and a large and growing population mean that the future of the Indian industry should be assured. In recent years, tanners and several shoe makers have made a significant move toward investing in new, rather than second hand, machines. The introduction of plants with leading edge technology, scale, and close association with others in the supply chain, is a step change from the world of reconditioned machinery and small incremental improvements. The larger organisations are investing in sophisticated equipment, focusing on automation, energy saving and reduced water consumption. There is increasing investment in equipment for environmental management.

In recent years India has been fighting hard for inward investment in leather and footwear and they have recently set up a number of "Leather Parks" with this in mind. They have missed Asian investment for the most part, but a recent $127 million investment in India by the Taiwanese indicates that a more global strategy is paying off. There is also evidence that more of the major sports and shoe brands will move some footwear sourcing from China to India as Chinese labour costs rise; this will support more positive growth in the tanning sector.

Indian tanners have been quite efficient at selling to the Chinese market and, generally, in opening up overseas markets. Technology and quality has improved to world class levels. India has the potential to move up to meet any gap left by the Chinese, but infrastructure issues, bureaucracy, and limited investment have held it back in the past.

India is expected to continue to grow its leather business on the back of growing domestic demand generated by an expanding middle class and via increasing its share in the global market. There is strong government support for the sector.

At the same time the Indian government is now expecting all tanneries to meet environmental standards that are laid down on the basis of being a "prerequisite for sustainable exports". This partly recognises the growing pressure from brands and retailers around the world for the entire supply chain to behave responsibly but also a much more rigorous governmental approach. As in China, this will lead larger scale organisations that would, nevertheless, fit into the SME categorisation.

The clustered situation already found in the Indian industry has helped with environmental matters as it has allowed the development of Central Effluent plants. By mid 2008 there were 19 such "common effluent treatment plants" of which 14 were in Tamil Nadu. 95% of Indian tanneries are thought to have pollution control.

In the early part of 2009 the government of India consulted widely with the leather industry to offer help through the difficult economic climate and a number of measures were introduced. At that stage export orders and cancellations appeared to be 20%--30% down on 2008 and the term "economic meltdown" was the one most used. However, the sectors in which the Indian industry has predominated - more formal footwear and higher value leather garments - have not been so badly hit as other areas of leather products. This has helped to minimise declines in 2009 and growth is expected to recover and accelerate through 2010 and on to 2015.

Pakistan

Pakistan will also play an important role in the future supply of leather goods, but the industry in the country is presently suffering due to overhead expenses (e.g. electricity), labour costs, scarcity of skilled labour and the need to upgrade machinery and infrastructure. Like India, it has a strong raw material supply and its cattle and buffalo production forms the basis of an important meat and dairy industry that the government is keen to exploit. The goat skin quality is excellent. The country has a group of tanneries with a high world standing for quality in three main clusters around Karachi, Lahore, including Kasur and also Sialkot. Sialkot is better known for its history in the manufacture of soccer balls, but its tanning, sports gloving and clothing sector is a big export earner.

There is a split in the industry to the extent that quite a big proportion of the industry making finished goods from leather works at the low end of the ex-factory price segments of world pricing while many of the tanners working on domestic raw material are able to sell crust or finished leather into the premium sectors of the world market. Until this considerable gap can be bridged the Pakistan industry will struggle to establish a really harmonious development process. The lack of development of a local market makes Pakistan stand out from countries such as China, India, and Indonesia with which it competes. Since the country has had some difficulty in establishing an image for its finished goods that would allow them to achieve the high selling prices that their raw material warrants, there is a considerable import of lower grade raw and wet blue from other parts of Asia and Africa to feed the demand for pigmented black garments. If Pakistan can resolve some of its financial and image problems, its domestic raw material supply, its strategic location, its highly competent tanners and its low cost labour give this industry the opportunity for considerable growth. The management of environmental issues is patchy, and it will have to be improved and enforced across the whole sector for the industry in Pakistan to

achieve its full potential. Power supply is also an issue for those plants which do not have their own generators.

Partly as a consequence of its position in the lower sectors price wise of the world market, and with local market growth Pakistan's leather industry has been badly hit in the financial downturn with exports down some 25% by mid 2009. For July-June 2007-08 the export of leather stood at $415 million as against $296 million during same period in 2008-09. This decline has continued in the first two quarters to November 2009. Most other leather items such as garments and gloves have also fallen so the export reduction of leather has not been taken up by local makers or demand for leather products in the domestic market.

Vietnam

Vietnam's leather industry is competing aggressively and they are confidently predicting growth of 12-15% per annum. Although they lost some ground in the EU as the result of high duties, they have recovered it by greatly increasing their exports to the USA. The Vietnamese Government is investing US$ 572 million into the industry in the next 3 years and is spending US$ 37.8 million on tanning facilities. It appears that they are after a slice of China's business in leather. Vietnam has certainly delighted many of its customers for gloves and footwear over the last decade and many EU companies have been willing to try and live with the EU duties. New tanning facilities are being built in Vietnam to support this growth in the leather industry.

The tanning industry is very dependent on selling to local shoe makers and the fact that footwear exports to November 2009 fell 16% has not been helpful. Vietnam is competing aggressively with India, Bangladesh and Indonesia and is thought to be losing out to recent tariff help given by the EU to Cambodia. Nevertheless investment in new tanneries in Vietnam has continued in 2009.

Indonesia

This country has certainly benefited from the anti-dumping tariffs in the EU and there has been some movement of production back from China to Indonesia. The domestic cattle quality has been deteriorating because some of the tick issues found in north Australia appear to have entered the country, but it remains an interesting light weight bovine article. The value of local sheepskins will increase as African skins become less available, and as other countries follow the Ethiopia's lead to slow or stop exports of raw or partly processed material.

Indonesia is thought by some to really be the second "I" in the BRIC countries as it has continued to grow GDP strongly and has not been greatly affected by the world economic recession. Domestic demand has been growing strongly and so the country is not so dependent on exports and there has been a reduction in the illegal import of footwear from China.

Thailand

Thailand is currently having a difficult time, but they have just signed a free trade agreement with Japan that raises the prospect of diminishing import duties and eventually removing them in 6 years time. Thailand has important supplies of buffalo, and it is a big producer of dog chews and of industrial gloves. It also has the world's largest golf glove factory and a sizeable automotive industry. There are also other shoe brands investing in the country.

There are around 130 tanneries in the country with a capacity according to the Thai Tanning Industry Association (TTIA) of 180m sq ft per annum although FAO figures put actual output at over 220 million square feet. Buffalo and cow constitute the vast majority of production.

The African Continent

As a whole, Africa's leather industry went backwards in terms of its share of the world trade in the last twenty five years of the 20th century. As a continent, it has problems with animal husbandry, raw material quality, technical knowledge and market access. This is in spite of the significant technical assistance programmes implemented by several UN specialized agencies (predominantly UNDP, UNIDO, ITC, ILO) and bilateral aids (e.g. through GTZ, DANIDA). Political changes and civil unrest have often been involved in interrupting expected development.

Sub-Saharan Africa

Observers of the leather industry have mixed opinions about the future for the sub-Saharan leather industry in Africa. Major brands show little enthusiasm to become involved in the continent, but Ethiopia has made some determined moves that indicate that strong action may be able to build a significant sector of manufacturing employment based on light industry and using locally made leather.

The importance of the development of the BRIC economies and globalisation are relevant here. As Asian workers have started to earn more in the last 25 years, those in Africa have made less money. This could provide opportunities for companies seeking low-cost labour. However, large countries like India and China have captured most of the textile and leather jobs, which leaves African countries searching for a niche position in the world market, with the local industry not yet hoping to export, but simply battling against Chinese imports. This is a generalisation, but one that is much supported by key industry figures.

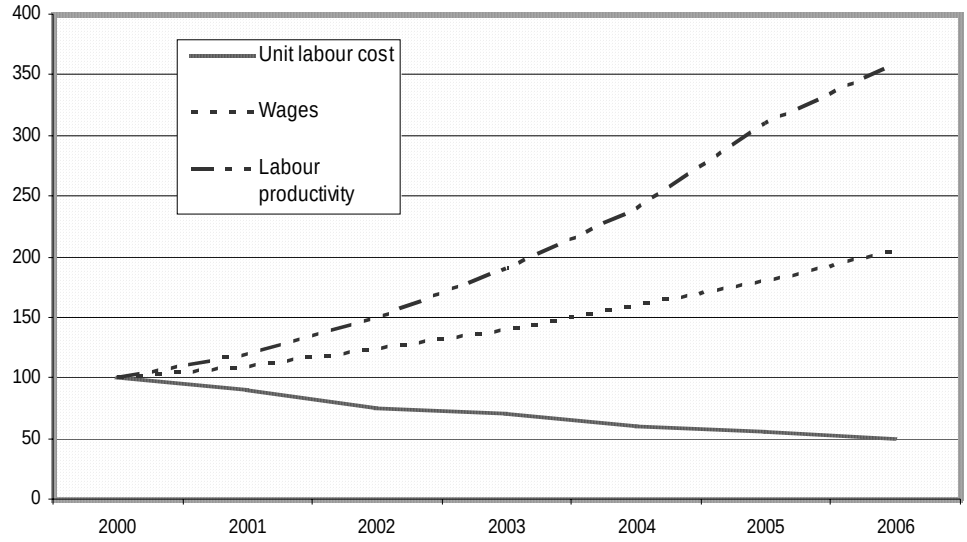

Figure 1 - China's wages costs
Source: Economist: September 29th, 2007. Reproduced with permission

Figure 1 demonstrates that even though wages are rising in China, productivity is outstripping it. In order for Africa to compete, efficiency needs to be considered in terms of scale, plant layout, labour and management training and the utilization of modern equipment. Country infrastructure is also important.

For those optimistically minded, there is some indication of self-generated progress in the Sub-Saharan African region and a realization that large raw material resources are available

domestically. These abundant resources should lead to a substantial leather industry suited to work with both import substitution and the export market.

Africa will have to find solutions to the issues of second hand footwear imports and counterfeit footwear, both of which are undermining potential growth of fledgling industries. An additional issue is infrastructure and transportation. Moving raw materials, chemicals and components from one African country to another, and often even within one single country, is very difficult; they have either no roads or very poor ones and there are many police halts on the way. Within a country, this raises the costs of hide and skin collection as well as the movement of goods to and from ports.

Up to date, Africa has not done well in terms of Foreign Direct Investment (FDI) in the leather industries and this will have to change in order for growth to be achieved. At the moment, the most likely country to lead such a move is China, or wealthy African expatriates. Again, Ethiopia has begun to see a greater interest in FDI and they can perhaps lead the way for other African countries.

If Africa overall is to develop its leather industry, environmental issues will come to the fore as tanners are now being inspected as part of the supply chain. Generally speaking, awareness is much higher than 10-12 years ago and primary treatment is more common. In many countries, such as Ethiopia and Morocco, tanneries still tend to be developed close to the town centres where treatment is difficult and costly. 2008 floods in Ethiopia highlighted the fact that the tanners are not adequately prepared and that considerable investment will be required to deal with the situation. One solution would be to place the tanneries out of town, where land is more available and cheaper; however, far from the towns there are often more problems with infrastructure, labour and salinity of effluents so that this solution is not always feasible. This also applies to tannery efficiency because in some African countries there is a preference to work mixed productions in tightly packed factories, using second hand or reconditioned machinery. This reduces the factories ability to be competitive on a world stage.

Ethiopia

During 2007 and 2008, Ethiopia has started to develop its leather and derived products industry more effectively. A mix of export duties and incentives have forced the move of a large proportion of their raw material into finished leather and finished products. In the 2006/07 budget year, Ethiopia exported leather and leather products worth US$ 89.5 million. Italy was the leading recipient with 44%. Other major trading partners are China and the UK. The government hopes to increase this to US$ 500 million in five years and they have imposed increasing duties on exports of part processed material to support this goal. Heavy duties mean that exported sheepskins now move out as crust or finished leather and footwear industry has grown quickly. Continued attempts have been made to reduce the damage to the skins by the “ekek” insect which has been steadily reducing the quality of these skins for some three decades.

The domestic footwear industry was badly hit with Chinese imports at the start of the millennium but had recovered from this “shock” by 2005 and new export markets such as South Africa and Botswana had been added to the limited number of countries served. Growth has been steady since then.

There has been significant foreign investment in tanning in the last decade.

North Africa

While the future for Sub-Saharan Africa lies in developing light industry with high employment levels based on indigenous raw materials, North Africa is already very much more advanced. The area from Morocco to Egypt has good raw materials and well developed industry. Proximity to southern Europe and historic links to France and Italy mean that they have also been able to become a low cost off shore manufacturing supply centre for some European brands, with the advantage of being in the same time zone, quite accessible and with good historic craftsmanship skill. Each of the countries in this area has a long history in leather making from, Fez to Marrakesh, through Bougie to Ghadames in Libya and including the Egyptian Mathematical Leather Roll (EMLR) from 1850 BC.

Egypt
Egypt has a significant production of leather, mostly bovine, while the other countries are better known for their sheep productions and their advancement into footwear and leather goods manufacture. Tunisia is perhaps the most important of them all, but all countries are likely to gain from rising Chinese labour costs and a preference for shorter supply lines. Shorter supply lines permit faster product turnover and they also respond to some environmental issues related to transportation costs. Unlike other countries in North Africa Egypt's sectoral exports growth in the last few years has come mainly from tanning. 2008 exports were more than 10% above those of 2007.

About 75 percent of tanning in Egypt is with cows and buffalo plus another 7% of camel.

The Egyptian industry must be considered one of the most forward thinking in the region and it makes many interesting initiatives. Its plans for 2009 were as follows:

- Relocating 100 leather factories out of urban area
- Relocating 1000 Leather work shop out of urban area
- Designing and Manufacturing Leather machinery locally
- Researching and Developing the chemicals used in a new method of leather dehairing

Tunisia and **Morocco**
These two countries have long been in the top ten textile clothing suppliers to the EU and they therefore have a developed understanding of the leather business. Tunisia has attracted a branch of CTC, the French testing housing, which is indicative of its importance as a producer of finished products. The Tunisian industry has mostly been pulled forward via footwear exports, 90% of which go to the EU; these exports have shown strong growth in the last decade with Germany, France and Italy being the leading markets. Leather, leather garments and leather goods are also important, but footwear is by far the leader of the leather industry. By value leather was 8% of the total value of the sector while footwear was 63% of production value. Leather goods are 9%. Between 2007 and 2008 exports of all leather items grew by 5.1%. A small bilateral trade with India has quietly been evolving over the last few years.

Morocco also has a test laboratory, but it is subsidised through EU and government grants and it is not used so much. This is because a high proportion of Moroccan business in finished leather products is cut measure and trim (CMT) business, where all materials and specifications are supplied by the customers. This is starting to change as Morocco now looks to open up some business in the USA market after the removal of all tariffs on leather and leather products and the opening of a new container port. Moroccan footwear producers also have an opportunity to sell in other African countries and some footwear companies do quite well in this regards. As

mentioned earlier, poor intra African communications continue to make the development of such business quite difficult.

South Africa

This region's leather industry has long been one of the strongest in the continent; for many years it has been supported by its strong automotive sector. There has been some decline in this market and it looks like specialist areas such as ostrich leather will become the mainstay of the South African industry in the years to come. South Africa has a good quality sheep raw material and significant bovine and sheep tanning capability.

Brazil

Brazil has been greatly affected by the rise in value of its currency over the last few years. This lead to a big loss of footwear exports to the USA, where many major customers moved purchasing to China. Brazilian footwear exports to USA dropped by 20% due to the strength of the Real against the US$.

However, the fundamentals of a large raw material supply and large pool of skilled labour means that the future of the industry is assured. The industry is also becoming increasingly entrepreneurial and looking to invest overseas as well as to improve its creativity and design.

Table 19 - Brazilian export in hides (m pieces)

Year	Wet Blue	Crust and Finished	Total
2000	10.3	4.3	14.7
2001	10.5	6.4	16.9
2002	12.5	6.3	18.8
2003	13.2	8.4	21.6
2004	15.9	10.3	26.1
2005	16.0	11.9	27.9
2006	17.8	16.4	34.2
2007	15.3	17.4	32.8

Source: SECEX/MDIC/CICB/AICSul

As with many countries the exports of leather give a misleading indication of the tanning industry as success is measured by retaining leather for use in leather using industries. The total value of leather exports in 2006 were half of that of beef (US$ 3.29 billion) and is more than that of footwear (US$ 1.44 billion). Exports in 2008 were 14% down on 2007 and 2009 started with significant further declines, mostly related to the world economic downturn. The main markets of leather include Italy, China, and Hong Kong.

Of the leather which remains in the country 42% is used for furniture and 18% automobile) while footwear takes 31%. The upholstery sector has been hit particularly badly since the final quarter of 2008.

Long term some experts predict that, as Chinese exports start to level out, Brazilian exports will come close to matching them by 2015.

Over the last two years there has been considerable consolidation in the Brazilian leather market with meat packing companies merging and acquiring tanning capacity. At the same time the implications of the concern over hides from the Amazon biome will take some years to become clear.

Table 20 - Leather sector trade balance

Unit: '000 US$ (FOB value)

Month	2004			2005		
	Export	Import	Balance	Export	Import	Balance
Total	**1,293,146**	**162,591**	**1,130,554**	**1,401,128**	**128,719**	**1,272,409**

Source: Secex

European Union Countries

Recent years have been better than expected for the EU and, although the current strength of the Euro is creating problems with exports into dollar areas, the long term view from many of the remaining EU tanners, mostly in southern Europe is optimistic. Italian tanners in particular showed a remarkable increase in turnover in 2006 and 2007. Europe was badly hit at the end of 2008 and early part of 2009 but indications were that the second half of 2009 was much better with more sales of fashion leathers and some recovery in automobile leathers as a result of scrappage schemes in many countries.

It was thought that REACH (Registration, Evaluation, Authorisation And Restriction Of Chemicals) would do specific harm to the EU industry in terms of creativity and innovation, as specialist chemicals would not be introduced or become too expensive. So far, this has not happened, and the view of the European tanners is that the world will level rapidly as more countries adopt the EU, or a similar approach. How REACH will work out in terms of chemicals, leather, and finished products is still, however, largely unknown.

In the European countries that were part of the former Council for Mutual Economic Assistance bloc (COMECON), the changes over the last two decades have not been particularly good for the leather industry. These markets opened up to cheaper leather products from China, which damaged the footwear industries in particular before they could modernise to compete. Even changes in the abattoirs affected the pig skin supply, of which some of the countries were top quality producers. Some stabilisation is taking place and, in the long term, the prospects for these countries should be reasonable.

Nevertheless, it should be said that, generally speaking, for much of the EU tanners margins are low and they are not well placed to withstand further shocks from environmental costs such as REACH and the currency volatility of trade downturn. Consequently, steady attrition of the industry in the EU seems likely.

As discussed elsewhere in this paper, EU tanners were mostly family owned and ill-structured to deal with globalisation. Those remaining in Italy have now reached very high levels of efficiency and process skills. When this is combined with their innovative product capability we have a country that can offer highly innovative leathers, often reflecting and leading European fashion trends at very affordable prices. Consequently they have been able to succeed in selling into difficult and price conscious markets such as China.

Four types of European tanner are likely to survive:

- those able to internationalise with overseas joint ventures and partnership;
- very large advanced and highly automated units (primarily for automobile/upholstery leather). These were badly impacted since the latter part of 2008 and the final outcome for the automobile sector will take some years to become clear

- other tanning enterprises moving towards smaller, creative boutique operations, serving local high end users of leathers, and who may also be making use of partnerships with the newer EU member states and/or North Africa;
- niche producers such as chamois and heavy leather for industrial users.

Italy
The Italian heavy leather sector is expected to remain strong and, if the luxury market continues to develop as expected, to thrive successfully. Vegetable tannage is trying to emulate certain advantages of chromium, and it is likely to increase based on a mix of its own appeal and continued anti-chromium marketing.

Over the years, tanners in Southern Europe have been subject to a great deal of pressure to become very efficient and some can offer prices similar to Brazil and India, but with a higher grade, more fashionable leather.

The recovery in the second half of 2009 for some parts of the Italian industry has been quite strong.

Germany.
The German industry has lately depended on automobile upholstery making up some 70% or more of production. Tannery output dropped by 15% in 2008 compared to 2007. There are still 60 tanneries remaining and just over 60% of turnover is exported. Germany comes third after Italy and Spain in size in Europe. Bigger falls in upholstery and furniture leather production were expected in 2009. The industry senses that this sector is reducing in margin in Germany and that the production is increasingly moving to former Eastern Europe and the Far East.

Russia
The leather industry in Russia has had a very disruptive last 15 years but it is now growing back to some strength, in large part on the basis of growing individual wealth. Output has more than doubled over the last decade, although there is doubt about the accuracy of the figures. The actual figure provided from the Russian industry for 2007 is a very large increase on the 1491 sq dm of 2006, which is closer to the FAO figure.

Table 21 - Russian leather production

Unit: million sq.ft.

	1991	1995	1998	2000	2003	2007
Soft (Cr)	45.2	9.7	4.2	8.7	15.7	26.6
Waterproof*	5.9	0.6	0.5	1.4	1.4	1.0

** This Russian waterproof leather is also known as juft being a vegetable tanned upper, waxed and waterproof, much used in winter boots, especially for the military.*

Unique to the Russian leather industry is the *juft* leather, a term that refers to a heavy type of leather for work and military footwear, combining high substance, heavy fat liquoring, hard wear and at a low cost. It was traditionally popular with local shoemakers, but its manufacture in a small number of tanneries and output fell by 20% in 2005. The largest producers are located in the Kirov region, the Yaroslavl region and the Nizhniy Novgorod region.

Between 2003 and 2007 imports of leather into Russia increased threefold and footwear more than ten times. Many countries such as Turkey, India and China are working hard to meet this growing demand, albeit 2009 has seen some slow down as a result of the decline in disposable incomes in Russia.

Turkey

Turkey currently sees its leather industry as stable after a number of years of steady growth based on a strong domestic sheepskin supply and an associated high quality export oriented leather clothing industry. 2008 figures were only marginally ahead of 2007, but this was against a backdrop of declines in output in most other Turkish industry sectors. In 2005 there were 1,462 tanneries employing 22,616 workers. The industry continues to modernise, primarily within the complex process of relocation to specialized leather industry zones like Tuzla, Menemen and Bursa with an emphasis on reducing water and energy consumption along with more automation of the tannery machines. The quality of Turkish leather products and their ability to command better prices perhaps insulates the Turkish industry to some degree against the economic downturn. According to the Turkish Undersecretariat for Foreign Trade Turkish leather garments exports increased in 2008 over 2007 by 10% by value with Germany, Russia and Spain being the top three destinations.

3.3 End Uses for Leather

History books tell us about leather boats called coracles (still in use in Tibet), about leather bottles and armour. This shows that end uses for leather have been changing over the centuries. This has coincided with an increased demand for leather and has meant that the industry has had to concede end uses many times over the last 1000 years or more.

The mechanisms that drive the market for leather and leather products all relate to population growth and per capita disposable income. Footwear is a more basic purchase, while most of the other items have to do with growing wealth allied with job and income security. The economics for footwear change when large numbers of pairs are bought per annum. For example, in the USA consumers purchase about seven pairs a year and the purchase of some of those pairs are impulse purchases.

Table 22 - End-users for leather in percentages based on square feet consumed

Year	Footwear (M)	Clothing (M)	Gloves	Leather goods	Upholstery	Automobile
1970	50-70	3-5.0	3-5.0	15-20	No data	No data
1990	67.9	12.4	4.3	8.8	5	1.6
1995	62.6	17.8	4.2	8.7	4.8	1.9
2000	58.0	14.6	4.3	9.4	8.8	4.9
2005	55.0	11.4	4.4	9.2	13.0	7.0
2010e	53.3	11.4	4.3	9.1	13.5	8.2

Source: ICT and industry sources

Because the volumes of leather used in various end uses is hard to estimate the figures in the table are at best an estimate. The latest ICT view was that in 2007 footwear had slipped to 52% and garment to 10% with automobile being over 10%. The recent decline in automobile and furniture leather has lead to a big reduction in tanning in those sectors and an increase in leather used in footwear so for the time being we remain with the figures as presented as being as good an estimate as any.

What this means is that while wealth increases there will be a rise in the demand for leather in premium goods. In turn, this means an increase in the sale of more luxury goods, leather furniture, and upholstered leather in automobiles. Increasingly important in this calculation is the

fact that growing wealth in much of Asia allied to the specific local demographics (one child families, multiple generations sharing housing) means that free disposable income increases rapidly with rises in income. Combined with the traditional Asian preference for premium brands, the rate of purchasing high quality leather goods is likely to continue rising at a higher rate than the rest of the world for many years to come. The percentage of automobiles sold in China with leather upholstery is near 100% in the high value segments. Luxury European automobiles average 70% of their cars sold with leather worldwide, yet in China the figure is usually 100% for this market sector.

Still, over and above these important patterns, there are other major considerations that have been discussed before:

- for the first time agricultural land is becoming limited for the keeping of animals, especially for cattle, the biggest users of land;
- meat eating habits are moving more toward white meat and, where red meat is still preferred, the hides will mostly be smaller and poorer in quality

The implication of this is that the demand for leather could increase faster than the supply. As indicated previously, historically, the industry has done well in adjusting to imbalances, so an apparent shortage of supply lead to substitution rather than high prices for tanners. The tanning industry generally accepts that it will need to consider what defines quality throughout the value chain from raw materials to final consumer products. In doing so, an eye should be kept closely on the definition of quality by the final user, as there is a lot of evidence that the industry at the tanners' level remains product oriented, rather than consumer oriented. The European tanners association COTANCE have a campaign addressing the issue of "misdescriptions of leather and labelling of leather products".

In the first quarter of 2008 it was reported that more than half of the shoes made in the world did not have leather for the first time in history. Perhaps the fact that some of the most recent footwear "fads" – such as Crocs – do not use leather at all was symptomatic of the trend. Until it is seen how quickly the upholstery sector recovers it is not clear whether this trend of a reducing percentage of leather going into footwear will continue long term.

