STUDY OF THE QUALITY CONTROL AND MANAGEMENT
ON THE AFRICAN LEATHER SECTOR

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INTRODUCTION

The business chain of leather-footwear and leather goods is one of the main sectors of the manufacturing African industry, even if the situation shows a heavy deficit regarding the use of the available raw materials and the insufficient integration of the productive chain, with a consequent poor efficiency of the distribution system. The sector is strongly export-oriented for the raw material, the semi-finished hides, whereas, on the contrary, the sector of the finished products is oriented at the home market, where export is smaller and limited to sub-contracting production.

This last sector is still characterised by the presence of some big foreign enterprises managing international distribution systems, which coexist with micro artisan enterprises.

Both tannery, footwear-clothing and leather goods are strategic sectors for the economic and industrial development of Africa, even if they are threatened by difficult competitive challenges, whose result mainly depends on the definition of solid strategies for the integration process of the business chain, including raw materials, semi finished products and components of local production, development of regional markets as strengthening elements of the technical ability and the productive continuity, development opportunities offered by international markets and their strategic role per the acquisition of quality standards and updated technology.

It is also necessary that the African sectors individuate and attain their own autonomous space in their relationship with the European markets, so that they must not face the competition with the countries of Asia and Eastern Europe and, more generally, with the other areas of offer of international supply. This positioning can only be based on policies of strong productive specialisation.

To the difficulties for the re-elaboration policies of sectorial development we must add those deriving from the specific company structures of the African systems, based on very old factories that are not linked at local level, under-utilised considering their theoretic productive capacity and are periodically invested by processes of restructuring and dismantling.

So, the modernisation process must invest all the business chain in the company organisations, considering all the managing and productive aspects, such as the product reconversion, the improvement of their qualitative standards, the positioning in the home market, the technological updating, the development of the human resources for a optimum management of design and production.

With this background, it is highly crucial that companies acquire significant technical services.

Africa can’t boast many service centres for companies belonging to leather, footwear and leather goods sector. More closely, only a few of these centres sell their services to companies and manage projects of research and development.

The identified operative filed is quite wide and goes from the offer of basic services to training, company technical consulting, management of laboratory technical tests, quality control, R&D including the development of standards. Considering this, the managerial structure of the African service centres are incomplete, equipped with few functional sectors with incomplete activities.
In order to attain the above mentioned aim, we will:

- Deepen the knowledge on the operative structures existing in Africa.
- Deepen the knowledge on the characteristics of the enterprise of reference.
- Deepen the knowledge on the degree of technical preparation of the human resources of the service centres.

Compare the African centres with the European ones, in order to reach a full sharing of the general approach and to start real co-operation projects.

The phases of technical assistance, worked out as technical assistance for the quality certification, will produce qualified managing staff for the re-organisation of all the productive activities of the sector.
1. THE PATH TOWARDS QUALITY

1.1. SOME ELEMENTS ON HOW TO UPDATE THE AFRICAN LEATHER SYSTEM

The first step towards quality consists in an international organisation which promotes the introduction of quality and of its philosophy in the sector.

AFLAI could act as a network aimed at improving the quality of African products. We should be able to define a quality target in order to allow AFLAI to become a sort of Quality Target Network. In order to do this, there is the necessity to exploit some positive features of the sector and to define a path towards the definition of the target.

Among the positive features, we consider:

- The existence of good relationships between the Africa and the European leather communities, in the fields of technical standards and specifications required to import in the European market;

- The fact that some countries have developed good service infrastructures in cooperation with government or public agencies and private companies;

- The experience of the Maghreb countries in the euro-Mediterranean integration process, along with the possibility to benefit from development programmes funded or supported by the European Union (such as Meda);

- Good knowledge of the leather sector thanks to several sector studies carried out in local, or national, realities.

- Possibility to exploit or take advantage from the European experience in the development of service centres which have been supplying companies with quality services and technical assistances for almost two decades.