Leather goods, while still selling the concept of quality, have shown that the combination of leather and textiles/synthetics can work with some consumers; some automobile companies use leather on key areas and plastics elsewhere. It can therefore be seen that where and how leather is used will depend on a price/value mechanism. Ultimately, price and quality related to alternative or substitute materials will be the deciding factor.

Making low grade heavily coated leathers does not appear to be the correct solution. Instead, natural leathers incorporating some natural defects need to be designed into goods whose designs are more sympathetic to the nature of the raw material.

Questions will be asked as to whether automobiles need to use the best quality hides, and about the dangers of using leather or coated splits that are hard to tell apart from plastic for the consumer. Aeroplanes are already starting to use smaller pieces and to take goatskin; perhaps this is a sign of future trends.

The leather industry does remain dependent upon consumer spending; the patterns of how that spending impacts the different sectors depends in turn on how consumers feel in terms of their employment and job security. Certain items such as footwear are essential and others such as premium leather goods are more of a luxury, so without question the next five to ten years in the

evolution of the leather industry will depend on how serious and prolonged the current recession is, and how it affects different segments of consumers and geographical regions.

Technical advancement and innovation related to consumer benefits and to process efficiency will be essential for a prosperous industry.

3.4 Tanning Chemicals

Over the last 100 years the tanning chemical industry has become very significant in the leather supply network, mostly achieving profit margins much higher than those to be found in the tanning sector itself. Major research and new product development – both long term and seasonal – has been carried out by the chemical companies over the decades and the ownership of technology in the industry has generally speaking slipped from tanneries, research institutes and educational institutes into the hands of these companies. The German and Italian leather chemical industries have been very innovative.

Over the last fifteen years this structure has changed. The move of much of the leather industry to Asia has increased the cost of technical support supplied by the chemical companies, substantially reducing margins. At the same time, there was significant reorganisation and consolidation in the global chemical industry, which created heightened competition.

In Asia, and in China in particular, the domestic market has been much more competitive than in the rest of the world as a whole; the international chemical companies have found this sector difficult to penetrate, as achievable prices are lower and qualities different. Initially at least, the international companies tried to focus on the joint venture tanneries in China, leaving the domestic Chinese tanners to the domestic chemical companies.

The confusion created in the industry worldwide by the new EU legislation on chemical registration (REACH) has been great. This process requires expensive registration of all chemicals in use and it was expected to raise the cost of chemicals and at the same time reduce the level of innovation of the European chemical companies, especially the smaller German companies. To date it appears that, while there are clearly costs in complying with these new regulations, the chemical companies were well prepared and the impact on tanneries has been minimal.

The general view is that any initial disadvantage to Europe will level itself out as the rest of the world moves to a common standard and REACH registration impacts on materials and finished product imported into the EU. Both Europe and the USA will become more particular about the chemical content of materials used in imported goods. Issues between the USA and China over toys, pet foods and foodstuffs during 2007 and 2008 make this more likely.

Overall, however, there is no doubt that margins both have and will reduce in the leather chemical sector and the outcome is likely to be a reduction in innovation and new chemicals coming from the sector. Fundamentally, this means that we are likely to see only incremental changes in the technology being used over the next few years. The view of many experts was expressed by Basford (2007) and Germann (2008) is that for the next two decades or more, chrome tanning will remain the basis for the majority of tanning carried out in the world. While leather that is free of chromium has made inroads in the automobile sector, chromium is still the dominant tannage covering 80-85% of all manufactured leather. The advantages of most chromium free leathers is the absence of heavy metals, reduced solid waste disposal issues, and

improved dry shrinking behaviour. However, they produce higher COD in the effluent, reduce the fixation of dyestuffs, are harder to make waterproof, are more complex to produce, and have more mould issues when wet, They also require two or three times the weight of tanning chemical per kilogram of raw hide. We can expect more work to be done to ensure that chemical and physical processing of leather has no chance of creating Cr^{VI}.

There will certainly continue to be interest in new techniques and there will be greater use of vegetable tannages and other non-chrome approaches. These have been increasing as it has been realised that only a small number of leathers need to pass the boil test.

We can expect new approaches to vegetable tannages combining traditional approaches with new technologies to produce effective outcomes with a reduced extract offer. It is anticipated that the industry will continue to look at new approaches to reduce the environmental impact and this is likely to involve looking for the further replacement of materials such as lime and sulphide by bio-chemicals. Fungicides and mould treatments are also likely to see further work to minimise the use of undesirable chemical agents.

New machinery also plays an important role. We have had many developments in vessels from liming, tanning and retanning, from concrete mixers through to Y shaped vessels, and many materials from stainless steel to polypropylene along with computerises chemical additions. Throughfeed systems for setting out, drying, conditioning and staking and dry drums suited to chemical addition are also now important. It can be seen that new machinery developments now go beyond just automation and process efficiency. They increasingly demand process and even chemical adaptation to get the best from them.

This need for leather chemicals and process technology to work hand in hand with machinery developments is very obvious in finishing. New systems of roller-coating and the possibilities of digital techniques being adapted to leather finishing have, and will continue to demand, the development of new and adjusted materials for the industry.

Overall, a great deal of continued development will look at the handling of raw material with more surface defects while at the same time retaining a natural leather look.

3.5 Environmental Issues for Tanners

Environmental issues have been at the top of the agenda for tanners for the last few decades since dealing properly with tannery wastes is expensive. This has lead to concerns about the fairness and appropriateness of demands made by governments, and to whether tanners worldwide are all able to operate on a level playing field.

Most of the main issues of solid and liquid wastes are now well understood, but the industry does have a number of evolving areas of concern:

- common salt (NaCl) and some other water soluble salts getting into water recipients – rivers, lakes and/or ground water – and making them unsuitable for drinking and other uses;
- the lack of environmentally acceptable and cost-effective solutions for solid waste disposal, landfill for solid wastes in some European countries and the associated trend to increase the cost of landfill disposable via tax or other methods;
- increasing consumer pressure and associated regulations related to an increasing number of chemicals now deemed harmful for various reasons;
- high levels of water consumption.

In dealing with these, the tanning industry does not speak with a unified voice, and although the International Union of Leather Technologists and Chemists (IULTC) started to spearhead better coordination of the potentially relevant bodies with its Paris meeting in September 2007, there is no clear evidence that the industry will do so. This has meant that power in these decisions has been left in the hands of the regulating authorities around the world, the pressure groups, and the major brands.

It is also the case that only 50% of the raw hide or skin actually makes a successful transition to leather and, in many instances, all the rest goes to waste. Research projects such as the EU funded Radical Environmentally Sustainable Tannery Operation By Resource Management (RESTORM) have aimed at trying to reduce this and to create more of a closed loop. This would involve changing some of the chemicals used, extracting more material for which economic uses can be found, recycling the liquids back into the tannery, and using the solids to generate gas and power in a variety of ways.

The industry can be expected to put more effort into making better uses of solid wastes, such as fleshings and shavings from the tannery, and to look for new possibilities.

Common salt has become a considerable problem as it is not removed easily and the best method, reverse osmosis (RO), is costly in energy. The need for fresh water in the world is advancing the technology for the removal of salt from sea water and this has helped reduce the costs, but there is now a need for another technological leap before this can be reduced further. Meanwhile, tanneries are often being built within pipeline distance to the sea.

At the same time, processing is being looked at to see if it is possible to reduce the use of salt in conservation and in pickling.

According to the 2007 Arthur Wilson Memorial Lecture by Daniels titled “Effluent Treatment in the Root Zone: Working with Nature”, tanneries with sufficient land reed beds are increasingly being considered, not just for polishing as a final process, but also to replace sections of chemical treatment and for drying sludge. These highly resilient and very capable plants are now extensively used outside the leather industry to handle difficult situations such as airport and highway run-offs, which are heavily laden with petrochemicals. Set up and management costs are very much lower than alternates and they are now an important potential element in the environmental treatment mix.

Burning and gasification is currently developing quickly. Burning solid wastes at a variety of temperatures is also being examined, such as moving to high temperature pyrolitic burning if chrome is present in order to avoid toxins. This high temperature burning acts effectively as a smelter for the chrome and creates an ash that contains the chromium. Chrome thus produced should be able to be reused. This area is still only starting and there have been some false starts. It does, however, looks possible that it can be made to work, although cost may make it uneconomic for a single tannery to build a standalone plant, requiring more than one tannery or other businesses to combine to build one plant. This technology can be expected to develop as more space for landfill is becoming unavailable.

Water consumption has been a major issue for a long time and great strides have been made over the last three decades to control and reduce water consumption. Metered water addition into drums and controlled drainage rather than the old lattice doors have been a major part of this, as it has been low float processes in general. More recently, work has been done with drum configurations and materials, which both reduce the water consumption and the energy usage in

tanneries. This is an area where considerable progress can be expected in future years. Increased recycling and work on higher exhaustion continues to be important and will carry on in the years to come.

Overall, the leather industry should be able to reposition itself as a solution to environmental problems rather than a contributor, as there is no other industry which could make use of the total volume of the hides and skins produced as a by-product of the meat and livestock industries. When pressure groups stopped the tanning of sealskins in Greenland, the outcome was that the skins were thrown into the sea untreated. The base position that the tanning industry needs to promote is that hides and skins are a renewable resource that would be an environmental hazard if it was not converted into something beautiful and useful. The replacement of leather by substitutes, more often than not, requires using material developed from non-renewable resources such as petrochemicals. To date, the industry has failed to present this position as its fragmented structure and different sectors have failed to come together.

In this regard, we can expect the industry to work more closely with its customers in footwear and leather goods to determine what is the appropriate life for an article and what, other than landfill, would be a suitable way to deal with used articles made from leather.

3.6 Research and Education

Historical Background

Work to improve the leather processes has gone on for many years and a great deal was done as new chemicals and processes were introduced in the 18th and 19th centuries, accompanied by the development of the move of the industry from a cottage industry structure to large factories in the mid 19th century. Structured industry research and education only began toward the end of the 19th centuries as the process of chrome tanning came into prominence. This required the tanneries to employ trained chemists and gave encouragement to the industry that further research could provide significant savings and produce much better leather.

Thus by the end of the first quarter of the 20th century, all of the major developed countries had established Research Associations funded by large payments, linked to turnover and number of employees, from their tanners. Over time, the industry in these countries has declined and it has transferred to the newer developing countries in the world and these research associations have seen their funding changed and reduced.

Consequently, the most apparent aspect of the research side of the leather industry in recent years has been the steady decline of the hugely influential research associations that were associated with the industry in the former major leather regions of the world. The USA, Australia, France, Germany, South Africa and the UK have all seen their leather industry research associations decline considerably, change into commercial organisations mostly doing testing, or close altogether.

India, Brazil and China are exceptions to this; all of these three countries have longstanding combined research and teaching institutions. Brazil in particular has been good at putting together an integrated structure of research with education and industry.

The expanding research done in institutions in India and China has increasingly provided the material that has allowed the learned journals of the *American Leather Chemists (JALCA)* and the UK *Society of Leather Chemists and Technologists (JSLTC)* to continue. It has been argued

that the research done in these newer institutions tends to focus on short term gains, which is to be expected considering the growth of their domestic industries.

In addition to this, a number of bodies have been established in the more recently emerging leather producing countries to assist with the implementation of best practise as well as training. Examples of these would be the Centre National de Cuir et de la Chaussure (CNCC) in Tunisia, the Leather and Leather Products Institute (LLTPI) in Ethiopia, and the National Institute of Leather Technology (NILT) and the Leather Products Development Institute (LPDI) in Pakistan. While most of their current activity relate to quality improvement and technology transfer, it can be expected that, over time, they will play a bigger role in research.

The very large amount of research carried out by the chemical companies has been of major importance in the last hundred years. However, the loss of margin and the cost of environmental issues related to leather chemicals has slowed these activities. The introduction of the European legislation REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals), along with other environmental concerns, has meant that the research expenditure of the chemical companies has moved much more towards compliance. The cost of REACH has also caused concern regarding the smaller chemical companies in Germany and Italy, who are thought likely to be able to fund only the development of "big winners". Today, evidence is mixed on this matter, although it appears that less damage than feared has been done to creativity.

All the evidence suggests that the chemical companies will put most of their research budgets into compliance and application technology, which is more about new process formulations with some product adaptation. The chemical companies argue that putting more money into research is difficult, as the margins are not available for new products when sold to the tanneries. There is an ongoing dialogue regarding the reason for this, some arguing that tanners are too cautious and others that tanners themselves have margins that are too small to pay a premium for new developments.

Current Problems And Future Areas

With increasing pressures on the chemicals that the leather industry uses, the volumes of water needed, and on land filling issues for the finished product there is a considerable need for research to allow the industry to remain stable. Most of these areas have already been detailed. Just as important, there is a pressure on leather to match the improving technologies in textile, faux leather and plastic alternatives. Consumer expectations rise year by year and, to maintain its position, the leather and the leather using industries require ongoing research at all levels. Considering that after many thousands of years in production, the leather industry has only had two dominant tannages – vegetable and chromium – and that chemists still argue about the precise mechanisms involved in both, it is clear that the industry has certainly been short of fundamental research.

It is not disputed that there is a positive link between research, training and industry development that needs to be maintained. However, it is clear that there has been a definite decline in the number of academic papers being published and also the amount of fundamental research being done.

There is a general agreement in the industry on the need to find a way to support more basic/strategic research on leather. Whilst a number of institutions: the British School of Leather Technology, University of North Hampton (BSLT), the Central Leather Research Institute in

Chennai/India (CLRI), the Eastern Regional Research Center in Pennsylvania/USA (ERRC), and the Consejo Superior de Investigaciones Científicas, or the Spanish Council for Scientific Research, (CSIC)) have been able to make advances in this key aspect of research, one of the problems of recent years has been the difficulty of getting sufficient financial support to carry out a sustained basic/strategic research effort. The need to demonstrate useful results in a short time scale means that mainly applied research is funded (as has been the case with much EU supported research). The fact that there has been no recent major innovation within the industry is very likely related to this short term approach that does not favour the creation of new durable knowledge that can support new ways of thinking about what is possible for the future.

The work on collagen biomaterials the EU RESTORM project in the early 21st century is a case in point. Funding for this was based on bringing together a number of commercial and educational bodies from many EU countries to work on a large project related to the "closed loop" concept of making leather. This was a mix of short to middle term research looking at reducing the use of inorganic chemicals such as lime and sulphide and replacing them with enzymes and other biomaterials. This would allow for re-using chemicals and liquids in the leather industry and other areas after membrane filtration and a number of other techniques to commercial waste materials and the like. It did not involve new fundamental research, but mostly the transfer of knowledge from other sectors and its application to the leather industry. Much of the work that has taken place on the various options for chrome free leathers has fallen under this heading also.

At the same time, the potential for collaboration should not be ignored. Sometimes these require mixing bodies from industrialised and developing countries. This concept of combined research using the skills of a number of bodies across the world seems more likely to access funding in the future and brings into the equation Universities whose skills are in related areas – collagen, medical treatments, stem cell work, and membranes – rather than being solely leather institutes. If the leather industry embraces this approach many participants think that the leather industry could benefit considerably from ideas in other areas such as:

- pharmaceuticals,
- collagen science,
- smart textiles and materials,
- nanotechnology,
- medical industry,
- waste treatment,
- food industry (sausage skins and gelatine),
- digital technologies (finishing)

Collaboration is now also taking place much more between the machinery manufacturers, the chemical suppliers, and the tanneries. New drum types and materials for wet and dry drums, drying and conditioning systems and finishing processes often require the development of new chemicals or new formulations/processes and some of the focus of development has swung towards the machinery manufacturers.

The research organisations that are fully committed to leather and retain a strong link to teaching are likely going forward to be institutions such as the Lederinstitut Gerberschule Reutlingen in Germany, the above mentioned BSLT in the University of North Hampton, the CLRI in Chennai and the Sichuan University in China. Many other European institutes in Spain, Holland, Italy, Germany, the Czech Republic and Turkey all have the competence to do additional work depending on funding and opportunities. The trend in recent years is of increased cooperation in

research. Older institutions such as the BATA University, although much smaller than a few decades ago, still retain their relevance and importance for the future

Over the last ten years, the British School of Leather Technology in the University of Northampton, UK has steadily developed its research in leather and has run studies on the psychology of using leather, collagen regeneration, and enzyme utilisation, which have been collaborative with other institutions within the UK and overseas. A process called "Knowledge Transfer Partnership" also allows access to some funding for the University to work with small and medium sized businesses on research projects. These sort of creative ways of expanding research in leather are likely to increase. In 2010 the University is preparing to put most of leather activities

In New Zealand, the Leather and Shoe Research Association (LASRA) research body is one of the few of the original research bodies to have survived in something like its original form. LASRA's success has been to "critically analyse real research and development needs in terms that reflect national demand on the one hand and deliver real commercial benefits on the other." They argue that because of national needs, research can be structured on longer term horizons and that it is possible to build on basic research to underpin the applied work that attracts industry buy-in. This perspective opens up different funding pathways. The mix also makes it easier to attract and retain good people. This approach is the successful continuation of the research association supported by its domestic industry, which was the formula for stand-alone research institutes through most of the 20th century. In nearly all other countries this business model has failed.

Another approach for the survival of these organizations that has been followed by SATRA in the UK and the Centre Technique Cuir Chaussure Maroquinerie (CTC) in France is to convert towards global test houses with consultancy arms. To a lesser degree the Leather Technology Center (BLC) in the UK has followed the same route. These are now strictly commercial organisations in which the role of research is considerably diminished, albeit not totally ignored. Testing is a logical income earner for a research and teaching institution and should not be overlooked by organisations in the developing world. If more testing could be done in these institutes it would reduce the issues of compliance as barriers to entry to some markets and it also represents a useful source of revenue.

For institutes in Northern Europe actual tannery access can be limited, especially in the north of Europe where tanneries no longer form a large industrial sector. Therefore, there would be a natural advantage for the older developed world institutes to work closely with the developing world institutes that are based amidst large conglomerates of tanneries and could thus create a high quality mix of the theoretical and the practical aspects of research. The funding systems would have to evolve somewhat to support such activities. Much of the ongoing research has moved from specialist leather research bodies and from the chemical supply trade back towards teaching institutions and the Universities.

Fundamentally, collaborative research is increasing and needs to be further encouraged. It could be very useful if it links top research work in the developed world with locations where the leather industry is expanding in the developing world.

New sources of funding for long term research are urgently needed.

Training and Education

Training and research are closely linked, but while the area of fundamental research has become more difficult as the industry re-aligned globally, teaching facilities have actually increased. The widespread use of chromium tanning required careful management of pH and temperature regulating machinery; additionally, automation, water and waste management plus the increasing use of biological materials such as enzymes means there is a steadily increasing need for skilled technical staff. While modern production systems may reduce the work force and reduce the number of skilled staff needed on the factory, the technical demands on those who are employed will increase. As more factories open in developing and newly developing countries, the constant need for training of workforce and supervisors will remain. This means that the industry will need a constant flow of basic skills in some parts of the world and this will overlap with a need for leather technicians and other staff trained in leather science and technology, biochemistry and environmental sciences, plus some highly skilled engineers.

Most countries in the world have introduced training for various levels, from skilled worker to supervisor and upwards. Some countries also have "model factories" or "shared facilities", where a mix of operational training and contracted production can be done.

As mentioned above, in some instances, these bodies have become highly important in technology transfer and in the introduction of quality control. Increasingly the older educational institutes have become dependent on foreign students and this has lead to a number of potential and current changes. At the same time, industry is less willing to release staff for long periods for study so shorter courses are becoming more common in much of the world. Some future trends are apparent:

- the older institutes will work more in conjunction with the developing world institutes in offering joint courses taught partly in each country;
- the older institutes will help with "training the trainers" and offering further education courses such as Ph.D.s and Masters;
- teaching of leather technology to others than teachers and senior management has increasingly been done locally and this is likely to increase;
- there will be a development of distance learning and blended learning;
- there will be more short courses;
- increasingly, educational institutes will look to the whole supply network from raw to retail, and adapt their courses according to the local student's requirements.

Worldwide, the commitment to education is very high, but for the various institutes almost everywhere, funding has been an issue. This has meant that institutes around the world have limited interconnections and knowledge, and teaching processes that could be beneficial spread less quickly than might otherwise be the case.

While the focus of activity of both teaching and research has moved with the restructuring of the industry, Europe has retained some relevance. The importance of retail, luxury and the fashion sectors of the leather industry creates a pull and a series of requirements for education and research. Europe retains a significant proportion of very creative tanneries, the research centres of some major tanning, footwear and leather goods businesses, a sizeable automobile industry and many of the world's most innovative leather chemical companies. Similarly, leather research and education will retain significance in this region.

3.7 Future Trends in the Tanning Industry: Conclusions

The tanning industry, with its wide range of raw materials from all over the globe and its extensive variety of end uses, is very complex. It has been an industry that over centuries has given up end uses as better materials have appeared. Its major outlet in footwear changed its course with the introduction of trainers, which leather has been unable to dominate.

Nevertheless, looking over the next fifteen years it is unlikely that the basic structure of the industry will change dramatically in terms of processing, end uses or raw material. Even in terms of location, which has been one of the most dynamic areas of the last fifteen years, it is expected that we will see more of the same rather than major discontinuities.

In terms of raw material, the point has been clearly made that there are issues of land use for cattle and some changes in preference for white meat, but that the overall demand for meat in the developed world will continue to flatten while that in the developing world will grow. As more raw material comes from the developing world, issues of quality will continue to be of concern for an industry that keenly wants to avoid producing a plastic like commodity. Overall the current supplies of raw material should continue to be steadily available, although some more commercialisation of such material as deer and camel is to be expected.

While gelatine and sausage skins take small amounts of the tanning raw material and in other places skin is eaten or left on the animal, no alternate uses for leather are likely to arise in the next fifteen years, although a lot of work will be done to find viable end uses for the waste collagen and other material produced by tanneries.

It has been demonstrated that there is a link between the tanning location and the availability of raw material, and this will continue to be important. While the overall volumes of raw material will steadily increase, the different types and grades in the material may be harder to obtain (especially noting that over 40% of the raw material produced in the world is not freely available for purchase). At the same time, there is a link between the tanning location and the end uses as a result of demand for shorter lead times and greater responsiveness to ups and downs in the demand. This locational pull between end-user need for quick response times on the one hand and where the raw materials originate is further complicated by the trade in semi-processed material such as wet blue and crust. These allow the raw material to be part processed at the point of origin. This diminishes the customers' flexibility in leather making but at the same time leaves the main environmental issues to be dealt with at the point of origin. This important dynamic is likely to be affected by further vertical integration as some meat packing companies, most notably in the USA and Brazil become more interested in owning additional parts of the industry.

The fact that growth in the Chinese leather industry is beginning to flatten and that most other countries with the elements to have a leather industry are already involved means that the next fifteen years will not see another country coming to match the dominance China has achieved. Even with some negative feelings from the Chinese government, its industry is expected to grow, albeit with some major relocation inland.

Further growth in China and other countries such as India, Bangladesh, Pakistan, Ethiopia, North Africa, and elsewhere means that there will be contraction in tanning elsewhere. Those countries without such a good hold on raw material, or with large end user industries such as some of the European countries (especially Italy), and Korea must therefore feel under threat. Tanners for the automobile industry have always located alongside the industry and are very capable of moving

plants; so their locations will be expected to change. Some consolidation in the automobile industry appears inevitable as does a move to India and China for future development.

Tanneries themselves are likely to develop as more machinery processes link operations, reduce labour content and improve the consistency of the leather. The industry is likely to see a split between smaller boutique tanneries and large highly mechanised ones. These latter, as seen in the automotive sector, can be built in different parts of the world with satisfactory transfer of processes and quality, which opens up this approach of larger groups having tanneries around the world. Such groups would have good access to raw material and be closely linked to a number of major consumer brands to ensure volume orders.

In terms of end uses, the steady move to more leather in automobiles and aeroplanes will increase, although how this will be impacted by the financial crisis of 2008-2010 is unclear. Equally uncertain are the effects if these industries continue to feel pressure from the customers to make plastic like leather, rather than products that emphasise the leather like properties.

This underscores the point that, perhaps with the exception of horse saddles, leather is everywhere in battle with other materials and must offer value for money. The footwear industry makes it clear that it will buy leather if it is suitable in all respects, but has no fear should supplies diminish. It is expected that until 2010 footwear will stay at about 55% of the used leather, but that after that, it will slip to 50% as leather goods and upholstery of all types grow in their use of leather.

Chrome tanning will remain the dominant tannage, but there will be continued attempts to find good alternatives. Over the last fifteen years chromium has slipped to 80-85% as the car industry in particular has adopted chrome free processes; this could well slip to 70% as new processes are adopted. In other aspects of processing, it is foreseen that cooperative work between chemical companies and machinery suppliers will create further improvements in processing.

Environmental issues will become even more important as the world population grows and urbanises along with increasing concern about global warming and the need for clean drinking water.

4. FOOTWEAR INDUSTRY

4.1 Summary

Global footwear production reached approximately 16 billion pairs in 2007, an increase of more than one third since 1995. Some of the main points for the recent developments in the footwear industry:

- It has taken China only 20 years to move from a poorly organised industry, catering predominantly for its domestic market, to becoming the most dominant player in world footwear by a large margin; its 63.7% share of the world's footwear manufacturing output is still increasing.
- In 2007, more than 84% of the world's footwear by volume was manufactured in Asia.
- Asian production will continue to increase over the next 10-15 years, to the further detriment of the "traditional" footwear manufacturing countries.
- With their respective shares of the world's footwear manufacturing, India (12.3%), Vietnam (4.1%), Indonesia (3.5%) and Thailand (1.6%) are the other main contributors to Asia's success.
- The largest footwear manufacturing nation outside of Asia is Brazil, with an estimated 4.9% of world output.
- 54% of globally produced genuine leather is used in the footwear industry.
- Footwear production in the developed world has, in most cases, been downsized to an irrecoverable level.
- It is estimated that 10 million people are employed in shoe manufacturing world wide.
- 2.8 billion pairs (more than 18% of the global output) are categorised as sports footwear.

This section looks at the trends in footwear consumption and production in the world and it attempts to identify areas of change within the main geographical areas. Before continuing, there are some points that require consideration:

- Only footwear production has been considered in this aspect of the report. Of course, there are many industries associated with the manufacture of shoes that also need to be considered. Significant changes have occurred in those industries supplying software, machinery, components and chemicals to the shoe industry. Many of the "traditional" suppliers have ceased to exist, some are involved in joint-ventures with Asian companies, and some have downsized or moved their operations to Asia. Simultaneously, new Asian-financed suppliers have assumed dominance in some areas. Although it is not within the scope of this report, the support industries to the shoe manufacturing industry have been subject to a similar degree of change as the industry that it is supporting.
- Many manufacturers in traditional footwear manufacturing countries import partly made shoes from other less industrialised countries, predominantly from Asia, Eastern Europe, North Africa and Brazil. Therefore, although industrialised countries quote shoe production figures, it is often the case that a significant part of the work in this declared production has been carried out in another country. This results in a distorted view of the health of the industry in industrialised countries and in an underestimation of the industry in the component - supplier country.
- It is well known that there is a very significant illegal trade in footwear on a scale that is impossible to determine because statistics for this trade do not exist. This illegal trade could have a significant effect on the statistics quoted in this report.

4.2 The Market

A regional breakdown of footwear consumption around the world is shown below.

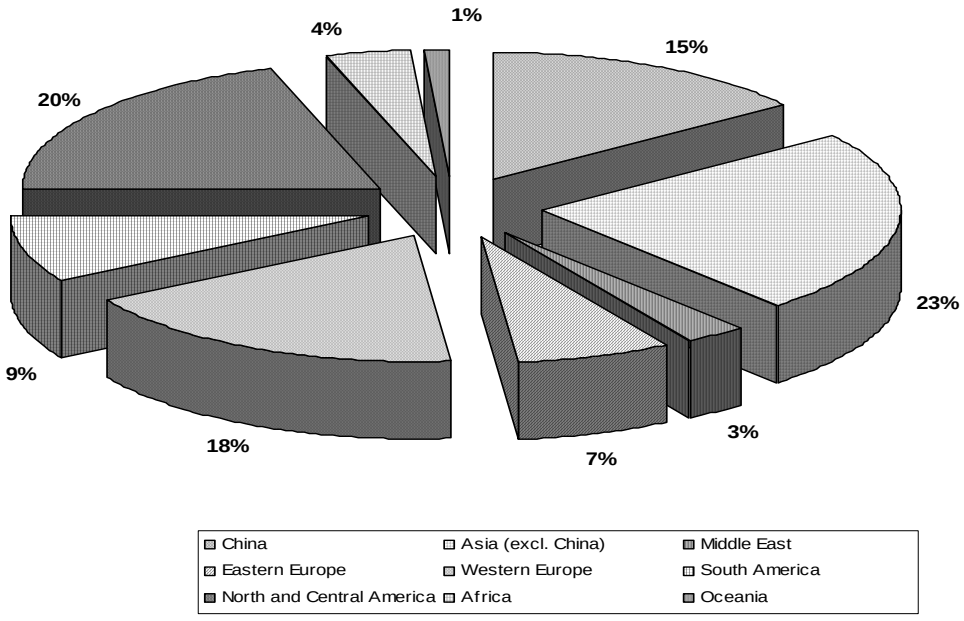

Figure 2 - Footwear consumption by region
Source: SATRA
Note: Turkey is included in the figures for Eastern Europe. North America total includes Central America

The top 10 consumers are shown below in ***Table 23.*** In total, they consume around 70% of the world footwear production.

Table 23- Top 10 consumers of footwear by volume 2007

	Consumption	Population**	Estimated consumption
	million pairs	*million*	*pair/par/capita*
USA	2,393	299.1	8.0
EU***	2,102	501.0	4.2
China	2,080	1,311.4	1.6
India	1,895	1,121.8	1.6
Japan	650	127.8	5.1
Brazil	648	187.0	3.5
Indonesia	393	224	1.74
Mexico	227	109	2.08
Pakistan	241	168	1.4
Russia*	234	143	1.5

Source: SATRA
** Figures for Russia may be distorted because of the difficulty in defining the actual imports and consumption figures*
*** Source: USA Census database*

Asia consumes more than 41% of the world's footwear and this consumption is expected to rise due to the increasing wealth of the region brought about by industrial expansion. . It has been reported that, in 2008, footwear consumption in the USA decreased while in China it rose significantly with the result that China exceeded the USA as the world's largest consumer of footwear. It is estimated that the consumption in China will continue to grow at a rate of 5 – 6% and China is unlikely to look outside the continent of Asia for these additional requirements.
The EU, North America and Russia consume a further 32% of the world's output and they no longer have a manufacturing base that is able to satisfy their requirements. In 2007, shoe production in these areas accounted for only 15.2% of the total consumption.
Of the top ten consumers outside of Asia, only Brazil and Mexico have retained a footwear manufacturing base that is capable of satisfying their domestic markets.

A very important and relative newcomer to the footwear scene is the "sports shoe", which has now developed into a fashion item. Of the 2.82 billion pairs estimated by SATRA to be made worldwide every year, only 16% are specialist sports shoes. Trainers constitute a further 57% and brown shoes the remaining 27%.

Table 24 - Top 10 sports shoes consumption and domestic output

Unit: million pairs

	Domestic output	Consumption
USA	1	752
China	1,452	457
Japan	7	196
Brazil	180	187
UK	1	105
Indonesia	309	87
India	87	79
France	3	78
Italy	28	77
Germany	2	61

Source: SATRA

4.3 Global Footwear Trade

The world's import and export statistics are becoming increasingly confusing due to the number of countries that are importing and re-exporting footwear.

Table 25 - Top 10 footwear importers and exporters (25a) by volume 2007

	2003	2007	Increase
	Million pairs		*%*
USA	1968.0	2362.0	20.0
Japan	494.0	594.2	20.3
Germany	382.8	497.5	30.0
UK	338.0	486.0	43.8
France	309.8	394.8*	27.4
Italy	268.7	390.0	45.1
Spain	131.2	352.8	168.9
Belgium	120.7	255.3	111.5
Netherlands	152.8	207.6	35.9
Russia	145.0	191.0	31.7

Source: UNCTAD/WTO
**2006*

Table 25a - Top 10 Footwear exporters by volume 2007

	2003	2007	Increase/(Decrease)
	Million pairs		*%*
China/Hong Kong	5,026.0	8,175.0	62.7
Vietnam	393.0	614.6	56.4
Italy	297.6	245.3	(17.6)
Indonesia	181.0	229.0	26.5
Belgium	77.0	199.1	158.6
Brazil	189.0	177.0	(6.3)
Thailand	138	144.0	4.3
Germany	77.6	141.0	81.7
Netherlands	81.1	114.3	41.0
India	70.0	105.5	50.7

Source: SATRA

The EU is the largest importer of footwear in the world, with imports in 2007 estimated at 3.2 billion pairs with a value of 26.6 billion Euros. The USA imported 2.36 billion pairs, valued at almost 19 billion dollars.

The USA has virtually replaced its footwear manufacturing industry with imports. Imports in 2007 accounted for 98.7% of its total consumption, with China providing 86.4% by volume of all footwear consumed, Vietnam's share was 3.8% followed by Brazil with 2.2% and by Indonesia with 1.4%. According to AAFA, the per capita consumption of footwear in the USA

dropped from 8 pairs in 2007 to 7 pairs in 2008. Current indicators for 2009 show that sales continued to decline due to the global economic downturn.

USA imports in 2005 accounted for 98.5% of its total consumption, with China providing 84.2% by volume of all the footwear consumed. Brazil's share was 3.5% and they were followed by Vietnam with 2.9% and by Indonesia with 2.1%.

Table 26 - USA footwear imports (wholesale market)

	2003	2007	Change 2003/2007
	Million pairs		*%*
Production	39.81	30.6	-23
Imports	1,968.1	2,362.35	+20.0
Consumption	2,007.9	2,393.0	+19.2
Import penetration	98.0%	98.7%	+0.7%

Source: AAFA

In the EU, it seems like the purchase of cheap footwear and the subsequent re-export has been identified as a business opportunity and the EU is now a market place for imported footwear from developing countries. The majority of this trade, however, is conducted within the EU, since shoes exported outside the EU represent only 8% of total EU imports. This is best illustrated by comparing the volume exported against the volume manufactured for selected countries in the EU.

EC Enterprise & Industry figures show that imports to the EU fell by 3% between 2007 and 2008 and, again because of the global economic downturn it is expected to see a further decline in 2009.

Italy, with a production output of less than half of that of Vietnam is the second largest exporter by value of footwear in the world.

Production from Italian factories declined to 242 million pairs in 2007. Imports for that year were 390 million pairs and exports were 245.3 million pairs. Annual domestic consumption was 386.6 million pairs.

The situation in Belgium is even more extreme. A country producing around 2,000 pairs per week, with an annual domestic consumption of only 56.3 million pairs, is the world's fifth biggest exporter of footwear by value.

Table 27 - A comparison of footwear production vs. exports in selected EU countries 2007

	Production	Exports	Share of exports in production
	million pairs		*%*
Austria	2.6	26.7	1,026.9
Belgium	0.1	199.1	199,100.0
Denmark	1.2	18.2	1,516.7
Eire	0.2	2.5	1,250.0
France	37.6	65.7	174.7
Germany	26.8	141.0	526.1
Italy	241.9	245.3	101.4
Netherlands	1.1	114.3	10,390.9
Portugal	74.5	70.5	94.6
Spain	108.4	101.6	93.7
Sweden	0.4	9.5	2,375.0
UK	5.0	40.1	802.0
Bulgaria	14.0	12.0	85.7
Czech Republic	5.1	34.2	670.6
Hungary	14.8	15.9	107.4
Poland	47.2	28.7	60.8
Romania	68.4	68.1	99.6
Slovakia	14.0	22.7	162.1
Slovenia	3.2	4.5	140.6

Source: CBI Database

In the EU, between 2001 and 2005, there has been an average annual increase in volume of imports of 10.6%, but only a 2.5% average annual increase in value, as is shown below.

Table 28 - EU imports of footwear

	2001		2003		2005 Value - Volume		Average annual change in value
	Million €	*Million pair*	*Million €*	*Million pair*	*Million €*	*Million pair*	*%*
Total EU, of which:	21,960	1,858	21,681	2,074	24,166	2,648	2.5
Intra-EU	11,366	698	11,362	653	12,298	733	2.1
Extra-EU of which:	10,594	1,159	10,319	1,421	11,868	1,915	3.0
Developing countries	7,411	940	7,819	1,186	9,992	1,792	8.7

Source: Eurostat 2006

This table shows both the increasing importance of imports in the overall market and also the downward pressure on the prices. The major source of increase of imports is from developing countries, which although they represent 41.3% of total EU imports by value, they represent 67.7% of the market by volume. Some key points are:

- Footwear with leather uppers represented nearly 60% by value (37% by volume) of all EU imports.
- The next largest group was footwear with plastic or rubber uppers, which accounted for 15% by value (32% by volume) followed by footwear with textile uppers at 14% by value. Other footwear, including shoe uppers, made up the remaining difference.

Apart from the EU and the USA, estimated imports in the rest of the world (in million of pairs) in 2005 were as follows:

Table 29 - Main footwear importers in 2007

Region	Total imports	Biggest importers	Volume	Of which ex China	From China
	million pairs	*Country*	*million pairs*	*million pairs*	*%*
Asia	1,440	Japan	594	545	91.7
		Korea	131	120	91.6
		Taiwan	76	68	89.5
		Philippines	61	52	85.2
		Indonesia	55	40	72.7
North & Central America	225	Canada	163	137	83.9
East Europe	203	Russia	191	170	89.0
Africa	372	South Africa	158	143	90.7
		Egypt	50	28	56.0
South America	326	Venezuela	51	24	47.3
		Chile	50	39	78.5
Middle East	326	Saudi Arabia	93	79	84.9
Oceania	142	Australia	94	70	74.3

Source: SATRA

4.4 Footwear Production

The top 10 footwear manufacturing countries in the world are shown below:

Table 29 - Top 10 footwear manufacturing countries in 2005

	Volume	Share in global production
	million pairs	*%*
China	10,209	63.7
India	2,000*	12.5
Brazil	796	4.97
Indonesia	665	4.1
Vietnam	565	3.5
Thailand	268	1.7
Pakistan	246**	1.5
Italy	242	1.5
Mexico	170	1.1
Turkey	172	1.1

Source: SATRA
** includes 1.02 billion pairs non-leather footwear and excludes 100 million pairs shoe uppers*
***includes at least 150m pairs of sandals/thongs*

These 10 countries supply more than 95% of the global footwear output.

To understand what has happened to the global manufacturing of footwear, it is necessary to examine each geographical area in some detail.

Asia

As previously stated, shoe production in Asia accounts for more than 84% of the world output and the numbers are still growing at a significant rate. The growth of the industry in Asia was phenomenal. China in particular has become the world's dominant footwear manufacturer and accounts for more than 63% of all the footwear produced worldwide. India, with 12%, is in second place. However, unlike China, they have failed until now to fully capitalise on the export market. 2008 reports appear to confirm the intention of some major sports and brown shoe brands to move some production from China to India over the years 2009-2011.

Vietnam grew rapidly from 2000 to 2007 and, in 2007, had a 4.1% share of the global production Indonesia with 3.5%, Thailand with 1.7% and Pakistan (1.5%) are also major contributors to the total global footwear production.

The success of the Asian footwear industry should be no surprise. In an industry that is labour intensive, these countries have the advantage to have labour costs that are significantly lower than those in the rest of the world, except Africa. China benefited from it's proximity to Taiwan and Hong Kong, whose shoe manufacturers relocated to China when their products were becoming increasingly uncompetitive in an increasingly competitive market.

Table 30 - Typical wages in selected countries in 2006

Country	Wages
	US$/hour
India	0.43
Vietnam	0.46
Indonesia	0.67
China**	0.70
Thailand	0.92
Philippines	1.15
Mexico	2.59
Brazil	2.98
Korea	6.30
USA*	12.0
Italy	13.6
Japan	21.95

*Source SATRA 2007; *AAFA*
***Wages in China increased by 20-25% in 2008.*

Of the estimated 2.85 billion pairs of sports shoes manufactured worldwide, 2.4 billion, or 84%, are manufactured in Asia and, of these, China manufactures almost 52%.

China

Since the mid 1980's, Chinese shoe production has grown from just below 2 billion pairs to 10.2 billion in 2007, 64% of the global footwear manufacturing. The importance of China's influence on the world market is such that they supply almost 86% of shoes sold in America and 50% in

Western Europe. The entire current footwear production of North, Central and South America amounts to only 16% of China's footwear exports. Output of the continent of Europe (including Turkey) amounts to only 12% of China's exports and the total output from the rest of Asia is 51%. China's amazing growth is best illustrated by its dramatic effect on the USA and EU footwear markets.

Table 31 - Chinese exports to the USA

	1980	1990	2000	2007
US consumption	1,012,200	1,305,230	1,851,545	2,393,008
Chinese imports	10,775	395,230	1,368,344	2,041,614
Import penetration	1.1%	30.3%	73.9%	85.3%

Source: AAFA

In 1986, China was manufacturing around 1.8 billion pairs, the vast majority of which were for the domestic market. From 1983 onwards Taiwanese, Hong Kong and South Korean entrepreneur shoemakers transferred most of their production facilities to China, mainly to the Guangdong and Fujian areas. This growth of foreign investment in footwear production continued throughout the late 1980's and 1990's.

Table 32 - Chinese exports to the EU

YEAR	2002	2005	2006	2007	2008	Growth 2005-2008	Growth 2002-2008
	000's pairs					*%*	
Total EU imports	1,232,914	1,939,813	2,163,356	2,508,834	2,443,522	26.0	98.2
Imports ex China	461,364	1,250,802	1,476,034	1,841,556	1,767,192	41.3	283.0

Source: Eurostat

Surprisingly, the traditional Chinese domestic footwear industry was apparently not interested in the booming export trade of the foreign financed companies until 1993, when recession shrank their domestic market by 25% and forced them to consider export production.

In 2007, China exported 80% of its production. Obviously, with this disproportionate share of the world's footwear capacity, China has made few friends among other traditional shoe making countries and many countries have imposed anti-dumping duties on footwear made in China.

In the EU, an anti-dumping duty was imposed in 2006 on leather shoes. Despite this, the total exports to the EU increased by 25% in 2007 although 2008 showed a 5% reduction on the 2007 figure. It seems possible that this duty will not be extended beyond 2010.

2007 was the first year in a decade in which the exports of leather footwear declined, although exports of all types of footwear continued to grow.

China has four main shoe making areas – Guangdong, Wenzhou, Chengdu and Fujian. Much has been written about the advantages and disadvantages of these areas, so they will described below only briefly:

Dongguan, in the province of Guangdong, has a shoemaking history of only around 20 years. It has more than 2,000 manufacturing sites (mostly of Taiwanese ownership) producing around 1.5

billion pairs/year, of which approximately 75% are leather shoes. This is the largest exporting region in China and it is also the world's largest distribution centre for footwear and footwear related products (machinery, chemicals, etc.).

According to the Brazilian financial newspaper, *Valor Economico*, there are 1,700 Brazilians, mainly from Rio Grande do Sul, working in the footwear industry in Dongguan.

Wenzhou, in the province of Zhejiang, is the traditional home of Chinese shoemaking with a history that goes back many years. They have grown to be the largest footwear manufacturing region in China and they produce around 25% of the country's volume in an estimated 1,900 factories. Many of the well known Chinese footwear brands are made in this region. The area has integrated tanneries, footwear component supplies and shoemaking machinery suppliers. Indeed, it has the third largest shoemaking machinery base in the world after Italy and Taiwan. Large numbers of these companies are now moving some or all of their production to western China.

Chengdu, in Sichuan province, is also a traditional shoemaking area. It ranks third in terms of output in China's main footwear areas with 1,500 shoe factories. It is the research and teaching base for China's leather industry and there are 100 tanneries in the area. The area is now one of the largest in the world for the production of ladies footwear. The surroundings of Chongqing are also growing as major footwear producers.

Quanzhou, in Fujian province, is like Dongguan, a relative newcomer to the Chinese footwear industry. It has been a shoemaking centre for around 20 years. Quanzhou sports shoe production accounts for one-fifth of the world's total output. It is China's second largest exporting base, after Dongguan and it has around 3,000 factories. The region also supplies around 60% of the domestic market. In 2005 the world's largest (USA based) retailer, invested US$ 12.34 in a logistics centre in Quanzhou to process the US$ 1 billion/year worth of footwear that it is reported to resource from China each year.

In order to support this growth in China's footwear industry, many western suppliers of machinery and materials have also invested heavily in China in order to capitalise on the opportunities. E.g. a German chemical company announced in December 2006, that it was to establish its Global Footwear Competence Centre within its existing Polymer R & D Centre in Shanghai.

The phenomenal growth in the Chinese footwear industry has given rise to several socio-economic problems. The majority of China's manufacturing export industries (including footwear) are located in the country's south-eastern coastal provinces. Millions of workers have been required to leave their homes inland to provide labour for these industries. This migration of labour has created significant differences in living standards between those living inland and those in the coastal regions. Also, this continuous flow of younger people, particularly female, from inland China has resulted in a severe imbalance where the elderly and males outnumber the young and females inland. This rapid increase in the working population of the south east provinces has also placed severe strain on the provincial governments to provide adequate housing, transportation, power, health care and education. There is evidence that footwear manufacturers are finding it increasingly difficult to recruit and, more importantly, retain labour in the face of increasing competition from other industries.

The Chinese Government has implemented new policies in an attempt to move labour intensive industries away from the coastal regions and to encourage them to locate inland:

- They are progressively increasing the minimum wage in major manufacturing regions. Wages in the Chinese footwear industry increased by 20-25% in 2008.
- Taxes on companies in the coastal regions are being increased, also non-environmentally friendly industries, like leather tanning, are subject to a higher degree of scrutiny.
- The pressure on the shoe manufacturers in the coastal region to relocate inland is, therefore, increasing. Sichuan and Jiangxi provincial governments are offering generous incentives to those companies that decide to relocate.

Obviously, relocation is not easy. One of the major problems is the shortage of trained labour. It is reported that some of the larger manufacturers are already setting up footwear training schools in the inland areas.

In addition to these problems, the Chinese manufacturing base faces other drawbacks:

- Exporters are finding that margins are heavily being reduced due to the increasing Yuan (RMB) exchange rate and the increasing energy and labour costs (social contract).
- Much of the high volume export business is arranged so that design and marketing is carried out by the customer. This means that the development of design and marketing skills have not kept pace with the development of the manufacturing base.
- In factories where very high volumes are supplied to a few very large customers, it is very difficult, if not impossible, for the manufacturer to pass on increased costs to their customers.
- Because of the reducing margins, many of these factories are applying increased pressure on raw materials suppliers in an attempt to recoup some lost ground by demanding discounts or increasing the number of claims for poor quality or short delivery.

It would be unrealistic to expect anything other than the difficulties outlined above given the rapid expansion of the Chinese footwear industry, or indeed, of Chinese manufacturing in general, in such a short time scale. The problems of the appreciation of the Renminbi and higher raw material and labour costs have been compounded by the impact of the global financial crisis. All footwear manufacturing countries have been adversely affected and it was to be expected that China, by far the biggest manufacturers, have been affected to the greatest extent. According to China's General Administration of Customs, exports for the first 5 months of 2009 were down 6% in volume and 3.3% in value, compared with the same period of 2008. The number of shoe exporting companies reduced by 17.4% from 9,856 to 8,137 between 2007 and 2008. The majority of these companies were smaller scale operations. Domestic sales are helping to reduce the effect of the economic crisis. It is reported that domestic sales are increasing by 5 – 6% per annum and this rate of increase is forecast to continue until, at least, 2015.

Nevertheless, the Chinese industry has also changed the concept of footwear resourcing and has developed into much more than just a low cost production source. The larger companies are able to offer complete packages to the customers, including sophisticated product engineering, planning and inventory systems and distribution. At least one large footwear producer has its own software company and it even erects its new factories with its own construction company. Many leading footwear companies have also entered the retail sector with considerable success.

It is almost certain that China will remain the world's leading footwear supplier in the foreseeable future for the following reasons:

- Although exports have suffered a significant setback in 2008 and 2009 there are reports that many companies are seeing improvements in business in the last quarter of 2009 as the world recession eases. As the world's biggest supplier by far, they are able, with their spare capacity, to respond to increases in demand.

- The size and scale of the industry is such that it would take many years if it would to decline. The increasing domestic consumption of 5 – 6% demands a large manufacturing base. Since the current per capita consumption is only 2 pairs/annum there is much room for expansion as the wealth of the Chinese population increases.
- Growth is more likely to feed the domestic market rather than to increase exports.
- In 2008, volumes of exports have been declining but value has been increasing.
- China has built up this dominance of the global footwear industry without investment from the EU or USA. The initial investments came from Asian entrepreneurs.
- It has, subsequently, attracted significant investment in the Chinese industry by western companies, keen to "piggy-back" on China's success in order to gain a share of the rapidly expanding market for materials and machinery. This large investment will help support Chinese shoe production.
- China's projected population growth of "only" 0.61% will add 8 million people annually to its workforce and consumers.
- There is no viable alternative nation that can provide the volume and especially the service provided currently by China.
- Costs are certainly increasing but China is still a relatively low cost country.
- The effects of the global recession have resulted in a much greater concentration of China's footwear industry and manufacturers are being forced to concentrate much more on improved operating efficiency and a reduction in production costs than in the past.
- It is possible that the anti-dumping duty imposed on Chinese leather footwear will not be extended beyond 2010.
- Relocation will be difficult for many Chinese footwear companies. Some have relocated and some are in the process of doing so. But relocation is not the only option. China is a large country and it is likely that cut/stitch operations will be set up in less developed parts of the country or even in other Asian countries. It was, after all, the import of shoe uppers that prolonged the life of western shoemaking and this is still an important factor for those companies that are surviving.
- Probably the question is, not whether China will remain a dominant force in global shoemaking, but rather where in China will the shoes be made?

India

India has a long established footwear industry with its own significant raw material source, producing an estimated 2 billion sq.ft of leather annually. Of this, 23% is exported, 41% is used in footwear production, 23% for leather goods, 10% for garments and 3% for saddlery and harness. It produced 2.06 billion pairs in the year ending March 2007 according to the Indian Shoe Federation (ISF). This was broken down as follows:

Table 33 – Production of Indian footwear 2007-2008

	Million pairs
Leather footwear	909
Leather shoe uppers	100
Non-leather footwear	1,056

Source: Council for Leather Exports (CLE) India

The main production centres are Chennai, Ranipet and Ambur in Tamil Nadu, Mumbai in Maharashtra, Kanpur, Agra and Noida in Uttar Pradesh, and Jallandhar in Punjab and Delhi. Its production bases are as follows:

Table 34 - Number of companies in India

	Companies
Factories producing 20,000 pairs/day	5
Factories producing 5,000 pairs/day	30
Factories producing <5,000 pairs/day	300
Households/artisans units	2,500*

Source: CLE India
** Official CLE Statistic*

Table 35 - Indian exports by value

Unit: US$ million

Product	2002-03	2003-04	2004-05	2005-06	2006-07	2008-09
Leather footwear	423.30	553.04	657.78	807.81	950.90	n/a
Shoe uppers	175.07	161.27	179.21	182.58	212.65	n/a
Total	598.37	714.31	836.99	990.39	1,163.55	1,533.6

Remark: Fiscal years are April-March.
Source: CLE India

In volume terms, the growth is shown in ***Table 36***:

Table 36 - Indian exports by Volume

Unit: Million Pairs

Product	2003-04	2004-05	2005-06	2008-09
Leather footwear	53.638	60.244	66.579	n/a
Non leather footwear	6.865	4.840	6.464	n/a
Shoe uppers	33.735	33.817	34.762	n/a
Total	94.298	98.901	107.805	115.0

Remark: Fiscal years are April-March
Source: CLE India

India's largest customer is the EU who buys 79% of their exports. Germany, the UK and Italy are their largest customers. 10% is exported to the USA.