- Possibility to take advantage from the Italian experience of the Industrial districts and clusters and their specialised service centres.
In order to define the target there is the necessity to:

- Carry out a deep analysis about the quality needs of the sector in order to define a quality target in terms of market requirements for the main importing area or countries, such as the European Union (to be done by ANSL/REASCP in collaboration with local beneficiaries such as National Associations and confederations of manufacturers and a sample of private companies of the sector);

- Take into due consideration the issue of sustainability, through appropriate interventions in the field of training (to be carried out in Africa and in Europe - vocational training and so on);

- Assess the applicability of the developed models and of the defined targets to the reality of every African country;

- Involve the beneficiaries in the implementation of the defined quality scheme;

- Integrate innovation and the development of local capabilities;

- Spread a culture of quality, and the awareness that quality is first of all a philosophy more than a management tool or a blueprint (see Box 1: Quality first).

In a few words the Quality Target Network should have the role to:

- Co-ordinate the a.m. mentioned work of definition through the involvement of beneficiaries (public agencies and private companies) and through the expertise of foreign consultants and service centres;

- Organize meetings and general conferences to discuss periodically the main issues about the quality target and to define the course of action to be undertaken in order to achieve it;

- Set up a technical committee to outline concrete proposals for the implementation of the a.m. course of action

- Produce a plan of action for the improvement of Quality in the leather sector;
BOX 1. Quality first

Quality first

When starting up a quality programme, some initial steps are important. One of these is linking the concept of quality to the company business as a whole. This clearly means understanding the effect that quality has and could have on the company’s business. It is and should be seen as a weapon to use for strategic placement.

In small and medium enterprises (SMEs), first of all it is necessary to be fully aware that quality is a revolution in the company management philosophy. If almost all of it is applied in all the enterprise’s sectors, it can help to improve the company’s state of health and its character.

Companies only remain on the market if they manage to find other companies or people willing to purchase the products or services that they offer. Competition is a continuous test that forces everyone to be chosen by a sufficient number of customers. The customer and his satisfaction are therefore the company’s reference point; it is he who, through his choices, awards success or failure to the company.

The modern approach to quality means changes in beliefs and habits, quality is not just a set of the product’s or service’s attributes, but it is instead one of the company’s crucial strategic factors. It allows improvement in the company’s image, in market competitiveness, in profits, in the efficiency and effectiveness of all the company processes and therefore improvement in productivity and the reduction of costs.

Quality must be viewed in the wider sense of the quality of organisational structures, of company management and of the carrying out all activities, both in departments and on an individual level. Quality should have the striving for excellence, aiming at market leadership as its goals, factors that can only be achieved by a dynamic process of continuous improvement.
1.2. THE FRAMEWORK OF THE PATH TOWARDS QUALITY

THE EURO-MEDITERRANEAN CONTEXT

The process of Euro-Mediterranean integration, creates the opportunity to take advantage of the European experience in the field of Quality. Europe has developed a specific strategy for the improvement of Quality based on actions aimed at building capacities (training, and other forms of public action aimed at raising the awareness of companies about these themes) and on the setting up of specific service structures.

The Free Trade Zone between Europe and Mediterranean countries (MEDA) will create a favourable environment for the exchange of such experiences and for the spreading of innovation. Issues such as quality will be positively affected by this process and exporting companies will be the first subject to benefit from this scenario.

Some African countries are already working to update their industrial systems and to strengthen their competitiveness. Particularly their aim is to:

- strengthen international competitiveness of SME’s through technology transfer and innovation, along with training and product innovation;

- improving the working environment of SME’s through the supply of better infrastructures and the re-structuring of the national training system;

- harmonize the rules and laws as regards quality, its standards and the accreditation of testing laboratories.

The system of service centres is wholly involved in this process. Moreover, it is considered a strategic asset of some national leather systems. This happens for two reasons:

- because the European experience proves the validity of such service infrastructures for the development of local systems of SME’s, particularly in the leather sector;

- because international development agencies are stressing the importance of the development of SME’s as means of poverty eradication and employment generation.