Although exports to the EU and USA have risen in the period from 2002 to 2007 its % share of total imports to both regions has remained virtually the same and growth in exports to both markets stabilised in 2007 and 2008 due to the world economic situation. Men's footwear dominates exports with a 58% share, ladies footwear (casual and sandals) constitute 34%

Imports into India have increased from 2.75 million pairs in 2003 to 19.54 millions in 2006. India has the potential for an enormous domestic market. It has a population of almost 1.322 billion, which is increasing at a rate of 1.61% pa. This equates to a staggering 21 million extra people every year.

The domestic market is currently dominated by Chappals but, as wealth increases, so will the consumption of conventional footwear.

Some key points are:

- India is the only country of sufficient size, population, and with low labour costs that could eventually replace China as the leading global footwear supplier.

- While China has forged ahead during the past 20 years, India has been content to see a relatively modest growth in its footwear market. India provides the EU and USA markets with only 20% of that the amount provided by Vietnam, a relative newcomer to the global scene.
- India has lacked the foreign investment in the footwear industry enjoyed by China over the past two decades. However, it is reported that Taiwan has invested US$ 127 million in India's footwear production during 2006-2007. It is likely that this could be the start of a more aggressive stance by India's footwear industry. It is anticipated that Taiwanese investors will find that cultural differences will generate more difficulties than the ones they encountered when setting up their Chinese and Vietnamese operations.
- The National Manufacturing Competitiveness Council (NMCC) of India has identified the leather and footwear sector as one of the twelve focus manufacturing sectors in terms of competitiveness and untapped potential in the country.
- To attract foreign investment, 100% foreign direct investment is now permitted along with 100% repatriation of profits and dividends, provided that investments are made in a convertible foreign currency. Additionally, raw materials may be imported free of duty.
- India has a large and growing consumer class estimated to constitute nearly 90 million households in 2006-2007.
- If it is to succeed, India must concentrate its activities. Currently, the industry is spread over a large area and is generally unorganised, unlike China with their large footwear manufacturing zones. They have, however, started to promote industrial parks and have planned a Leather Park in Andhra Pradesh, a Leather Goods Park in West Bengal, a Footwear Park in Tamil Nadu, planning to house 25 production units with a capacity of 250,000 pairs/day and a Footwear Components Park (for shoe uppers) in Chennai.
- India has shown what can be achieved by concentration of effort in their IT industry in the Bangalore area. This may provide the impetus for the Indian footwear industry to re-think their strategy.

Vietnam

The Vietnamese footwear industry has grown rapidly from a total production of 445 million pairs in 2004 to an estimated 700 million pairs in 2008.

Table 37 - Vietnamese footwear production

Unit: million pairs

YEAR	2001	2002	2003	2004	2005	2006	2007	2008
PRODUCTION	320	260	416	445	534	629	665	700*

Source: SATRA
**Source: LEFASO*

The country has more than 750 production facilities. Vietnam's main export market is the EU, despite the imposition of the 10% anti dumping duty. As a result of this duty, exports to the EU fell by 5% by volume in 2006 but have since increased by nearly 8% to 2008. Vietnam is the second highest exporter of footwear to the EU after China, comprising nearly 12% by volume of all EU imports in 2008.

To compensate for the potential reduction of trade due to the EU anti dumping duty, the Vietnamese footwear exporters targeted other markets, especially North America, Japan, Taiwan and Eastern Europe. This has been successful with exports to North America alone increasing by 39% between 2005 and 2007. By 2006, Vietnam had overtaken Brazil as the USA's second highest source of footwear.

Table 38 - Vietnamese exports to EU and USA

Unit: million pairs

	2002	2003	2004	2005	2006	2007	2008
EU*	284.03	285.7	297.0	265.3	256.0	278.1	290.7
USA**	17.5	30.5	43.7	64.5	83.9	89.5	n/a

**Source: Eurostat*
***Source: AAFA*

Footwear export earnings in 2008 were US$ 4.767 billion, up 13.3% over 2007. However, due to the effects of the global recession, LEFASO reports that January – August exports in 2009 were 11% in value down over the same period in 2008.

In August, 2007, The Ministry of Trade and Industry approved a plan to increase export earnings of footwear to US$ 6.3 billion by 2010. In order to achieve this objective, it is estimated that an investment of US$ 572 million will be required. In addition, the industry anticipates that it will attract more than US$ 348 million in investment capital from foreign firms during this period. Expansion will be concentrated in Hanoi in the north, Da Nang in the country's centre and Ho Chi Min city in the south. Additionally, US$ 37.8 million is to be spent on developing tanning facilities.

With a population of 85 million (growing at 1% p/a) and an average wage of US$ 3.7/day, Vietnam has a strong competitive edge. However, due to the country's rapidly growing economy there are already signs that labour availability is limited in the fastest growing areas and it is likely that footwear manufacturers will have to increase wages if they are to attract and retain suitable labour.

Some key points are:

- There seems little doubt that, as the world comes out of recession, the Vietnamese footwear industry will continue to grow at a significant rate. They are following the Chinese model by setting up industrial zones specialising in leather, footwear and footwear supplies.
- Although they are able to, and probably will, take some of China's share of the footwear market (especially in sports shoes), they do not have the size and scale to replace China's dominance in the global market.
- Some Chinese manufacturers are likely to move part of their production from China to Vietnam and it is expected that these companies will continue to expand in both regions, with Vietnam being the priority.
- In following the Chinese model, they are already encountering similar problems of labour recruitment and retention.
- New tanneries will be opened in Vietnam in order to support this growth.

Indonesia

Indonesia is the fourth-highest populated country in the world, with a population of more than 234 million that is growing at an annual rate of 1.21%, or 2.83 million per year.

The country has a well established footwear industry located in Java around the cities of Jakarta and Surabaya. There are over 350 production units with more than 390,000 employees. The industry has shown steady growth and it exports around 27% of its production – mainly sports shoes.

Table 39 - Indonesia production and exports

Unit: million pairs

	2002	2003	2004	2005	2006	2007	2008
Production	400	507	533	552	560	565	n/a
Exports	126	181	165	221	225	229	n/a
Export to the EU*	62.55	55.0	60.19	52.77	54.42	64.13	75.2
Export to USA**	73.1	56.95	46.73	46.29	n/a	33.61	n/a
Consumption	291	356	452	480	n/a	391	n/a

Source: SATRA
***Source AAFA*
**Source Eurostat*

Domestic consumption, although low, has increased steadily during this period.

According to Aprisindo, the EU was Indonesia's main export market in 2008 with 37% of all exports. ***Table 39*** shows that the annual decline in exports to the EU from 2002 to 2005 was reversed from 2006 and there was a 38% increase in exports between 2006 and 2008. It would appear that Indonesia benefited significantly, at China's expense, from the EU's anti dumping duty. Export figures to the USA show a different picture. They have been dropping annually from 2000 and suffered a 20% decrease between 2006 and 2007.

The domestic footwear market has been affected severely as a result of increased imports. Imports in 2007 were estimated to be 55 million pairs. In addition to these official figures there is a highly significant but unquantified market in illegal shoe imports. Such was the scale of the effect of this illegal trade on Indonesian shoe manufacturers, that in 2008, the government took action to prevent this influx of illegal shoe imports.
Aprisindo claim that illegal shoe imports fell by 30% in the first quarter of 2009.

Some key points are:

- Indonesia is currently utilising about 70% of the country's footwear manufacturing capacity of 720 million pairs. In view of the current competition from other Asian suppliers, it will be difficult to fill this excess capacity unless imports from China can be reduced significantly.
- However, Indonesia is still regarded as a valuable resource by sports shoe brands due to its labour availability and low labour cost.

Thailand

Thailand has a population of 65 million, which is growing at a rate of 0.66%/year. 576 firms employ around 84,000 people in the country. The industry has been stable from 2001 to 2007 and exports have been increasing gradually.

Table 40 - Thai footwear production, imports and exports

Unit: million pairs

	2002	2003	2004	2005	2006	2007
Production	270.0	268.0	260.0	264.0	275.0	268.0
Imports	10.4	14.7	15.0	17.0	17.0	19.0
Exports	136.0	138.0	140.0	143.0	148.0	144.0

Source: SATRA

Despite this overall increase, exports to the EU and the USA have been declining:

Table 41 - Thai exports to EU and USA

Unit: million pairs

	2002	2003	2004	2005	2006	2007	2008
EU*	37.48	36.06	33.68	28.06	27.50	29.0	23.27
USA**	27.08	25.33	25.30	24.45	24.40	20.0	n/a

**Source: Eurostat*
***Source: AAFA*

Like all other footwear manufacturing countries, Thailand has been affected by the global economic crisis. The Thai news service reported that footwear exports during 2009 will contract by 10% year on year with total sales expected to be $800 to $900 million. The Thai domestic market is growing steadily as Thai manufacturers develop their own brands. Wages are significantly higher in Thailand than in China, Vietnam and India, but the factory efficiency is high. Much of the sports shoe business that was key to Thailand's success in footwear in the 1980's and '90's has been transferred to China and Vietnam. Employment is high in the Bangkok area, where most of the shoe manufacturing takes place and the footwear industry is experiencing difficulty in competing with other industries in recruiting and retaining labour. The bigger companies have set up cut/stitch factories in the north of the country to help with these labour problems.

In April 2007, Japan and Thailand signed a free trade agreement that will progressively phase out duties on Japanese imports of leather footwear from Thailand over 5 years.

Some key points are:

- Thailand was a major contributor of sports shoes to the world market in the 1980's and 90's. Although it still has a significant contribution to the global resource of the big brands, its position has been eroded by China and Vietnam.
- Thailand is struggling to maintain its footwear industry at its current level.
- It is possible that increased trade with Japan will provide increased volume within the next 5 years, but it is also possible that this will be offset by the transfer of some of their sport shoe production to China or Vietnam.

Other Asian Countries

Table 42 - Production, imports exports of selected Asian countries

Unit: million pairs

	Production	Imports	Exports
China	10,209	46.1	8,175
India	2,065	21.0	105.5
Vietnam	665.0	5.6	614.6
Indonesia	565.0	55.0	229.0
Thailand	268.0	19.0	144.0
Pakistan	246.0	13.0	18.0
Philippines	112.0	61.0	6.0
South Korea	88.0	131.0	12.0
Japan	114.2	594.0	1.7
Malaysia	58.0	35.0	22.0
Taiwan	9.0	76.0	15.0
Others	96.0	228.0	36.0

Source: SATRA 2007

South Korea and the ***Philippines*** were once large exporters of sports footwear, before cheaper prices from other Asian countries led the large buyers elsewhere.

Pakistan has a large shoe manufacturing base (the eighth largest in the world), but it serves mainly its domestic market of 166 million people mostly with Chappals. A new government strategy is being put in place in Pakistan for the leather sector; it will try to force growth in footwear manufacture based on Pakistan's domestic raw material and low cost labour.

Cambodia, of little significance in the footwear industry at present, could develop a meaningful role within the next 10 years. Geographically, it is ideally situated to take some overspill business from Vietnam and China. Labour rates are very low but, with a population of only 14 million and a poor infrastructure, it is not likely to become a leading world player.

The European Union

In 2007, the EU's share of the global production was 4.3 %, of which, Italy, Spain and Portugal contributed 67%. As previously mentioned, the EU is becoming a market place for Far Eastern footwear and is rapidly losing its manufacturing base. Italy, Spain and Portugal are losing ground every year to imports. The trends may be seen in ***Table 43*** below:

Table 43 - EU production of footwear

Unit: million pairs

	2003	2005	2007	Change 03-07
Italy	330	260	242	-26.7%
Spain	171	126	108	-36.8%
Germany	27	25	23	-14.8%
Portugal	91	86	79	-13.2%
France	52	39	36	-30.8%
Romania	33	35	29	-12.1%
Austria	10	7	6	-40%
Poland	43	45	41	-4.7%
UK	20	12	11	-45%
Slovakia	13	13	16	+23.1%
Finland	5	3	3	-40%
Greece	7	7	6	-14.3%
Bulgaria	7	7	9	+28.6%
Hungary	17	13	12	-29.4%
The Netherlands	4	4	3	-25%
Denmark	3	2	2	-33.3%
Slovenia	2	2	2	0
Sweden	1	1	1	0
Czech Republic	8	6	5	-37.5%
Belgium	1	1	1	0
Ireland	1	1	1	0
Estonia	1	1	1	0
Lithuania	1	1	1	0

	2003	2005	2007	Change 03-07
Latvia	0.4	0.5	0.4	0
Cyprus	1	0.5	0.4	-60.0%
Total	**849**	**698**	**639**	**-24.7%**

Source: CBI Market Information Database

Traditional footwear producers continue to decline. The three largest manufacturing countries, Italy, Spain and Portugal all showed dramatic declines in output between 2003 and 2007. Exports of Italian shoes to the USA, an important part of the Italian footwear business, showed a 39% reduction between 2003 and 2007, according to AAFA.

The larger footwear producers in the Eastern EU appear to be holding up better than their western counterparts. Romania in particular has a strong footwear industry and for several years it has been a provider of outsourcing to established Western EU manufacturers, particularly to Italy. According to the Market Information Database of the EU (CBI), profit margins in the European footwear manufacturing industry since 2001 have fluctuated between 0-2% and EU production of leather footwear fell 30% between 2001 and 2005. During the same period, imports of leather shoes from China and Vietnam trebled.

Some key points are:

- The EU footwear production industry has shown a severe decline and it is forecasted that this decline will continue.
- As this decline has taken place, the EU has lost (and continues to lose) many of its shoemaking skills. Even under more favourable conditions, it would be impossible for most EU countries to respond to a significant increase in demand for the domestic production.
- The new EU member states, particularly Romania, will hope to make further inroads into other EU markets, having already developed good relationships in leather and footwear with countries such as Italy and Germany, partly in preparation for EU membership.

Eastern Europe

Since many countries of the old Council for Mutual Economic Assistance (COMECON) in Eastern Europe have now joined the EU, there are only 3 significant footwear producers in Eastern Europe – Turkey, Russia and Croatia.

Turkey is the largest producer in the sector, manufacturing approximately 170 million pairs per annum in around 18,000 factories. The industry is fragmented and more than 90% of these factories employ less than 20 people.

Imports rose from 8 million pairs to more than 37 million pairs in the period 2001-2007.

Russia produced just over 50 million pairs per annum in around 190 factories. This has grown from 32.9 million pairs in 2000 but is down from 336 millions recorded in 1991. Imports in 2007 were 191 million pairs, almost 170 million of these from China. In 2007, Russia's Economic and Trade Ministry announced that, in 2011 customs duties on footwear imports would be halved and completely scrapped for some categories. This will place even greater pressure on the remaining Russian manufacturers.

Croatia manufactures around 9 million pairs per annum and imports 11.2 million pairs. The remainder of the eastern European countries produce approximately 70 million pairs annually.

It is unlikely that Eastern Europe will show significant developments in its footwear manufacturing industries in the years to come.

South America

South America provides more than 6% of the global footwear production. Brazil is by far the biggest contributor, with a 76% share of the total production and a 90% share of the exports of the region.

Table 44 - South America footwear industry 2005

Unit: million pairs

	Production	Imports	Exports
Argentina	87.1	24.9	2.1
Brazil	796.3	28.7	177.0
Chile	8.5	49.8	1.1
Colombia	53.6	38.5	5.3
Ecuador	15.5	19.0	2.9
Paraguay	3.6	19.3	0.0
Peru	44.8	24.6	1.9
Uruguay	3.3	9.4	1.9
Venezuela	17.4	51.1	0.0
Others	26.0	60.0	4.0

Source: SATRA

With the exception of Brazil, the South American manufacturers cater for their domestic markets and the supply is supplemented by proportionately high levels of imports.

Brazil is a very important supplier of footwear to the world market. In 2007, it ranked as the fourth largest producer of footwear in the world and they have 8,000 firms with 300,000 employees. It also has the fifth highest population in the world, just above 190 million, which is growing at a rate of 1.01% annually.

Like every other manufacturer it has had to compete with the increasing competition from Asia but Brazil has managed the situation better than most other countries.

Table 45 - Brazilian footwear trade

Unit: million pairs

	2003	2004	2005	2006	2007
Production	665.0	750	762.0	796.0	796.3
Imports	5.0	9.0	10.0	19.1	28.7
Exports	189.0	212.0	189.3	179.7	177.0

Source: SATRA

Brazil protects its domestic market with a 35% import duty (increased from 20% in 2007) on Chinese imports, but it has to fight to retain the level of its important exports that constitute almost 25% of its total production. 53% of its exports are leather and 20% are rubber/plastic.

Almost 25% of Brazil's total footwear production is sports shoes. By far, its largest customer is the USA – they imported almost 42% of all Brazilian exports (10% of its production by volume) in 2005. Exports to the USA have been falling slightly over the period from 2002 to 2005. The period from 2005 to 2007 has shown a more dramatic decrease in Brazil's share of the USA market. AAFA report that US imports from Brazil fell by 22.5% between 2006 and 2007. In this same period, China declined 0.1% and Vietnam increased by 3.9%.

Table 46 - Brazilian exports to the USA

YEAR	2002	2003	2004	2005	2006	2007
Pairs (millions)	101.6	103.3	98.8	79.3	66.7	51.7
Value USD (millions)	1,078	1,038	1,079	1,017	893	755

Source: AAFA

Exports to the USA have halved between 2003 and 2007. Exports to the EU increased from 31.4 million pairs in 2005 to 35.1 million pairs in 2007.

Some key points are:

- Brazil has the raw materials, footwear expertise and population to continue to be a force in the global footwear market.
- However, in the last 2 years there are signs of strain on their industry as Asia's dominance continues to threaten Brazil's exports.
- Their labour costs, although low, are significantly higher than those in Asia.
- Their production of ladies leather shoes has been of particular interest to Brazil's overseas customers. With China's growing expertise in this area, their exports will increasingly be under pressure.

North and Central America

Canada and the USA are insignificant in terms of the global production:

- In 2007, the total production in Canada was 7.8 million pairs, of which 34% was work boots. Canadian imports in 2007 were almost 163 million pairs.
- USA footwear production dropped by 61% to 31 million pairs between 2001 and 2007. The current USA production is split almost equally between leather and non-leather.

Mexico is by far the largest footwear producer in this region with 3,200 firms and around 72,000 employees. Since 2003, its annual production has dropped by 11% to 170,000 pairs. Imports during the period from 2001 to 2007 increased significantly, from 9.5 million to 62 million pairs.

With a population of 108 million, Mexico has the eleventh highest population in the world and, therefore, retains a significant domestic demand for its footwear industry. However, it is not sufficiently competitive to contend with Asia on the world stage and its products do not have the appeal of those from Brazil. Despite its proximity to the USA, Mexico has only a 0.5% share of USA imports and its exports to the USA dropped by more than 34% between 2004 and 2005.

Mexico will continue to have a strong footwear industry due to a strong domestic demand, but it is not in a position to compete on the global market.

Africa

Africa, a continent producing 14% of the world's supply of hides and skins and with a population of more than 900 million, should represent a significant contributor to the global footwear production stage. Instead, more than 74% of its footwear requirements are imported as cheap footwear from Asia or as used footwear supplied from the richer, industrialised countries.

It is the continent with the highest birth rate and, by 2050, its population is projected to be 2 billion.

In total, footwear production in the continent is estimated at 170 million pairs against imports of an estimated 350 million pairs, predominantly cheap shoes from China.

One of the largest international companies has been manufacturing and retailing shoes in Africa for many years. They have operations in Sudan, Egypt, Tunisia, Botswana, Democratic Republic of Congo, Kenya, Malawi, Mauritius, South Africa, Uganda, Zambia and Zimbabwe.

Egypt is the largest shoe manufacturer in Africa, producing 57 million pairs in 2,500 factories which are mostly artisanal plants. These, together with imports of 50 million pairs, supply the needs of its population of 80.3 million, which is increasing at a rate of 1.38 million per annum. Between 2005 and 2007, production declined by 8% and imports increased by the same figure.

South Africa had a diminishing shoe production facility until 2006 when there was a sharp increase in production 136% to 36.1 million pairs. In 2007 it manufactured 40.2 million pairs in 233 factories and imported 157.8 million pairs (an increase of 30% since 2005), mainly from Asia.

Morocco has 242 shoemakers and produces around 23.6 million pairs/year mainly for domestic consumption, although a strong export sector linked to European brands has grown on a CMT basis over the last decade. Exports to the USA are currently being developed. Overall, exports of leather footwear in 2006 were US$ 153 million out of a total of US$ 275 million of all footwear related exports, up 11% from 2005. At the moment the industry is testing its capability to go beyond this level and to enter the USA market. In the first half of 2008 footwear exports to the USA grew by 12% to US$ 5 million.

Tunisia has built up a meaningful export business with Italy and France, amounting to 16 million pairs in 2005. It produces 50 million pairs/year in 134 firms. They imported only 5.5 million pairs in 2007. Tunisia's population is 10.2 million and is growing by 0.99% per annum. In 2007, exports of all footwear types were 20.1 million pairs which is a growth of 25% on 2005.

With their natural resources, high availability of very low cost labour and their need to increase their GDP, other African countries should be in a position to develop into suppliers of world footwear. Unfortunately, the current patterns are not likely to change, especially for Sub-Saharan Africa in the years to come. While some exceptions such as Ethiopia may be found, the overall infrastructure, the business environment and the development of a skilled workforce is required before a change to this pattern can be expected.

4.5 Leather Footwear

The demand for leather footwear has doubled over the past 30 years and there is no reason to assume that this demand will not continue to rise as world population and consumer demand increases.

The 1975 UNIDO's study of the leather and leather products industry showed that global leather footwear production was 3.2 billion pairs, with production of 65.4% originating in industrialised countries and 34.6% in developing countries.

By 2002, the total leather footwear production had increased to 4.45 billion pairs and, by 2007, had further increased to an estimated 7.1 billion pairs. SATRA estimates that in 12.16 billion sq ft of leather (54% 0f the 22.6 billion sq ft of leather used worldwide in all industries) was used for the manufacture of leather footwear. This amounts to an average consumption of 1.7 sq ft per pair of shoes. Of course, the definition of a leather shoe has become increasingly blurred over the years. Many shoes now use leather in conjunction with synthetic materials, but an average figure of 1.7 sq.ft/pair for all types of footwear incorporating leather seems realistic, given that typically children's shoes consume 1.2-1.4 sq.ft/pair, many sandals less than 1 sq.ft/pair and ladies court shoes around 2 sq.ft/pair.

In 1975, India produced 224 million pairs of leather shoes and China 219 million according to the UNIDO study. In 2008, India produced 909 million pairs of leather shoes and 100 million pairs of leather uppers. According to CBI, Chinese exports of leather shoes to the EU increased from 75 million pairs to 174 million pairs between 2003 and 2007. It is estimated that China's production of leather shoes has increased to 3.12 billion pairs. Statistics from the Chinese Council for Leather Exports indicate a drop of 24% in the export of leather footwear in 2009 reflecting the effect of the global recession.

Vietnam's production of leather footwear has increased significantly since 2002 but statistics are not available. Vietnam's imports to the USA have surged since 2002 and the effect of this is indicated by the fact that Brazil's exports of leather footwear to the USA fell by 50 million pairs between 2005 and 2007. CBI reports that, in 2007, Vietnam exported 95 million pairs of leather shoes to the EU.

USA's leather footwear production has dropped from 250.2 million pairs in 1987 to 15 million pairs in 2007. According to CBI, leather footwear production within the EU has been constant at 22% of all production between 2003 and 2007. This figure represents a decline in leather footwear manufactured in the EU as the overall volumes have been declining significantly in this time.

With the increasing demand for leather footwear and its competition for raw material with other leather consuming industries, there appears to be a significant business opportunity for Africa, who, as mentioned above, has 14% of the world's hides and skins but only 2% of world leather supply.

4.6 Employment

The footwear industry is a valuable source of employment for developing countries. It is estimated that 10 million people are employed world wide in the direct production of footwear

and there are significant additional numbers employed in the support industries. Putting this in the context of world population, it is the equivalent to the entire populations of Belgium, the Czech Republic or Sweden, and double the entire population of Denmark.

Despite the value of the industry in improving the living standards of so many inhabitants in the developing world, there is little coordinated information on the industry as a whole, particularly in the developing countries. In fairness, most industrialised countries have good production data bases but, as has been shown, their contribution to the global footwear manufacture is becoming almost insignificant.

The establishment of a global database for the footwear industry, detailing employment, wages, output, imports, exports, etc., statistics could be of immense value to developing countries in assessing their performance and indicating areas for improvements in manufacture, in trade and in identifying areas for investment. UNIDO could play a leading role in either setting up and maintaining, or coordinating similar databases run by other international organizations (e.g. ILO, ITC, UNCTAD, FAO, World Bank).

4.7 Second Hand Footwear

The business of second hand footwear is large and worldwide. Although mostly considered an African matter, it is routinely mentioned in places as far apart as Poland, Ukraine and Japan. Those wishing to understand all the issues should also examine the second hand market for clothing, which works in parallel with that for footwear and shares the same issues.

In the industrialised world the second hand trade offers access to very expensive footwear to wear alongside second hand designer clothing – an increasingly important market area in recent years. In the developing world, the practice started as charity to provide footwear free of charge to impoverished communities, who would otherwise be barefoot. Steadily, the concept of charitable giving of free second hand footwear has evolved into a business that employs very large numbers of people in most countries in Sub-Saharan Africa and has a number of major companies worldwide involved in the sourcing and distribution.

Second hand footwear is moved around the world by weight and the largest three countries involved in supply are the USA, the UK and Germany. It is almost impossible to put a value or numerical figures on this business. There is some evidence that footwear makes up 15-20% of the value of the bigger second hand clothing industry. The worldwide trade of both has been estimated as having risen from US$ 207 million in 1996 to US$ 1.5 billion in 2003 according to the United Nations (quoted in “Helping or Hindering” by Hansen). At the other end of the trade we know that one company collects 5-10 t of worn footwear per year in the UK alone.

This is an area of business with many unexpected consequences and one where it is not possible to find a solution that will satisfy all those involved.

The second hand footwear business has the following benefits:

- provides footwear for those in poor countries that do not have access to footwear because of poverty;
- provides a significant level of employment for some people in the poor countries in logistics and sales;
- extends the life of footwear rather than just putting it in to landfill.