All that said, we must reaffirm the fact that Europe and particularly Italy have developed positive experiences in the area of services for the SME’s which work in the leather sector. These experience have caused a dramatic improve in the average quality level of the sector and can become a positive benchmark for the Africa sector.
The Qualitative Lacks of the African products

The African continent makes only 1.8% of the world trade, but the figures of the trade of the leather business chain are a bit better. For Africa, Europe is the most important trade partner, importing 4% of bovine raw hides, 20% of ovine raw hides and nearly 50% of goat raw hides considering the total imports from extra-European countries.

Obviously, these percentages diminish as the offer increases in the production chain: so they are smaller – but still significant – for the semi finished leather, but definitely unimportant for leather and footwear. The only exception regards uppers and footwear manufactured by subcontracting companies in some countries of the Mediterranean Africa, mainly Tunisia and Morocco.

Even if it can be considered an important sign for the market liberalisation, the elimination of the custom barriers for the import from all the developing countries, allowed by the EU does not help much; in fact, Africa imports footwear seven times more of its export and the only positive item regarding export in the leather business chain is still today and in the next future the raw material.

The main obstacles that reduce the African ability to market access are at the source, well-known, easily list able, such as the famine of infrastructures, the inability to plan, the obsolescence of the plants, the low technical level of training, the lack of capitals.

These could be slowly solved, if the business chain could be reassembled step by step, considering, on the one hand, the export (obviously of more and more improved according to the technological development reached at each subsequent level of transformation ability) on the other, the home market, always available to absorb the offer of local production according to the size of the demand, though very small because of poverty. On the contrary trade does not allow this graduality, as the philosophy of quality is becoming very popular at world level.

Philosophy of quality means, on the one hand, sale for quality rather than for price, so African customers prefer European second-hand shoes to new footwear manufactured by local factories, but, on the other, this means a specific regulation on the terms of reference of quality, in order to make a product suitable for the international market.

So, quality seems to be a general obstacle that interacts each time with all the above mentioned restrictive aspects for the access to the European and world trade:

- The lack of agencies able to supply services in the field of quality.
- The incapacity of planning is not absolute, but it can be measured according to the qualitative levels requested by the market.
- Plants are obsolescent, as they are changed each five years, with old plants, rather than new: this is due to the lack of capital, but also because the purchase is decided according to price, the solidity of the offered materials and the use according to old projects and the technological innovation and quality are not considered at all.
• The lack of training is not so evident, when we consider the workers specialised thanks to the apprenticeship; on the contrary, it is considerable looking at middle management, as they don’t know the procedures and methods to obtain quality.

• The lack of capitals hinders the access to technological innovation and human resources which could allow an improvement of quality, work, production and marketing.

Alternatively, quality can be also considered an opportunity for the African entrepreneurs, as entrepreneurs of rich countries have shown the need of quality of consumers, which has well-defined answers and models to follow.

There are public rules and there are quality standards and certifications to be agreed individually or collectively (for enterprise category or association), such as Ecolabel for footwear; these can be used for the marketing to export, as well as for the re-qualification of the home market.

The more-updated general reference context for the development of the quality system in Africa is the Euro-Mediterranean integration process and, more closely, the creation of the free trade zone between Europe and MEDE (Mediterranean Africa) countries. Despite the difficulties and the African backwardness, this context will define the competitive environment of the African industrial system in the next years.

### Quality of Raw Hides

Cattle-breeding is the crucial factor of the development of the tanning industry. According to the FAO statistics (2001 Statistics for hides, leather and footwear) the global bovine population annually produces 5.7 million of tons of raw bovine hides on a basis of medium salted weight of kg. 18.1 for each hide. This shows a wide gap between bovine production and obtained hides between developed countries and developing ones: Africa has more than 10% of the world bovine cattle, but only 4.5% in weight of the raw hide production.