There are many negatives sides as well:

- free or low cost imports compete with local manufacture and have reportedly led to the closure of many shoe factories;
- loss of duties to government as low price new goods (sometimes counterfeit) is often imported under the "used" classification;
- transfer of landfill problem to countries less able to manage it;
- fit and hygienic problems cause foot deceases (especially in the case of children).

Detailed reports can be obtained fairly easily and are being regularly updated on most African countries from Senegal through Tunisia, many of which are referred to in the useful Oxfam (2005) report on "The Impact of Second-Hand Clothing Trade on Developing Countries".

Typical comments from many countries in Africa match those of Theo van der Loop on the Ethiopian footwear business: "There are, however, serious drawbacks of globalisation and the resulting liberalisation. The flooding of the previously protected domestic markets, such as in countries like Kenya and Ethiopia, with imported new and second-hand goods, has resulted in the closure of many firms and the reorientation of many others."

To understand the scale of the problem it needs to be recognised that, while the worldwide trade in new footwear is huge compared to that of second hand footwear, in many of the African countries second hand footwear has by far the leading market share over domestic manufacture and legitimate imports. Staikos (2007) points out that in "Uganda alone 7 million pairs of second hand shoes are imported annually while only 240,000 are made by the local footwear industry." Additionally, it is reported that, in some countries, government officials have become involved in the business, which makes it harder for it to be honestly limited or controlled.

As well as new footwear coming in alongside second hand, there is considerable smuggling of footwear, improper declaration and straight falsification of customs documents. These factors, along with the heavy involvement of the informal sector in footwear, mean that there is considerable inaccuracy in any statistics.

It is easy to see that cheap second footwear from famous brands can be very attractive in third world countries, where global branding can have a big impact and that this will do harm to nascent local industries. There are alternate views that consider weak shoe factory management to be more damaging to the local footwear business than cheap imports. Other issues may also be relevant:

- exchange rate instability;
- infrastructure inadequacies and deficiencies;
- high customs tariffs on raw materials;
- increase in taxes and levies by the various tiers of government;
- high cost of funds;
- unstable government policies.

The most outspoken position against second hand footwear is taken by the International Textile, Garment and Leather Workers Federation (ITGLWF). This is a Brussels based international trade secretariat that brings together 217 affiliated organisations in 110 countries. Their position has three distinct strands:

- campaign to ensure that used clothing donated for the poor is used for that purpose, and that it is distributed free of charge, thus avoiding the damage being caused in developing countries;
- campaign for recycling through means other than re-sale;

- campaign for poverty alleviation through sustainable economic development.

The recycling issue is a relevant one as landfill issues in the EU in particular are getting increasingly stringent for footwear. In the EU, Article 5 of the EU Landfill Directive is important to the footwear industry as it relates to biodegradable waste and its suitability for landfill. It would appear that shortly genuine leather, natural rubbers and natural textiles will have to be reused or recycled rather than going to landfill. This could well mean that more footwear will end up in the second hand channels in years to come.

Oxfam gives some simple suggestions for charities, which include trying to work scrupulously with countries that have well administered customs, ensuring that goods get primarily to outlying villages where access to product of any sort is unavailable, and using any profits to benefit domestic producers, through advocacy and support for livelihoods programmes.

This is an area where UNIDO has done some work and where further and supportive work could be beneficial.

4.8 Footwear: Expected Future Trends

Before considering the future, it is necessary to look back and examine the changes in the footwear industry over the past 40 years and the dynamics that brought about these changes.

In the 1960s and 70s, the world footwear scene was dominated by large branded companies with their own manufacturing facilities. For example, in 1968 the USA was producing 80% of its domestic footwear requirements and the countries of the EU also had thriving footwear companies.

The 1960s saw the advent of the training shoe and, as demand for these products grew in subsequent decades, their manufacturing bases changed as the companies constantly searched for cheaper sources of supply from developing countries. So, the production of mass marketed sports shoes started in Japan, continued through the Philippines, South Korea, Taiwan, Indonesia and Thailand to China. As the sports shoe production developed in these countries, so did the country's shoemaking capacity and expertise. Then, when the sports shoe marketing companies moved on to regions with lower costs, these countries looked to the western world as a market for their significantly lower priced products.

This placed increasing strain on European and North American shoemakers, who responded aggressively with improvements in efficiency and technology that were impressive. As a means to further keep their prices competitive with the Asian imports, in the 1970s, the western shoemakers started to import shoe uppers from low labour cost countries. As price pressures increased, more and more shoe uppers were imported and, inevitably, imports of shoe uppers were progressively replaced with whole shoes as the competition from Asia increased.

To accelerate the demise of the decline in western shoemaking, many of the newly acquired western technologies and systems were rapidly spread to the Asian countries by the western shoemakers themselves (wishing to safeguard their brands in the resource factories), or by western machinery and material suppliers keen to recover their lost business in the western market.

In a relatively short time, therefore, we have arrived at a situation in the global footwear industry where some of the biggest brands have never been shoemakers (or they have been so only to a

limited degree) and where the majority of the large branded footwear producers of the 1970s, particularly in the EU and the USA, have ceased production and have become marketing and wholesaling businesses.

In pursuing cheaper and cheaper sources for their footwear, the industry now faces a dilemma. They found in China a country with, it seemed, a limitless supply of low cost labour and also entrepreneurs from other Asian countries - especially from Taiwan, where people have the advantage of knowing the local culture and speaking the language - who were already familiar with the demands of their products, were prepared to make the necessary investments in money, and had the machinery and shoemaking skills. So throughout the last two decades, most of the world's leading brands have capitalised on the inroads made by the large sports shoe brands and have also made China their preferred source of products.

China has reached such a dominant position in the global footwear manufacturing that it has become an indispensable source. It is hard to envisage where the next major source of footwear production is going to be located. Most areas of the world have retreated from this Asian advance and have downsized their production of footwear, many to a point from which recovery is virtually impossible. The extent of this global erosion of footwear manufacturing is seen in the ***Table 47*** below:

Table 47 - Global footwear trade 2007

	Manufacturing output	Consumption	Share of output in consumption
	Million pairs		*%*
USA & Canada	40	2557	1.5
Oceania	9	149	6.0
EU	676	2922	23.1
Africa	209	526	40.0
Middle East	159	394	40.0
Eastern Europe	309	563	54.0
Central America	182	263	69.0
South America	1056	1186	112.0
Asia	13,435	5364	399.0

** Including Turkey*
Source:SATRA

Of all the traditional shoe making areas, only South America has retained a footwear industry of sufficient size to meet the demands of their domestic market. Africa is the only country with labour costs that could compete with Asia but, apart from some North African countries, its footwear industry is not sufficiently developed. According to SATRA, world footwear consumption in 2007 (excluding China) was 11.8 billion pairs. China exported 8.175 billion pairs, which represents more than 69% of the world's footwear consumption (excluding China).

Recent history has shown that sports shoe companies have constantly moved on geographically in order to chase new major sources of supply at lower labour cost, leaving behind them greatly improved footwear industries. But the sheer scale of the Chinese business means that there are few areas of the world of sufficient size and scale to seriously threaten the Chinese. Certainly, Vietnam will continue to grow, but it has a population only one twentieth of that of China. It may be argued that Vietnam is becoming an extension of the Chinese footwear industry, since many of the established Chinese companies are setting up production units there. The dominance

of China is such that it seems like the world has seen a change in the footwear industry that is almost irreversible.

The world of business is becoming increasingly volatile and fluctuations in currency exchange rates and political affiliations, rapid economic growth in some developing countries, and increasing competition for energy resources, make any predictions extremely tenuous. However, short of any major unforeseen crises, the most likely possible scenarios are discussed below.

Scenario 1

China will remain the dominant source of world footwear for the next 10-15 years due to its technical capabilities, infrastructure and the strength of the well-established factory groups.

Along with the rest of the world's shoe manufacturing industries, it has suffered a severe setback during the world economic recession and many factories have closed. However, the recession in China was not as severe as in the other large industrialised nations and, as the rest of the world gradually climbs out of recession, growth will be restored. The loss of a significant part of its export business during 2008 and 2009, increased labour costs and the strengthening of its currency have resulted in a concentration in the manufacturing sector.

During the very rapid expansion of exports to 2007, regulation of manufacturing costs and production efficiency seemed to be a low priority. Now most manufacturers are actively reducing these costs. Manufacturing units are also being relocated and manufacturers in Wenzhou have invested US$ 30 million in an industrial zone in Uzbekistan. They have already established a leather industrial zone in Russia and discussions for another six foreign industrial zones are in hand.

Its share of exports may decrease, in part, during this period, but increasing domestic consumption will partly compensate for this. Also, as footwear design and marketing skills develop in the country, China will progressively become less dependent on manufacturing for the large international brands, and it is likely that they will develop global brands of their own.

Every area of the world, with the exception of South America and Asia, has decreased its production capacity to a great extent. In 2007, the entire global production of footwear in all the other countries combined amounted to only 71% of China's exports.

Any major competition to China must come from low labour cost countries since major companies are very satisfied with the level of expertise and service currently available in China. In the medium term, the only apparent reason to change would be cost advantage. It is significant that many of the new footwear businesses opening in Vietnam share the same owners as the Chinese companies.

Scenario 2 (5 – 15 years)

As mentioned earlier, India is the only country with the size, population, raw materials and with a meaningful existing footwear industry that could challenge China's dominance. It has the advantage of lower labour rates than China and the projected increase in population is likely to ensure that this continues for some time. Indeed, with increasing labour costs in China, the differential in labour rates between the two countries is likely to widen.

In February 2007, the Taiwan-India Cooperation Council (TICC) was inaugurated. Some Taiwanese companies are reported to have invested US$ 127 million in Indian shoemaking during 2006-2007 in Tamil Nadu. The Taiwanese have proven their ability by turning two areas of China, with little, or no previous shoemaking experience, into world leaders within just 20 years. It is possible that this same transformation could be made in India if their initial investments are seen to yield satisfactory returns. However, the challenges of cultural differences in India would be greater than those experienced in China in setting up manufacturing regions. Easy access to ports could also be seen as an advantage in Southern Indian manufacturing.

The Indian footwear industry, although large, is not well organised and they have allowed the growth in global footwear consumption and the dramatic growth in China to pass unchallenged. Some radical reorganization of the industry would be required if India is to challenge China for dominance in the world market. Perhaps high foreign investment with the subsequent pressure for returns could be the impetus that the Indian footwear manufacturers require.

Scenario 3 (5 – 10 years)

The purchasing patterns of the large branded footwear companies may change.

Many shoe products are now global items. With the consumer boom in China and increasingly, in India, it is possible that the footwear brands could segment their manufacturing bases.

For example, a situation could be envisaged where the same product could be made for the Asian, American and European markets in say, Asia, Brazil and Eastern Europe respectively. Tooling costs and technical knowledge would make this option difficult for sports shoe brands, but this is an option for the large conventional shoe brands. This would result in higher average labour costs for the product, but should result in reduced logistics costs and lead times.

The result of this scenario would be to distribute footwear manufacturing more evenly across the world and reduce, to some extent, the dependence upon China. Much depends on the future relationship between China and the rest of the world and, of course, on currency exchange rates. Should the competition between China and the USA for resources, particularly oil, result in a deterioration in relationships, then this would appear to be a feasible scenario, at least in the short term.

Longer term possible scenarios (15 – 25 years)

At the start of the 20th century, the world had a population of 1.6 billion people. This had grown to 6.1 billion by the start of the 21st century; in 2007, world population was 6.6 billion. Almost all this growth is occurring in the less developed countries. Currently, 80 million people are being added every year in the less developed countries, compared with about 1.6 million in the more developed countries.

It is projected that, by 2020, world population will be 7.8 billion. Labour intensive industries must be found to provide this increased population in the developing countries with a means to survive since agricultural employment is forecasted to diminish. There is a significant global move away from rural to urban areas, which will put further strain upon the economies of the poorer nations.

The resultant socio-economic changes could affect the footwear industry significantly in the long term.

South and Central America have a combined population of almost 517 millions. Brazil's population is increasing at a rate of 1.9 million/year while that of Mexico is forecasted to grow by 1.2 millions/year. Both these countries have established large footwear industries with a plentiful supply of leather and they could expand significantly in the longer term. However, market forces and labour cost differentials against Asian countries would have to change dramatically for South American countries to challenge Asia's dominance in footwear manufacturing.

Africa has a population of more than 933 millions estimated to become around 2 billions by 2050. China has had a good relationship with many African countries for more than 50 years and Chinese investment in Africa has grown rapidly in recent years. In 2006, China agreed to double their aid to Africa by 2009, to set up a US$ 5 billions investment fund and to provide US$ 3 billion in loans over the next 3 years.

Direct investment in Africa by China more than quadrupled between 2001 and 2005. The driving force for the investment is oil and minerals supply; the result of this increased competition for oil has substantially helped the African economy by enabling the oil producing African countries to obtain higher prices.

At the moment, large imports of Chinese footwear are flowing into Africa. It is reported that discussions between China and the World Bank are underway to discuss the feasibility of setting up industrial parks in some Sub-Saharan countries. This may include footwear. As the Chinese economy surges ahead, the wealth of China's population increases and competition for labour becomes more severe, then it is just possible that global footwear companies realise the potential of the last remaining continent to have a significant source of leather and a plentiful supply of low cost labour. The average growth in the African economy in 2007 is estimated by the African Development Bank (ADB) to be 5.9%, with Ethiopia, Ghana, Kenya, Niger, Rwanda, Senegal, Tanzania Uganda and Zambia showing growth of 7%. North Africa has an established and significant footwear industry. With the exception of South Africa, the rest of the continent's shoe production is insignificant.

The leather production and shoe manufacturing output in selected countries may be seen in ***Table 48*** below:

Table 48- Leather production and shoe manufacturing in selected African countries

	Leather production*	Shoe Production	Chinese shoe imports	Population
	million sq.ft.	million pairs	million pairs	million
Nigeria	114.2	N/A	22.0	135
Kenya	73.2	8.0	0.5	37
Sudan	72.9	N/A	N/A	39
Ethiopia	68.0	N/A	1.9	76
Tanzania	22.6	N/A	N/A	31
Zimbabwe	14.0	3.0	1.3	11

Sources: FAO, Cipriani 2002
**Skins & hides.*

Of course, unlike China and India, Africa is a continent of very different countries. But with stability, investment and training, the potential for footwear manufacturing among the

abovementioned and other African countries could have long term significance. Although, given the present conditions, if it is to occur, it will be in the long term.

Scenario 1 appears to be most likely. In previous decades, footwear outsourcing was merely a route chosen by footwear companies to ensure a low cost manufacturing base for their products. Other considerations used to be the responsibility of the resources. The Chinese industry has developed a philosophy that places manufacturing as only a part of the service that is available and they now offer a complete outsourcing package, including sophisticated product development, production planning and logistics. This means that labour cost, although still of great importance, is by no means the only consideration. Significant savings are possible to the customers when they avail themselves of these services.

This has proven to be of considerable value to all the major global brands and, the benefits are such, that it is extremely unlikely that former large, western branded manufacturers will be tempted to re-enter the manufacturing arena.

The manufacturers that remain outside Asia, with the possible exception of Brazil, are either smaller, specialist companies or significant companies providing for their domestic requirements. Many of the smaller, specialist companies in the EU depend upon the import of shoe components for their survival.

The current expansion in Vietnam is also driven partly by the Chinese industry and many of the Vietnamese operations are owned or controlled by Chinese based companies. Mention has been made in the report of possible expansion of the industry into other countries but, again, often with Chinese involvement.

While Asia has been developing its footwear technology skills at a rate that is impressive, the western manufacturing industry has been losing its skills just as rapidly. Only South America has retained its manufacturing base, but it is not likely to be able to compete with Asia on price or service in the foreseeable future.

Considering the billions of pairs involved, India is the only country that, in the medium term (10-15 years), could compete with China for dominance, but they will need large foreign investment and changes in the attitude and structure of their footwear industry in order to achieve this.

Africa has great potential for a footwear industry, but this will not be realised for many years unless the issues of infrastructure and business environment are addressed. At the moment, major brands have little confidence in developing in sub-Saharan Africa,

It appears that no western country is, or will be, able to compete with Asia on cost or service in the foreseeable future. Those footwear manufacturers that survive in industrialised countries generally supply products to niche markets. With Asia's rapidly growing consumer classes, they could find a ready market for their products among these populations. CLIA reports that, in 2008, China imported 17.9 million pairs of leather shoes valued at US$508 million. There is also an almost insatiable demand for leather in China and Vietnam. Many of the traditional footwear manufacturing countries are large suppliers of leather. Again, CLIA reports that 1.01 million tons of raw hides and skins and 964,000 tons of finished leather with a combined value of US$5.63 billion were imported in 2008. India imported raw hides and skins to the value of US$ 358.48 million during the fiscal year ending in March 2007.

Asia is no longer a threat to the traditional shoemaking nations. It has already gained a degree of supremacy that is almost impregnable and should now be regarded as an attractive emerging market.

Despite the dominance of China, which looks like it will remain, the potential opportunities to meet new growth in domestic and international markets still offer sizeable employment in many countries throughout the world. Countries around the world will continue to fight for their share in the steadily growing world footwear market for many years to come.

5. LEATHER GOODS AND OTHER LEATHER ITEMS

5.1 Leather Goods

5.1.1 Introduction to the leather goods market

The term "leather goods" covers a wide range of items such as all kinds of handbags, attaché cases, luggage and other travel goods, flat or small items (e.g. purses, wallets), belts, etc.

In most languages this term simply means "items in leather", e.g. in German "*Lederwaren*", in English "leather goods", in Arabic "*mawed min jeld*", and in Indonesian "*barang kulit*", etc. The French term makes an exception "*maroquinerie*", but only in appearance since it comes from the word "*Maroc*" (Morocco), where people used to produce a particular quality of goat skin leather called "*Le maroquin*".

The leather goods industry has a history of evolution with very distinct jumps in end uses and materials, from the age of horse and foot transport to the automobile era, from the use of leather goods for definitive purposes to a current market of luxury.

Large amounts of leather goods have been and are still made in small craft shops. Therefore, statistics are scarce, not always reliable, or based on informal communications. Due to the wide variety of products, with different functions, sizes, constructions and material structures, available production and trade statistics are expressed in value rather than in natural (volume) terms.

5.1.2 Major Changes in the Last 30 years

During the last 25 to 30 years, the leather goods industry has undergone major changes due to several factors such as:

- The rise of living standards and labour costs in most leather goods producing countries.
- The appearance of marketing and brand strategies at national and international level, mainly thanks to new advertising instruments (e.g. the TV).
- The breaking down of activities: production, delocalisation, export of know-how to developing countries.
- Development of tourism and air travel.
- Significant progress in process technology.
- Improvement of productivity.
- Development of the automotive industry.

Within this context, it was necessary to look for lower production costs in labour intensive industries such as textiles, footwear and leather goods. Furthermore, and because of competition, a great number of companies started to make themselves better known directly to the customers, which called for heavy spending in marketing and for lower production costs. Many companies decided to move part or the whole of their production offshore. Countries of destination were selected according to several

criteria: proximity, political and financial stability, quality and costs of labour, availability of raw materials (genuine leather), communication language, quality of life (for expatriate production supervisors). European countries chose North Africa while North Americans preferred nearby countries in Latin America (Mexico, Brazil, Nicaragua, Colombia, etc.). Others did not hesitate to go further, i.e. to Mauritius, where a big French company moved its production line of wrist watch straps even before 1980. Prior to this, early in the 20th century, the USA glove business had moved first to Puerto Rico and later to the Philippines.

Some key points in this transition are:

- In the beginning, these operations were not always successful, but the relocation trend was put under way and, since then, it has been considerably expanding due to the following factors: Faster transportation at lower costs for raw materials as well as finished products and travellers (the invention of the container was a significant asset in international transport).
- More and more efficient communication means lower costs. From the telephone, through the telex and fax, up to the Internet, these relatively new technologies provide various communication services that were previously much more costly and time consuming.
- Industrial cooperation (e.g. through UNIDO, ILO and bilateral technical assistance programmes) made possible the transfer of know-how to developing countries – especially vocational training and development centres.
- Incentives granted by some countries to foreign investors in the form of bonded warehouses, tax exemptions and export of profits in foreign currencies were successful in increasing the profits of this market.

Within twenty years, the production of most volume leather goods companies has moved out of industrialised countries, resulting in the closing down of a great number of factories, loss of jobs, disappearance of know-how, and the reducing significance or shutting down of some vocational training centres.

5.1.3 Recent evolution

The history of leather goods explains the underlining diversity that characterises this activity. That is why it is perhaps better to use the term “leather goods industries”, since products and related techniques required for manufacturing are very diverse and the production has increased massively. ***Table 49*** highlights the activities linked to the manufacture of leather articles. Sports equipment and bookbinding may also be considered as leather goods, but they are sometimes excluded. Industrial products began to disappear with the introduction of synthetic materials replacing leather. Industrial leathers are now so small in volume worldwide that they fit with parchments in a micro-niche and they are difficult to classify. Nevertheless, they should not be ignored.

Table 49 - Overview of products groups

Product group	Description	Trade
Handbags	Handbags with or without shoulder strap, for ladies, girls, gents, etc.	Leather goods
Pocket or small leather goods	Wallets, purses, coin-purses, billfolds, key-pouches, credit-cards cases, pen cases and all small “pocket” articles	

Travel goods	Trunks, suitcases, travel bags, beauty-cases, toilet kits, and other travel articles	
Sports bags	Sports bags, casual travel bags, rucksacks	
Briefcases and portfolios	Porte-folio, document bags, briefcases, attaché-cases	
School articles	School bags, rucksacks, and other school cases	
Saddles	Saddles and horse related equipment	
Cats and dogs articles	Leashes, collars and all cats and dogs articles	
Hunting and fishing	Gun cases, cutlery cases, etc.	
Stationary articles and special cases	Writing pads, book covers, camera cases, spectacles cases, cigarettes cases, jewel cases, hand-phone holsters, etc.	
Military equipment	Various holsters for fire arms	
Belts	Belts for ladies and gents, suspenders for men	
Watch straps	Watch straps made of leather or synthetic	
Sports articles made of leather	Rugby, soccer, USA football leather balls	Leather goods
Book binding	Books covered with leather	
Leather belts, washers and items for industrial use	Industrial items made from leather	Industrial leather products

Handbags

Ladies handbags represent a huge leather goods market. Bags are not only a useful accessory but they are also a sign of social rank. The use of bags is very much influenced by fashion and culture, which themselves vary from one country to another. There are many price segments in the market and a wide variety of styles and designs. Consequently, the market for handbags retailing at US$ 1,000 upwards has been growing quite rapidly in the past five years.

Small leather goods

Small leather goods depend less on fashion. Pocket leather goods, which are mainly made of genuine leather, follow societal trends and utilisations: i.e. size of banknotes, credit cards. The last ten years has seen the rise of importance in covers for mobile phones, MP3 players, and *iPods*. The introduction of super luxury leather goods related to new electronic equipment is a sector that is expected to grow.

Travel goods

Travel goods constitute a big market that has developed with travelling and tourism. The emphasis is basically put on usefulness and ergonomics. The major trend over the last years has been the introduction of wheels to all kinds of luggage and the search for lightness. This has worked against leather. There have been considerable changes in the last decade with the arrival of budget airlines and continuously changing security rules. Short haul passengers not wishing to check in luggage have created a market for maximum sized hand/cabin luggage of high quality.

Briefcases and porte folios

This market is also linked to travel and business. Laptops have created a great need for cases with a specific design: they are mostly made from high performance textiles and synthetic materials. Similarly, ladies' and men's briefcases made of genuine leather and synthetic materials still hold an important place in the market. Changes in travel are affecting this market in the same way as travel goods.

School articles

This market corresponds to that of the old "leather satchels". Trends changed in 1980 with the appearance of new and fashionable lines of school bags in France and in Germany. Today, the trend is the rucksack made of canvas and printed with various logos and brands. A number of the better known brands today were founded to make military packs and evolved into student items using materials such as "cordura".

Saddlery

This is a specialised market with its own targeted customers. Saddles and horse equipment belong to the luxury segment due to their time consuming manufacturing process. They are hardly affected by fashion, so they can easily be made in low-cost labour countries. There is still a premium market for superior saddles, especially the "English" saddle. Premium makers exist throughout Europe especially in France, Germany and in the UK. Argentina, Pakistan and Morocco are now important for saddles; India also makes efforts for getting a share in this specialty market.

Cats and dogs articles

This is a fast growing market in industrialised countries (USA, Europe), where many people are increasingly fond of pets. A great deal of these products (e.g. collars, leashes, muzzles) are made predominantly in developing countries. The pet food market using raw hides is a separate, but important market.

Hunting and fishing articles

This is a specific market segment that is not really influenced by fashion. The products are basically destined for wealthy people, although markets such as these are becoming more specific and segmenting into groups from a wide variety of backgrounds with discretionary spending available.

Stationery and special cases

Articles such as desk-pads and note pad covers are today on the decline due to the use of the computers. But other articles such as mobile (handy) phones cases are booming. The fountain pen has made a come-back and, with it, a market for protective carrying cases. Some evolution in the luxury end of this market can be expected, as the balance between paper and the computer continues to change.

Military equipment

Historically, leather and the military have been of great importance to each other in terms of saddlery, harness, belting, holsters, footwear and at one time armour. Today, this is a very specific market, which has started to grow considerably in the last ten years. It is more important for footwear and gloves (as personal protective equipment). These are now normally made of highly technical leathers.

Belts

This is a steady and relatively big market especially when it comes to traditional gents' belts. Belts are not much influenced by fashion, since changes depend mostly on the buckle designs. The manufacturing process of such items has become highly mechanized.

Watch straps

This is a relatively big market that has only been slightly threatened by metal or synthetic straps since it stabilised some years ago. Manufacturing process, as for belts, is highly mechanized, except for top luxury products (hand-stitched straps made of exotic skins). Leather for watch straps is required to be anti-allergic and to have good levels of sweat resistance.

Overall the leather goods industry is characterised by the diversity of the items it covers. These items are constantly developing according to the consumers' needs and for certain articles, to fashion trends.

5.1.4 Raw materials and accessories today

Raw materials used in the leather goods industry are as diverse as their products. Leather remains important, but the use of synthetic materials such as nylon (and others of similar chemical origin/structure), fibres, canvas, artificial (faux) leather, textile and even polypropylene is growing.

Hides and skins

Leather, which is at the origin of the leather goods industry, is still the most appreciated material. Leather cost and particularly the cost of "grain" leather means that it is reserved for articles corresponding to the following criteria:

- "Luxury" criteria: leather articles are generally much more expensive than synthetic items.
- "Body proximity" criteria: the closer to the human body a product is, the better appreciated leather is.
-

Therefore, products such as small leather goods, which are often touched by hands and kept in pockets, are made of leather most of the time. All saddles are also made of genuine leather, because horses do not tolerate substitute materials.

Over the last half a century, the use of exotic skins has been on the decline due to the laws on protection of species, the moral influence of pressure groups (civil societies and environmental groups), and also because precious skins are no longer considered

the only exterior sign of wealth and social rank. Today a luxury product brand is perhaps more important than the type of leather used for it.

However, the use of exotic skins should not be underestimated in the luxury leather goods segment and could represent interesting markets in countries where farming is possible thanks to favourable environmental conditions and a reliable (international and/or legal) image. Most of these skins have to come from farming, since the Washington convention is meant to protect certain species. But currently the market of exotic skins has stabilised and is growing.

In particular crocodile, ostrich, lizard and snake skins are highly appreciated by the luxury leather goods. The most difficult thing is that these skins require a high level of know-how (from treatment in tanneries to manufacturing of derived leather product) without which the required high quality of the articles cannot be ensured.

As long as tanners can police the processing from beginning to end in order to ensure that no endangered species are involved, and that the animals are properly kept and slaughtered, this is a relatively profitable segment of the industry. It would be appropriate for the industry to support this sector against pressure groups with proper PR and marketing.

To have an insight into the use of leather, ***Table 50*** indicates the approximate proportions of the total quantity of leather in use worldwide for each main sector.

Table 50 - Leather use by derived products 2005

Leather product	Share (%)
Footwear	55.0
Upholstery	13.0
Leather Clothing	11.4
Leather goods	9.2
Automobile	7.0
Gloves	4.4

Source: ICT and industry sources

Synthetic materials

The range of synthetic materials used in the leather goods industry is very wide. There are no leather goods products that could not be manufactured out of textile, synthetic or other materials instead of genuine leather. Increasingly, materials are being used in combination to achieve a certain look or price range.

Synthetic materials can be found in all types of leather goods products: in luxury items as well as in cheap casual articles. As a rule, the quality of the non leather materials follows the trends of the respective market segments. Synthetic materials are particularly used in the manufacture of large-size articles: travel bags, suit-cases, computer cases, etc.

The development of polypropylene and polycarbonate injection has resulted in the manufacture of completely new articles such as hard luggage for air travelling.

Accessories

To-day, important progress makes it possible to manufacture accessories at more competitive prices. Articles such as locks, buckles, rings, etc., which were previously made from brass and steel, are now made from injected “zamac” in various and unlimited finishes.

5.1.5 Evolution in the production field

The leather goods industry has always been a profession with a great deal of manual work – even more than that of footwear. This is still true, and it will probably remain such in the future, particularly in the luxury segment of leather items that are tailored made in small quantities. In fact, in these fields, many operations require assessment or particular skills, especially in cutting and assembling. Since the beginning of industrialisation, and for most of the products, basic manufacturing techniques have not undergone significant changes. It should be noted that some changes that have taken place since 1980 have nearly resulted in the loss of certain established techniques, for example, the preference of shoulder strap bags and the gradual abandonment of framed hand-bags.

Some of the changes that can be noted are:

- Abandonment of lacing techniques that were used for assembling bags and small leather goods.
- The majority of frame manufacturers disappeared between 1980 and 1990, and the art of bag framing was nearly lost.
- Abandonment of riveting techniques because they were considered as very time consuming.
- The technique of hand stitching has, on the contrary, been maintained. But only for top luxury articles as well as horse saddles, which are impossible to stitch by machine.

The main manufacturing leather goods operations continue to comply with the following traditional scheme:

- Cutting
- Splitting
- Skiving
- Assembling
- Sewing
- fixing accessories
- finishing

The basic leather machinery remains:

- hydraulic cutting press,
- splitting machine,
- skiving machine,
- sewing machines of 3 main types: flat-bed, post-bed, cylinder/arm-bed.

While manufacturing principles have not undergone major changes, productivity has considerably increased due to advancements made in various related fields.

Improvement in machinery (more specialized and higher performance), development of new types of adhesives, computer (CAD) and programs applications (CAM), new cutting techniques (laser, waterjet), and automation when possible, allows us to record improvements in the following fields:

- quality of work,
- speed/performance,
- operator's comfort.

The luxury leather goods industry has spurred the development of new tools and small machines specialised in operations that were performed by hand in the past (e.g. glue spraying, edge heating and smoothing). High productivity gains are also achieved thanks to improvement in work organisation and plant management. These developments are aiming at reduction of processing time and separation from the main manufacturing process (i.e. preparation and/or pre-fabrication). Times that can be reduced or even eliminated are those related to feeding the work-station, removal of products, transportation to other stations, etc. Thus the manufacturing cycle becomes shorter and materials storage time is reduced.

The work optimisation (mostly carried out by time/method or industrial engineers) is facilitated today by technology development, such as computer science and video techniques. These productivity notions do not only apply to large production quantities.

The "productivity-quality" ratio is a modern feature that is making its way through the whole range of product sectors, whatever the price level of the article. It is noteworthy that luxury leather goods industry is paying as much attention to mastering production costs and productivity, as cheap products manufacturers are doing. Production times should be carefully studied in order to control manufacturing costs.

5.1.6 Current leather goods consumer markets

Leather goods consumption is linked to living standards; therefore, currently most consumers of leather goods are from the industrialised countries.

The leather goods market is gradually splitting into two major segments: luxury and casual products. Big and prestigious brands share the luxury segment. The products are generally of high quality, whether they are manufactured in industrial countries or elsewhere. The design, development and manufacture of such products require high investment, excellent technological control, high level of know-how (especially in product development and marketing) along with the ability to create and set trends, the availability of highly skilled workforce, highly performing machinery and raw materials of top quality**.**

Unlike jewellery, luxury leather goods products keep always a utilitarian aspect (e.g. briefcases carry documents, wallets bank-notes and credit cards). Beside their basic functions and purposes, these products also imply social status for the owner/user according to design, sophisticated workmanship and the precious materials used. That partly explains the success of the luxury sector of leather goods. Another reason is that the luxury leather goods are often gift items by excellence. During the month of

December, leather goods retailers achieve about 25% of their annual turn-over due to Christmas sales, while in Islamic countries, the large amount of expenditure is made at the end of Ramadan and during Aid-El-Fitr.

Besides these luxury products, there is a variety of cheap and medium price articles facing extremely strong competition. They are also subjects of research in design motivated by competition and fashion. Medium priced and cheap items are mostly made of synthetic materials or sometimes from split leather, or cheap, heavily pigmented *nappa*.

Countries that are significant leather goods consumers in recent years are:

- USA;
- European countries, (particularly Italy, UK, Germany, France);
- Japan.

Outside of these countries, leather goods consumption is linked to the standard of living. They are also the privilege of wealthy people all around the world; the manufacture of luxury items has also been increasingly successful in developing countries, especially after the downturn of the 1990's. A great many luxury articles are, for example, bought by Japanese, Chinese, and Indian tourists from luxury shops located in big European cities. This can be considered as an indirect export linked to tourism, although currently the domestic stores in Europe constitute one of the world's fastest growing areas of luxury leather goods consumption. These markets are expected to maintain the growth in this sector over the next five to ten years, once the current downturn ends.

Table 51 indicates the consumption, imports and exports in leading European leather goods markets.

Table 51 - Leather goods trade in leading EU countries in 2003

	Domestic consumption in million €	Domestic production	Total imports except from EU countries	Imports from developing countries only
Germany	837	171	1,100	803
UK	1,062	50	1,000	610
Italy	1,315	2,137	800	432
France	548	1,008	1,100	473
Spain	530	350	500	295
Belgium	65	10	500	290
Netherlands	130	20	360	241
Total	**4,487**	**3,746**	**5,360**	**3,144**

Source: ICT and Industry Sources

Contrary to widely spread perception, most of the companies that market luxury items all over the world do not prosper only from their brand reputations. Because of their established know-how, the sophistication of their designs, as well as the quality of the raw materials used for their products, high prices can often be justified.

A current trend in the luxury market, the development of tailor-made products, is also significant. This trend has some history in clothing, shoes and leather garments but it is now starting to involve leather goods products as well. Some companies offer tailor-made watch straps, wallets and belts from various types of leather, such as box-calf, ostrich, crocodile, "Galuchat" (ray and shark skin), lizard (iguana), etc.

5.1.7 Leather goods company structures

The industry has now become divided into distinct groupings just as in the footwear industry, but more obvious as a result of the wide number of products and brands involved. One specific area has been the number of fashion brands who have chosen to extend their brands into leather goods, which is made easier by the large number of very competent suppliers they can turn to.

Here is a brief explanation of the different components of the leather industry:

- Trademark companies that do not have their own manufacturing - these companies are focusing on design, marketing and distribution and they leave production to sub-contractors. They constitute the majority of the main companies involved in the business to the consumer level.
- Trademark companies that have their own production units - these companies can put emphasis both on the trademark and the origin. They have decided to keep control of the whole value chain from the design, through the production process up to distribution and retail. They mostly maintain the production in their home country, allowing them to promote the historic craftsmanship with which the products are made. Some top French and Italian brands have followed this route and are consequently important customers for some European tanneries.
- Manufacturers "no name" - these are companies that have specialized in manufacturing and are often sub-contractors or co-producers at the service of trademark companies or importers. Some of these companies are very large, very competent and have good reputation. They will also work for brands who use a "hybrid" policy, such as when they choose to make the flagship products in their own factory but to outsource, or more often offshore, the small leather goods made with the same leathers. As markets develop in countries such as India and China we may expect to see one or two of these companies develop brands, initially for their home market but they could also be expected to export their products with their own brands.
- Importers - they do not manufacture, but they buy from manufacturers in developing countries and resell to distributors in industrialised countries.

5.1.8 Production markets

The labour intensive aspects of leather goods and the increasing labour costs in industrial countries facilitated the relocation of manufacturing to developing countries. The process started in the early 1980s and it has been facilitated by various kinds of supports (e.g. credits, tax exemptions and holidays, investment aids etc.) offered by Governments in target countries along with technical assistance (training, expertise, transfer of – mainly second-hand or used – equipment) provided by partner

companies in industrialised countries, and by bilateral and international agencies such as GTZ, ILO, UNIDO etc. A great number of manufacturers operating today are located in developing countries, particularly in China. ***Table 52*** indicates the value of exported leather goods products by some Asian countries to the EU in 2003.

Table 52 - Suppliers to Europe

Supplier	Quantity	Share
	million €	*%*
China	2,800	73.0
India	260	6.7
Vietnam	130	3.4
Hong Kong	130	3.4
Others	520	13.0
Total	**3,710**	**100.0**

Source: ICT and Industry Sources

However, in spite of this strong delocalisation wave to developing countries, there still exist some sizable productions in certain industrialised countries, particularly important in terms of added value rather than in volume. This concerns the luxury leather goods in particular.

For example, during 2003, Italy and France together produced for value exceeding 3 billion € of exclusive leather goods products, while their overall consumption represented only 1.85 billion €. These two countries together exported top luxury articles (made locally for the most part) to industrialised countries from and outside the EU. Below is a breakdown of export destinations in 2003 by these two countries:

Table 53 - Main export destinations of Italian and French leather goods

Unit: million €

	Value
Switzerland	289
Japan	850
Hong Kong	221
the USA	480
South-Korea	68

Source: ICT and Industry Sources

The production of leather goods by the leading European countries in this market has been in a continuous decrease since 1980, but might become stable in the future thanks to the high demand from Japan that seems to be stable, or even increasing. The Japanese market alone represents 38% of the whole EU export (USA – 21%).

Table 54 - EU Export

Unit:million €

	Total	Extra-EU Export		
		Value	*Destination*	*Value*
Germany	400	64	Japan	32.0
			Switzerland	32.0
UK	222	80	USA	18
			Japan	15.5
			Hong Kong	13.3
			South Korea	11.1
			Others	22.1
Italy	1,700	1,071	Switzerland	289.0 To Japan: 255 To USA: 255 To others: 272
			Japan	255.0
			USA	255.0
			Others	272.0
France	1,700	1,105	Japan	595.0 To USA: 221 To Hong Kong: 221 To South Korea: 68
			USA	221.0
			Hong Kong	221.0
			South Korea	68.0
Spain	246	38	Japan	22
			USA	17
Belgium	531	37		*No details available*
The Netherlands	245			*No details available*
Total	**5,044**	**2,395**		

Source: derived data

Leather goods manufacturers are of a great diversity. Craftsmen working alone or with their family members using basic tools and simple equipment represent simple operations, whereas large factories employing several hundred workers and using sophisticated machinery, including injection moulding equipment for heavy suitcases, are real industrial ventures. Plants and employed labour force vary considerably by nature of products, types of raw materials and quantities to be produced. Manufacturing facilities and organizations having appropriate design capabilities, modern equipment and production know-how, quality assurance systems, market intelligence and at least a minimum economic size of operation appear to be competitive on the global market.

5.2 Leather Upholstery

The rapid and significant growth of upholstery leather for furniture, aeroplanes, and especially for automobiles, has been one of the main characteristics of the past 15 years in the leather industry. This sub-sector was among those affected negatively by the economic recession which began in housing in some western markets in 2007 and accelerated in the autumn of 2008. The future is quite unpredictable. Greater automobile industry reorganisation was expected in the west but various scrappage schemes and other government support schemes have left much European and US capacity intact.

Because the production (assembling) of automobiles had remained largely in industrialised countries and automobile upholstery requires good quality hides with large surface, tanneries in industrialised countries had until 2009 done better than those in developing countries. This market continues to grow, but certain changes will have an impact in the speed and the direction of this growth. Countries like Brazil and Argentina are also important producers of upholstery leather.

The recent rapid development of the upholstery industry was the consequence of the increasing wealth in the world and the desire for enjoying luxury. Leather is found in up market automobiles and in the best quality furniture. There has been a move to what is called “affordable luxury”, which means that other market segments may also enjoy these high quality items. As a consequence, large numbers of smaller vehicle models, especially from premium brands, are sold with leather upholstery, taking the leather in the automobile categories in an unexpected direction.

In 2007 in Europe, leather held about a 14% share in automobiles and a further 4% in mixes with textiles, composites and faux leathers. Through to 2012 industry estimates were that these would both grow to 17% and 6% respectively (industry estimates). The share of leather covered seats in cars is somewhat higher in the USA than in Europe, whereas premium car brands are all leather upholstered.

In China, all cars are air conditioned, which has affected design, in some instances requiring larger grills. Taxis and some other vehicles will have specially designed white textile covers made in specialist work shops, while the upper echelon of society demands leather upholstery. Luxury models in China all come with leather and leather as a standard offer goes far lower in car ranges than in the rest of the world.

The United Kingdom Design Council (Clements and Porter 2007) specified three future trends in the automobile industry:

A. **Eco-friendly vehicles** - the concept applies mainly to the engines, but this principle has an impact on the interior. There is the EU end-of-life directive requiring separation and recycling of components. As for leather, less polluting tanning and finishing techniques, and its promotion as a sustainable source are relevant features. Considerable wastes produced when making leather car upholstery is the most important issue in need of an appropriate solution.

B. **Mass customization** - People tend to purchase vehicles that reflect their lifestyles and individuality. This is a trend that futurists argue is set to continue. This is manifest in the vehicles to be seen on the road

C. **Inclusive design.** Increased longevity, a greater number of older people holding driving licenses and escalating affluence are just some of the factors contributing to a rise in the number of older drivers. Both the interior and the exterior of the car will be affected by the accommodation of the older user.

Leather has properties that make it a material of choice for interior designers. It is tactile, mellow (i.e. ages well), has agreeable odour, it is durable and it has connotations of heritage and craftsmanship. It is a metaphor for quality and craftsmanship, which is important in an age of personalization.

Small cars

Current examples of small cars for the European market have 6 trim levels with optional leather on the steering wheel, the gearstick and the handbrake. Other small-size car manufacturers offer even further customization, including seats in two-tone trims, showing scope for smaller sizes and a wider range of hides being used. There is a buoyant after-sales and custom market that supplements the manufacturers' offerings and there is lively exchange over the internet, discussing leather trim and saddlery techniques. Designers use leather trim to provide the perception and the experience of quality to their customers.

Some new trends are emerging in connection to this. The amount of leather per automobile is reducing, the pattern sizes are reducing, and more corrected grain leathers are being used. Corrected grain is easier to match with plastic and PVC coated material. The leather industry concern is that the move to corrected grain will put the status of leather furniture at great risk, as it will no longer be perceived as being "upmarket".

At the same time, the location of manufacture has begun to change, with China and Eastern Europe being the new and fast growing areas. ***Table 55*** shows the car production and its increase worldwide since 2000.

Table 55 - World vehicle production

Units: Million

Region	Cars	Commercial vehicles	Total	Cars	Commercial vehicles	Total
YEAR	2000			2008		
North & Central America	8.4	9.3	17.7	6.2	10.7	16.9
South America	2.9	1.1	4.0	3.0	0.9	3.9
Africa	0.3	0.15	0.4	0.38	0.2	0.6
Asia	13.3	4.5	17.9	21.9	10.0	30.9
Australia	0.3	0.02	0.35	0.3	0.03	0.33
Europe	17.8	2.8	20.7	18.3	3.5	21.8
TOTAL	43.0	17.9	61.0	52.3	18.2	70.5

Source: OICA

The 2008 figures already include quite big declines from 2007 in countries like the US. While world wide production was down 4% that in the US was down just under 20%. 2009 has shown much faster growth in China than expected with some uncertainty that such high growth can be sustained. The 40% growth seen has highlighted demand in nearly 300 smaller Chinese cities, 118 of which have over 1m people and where savings rates are high.

Analysts are now raising projections for sales in the US of light vehicles which peaked in 2005 at 16.9m (17.3m in 2000) and went to their lowest in 2008 at 10.1 million. Some suggestions for 2010 are that the figure will be 11.8m.

In 2007 Europe produced 20% of all cars made in the world European car production fell to 10.9 million units in the first 9 months of 2009, down on 2008 by 26%. By mid year there were some signs of recovery although larger luxury cars were still suffering. Trucks and vans were heavily down on 2008.

Additional future growth is foreseen in India and Russia. These changes in location have come together with major car brands disinvesting in seat manufacture. Tanners have had to adjust to changing locations and many have become sizeable international organisations. Indeed, automobile upholstery tanners have created a new elite group within the leather manufacturing community.

In addition to seats – the dominant application – leather is used for steering wheels and gearshifts, doors and sometimes for instrument panels. According to Automotive Interiors Worldwide: “as well as coping with growing demand, players in the leather supply chain – including tanners, cut and sew operators, process chemical and coating manufacturers and first tier system suppliers – are facing a wide range of challenges posed by the automotive industry’s current development. Chief among these is the need to accommodate vehicle manufacturers’ continuing demands for lower unit costs.”

Long term the leather has a difficult calculation to make in terms of this industry. New players in India and China are becoming powerful in the market and as the market recovers it is not clear how the balance will be between the need for large prestigious vehicles compared and environmental pressure to use smaller models. There is some evidence the younger Generations X and Y are showing a preference for smaller cars and most of the larger makers are adjusting their ranges accordingly. This being the case tanners will have to adapt their proposition to ensure that leather is used more often in the smaller vehicles.

Other transport industries

Besides being luxurious, leather upholstery features durability and easy cleaning. Therefore, it is quite often used in trucks and commercial vehicles where these properties are important requirements. Another growth area is airplane interiors. In this market, the performance properties of leather, being hardwearing, makes it a material of choice for designers, engineers and cost controllers. Some budget airline fleets had its (non-reclining) seats fitted with leather, as they like to offer luxury and comfort while maintaining practicality. These seats can easily be cleaned using liquid spillage – textile seat covers would be out of service after a relatively small number of

flights. The types of leather used for covering seats in budget airline planes is sometimes of lower quality; the typical representative of such materials is corrected grain leather that may downgrade the value of genuine leather in consumers' minds. At the same time, upcoming new aviation regulations will influence specifications for materials used in airplanes: the leather processing industry may have difficulties to meet them and subsequently, this upholstery leather market may also shrink.

Demand for private business jets has been growing during the past decade and this may be a considerable market for leather upholstery, although its impact is difficult to measure.

Leather for both automobiles and aeroplanes has to be made to a very tight technical specification in terms of characteristics such as fire resistance, anti fogging and stain resistance.

Furniture leather

This is a market that has scarce statistical data. Like leather goods, this business also covers a very wide spectrum with regards to material combinations. A lot of products are manufactured in the craft sectors in various parts of the world and these are important for employment.

The health of the housing market has a major impact on the performance of the furniture industry. The rising value of houses in the early part of the millennium encouraged consumers to borrow and to spend on refurnishing. They also encouraged people to change houses more often and to buy new furniture. Growth in the buy-to-let sector further stimulated the furniture market.

Italian makers have been fairly successful in supplying leather furniture to European and USA costumers featuring quality and value for money. With this, they have boosted the demand for these products over the last ten years.

The sector has taken a major hit as a result of the US and European housing crisis and its knock-on impact in the rest of the world. Leather furniture is very much a discretionary purchase and it is strongly linked to the housing market. Not all markets in Europe are seeing the same decline in house prices, so this has not been totally uniform. Figures available for furniture show that in 2008 the market only fell slightly after three years of strong growth.

Tanners are also concerned that, in a number of markets, leather furniture is now priced lower than those with fabric upholstery and this may have an implication on consumer perception.

The apparently continued growth in the demand for leather in upholstery in Asia may nevertheless maintain the overall demand. Indian tanners were successful in this sub-sector in recent years by developing their markets in Russia, China, Malaysia, Italy and USA.

5.3 Clothing Leather

The market for clothing leather is one of the most volatile in the leather-based industry because, just as leather furniture, leather garment is a discretionary purchase. The demand depends largely on the available free disposable income of consumers and, in many markets, on the actual fashion trends. Over the last three decades, the percentage of leather used in garments has been somewhere between 11 and 18%.

Historically, leather garments have been less of a luxury and more of a necessity, at times when other materials were not available to protect from the cold. In many regions of the world, leather garment became the primary cold weather outerwear. But rising wealth, the introduction of excellent fabrics for waterproof and insulating outerwear at affordable costs have steadily eaten into the traditional utilitarian outerwear market in most countries in the world.

Some elements of this utilitarian market remain in Russia and in some countries of the former Soviet Union, but this is likely to decline steadily with time. In some parts of the world, police forces and similar organisations continue to specify leather garment for certain uniforms. For one large niche segment – motorcycling – leather remains the most important material, as there are only few alternatives that can match the durability of leather and the capacity to not melt with the heat of friction when sliding along the ground. The increasing speed and power of motorcycles require thicker materials, so today, bovine leather around 1.6 mm thickness is the most widely used material in this field. Nevertheless, leather garments worldwide have moved from a weather item to a fashion item.

Technology development led to considerable market growth in the 1970s, a period when tanners began to use cow hides for manufacturing of garment leather, reducing leather wastes and manufacturing costs. Before this breakthrough, only small animal skins (goat, sheep and lamb) could be used with cutting yield. Soon, tanners managed to reduce the thickness of heavier wool sheep skins from New Zealand and UK to 0.5 mm without substantial loss of tear strength. With this, the market for extremely soft lightweight garments was given a further boost.

The jump in leather garment production in China lead to a considerable development of pigskin tanning using the large Chinese domestic supplies. However, it is not yet possible to achieve the same degree of softness with pigskin as with fine sheepskin nappa. The volumes used are close to 2 billion sq.ft./year. This is significant as consumers are becoming more aware of softness.

Over the last decade, Turkey, India and China have become the dominant forces in garment leather and garment production, although production is widely scattered world wide. Italy and Pakistan are also important. During 2009 leather garments have become much more fashionable and the market for better quality items is growing. How this area of leather consumption grows requires tanners to be both innovative and imaginative working closely with designers to highlight the fashionability and other qualities of leather.

5.4 Glove Leather

The glove market is consistently measured as using about 4% of the leather produced. Most data indicates that some 50 billion gloves are produced annually. This estimated figure includes huge numbers of industrial gloves, which are a useful outlet for large amounts of suede splits, pigskin suede and other grades that tanners can find hard to commercialise otherwise.

The dress glove market is much smaller and it has been declining until around the early 1990s, when there was a revival. These gloves normally use hairsheep from arid areas in Africa and the Middle East. Some small production of skins is found in Brazil, Indonesia and India, while Spanish and French tanners are experts with certain grades of Spanish lamb material. Glove production is concentrated mostly in China, India, Philippines and Eastern Europe. This market is currently undergoing changes, as Ethiopia has moved from the export of pickled sheep to crust and finished leather, and it is likely that other African countries will follow over the coming decade. There is currently a wide search for materials suited to making golf glove leather and fine dress glove leathers, should African material become totally unavailable. Deerskin, pigskin suede, peccaries, goatskins and some very light weight bovines are also used.

Many leather goods gloves are often gift items. This is supported by the combination of cold weather (winter season) and Christmas. 60% of the dress gloves are sold on the four Saturdays before Christmas in USA. Another interesting aspect of the dress glove market is the fact that unsold gloves are often returned to producers at the end of the season in USA, the UK and Japan.

Leather items, in particular footwear and gloves, are important parts of military equipment. The volumes of such footwear are small in comparison with total volumes of footwear and fit in with work wear, albeit they are important and of high quality. For the glove industry the volumes are much higher than they might have been historically anticipated, as soldiers are now wearing gloves routinely in all climates. While this is a micro-niche in terms of the world leather industry, it is a significant sector for the glove industry. Technology in terms of fire, chemical, UV, and water resistance are all important and will need to be better developed in leather in order to avoid replacement in a wide variety of industrial performance gloves.

In 2008 and 2009 there has been a reduction in the consumption of work gloves as industry in the developed world declined. On the other hand dress glove business has benefited from cold weather in both 2008 and 2009 keeping inventories low.

5.5 Expected Future Trends

It is expected that the leather goods industry will continue to be divided into two major categories. On the one side there are be the luxury leather goods market that will continue to use mainly genuine leather, exotic skins (from farming) – often combined with other expensive raw materials and accessories. High quality articles promoted by well-known international and national brands will be continue to be sold at expensive prices to wealthy customers throughout the world, in industrialised as well as developing countries. There will also be luxury brands that will integrate into the whole circuit, from the design of the article to its distribution through retail outlets. Existing brands will also be able to win upper markets by way of providing tailor-made articles. Wealthy consumers in any country will be able to buy from

specialised shops, but also through the Internet, which is becoming a window of information and a relevant sales network as luxury brands are steadily refining their offer and becoming more comfortable with Internet sales.

Trade rules should enable the tracking of manufactured articles, providing customers and consumers with adequate information on the origins and helping with counterfeit control. The struggle against counterfeiting should be fostered since developing countries will want to launch their own luxury brands and thus will face similar issues with counterfeiting. The notions of quality and guarantee will generate a demand for traceability that will in itself involve a care for ethics. Radio Frequency Identification Technology (RFID), tagging, and similar security measures will be used to help provide answers to the following:

- Where and by whom the product has been manufactured?
- From which raw materials (what type of leather) has this product been manufactured?
- Are these materials friendly to the environment and suitable to be recycled?

These questions are already being asked by top brands and they will become commonplace. Besides top quality industries, there will also be manufacturing of articles of less expensive prices, according to the raw materials used (with or without genuine leather).

With the exception of the handbag, which will remain a fashion accessory with social distinction (like clothing), all other leather goods will be designed for longer survive time (durability), strengths and more functionality. Luggage, travel bags, rucksacks, briefcases and even small leather goods, made either of genuine leather or synthetics, will be more and more the object of guarantee from manufacturers and distributors. Such guarantees already exist in the field of luggage and furniture industries.

The speed at which China has been able to conquer leather goods markets and to produce relatively high quality, proves that the leather goods manufacturing may be set up anywhere, particularly in countries where large quantities of leather are available (e.g. in Africa, Latin America and India).

Leather goods industries may provide job opportunities in many countries. Considerable historic skills exist in this sub-sector in some countries in Africa. In Morocco, for example, the trade association has indicated that there are over 100,000 people working in the informal leather goods business. Ethiopia has an equally long history of making parchment for religious books and of using leather for elaborate “lunch boxes”. As countries become richer, the small leather goods sub-sector is likely to prosper as more people will purchase wallets and purses – as they do in industrialised countries – to hold money, rather than keeping notes and coins in their pockets.

Generally speaking, efforts should be made so that articles designed and manufactured can comply with international quality standards. Quality is a notion that should become an inherent part of any product, regardless of their price levels, because the future will no longer tolerate wastes. Consumers will become more difficult to please and every manufacturer will have to pay more attention to the use of basic materials. At the same time, in certain areas of the industry it could be helpful

to unify and/or standardize the taxonomy on leather products (especially those different from footwear). This could be instrumental in generating more uniform and meaningful statistics, and could therefore aid the industry in identifying potential trends and solutions.

Tomorrow's world should make sensible use of available natural resources, be it ore, wood, water or raw hides and skins. These responsibilities fall to politicians as well as to companies and consumers. It is well understood that these responsibilities should benefit not only the general public, but also the manufacturers of leather products.

It is likely that some criteria such as robustness and reliability, which was crucial at the start of the industry, will reappear, at least for articles that are less influenced by fashion: travel goods, small leather goods, etc.

There are likely to be issues for the automobile sector in terms of availability of high quality hides. If this is dealt with by a reduction in quality, this may lead to a consumer backlash. Quality, both aesthetic and technical, may have to be redefined in the auto/aerospace and furniture sectors. Smaller patterns will be used in automobiles, which will reduce wastes, allow mixing of colours and material types, and open opportunities for using smaller skins in this market. The use of smaller patterns, mixes of leather with textiles and other materials, and less use of leather per car can be foreseen. Overall, the use of leather in automobiles will continue to grow, but these changes will slow the growth in volumes

Unless there is a consumer reaction to leather that looks too much like plastic, which is quite likely, it is expected that corrected grain leathers will continue to increase their share in both automobiles and aeroplanes at the lower end of the market. It is possible that this use of corrected grain will start to diminish the pressure on the supply of large high quality hides and it is also anticipated that seat design will adjust to better accommodate smaller hides.

Since so many low priced pigmented leathers are already in this sector, the industry is currently worried about the damage being done to the premium and quality image that leather has with the public. As a consequence, the growth of the furniture sector will require tanners to find a way to keep the quality and image high, or the consumers will not continue to identify leather as value for money.

In leather goods in particular, but also in some of these other areas, design training will be needed to make use of leather that has more surface and other defects, but that is still intrinsically of high quality. This should also work to make better use of locally available materials.

Using sheep and goat skins for other end uses such as upholstery and leather goods will require technological adjustment and new skills.

Over the next fifteen years, we would expect to see further transfer of leather goods production to lower cost countries, but at the same time, a development of a number of local brands in countries like China and India. Despite rising costs, it is unlikely that the very top end companies will start to outsource their product.

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Generally speaking, efforts should be made so that articles designed and manufactured can comply with international quality standards. Quality is a notion that should become an inherent part of any product, regardless of their price levels, because the future will no longer tolerate wastes. Consumers will become more difficult to please and every manufacturer will have to pay more attention to the use of basic materials. At the same time, in certain areas of the industry it could be helpful to unify and/or standardize the taxonomy on leather products (especially those different from footwear). This could be instrumental in generating more uniform and meaningful statistics, and could therefore aid the industry in identifying potential trends and solutions.

Tomorrow's world should make sensible use of available natural resources, be it ore, wood, water or raw hides and skins. These responsibilities fall to politicians as well as to companies and consumers. It is well understood that these responsibilities should benefit not only the general public, but also the manufacturers of leather products.

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require tanners to find a way to keep the quality and image high, or the consumers will not continue to identify leather as value for money.

In leather goods in particular, but also in some of these other areas, design training will be needed to make use of leather that has more surface and other defects, but that is still intrinsically of high quality. This should also work to make better use of locally available materials.

Using sheep and goat skins for other end uses such as upholstery and leather goods will require technological adjustment and new skills.

Over the next fifteen years, we would expect to see further transfer of leather goods production to lower cost countries, but at the same time, a development of a number of local brands in countries like China and India. Despite rising costs, it is unlikely that the very top end companies will start to outsource their product.

6. THE ROLE AND IMPACT OF DUTIES AND TARIFFS IN THE LEATHER INDUSTRY

World trade in leather and leather products is placed at around US$100 billion and the industry has been growing rapidly as manufacturing has moved to the developing world. This growth has been accompanied by the use of various barriers to trade, which have sparked considerable controversy within the industry.

From the beginning of trading thousands of years ago, governments have always tried to encourage local economic benefit in one way or another. They have also wished to protect items that were considered “strategic” such as food and products needed for warfare. With leather being essential for warfare – boots, saddlery, armour, etc – and hides and skins a by-product from the food industries, the leather and leather using industries have always been susceptible to government involvement.

An examination of the value added chain for leather is useful in understanding government approaches to the industry. The labour content in the leather chain is much greater with the finished products than with the first stages of tanning, and it is in these first stages of tanning that the greatest environmental load occurs. As a consequence, some countries with large amounts of raw material are not willing to accept the load of early processing without the employment benefits of making finished products. On the other hand, for areas such as the USA and much of the EU, which have well established wet blue operations, often associated with abattoirs, and are capable of more or less satisfactorily managing the environmental aspects, the imperative of protecting further value added processes is not apparent.

The use of tariffs and duties, and lately of other less transparent barriers to trade, has been increasing in the industry and has led to disagreement amongst leading leather industry bodies such as COTANCE and the ICT. This relates in particular to free access to raw materials. Most of the countries in the EU hold the view that raw material should be freely traded on a world wide basis and that only the very poorest countries should try, on a temporary basis, to stop raw exports while its industry develops. As such, they are displeased by the actions undertaken by some countries to control the free exports of raw or partly processed material. On the other hand, those countries and others in a similar situation are concerned that exports of wet blue or other semi-processed material means that high levels of employment and added value are being lost, while they are left having to pay for the heavy environmental load from the early processing. They are also increasingly concerned about direct or hidden tariff barriers being applied by the developed world.

The World Trade Organization’s (WTO) rules define a subsidy as either a "financial contribution" by government entities that confers benefits on the recipient, whether through direct payments or tax breaks,” or "any form of income or price support" that promotes exports or reduces imports. Industrial subsidies directly linked to export performance and import use are prohibited. This also applies to taxes on exports, which may be intended to encourage goods to stay at home for further processing, or may just be another source of revenue for the government, since exported goods are less subject to tax evasion than many others forms of tax. Given the many arguments at the WTO on other industrial areas, from agriculture to aviation, it is clear that an

agreed solution is some way off and that no easy outcome can be presented for the leather industry.

Recent high price levels and scarcity in the food and energy sectors have heightened attention in these areas. The leather industry is entangled in this as its raw material is a bi-product of the food producing agro industries. In some cases, this even extends to a concern about the export of live animals, depriving tanners of the hides, which is an issue in such countries as Pakistan.

6.1 Types of Duties and their Utilisation

The types of barriers to trade that can be used are extensive and they go far beyond simple duties.

Non-tariff barriers have become more common in the leather trade in recent years. These include compulsory marking, or labelling requirements, or testing and certification. The latter tend to originate in developed economies aiming at protecting consumer health and safety and/or the environment.

International trade can be restricted in a great number of ways. Some can relate to both imports and exports while some are specific to one or the other. The most common problems is to control the export of raw materials in order to help the domestic industries develop or to impede the importation of finished products to protect existing or nascent domestic industries. Historically, the leather industry is one in which raw material from the developing world moved to the industrial nations for tanning and use in leather products. Given that this structure has reversed in the last three decades or so, it is inevitable that problems should arise.

A list of potential restrictions and impediments to free trade are noted below.

- Import and export duties
- Import and export licenses
- Import and export quotas
- Domestic taxes
- Anti dumping duties
- Countervailing duties
- Phyto-sanitary certificates
- Labour conditions
- Temporary imports (and drawback)
- Eco-labelling
- Traceability
- Chemical product restrictions
- Cost of testing and certification
- Custom imposed index values
- Custom clearance barriers
- State trading and exclusive franchising
- Government procurement policies
- Export embargo
- Minimum export prices
- Export rebates
- Tax incentives
- Financial aid programs
- Sales tax (VAT) rebate
- Industrial and/or free zones
- Environmental considerations
- Monetary/fiscal and exchange rate benefits
- Foreign investment policies
- Immigration policies
- Intellectual property issues

The success of many Asian countries, starting with Korea and leading up more recently to the spectacular growth of China, has created a template of job creation via exports which others want to follow. Many countries with good resources of raw materials being exported raw or with minimal processing are often now the most determined to find a way to move on to finished product based on their domestic hides and skins.

India is the most frequently quoted example of a country that developed its industry over a period using tariffs and non-tariff support at different stages of the industry evolution. It used duties and support of various types to encourage and accelerate the movement towards the manufacture of finished products made of leather using 100% of the domestic raw material and other imported raw material as well. Many industry experts argue that the government action in India had positive outcomes for the industry.

More recently, the changes in duty and VAT payments related to exports in China has shown again how government changes related to trade legislation can have a very great impact. When put together with “dumping duties” on leather footwear imposed on China and Vietnam by the EU, the changes made by those manufacturing in China and their customers has been quite significant in terms of the leather industry changing location within China or moving overseas.

The difficulty of trying to fully comprehend the role of such barriers was well elaborated by USA economists emphasising the following elements:

1. Subsidies, Tax Preferences, and Other WTO Violations
2. Currency Manipulation
3. Lax Health and Safety Standards
4. Counterfeiting and Piracy
5. Lax Environmental Standards and Enforcement
6. Foreign Direct Investment (including “round tripping” of Chinese capital and attraction of capital that would go elsewhere if it were not for the above advantages)

Many of these issues are currently being very effectively terminated in China as a result of changes between 2006 and 2008. Other important elements have also been vital to China’s competitiveness. These include a low labour costs for workforce that is well educated and highly disciplined, good infrastructure and logistics when it comes to exporting, and the very large cost savings that come from having many suppliers located in the same close geographical areas. This latter reduces lead times, inventory holdings, and speeds the development of new products and processes. Thus, it is not always easy to explain away competitiveness through the use of tariff and non-tariff barriers alone.

On the other hand, there are strong complaints about the unfairness of the EU duties on certain types of leather footwear from China and Vietnam, albeit they may have been introduced after analysis and legal process. On these, the tanning and footwear industry in Europe is far from united. The USA and the EU are also seen as using traceability and chemical product restrictions (with complex and expensive testing) as barriers to access to their markets.

The following are some important points noted by Koppany (2007) about the currently applied barriers.

- Most countries do not tax raw material imports, but they tend to do so as the level of processing increases (i.e. India does not tax imported hides but does tax imported footwear). One change to this has been China in 2006, as it wished to discourage the pollution coming from the raw to wet blue stages.
- Sales Tax (or VAT), at the point of entry into a country, is a form of import duty, especially where local goods are given exemption.
- Anti-dumping duties have been quite frequently applied to footwear by Brazil, the EU, Mexico, and the USA, but are not used much in relation to leather or raw hides.
- Phyto-Sanitary certificates have been regularly demanded as animal diseases have escalated and are most used at raw and occasionally wet blue levels. Brazil, Paraguay, Uruguay and Chile have asked for health certificates for crust and finished leather.
- Traceability is increasingly important as health issues arise in animals and also for the major brands and retailers. In the leather industry, traceability has been pushed forward mostly by the automotive industry.
- Chemical product restrictions - Increasingly brands and retailers are introducing lists of banned chemicals that must not be found in any articles they sell. Testing for these is costly and, for some locations without "approved" laboratories, complex and time consuming. The new EU REACH legislation is now in force and it has created great confusion and cost in different sectors of the industry. The final impact of REACH for the worldwide industry remains very unclear, but many countries are suspicious that the primary intention of it is to act as a barrier to trade, rather than as a benefit to health;
- Certification - Allied to testing for banned substances is the fact that lack of certification is for many a barrier to export, and while the cost of certification has fallen, it is still a significant cost that is often resented. This includes ISO9000 and ISO14000.
- Custom imposed index values are used when a country believes false values are being applied to products, most frequently imported footwear. Mostly this has been applied to low price footwear imports from China and other Asian countries. A minimum index value is established and the duty is charged against that rather than the invoice value.
- Custom clearance barriers often relate to no more than extensive delays. The delay or rejection of import documents for leather chemicals, leather machinery, leather and leather products has been used by Brazil, China, India, Pakistan, and Russia.
- Export rebates have been frequently used in many countries to help the domestic leather industries. In the leather industry, they have been mostly used for finished leather items such as clothing or footwear, rather than for leather. An example of this was the South African government's aid to the exporters of leather car seats.

- Financial aid programmes have been quite frequently used as countries try to accelerate the speed of development of their industries. These are often known as soft credits and sometimes require recipients to move into selected locations
- Sales tax (VAT) rebate. This is where a variety of mechanisms allow businesses to reclaim internal sales taxes when exporting. Some governments can be very slow in repaying these refunds.
- Free zones in a variety of countries are intended to attract export oriented businesses and are given a variety of incentives, especially where foreign direct investment is involved. These can include labour training programmes, where wages are subsidised for a period or cash sums given, land is available at subsidised rates, the infrastructure is fully established, and tax holidays given for a set number of years. These have been common throughout the world, but are most noted in places like China, Tunisia, and Thailand.
- Environmental considerations. Most countries have some environmental legislation in place but, globally, its enforcement is irregular. Between the two, environmental costs thus vary considerably from one country to another. Koppany argues that, consequently, a tanner can have effluent treatment costs varying from 3-4 cents a square foot to 20 cents a foot of leather, only depending on location. While some countries choose not to enforce or support environmental legislation, some others offer subsidies to tanners to help pay for these costs.

The opening up of the EU to imports from China after a ten year period of protection in order for the industry in Europe to adjust, was supposedly one of the most profound changes in the last twenty years. Yet this was only one activity in an area that stretches across the whole industry and across the globe.

Table 56, which is taken from the ITC Business Briefing of June 2008, shows that the amount of material subject to tariffs and duties is growing. The paper, prepared by COTANCE, indicates that the "export taxes and export restrictions on these commodities have proliferated so much that actually only about 40% of global availabilities reach the free market".

Table 56 - Production of Raw Hides and Skins in Countries applying Export Taxes or Export Restrictions

Data in thousand tons

Countries	***1996***	***2006***
Argentina	262,5	249,5
Bangladesh	43,4	46,3
Byelorussia	30,5	16,7
Brazil	505,9	736,3
China	485,4	937,3
Ethiopia	36,2	36,4
India	474,2	504,7
Indonesia	37,2	37,7
Kenya	29,1	32,1
Morocco	13,2	15,5
Nepal	21,5	26,4
Nigeria	40,4	40,4

Countries	*1996*	*2006*
Pakistan	75,9	110,1
Paraguay	27,6	29,8
Russia	335,0	243,2
Thailand	47,6	43,2
Tunisia	6,0	6,6
Ukraine	153,0	105,5
Uruguay	46,9	43,6
% of world total restricted	34.60%	48.90%
World total	6.180,0	6.668,0

Source: COTANCE Elaboration on FAO data
Notes: Data refer to the sum of salted cattle & calf and sheep & goat hides and Skins. In 1996, no export restrictions applied in Byelorussia, Morocco, Russia and Ukraine

Tariffs and Duties are changing all the time, but a good snapshot is given in the tables below provided by Koppany (2007). These provide information for a number of the more important countries in the world in terms of leather and leather products covering a variety of major countries involved in leather. These exclude duties on chemicals and machinery. The details for China have been updated to autumn 2008, except for crust which was not available. China, in line with many other countries taxes imported leather chemicals at 6.5%, machinery at 8% and accessories for shoes and garments at 15%. At the same time, it should be noted that the import duties for Pakistan are now stated as zero except for leather chemicals that average 12%, machinery at 5% and accessories at 20%.

It should also be noted that, when domestic taxes are concerned, a domestic sales tax is normally added to the import duty. In Argentina, importers of wet blue hides in January 2006 would pay 25% import duty plus 8.5% sales tax, a total of 33.5%. In India, the 2008 import duty on footwear was a basic 10%, but effectively a total 31.71%, and for tannery machinery it was 7.5%, giving a total duty of 28.64%.

Table 57 - Some Import duties in force as of January 2006 (%)

Country	*Rawhides*	*Wet blue*	*Crust*	*Finished leather*	*Footwear*
Algeria	5	15	15	15	30
Argentina	2.5	8.5	10.5	10.5	20.5
Australia	0	2.5	5.0	5.0	10
Bangladesh	0	0	0	0	25
Brazil	2	7.4	9.5	9.33	20
Chile	6	6	6	6	6
China	5-14	5-14	na	8-14	10-24
Egypt	2	7	12	12	32
EU	0	1.38	5	6.5	8
India	0	15	15	15	15
Japan	8.4	14	19.26	18.8	28.5

Country	*Rawhides*	*Wet blue*	*Crust*	*Finished leather*	*Footwear*
Kenya	10	10	10	10	25
Korea	2.25	5	5	5	13
Mexico	6	7.5	10	10	35
New Zealand	0	0	2.33	3.5	0
Nigeria	5	10	10	10	15
Pakistan	5	5	5	5	25
Paraguay	2	8	9.5	9.33	20
Russian Fed	5	5	5	5	0
South Africa	5	5	5	10	30
Taiwan	0	0	1	1	5
Tanzania	10	10	10	10	25
Thailand	0	5	5	5	40
Turkey	0	1.38	4.5	6.5	8
USA	2.34	2.62	2.62	2.96	0-5
Uruguay	2	8	9.14	9.14	20
Vietnam	0	3	5	10	50
Zimbabwe	5	15	15	15	0

Source: from Koppany (2007,) who used FAO and national trade associations

Table 58 - Domestic taxes (applied on imports – in force as of January 2006)

Country	*Raw hides*	*Wet blue*	*Crust*	*Finished*	*Shoes*
Argentina	14.5	25	25	25	25
Brazil	27.25	27.25	27.25	27.25	27.25
Chile	17	17	17	17	17
EU	14-21	14-21	14-21	14-21	14-21
Mexico	15	15	15	15	15
Pakistan	15	15	15	15	15

Source: from Koppany (2007)

Table 59 - Export Taxes (in force as of January 2007)

Country	*Hides*	*Wet blue*	*Leather crust*	*Finished leather*	*Manufactured Products (Leather shoes)*
Argentina	15*	15*	5	5	5
Brazil	9	9	0	0	0
India	60	60	60	0	0
Kenya	15	0	0	0	0
Pakistan	20	20	0	0	0
Paraguay	12	0	0	0	0
Russia	15	10	10	0	0
Tanzania	20	0	0	0	0
Uganda	20	0	0	0	0
Uruguay	8	8	0	0	0

*Source: from Koppany (2007)*Argentine export taxes are applied on the value of USA butt branded steers as quoted in Chicago*

There are a number of reasons why we can expect these numbers to be dynamic and keep changing:

- the final part of the value chain, where leather goods, garments and footwear are made, is more labour intensive than the first stages and involves small amounts of start up capital compared to many other industries. It is thus an attractive sector for the developed world;
- the production of hides and skins are environmentally sensitive and subject to considerable legislation, making them likely targets for non tariff barriers;
- the lack of link between hide supply and consumer demand for leather can create major fluctuations on price, which may make governments more inclined to intervene;
- increasing pressure to comply with WTO rules has lead to an increase in the use of non-tariff barriers.

6.2 Major Issues Related to Duties and Tariffs

Trade barriers and protectionism are major global issues in which the leather industry plays only a tiny role. From aviation, through agriculture and military equipment, we have seen battles rage between countries for most of the twentieth century, at the start of which most companies in Europe and the USA were heavily protected as they tried to grow. Leather and the leather industry has always been a small part of this, as leather, footwear and saddlery have been seen as strategic, whereas today it is mainly protected with the intention of creating or maintaining jobs.

Some of the most dominant views on the role of tariff barriers have come from the USA and the EU. Both argue for zero tolerance for all sorts of protectionism. The tanners in the EU working through COTANCE have been the most articulate and claim that “certain protectionist measures, such as those in Brazil, Argentina, Pakistan and India, have been implemented for much too long. This is unacceptable, and the worst part is that in addition to damaging our competitiveness they also slow down the development of the less advanced countries that remain in a state of permanent and forced underdevelopment.”

Access to raw materials has been the main focus and the arguments presented against trade barriers are that export restrictions on raw materials isolate the protected market from global competition. This decreases the supply of hides and skins to the international market, cutting off traditional trade flows and creating situations of oversupply on a closed market with a consequent fall in prices. As a result, traditional foreign buyers are forced to reorient their purchases on a reduced open market exacerbating competition and pushing prices to rise. In addition, local operators see their input costs fall (hides and skins typically represent 50% of tanner’s production costs), allowing them to undercut prices for their processed goods on the international market or making extraordinary margins.

They argue that this leads to artificially transferring gains from trade between WTO members (beg thy neighbour) and that it creates unfair advantage for some countries

at the expense of other WTO members' producers, including infant industries in developing countries.

Over the last few years, the EU has indicated the possible lists of exceptions from the commitment to eliminate export taxes in certain circumstances. The EU considered that these should be negotiated according to the following parameters:

- Developed countries: no exceptions for the use of export taxes;
- Developing countries: export taxes of maximum [X] percent for a limited set of products to be determined through request and offer and taking into account the potential trade-distortive effects of these export taxes on other Members;
- Least developed countries: binding of existing export taxes and listing of export taxes of maximum [Y] percent on a set of products for which countries currently apply no taxes but may want to retain flexibility of introducing export taxes in the future, to be determined on the basis of these countries' expressed development needs and possible fiscal constraints.[2]

While it is argued that this offers help to the poorer countries with emerging leather industries, it is demanding that those whose industry has started to grow should comply completely. Since there is quite good evidence that certain forms of protection have helped industries to grow, those whose industries are still not fully developed are reluctant to comply.

6.3 Expected Future Trends

It is hard to imagine that the situation on tariffs will be resolved over the next fifteen years. The leather industry and the industries supporting it are so important in terms of exports and employment to so many countries that they appear certain to try and support the industry as much as they can. Equally, many of the countries who have employed tariffs are the same ones who are the strongest opponents of the protection given by both the EU and the USA to various areas of their agricultural industries.

This is despite an argument that says that extensive protectionist policy leaves the industry open to excessive price fluctuations, weakens further the very weakest, and is unfair to developed countries who have tried to help some of the weaker ones in the past.

Where all agree is that the tariffs and duties have had and will continue to have a profound effect on trade and on the progress of the industry at all levels. Duties applied by the USA and the EU have, over the last two decades, greatly affected the location of industries

It is also clear that when duties are applied, they do create distortions and thus great opportunities for those who are able to "get around" them via corruption, smuggling, mis-reporting or other means. Throughout the world, there is very significant

[2] Where Y>X and the level of X, for negotiating purposes, takes into account the effective rate of protection caused by any remaining tariff escalation or high tariffs in key importing countries following the application of the formula.

movement of raw hides and skins, and of footwear in particular, that is outside the legal systems laid down by governments.

This is combined with an encouragement to produce fake or counterfeit goods, which has accelerated as the importance of brands have grown since the 1980s and increasingly outsourced their manufacture.

The industry continues to trade large amounts of product in a wide variety of partly processed stages, from pickle and wet blue through to cut uppers in footwear, and it retains a number of countries whose supply or raw material and/or finished leather does not come near to meet the local requirement at the stage. It is logical that this growing level of trade will see continued efforts to influence movements via protectionism of one sort or another.

7. Recommendations for further Research & Areas of Intervention

Every attempt has been made to make this report as comprehensive and accurate as possible. However, much more investigation and more resources will be required to provide a ***complete*** picture of the global production of leather. The main areas requiring more investigation are outlined below.

The way in which leather is utilised, especially the increasing quantity of low grade material, is of great importance. Where and how leather is used will depend on a price/value mechanism as well as on the traditional pattern of supply and demand. Making low grade, heavily coated leathers does not appear to be the correct solution for lower grade raw material or to fill the gap in supply that is likely to arise for top quality material. This is linked to questions of what types of leather should go or will go in the future into automobiles, one of the fastest growing leather consumption sectors.

There are many aspects to these issues, but further study is needed, as they have relevance to future use of raw material, the technologies required, the location of tanneries, and design skills in end user area.

For the whole industry, from raw to finished article, this study has highlighted the ready availability of large amounts of data, but it has also shown that the form of these various data sources is not standardized, so that drawing comparisons and conclusions is difficult. Hence, in a number of areas, a large amount of data has been included in tables in order to allow readers to draw their own conclusions. There would be great value in developing a better global database. Taking the footwear industry alone, considering that it provides employment for at least 10 million people world-wide, consideration should be given to provide resources to establish a ***global footwear industry database***. No such database exists currently.

An investigation into ***the support industries*** to the global leather, footwear, and leather goods manufacturing industry should also be considered. This would include researching relevant software, machinery, chemicals, components and machinery.

The old arguments over the respective merits of ***cluster production versus industrial parks*** for shoe production should be revisited. Navarro (2006) indicates once again the financial gains to be achieved from the structural organisation of an industry in a region. Annex 4 explains this area in more depth.

The extent of the ***sourcing of shoe components*** by shoe manufacturers in developed countries should be investigated to establish the true importance of the footwear manufacturing industry in developed countries.

A full investigation into the extent of the ***illegal trading in footwear*** in particular, but also of other leather goods and even raw hides would produce a much clearer picture of the global industry.

It has been assumed in the report that no ***new synthetic materials*** are likely to become available that will challenge leather in the foreseeable future. A survey of the synthetic material suppliers is required to confirm or reject this assumption. There is some evidence in this report pointing that the market for a new material could be considerable.

In any country, ***significant growth in the shoe industry requires significant investment.*** The phenomenal growth of the industry in China has received no investment capital from the USA or the EU and it has been financed solely by Asian investors. Lessons could be learned that are transferable to other developing countries, such as Africa. Every country, however poor, has rich entrepreneurs prepared to invest if the returns appear to be satisfactory.

The potential for traditional, branded western footwear manufacturers to develop the market for their products in the rapidly expanding markets in Asia should, if possible, be quantified.

Quality encouragement.

With inward foreign investment and the support of international chemical and machinery companies, technology transfer has been very efficient. However, in certain of the poorer nations in the world, where the industry is evolving out of a traditional or craft base, manufacturers have not yet sufficiently adopted the quality concept.

In a responsible world, it seems unconceivable to waste material and there should be no place for low-quality. Due to progress in manufacturing techniques and work organisation, doing things properly needs no more time than doing them poorly. Making a nice piece of stitching is not more difficult than stitching it haphazardly: what is to be manufactured should be well manufactured.

At the same time, consumers and users should get more educated, so that no one will consciously buy an item of bad quality. Consuming should become an intelligent and responsible act.

Encouraging local production in developing countries

All aspects of the leather industry offer labour intensive light industry, especially the post tanning stages and the use of leather in the making of garments, gloves, footwear and leather-goods. This is important for the developing world.

To differing degrees, the level of investment is not so great in any of the leather using industries and, properly managed, they are not polluting.

There are many small scale industries based on old tannages and manufacturing techniques that are in danger of being overwhelmed with modernisation and urbanisation. Many of these lie in the informal sector and are not accounted for in any statistics. Nevertheless, they do offer sizable rural employment and robust technologies based on local materials. Parchment and lunch boxes in Ethiopia and babouches (elegantly embroidered slippers) in Morocco are typical. In both of these

examples, there is a significant tourism element, but the poor smell of the leather consequent of low grade chemicals and poor processing techniques considerably damages the benefit that could be gained by the communities involved. Since labour is generally available at low cost, certain technologies in the manufacture of leather products can be re-introduced or maintained in these sectors in order to make higher value handcrafted products.

These sorts of approaches are more important because there are limited opportunities for high volume low cost production for export, which is largely under the control of highly efficient well established plants in countries such as China and India.

Encouraging developing countries to promote such activities as design, use of local raw materials and some local techniques compatible with quality.

One of the big advantages of the leather industry is that almost every country in the world has domestically available raw material. In terms of the leather industry, other locally available raw materials must be considered. As indicated, these natural local materials can provide opportunities for creation and added value. For an example Rotan in Indonesia, which is a material that can be combined with leather to manufacture bags and create a potentially valuable local differentiator.

This sort of approach has its value in the encouragement of ecology, respect of the environment and recycling, as well as being associated with fair trade.

In spite of an ever increasing global world growth, it is noticeable that the gap between rich and poor people is greater today than it was in 1973.

The gap may be wider between industrial and developing countries and the reality is certainly worse if such notions as working conditions were taken into account. The labour value that enters into the manufacture of a product is in itself often insignificant when compared with all other components, not to mention design, advertising and marketing.

This situation is partly due to globalisation, but also partly to the margin system in use, a system based on cumulative percentages that increase considerably the costs at each step of the chain from production to distribution. Efforts should be deployed to try and find solutions, or at least to prevent the gap from widening.

The current situation has largely arisen from the movement around the world of the “assembly” part of the production process while the higher value added elements of design, materials choice and specification, logistics management, and marketing are being kept in the hands of developed world brands.

At this time, it is important for new emergent industries, which will not be able to compete with low cost volume production, to look for local design and development skills. Many countries using locally available material and both traditional and historical design elements built into a contemporary product in terms of quality, could achieve the niche position required. Design training needs to take into consideration aspects of quality and to allow the upgrading of lower qualities of leather, rather than downgrading them into plastic look-a-likes.

Routes to Achieve these Objectives

Internet based databases that might be considered by UNIDO or UNIDO in cooperation with other organisations:

- Providing online traditional, as well as new production techniques, through video films (demonstration), scanned books and manuals, etc. These data could be downloaded by interested users world wide.
- Creating an online authentic virtual museum with digital pictures of leather-goods and other related trades. The museum would continually be enriched by interactive visitors' contributions.
- Creating an online ads network to be used as a platform for exchange between manufacturers, sub-contractors, distributors, clients and suppliers of raw materials, machinery and accessories.
- Creating an online multi-languages technical dictionary proper to all leather related professions.
- Providing a better centralised global statistical database for the industry

Such a website could be created, designed and enriched with the cooperation of a team of experts from various countries.

Vocational training and information centres in several countries.

These centres would be financed partly by concerned governments as well as by local companies along with international development aid programmes. The essential thing would be the identification of receptive countries interested in the development of the appropriate sectors.

Some countries could also be considered, such as Madagascar, which has a great potential for the development of crocodile and other animals farming with exotic skins. If these skins could be properly tanned and finished locally, then luxury manufacturing industries could be set up in those very poor countries.

The centres would serve for organising workshops where specialist speakers, experts in their fields, could provide know-how and assistance.

People responsible for these centres should be carefully chosen according to their professional qualifications and integrity. At the start up stage, foreign consultants could collaborate with them and monitor their work at from distance at later stages.

Training provided in such centres should not only be limited to technical aspects, but it should also cover some skills related to management such as: cost price calculation, purchase and choice of materials, production time, productivity, customer service, etc. Design and product development is also important and design and artistic villages or communities might be considered.

The centres could also act as a base for common services facilities for local craftsmen, provided they are equipped with basic machinery, especially those not easily accessible to small entrepreneurs: splitting and skiving machine, hydraulic press, etc.

International ethical regulations and rules destined to provide consumers with adequate information.

In large areas of the leather industry, the term “leather” is abundantly used with no distinction between “grain leather” and “split leather”, even though these appellations refer to items that differ widely in terms of quality. There exists a wide variety of coated splits, heavily corrected grain leathers through to e-leather that are ill-defined. The industry needs to take charge of definitions and assist in global training so that each grade and type may be correctly promoted.

On the other hand, the type of animal is almost never mentioned, except when it comes to exotic skins serving to justify the product’s price. It should be noted that “leather label” may confuse the consumer when it is prominently attached to the items that are in fact combined with synthetics that form the main components of the product.

As a summary, one can say that today’s consumer is insufficiently informed and that it would be useful that some steps should be taken in this respect.

As for the country of origin of the product, information does not always exist, and if it does, it is treated differently and depending on whether the country has a negative or a positive connotation. Positive connotation exists when the country of origin is considered by the foreign company as synonymous of quality and reliability. Negative connotations exist when the company considers, on the contrary, that information about the country may put sales at risk. This is obviously a subjective judgement, and even contradictory, since it is the company itself that has decided to have it manufactured in one place or in another.

Some rules could be put into place in order that leather-goods, footwear, etc. provide information as follows:

- Without being necessarily obvious on the product, information should be placed in such way that it could not be missed.
- Detailed information should be put together on the same label.
- Trade-mark should be mentioned.
- The manufacturers’ and the countries’ names, as well as raw materials’ nature’ should also be mentioned.

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9. ANNEXES

9.1 Annex 1: Activities and Sources

In the preparation of this document the authors held meetings in Vienna (Austria), Brussels (Belgium), Bologna (Italy), Street and Kettering (UK). Most of the data was collected via the Internet and email. A number of key individuals were interviewed by telephone. Below is a list of the most helpful sources for the preparation of this report:

AAFA:	**American Apparel and Footwear Association.** This is an excellent source defining imports to the USA by country and category. It also has a good website detailing current trends and giving quarterly movements. Unfortunately there is little of value on the manufacturing scene.
Abicalcados:	**Brazilian Footwear Association.** Notas de Prensa, gives interesting information on this sector on behalf of Abicalcados.
Apiccaps:	**Portuguese Footwear Manufacturers Association** A ready source of Portuguese production, employment, import & export statistics.
Aprisindo:	**Association of Indonesian Shoe Manufacturers** Information is limited and may be unreliable.
CBI:	**Market Information Database of the EU** A good source of information both general and country-specific for countries within the EU.
CLE:	**Council for Leather Exports India** Provides information on production, imports & exports.
CLRI:	**Central Leather Research Institute India** Used in conjunction with the above, it also includes employment and more detailed production information.
CLIA:	**China Leather Industry Association** Another excellent source giving quarterly details of, imports and exports of leather and leather products. Unfortunately, there is no information on production or the domestic market.
Eurostat:	**European Commission Statistics** A good source of import/export and production within the EU.
FAO:	**Food & Agriculture Organisation of UN.** A respected source of information on meat, livestock, raw stock, leather and leather shoe world production. The statistical compendium is now the basis for most industry analysis.
ICT:	**International Council of Tanners** Builds its member country details and other information into the FAO data
ILO:	**International Labour Office**
IMS:	IMS Automotive Research (www.imsautomotive.com) Source for information on automotive interiors
UNCTAD /WTO:	**International Trade Center** http://www.intracen.org/dbms/Leather/Index.asp

	Very comprehensive web site with some world stats, trade stats and many useful links. Has detailed African section for selected countries.
ISTAT:	**Istituto Nazionale de Statistica** Information available on production, imports and exports of the Italian footwear industry.
Lefaso:	**The Vietnam Leather & Footwear Association** Limited available information presumably due to the rapid growth of the Vietnamese industry.
OICA:	**International Organization of Motor Vehicle Manufacturers, Paris** www.oica.net. Web site gives information on automobile production world wide and by brand
SATRA:	**Shoe and Allied Trades Research Association.** Probably gives the best general view of the global footwear industry. However, information can be expensive and much of the information is estimated and can be, on occasions, misleading.
UNCTAD/WTO:	**UN Conference on Trade & Development** Gives useful information on world trade by sector.

US Census Database: World population statistics.

World Leather Business Week:	Weekly Subscription newsletter
Xinhua News Agency:	www.xinhuanet.com: China's official news agency with bilingual web site.

Valuable contributions were made by:

Adidas Group
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Franklin Sports
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Scottish Leather Group
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Other Information sourced from:-
Valor Economico
Vietnam News Agency
People's Daily Online
The News, Pakistan
Moscow News
Chinashoeexpo
IndianShoeBazaar.com
Financial Express, India

The Economic Times, India
Confederation of Indian Industry
Macauhub
The Economist

9.2 Annex 2: Clusters

For many years the leather industry has shown good examples of co-location, the agglomeration of various aspects of an industry in one local area. For example in Pergamum, Ancient Rome, and Venice certain activities were agglomerated for environmental or market reasons. In the 1980s, Prof. Michael Porter of the MIT developed his concept of the advantages in innovation and flexibility of what he defined as local "clusters", a concept that he coined after studying the Italian footwear and textile industries. This concept has undergone much development and is most recently recognised via areas such as Silicon Valley and various other high tech or bio-tech localities. UNIDO have considerable experience in this area. There is significant variation in the definitions of clusters, local area networks, industrial parks, local area agglomeration, and clusters. For the purpose of this study, clusters are considered to be a local area with a significant number of companies working in the industry including competitors, suppliers and associated service industries. Industrial parks exist where a local area is designed to hold a large number of businesses in the same industry and are often intended to create clusters. For tanneries, this would allow for one effluent plant to handle all the waste from the park.

Clothier's 2004 report on China's footwear industry makes a number of references to clusters. For example, on page 7 he writes: "Local authorities in more remote areas of China remain keen to assist the establishment of shoe industry clusters as they see this as a first phase in industrialization" and on page 37: "The shoemaking base of Fujian has formed a complete chain of industries and trades with superiority of groups and clusters on the basis of sports shoes and jogging shoes as main products integrated with allied trades of shoe material and shoe machinery. Now all allied products used on shoes such as metal accessories, shoe lasts, soles, heels, shoe lining materials, adhesives and packing boxes are produced in this industrial area."

USAID suppliers working in the last few years in Ethiopia defined clusters as follows: *Clusters are geographic concentrations of exporting firms operating in shared markets, their suppliers and the public sector institutions (e.g., training centers, finance agencies, infrastructure providers) that support private sector firms in the shared market with specialized inputs needed to help them be competitive.*

The texts below are references to more academic works on this important but complex area. Readers will note that the leather industry features in many of these studies, from Brazil, through Italy to Pakistan and China.

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9.3 Annex 3: China - An Analysis

Whatever happens in China, its size and large population combined with its growing disposable income per capita means that it is likely to be dominant for some decades to come in most areas of leather manufacture. The Chinese industry is closely integrated and tanneries very often work closely with shoe or garment factories. Examining the leather industry requires understanding of this overlap.

Despite its size and rapid growth, the Chinese leather industry in 2008 is classed by the CLIA as being in a declining mode as a result of increasing costs for labour and raw material, plus government policy adjustments over the last two years, which have reduced tax rebates and benefits for the industry. Two fundamental elements lie behind the government's approach: reducing the environmental load from the leather industry by slowing the amount of production from the raw and encouraging the industry to move towards higher value added exports rather than to footwear, garments and gloves. Labour cost rises relate to a mix of the steady development of the country and a new social contract giving workers greater security of employment and payment rights. Labour costs are expected to rise by 20% as a result and have already been rising faster than this in the coastal export oriented areas.

The Chinese leather industry comprises well over 20,000 enterprises, with about 5.5 million employees; of these, over 2,900 are leather-making enterprises. The numbers are currently changing quite dramatically with some hundreds of tanning and shoe plants closing in 2008 as a joint result of these increased costs and declining growth in overseas demand. The Government did slow these changes and introduce additional help to the industry to slow job losses in the final months of 2008 and in 2009 after the economic downturn hit orders.

According to CLIA figures, which indicate larger outputs than those suggested by the FAO, in 2007 China produced about 680 million square metres of light leather (7.75 billion sq.ft), over 9 billion pairs of shoes, and over 65 million leather garments. Exports of main leather commodities amounted to US$ 39.21 billion, accounting for 4% of the total value of national commodity exports, while the import of main leather commodities was US$ 7.67 billion by value, an increase of 14% over the previous year.

According to the CLIA, China has a number of locations around which leather is centred:

Wenzhou - Footwear
Haining - Leather
Xinji - Leather and Leather Garments
Huadu - Leather Goods
Chongfu - Fur Production
Suning - Fur Production
Wuhou (Chengdu) - Women's Footwear
Bishan (Chongqing) - Footwear
Huidong – Womens' Footwear
Daying - Fur Market

Tongerpu – Fur and Leather Garments
Baigou - Suitcase & Bag Market
Jinjiang - Footwear Production Zone
Liushi - Leather Market

The output of finished leather has risen rapidly in the past decade. In 2006, the output was up 29% compared with the previous year and the output level in value terms rose 20.7% in 2007 compared with 2006.

Tanneries are mostly located in eastern China or near leather products markets such as Zhejiang, Hebei, Shandong and Guangdong provinces. In 2006, the output of light leather produced by the top ten regions accounted for 97.4% of the total output nationwide. Among them, Zhejiang was the largest area, accounting for 31.7% of the total production of light leather, followed by Hebei province, accounting for 20.1%.

Table 60 - Major areas for light leather processing in China in 2006

Unit: million m^2

Area	Light leather	%
Zhejiang	229.83	31.7
Hebei	145.80	20.1
Guangdong	69.52	9.6
Shandong	69.19	9.6
Fujian	65.62	9.1
Hunan	33.01	4.6
Henan	27.21	3.8
Guangxi	23.60	3.3
Jiangsu	21.07	2.9
Sichuan	19.81	2.7
Total of above ten regions	*704.66*	*97.4*
Total of China's light leather	**724.19**	**100.0**

*Source: China National Statistics Bureau (based on largest makers only). The data in **this table** was collected from those manufacturers who achieved annual sales revenue of US$ 600,000. Figures are higher than the later revised figures.*

Export of leather and leather products for the year 2008 are shown in ***Table 61***.

Table 61 - Export of leather and products in 2008

Item	Unit	2008		Change vs. 2007 %	
		Quantity	Value	Quantity	Value
			US$ '000	*%*	*%*
Leather shoes	10,000 pairs	112,588	9,808,294	-14.8	2.6
Bags and travel goods			13,939,388		28.9
Leather garments	10,000 pieces	2232	992,779	-34.7	-23.1
Leather gloves	10,000	79,648	832,424	2.1	1.0

	pieces				
Leather balls	10,000 pieces	19,653	346,829	8.7	26.7
Raw hides and skins	1,000 ton	1	1,960	93.8	13.8
Semi- and finished leather	1,000 ton	36	397,243	-68.0	-66.2
Components for shoes	1,000 ton	407	1,599,951	30.3	37.0
Machinery for tanning and shoes	1,000 sets	47	65,861	-6.1	21.3

Source: CLIA

At the same time, China's development has lead to increases in imports of leather and leather products. While the volumes and values are small compared to Chinese exports, the numbers are large when put against world trade and indicate that a number of countries have chosen to gear up to service this market. In other areas such as machinery, the ongoing changes and the increasing domestic production have lead to declines in imports. The figures given by the CLIA show multiple products and multiple units, making them a little confusing. Given the dominance of China in so many leather product segments they nevertheless shed light on trends in a wide area of important leather products.

Table 62 - Import of leather and leather products in 2008

Item	**Unit**	**Jan.-Dec.2008**		**Change vs. 2007 %**	
		Volume	***Value***	***Volume***	***Value***
Raw hides and skins	1,000 tons	1093	1,847,046	9.7	14.0
Semi-& finished leather	1,000 tons	964	3,790,684	-11.0	-12.7
Components for shoes	1,000 tons	26	285,097	-11.1	-4.7
Machinery for tanning and shoes	1000 sets	4049	45,136	-29.5	-13.4
Machinery components	tons	488	8,400	−4. 3	11. 9
Bags & travel goods			544,927		54.0
Leather garments	1,000 pieces	106	41,402	3.3	54.1
Leather shoes	10,000 pairs	1,789	508,041	58.1	65.0
Leather gloves	1,000 pieces	644	2,566	1.3	25.4
Leather balls	10,000 pieces	750	3,399	-52.3	0.1

Source: CLIA

The current (11th) Chinese five year plan looking at intentions towards 2015 has the following objectives:

- To control the output growth, encourage the increase of the products with high added value, keep the average annual growth rate of gross industrial output value (or sales revenue) by 10-15%.
- To control the growth of export quantity, encourage the rise in export price, and keep the average annual growth rate of export by 10% in terms of value.
- To raise the level of resources utilization, and lower the energy consumption by 20% than that at the end of the "10th Five-Year Plan".

- To effectively control environmental pollution, realize production increase without adding pollution.
- To create 3-5 famous brands in the world by 2010 or soon after that.

This long term plan has been quite aggressively promoted by the changes made at the government level. First of all, there are regulations related to the environment. In China, some of the smaller tanneries lack waste water treatment and, in general, the industry lacks know-how related to waste water treatment and water conservation.

For the leather industry, the government's new policy is named the "Technology Policy for Treatment of Pollutants in the Tanning and Fur-making Industry" and it was announced officially in 2006. Additionally, the "Discharge Standards of Pollutants for Leather and Fur Making Industry" were issued in 2008, stating the goal to reduce the total discharge volume of pollutants by 11% within five years. As a result, it is anticipated that some small or poorly run enterprises will be forced to cease trading, but the overall leather production will not be affected because it may create a sounder external environment for larger and more efficient tanneries.

The new policy encourages tanneries to move their production into tanning clusters where the effluent treatment Plants (RTPs) are well established and well managed, adopting cleaner and water-saving technologies, as well as environmentally friendly chemicals in leather processing. Tanneries whose annual production capacity is less than 50,000 pieces of cattle hide will be forced to close down over the next few years and closures have continued in 2009.

One aspect of the Chinese industry has been the very patchy enforcement of national law within localities, which has meant that some tanners have been able to continue polluting if the local community wanted to maintain the employment. Quite often, this involves tanneries with effluent plants that are not used, as they are considered too expensive to maintain. It seems likely that this situation will change rapidly as the result of better countrywide enforcement and greater consumer awareness and willingness to complain.

Various government circulars since December 2005 have adjusted the tax rebates and duties related to the leather industry and have had a major impact. To help producers cope with smaller profit margins as a result of slacking market demand, the Yuan's (RMB) appreciation, and the rising production costs, some adjustments were made in November 2008 to ease the position for leather garments, fur garments and some fur products and accessories. Yet, overall, the tanning industry, the footwear industry, and the gloves and leather goods businesses have been considerably affected by the changes over the last two years.

One of the major changes is related to the importation of rawhides and skins, where the inputs are subsequently converted to semi-finished leather or finished leather and re-exported. Importers must now pay the customs duty and the VAT of 17% on the importation of these items. Some exceptions have been left in place until December 2008, but after that, the only area where it appears duty will not be paid relates to wet blue, crust and finished leather for footwear to be exported. These will still remain tax free.

In addition, Chinese producers obtained tax rebates for exports. Those for finished leather have ceased altogether, the rebate on leather footwear and bags dropped from 13% to 11% and the rebate on leather apparel and gloves dropped from 13% to 5%.

The impact of these changes is already being seen on the industry. The pigskin business has been the most affected, as nearly all of its production ends up in the export market. With problems in domestic supply, caused partly by disease to the animal population, and to 14% duties on imports, the price of pigskin has risen by 100%.

According to the CLIA, in 2007 the livestock number for pigs in China was 460 million, and the output was 565 million. The tanning volume was probably 224 million m^2 (2.4 billion sq.ft) in 2007. Most tanners in China work with skins between 11 and 12 sq.ft, so these numbers may not be precise, but they do give an indication of the huge significance to both the Chinese, and indeed to the world leather industry, of pigskin production.

Some pigskin tanneries reduced their production by 50-60% as costs rose. In all sectors, it is thought that the number of tanneries in China might have reduced by over 1,000 and the Wenzhou Leather Association noted that, in 2007, a number of local shoe factories and tanneries closed. These were mostly the smaller ones.

Other elements that are important in relation to the Chinese leather industry are the fast rising rates of pay, particularly in eastern coastal states, over and above the cost of the social contract. Also the Yuan (RMB) has been appreciating in value. P. Navarro, from the Merage School of Business in California listed the issues that have helped make China so competitive:

> *"Lower labour costs account for 39% of the China Price advantage. A highly efficient form of production known as »industrial network clustering« together with catalytic Foreign Direct Investment add another 16% and 3%, respectively. The remainder of the China Price advantage is driven by more mercantilist elements. Export subsidies account for 17% of the advantage, an undervalued currency adds 11%, counterfeiting and piracy contribute 9%, and together, lax environmental and worker health and safety regulatory regimes add another 5%."*

It is believed that many of these elements are now losing their relevance in the leather industry.

The cluster effect is important and Clothier (2004) indicates that, while it has become a feature of the strength of the Chinese industry, it has been eroding in Italy. One feature of this in China is that many footwear companies have moved into ownership of domestic tanneries, or close family liaison in order to reach delivery times for leather in the order of 25 days.

Increasingly, China has been importing, not just raw material, now increasingly in wet blue form, but finished leather and footwear and leather goods also. The Indian and the Italian leather industries have a good record of exporting to China in recent years

It is also anticipated that the imports of raw hides, finished leather, footwear accessories and environmentally friendly chemicals, all geared to higher quality will

be further increased in the next 5 years. Technology and equipment for environmental protection are needed by Chinese tanneries. As the consumer market for cars and house related purchases is now steadily increasing in Chinese cities, the processing technologies for upholstery leather are also in demand.

Domestic demand for quality and fashionable shoes will be further increased steadily as the middle class keeps growing year by year. Other key factors are increased urbanisation and the policy of expanding domestic demand and consumption. More and more rural people have moved to work in the cities and they will contribute to the growth of consumption.

Given the enormous gulf in volumes of leather manufacture and leather product manufacture, it looks like there is no country with the capacity to overtake or replace the Chinese volumes. Yet, it would be wrong to consider that Chinese dominance leaves no role or opportunity for others. India, for example, also shows considerable competitiveness in their industry.