Developed countries use modern methods of breeding, slaughter and flaying which give a high output in the production of by-products and raw hides, followed with care in the successive stages of curing and distributed to tanneries by rational and short trade way.

On the contrary, cattle in Africa is often bred in extreme condition of environmental poverty and the process from breeding to slaughter is chaotic and scattered on vast territories, so that the slaughter ratio in Africa is estimated only around 7-10%.

Considering this, the quality of the hides decreases in the following stages, as, in the long business chain between the raw hides producers and the consumers, the same producers have not the perception that their material may have a different value degree according to a different quality level, together with a low level of technical and trade specialisation of the leather traders.
For this reason, in the last years, ESALIA (Eastern and Southern African Leather Industry Association) supported by UNIDO, has been developing specific programmes to improve the quality of raw hides centred on training on curing methodologies, as well as the introduction of selection methods of the different qualities of choice, with price incentives for the best choices.

Box 2 The hides and leather improvement scheme in east Africa

The Hides and Leather Improvement Scheme

In order to have a simple and fairly adoptable grading system for African producers UNIDO drew a comprehensive grading system which has been adopted by the on-going CFC/ESALIA project on Hides & Skins Grading and Pricing.

UNIDO, and to a certain extent FAO, have also for years been engaged in the hides and skins improvement in Africa. The most relevant work for the present project are the Joint UNIDO/FAO/ITC projects US/RAF/88/100 and US/RAF/92/200.

The most significant results and lessons learned from these two large-scale projects are:

- The formation of the National Leather Industry Associations in the Eastern and Southern African region and the formation of ESALIA.
- Results in the selected target areas for hides and skins improvements where it was shown that significant improvement could be obtained by specific inputs. It was, however, noted that these results were not sustainable if the target beneficiaries – the tanneries and leather product manufacturers through the leather associations – were not the main players in the process. Also if the leather traders were not willing to pay better prices for the improved product no motivation was provided to the primary producer thereby causing the project to fail.

Detailed “Guidelines for Grading of Hides and Skins by Quality” were prepared and presented to the FAO Intergovernmental Sub-Group on Hides and Skins and recommended to be applied in the African countries. These guidelines have now been finalized under the CFC funded project and are to be the base of the grading system to be introduced.

In addition to these directly raw hides and skins related results the projects made significant impact on tannery effluent treatment, establishment and assistance to leather products and footwear training centres, product development and marketing of leather and footwear.

In general, UNIDO support to hides and skins improvement focused on selected target areas in the various countries, with other regions benefiting in terms of the countrywide training of extension officers and awareness raising activities supported by the Programme.

It should also be mentioned that the hides and skins component is the most complex component considering that it is a field where FAO is the main player, as well as that it is a continuous activity which should never cease. UNIDO’s role in the hides and skins area was just marginal and focused on the demonstration role. Therefore, the impact is only to be found in the target areas, where hides and skins activities were carried and not in other regions. There are examples where tanneries present in target areas have confirmed that after Programme activities, the hides and skins collected in those target areas were of distinctly better quality.

On completion of this programme, ESALIA, drawing experience from UNIDO programmes, prepared the on-going project, “Raw Hides and Skins Grading and Pricing Systems in Selected ESALIA Countries” (in four selected countries in Eastern Africa, namely Ethiopia, Kenya, Tanzania and Zambia).
The Disadvantageous Import/Export Ratio of the African Footwear

In Africa, the production, including plastic and sport footwear, is on the whole stagnant or slightly increasing (from 162 million pairs in 1996 to 194 million pairs in 2000), but, due to the drop in the world industry in comparison with the huge Chinese growth (from 4.5 billion pairs in 1996 to 6.4 billion pairs in 2000), the position of the African production in the world is even improved, from 1.5% in 1996 to 1.6% in 2000.

Regarding the footwear production, the most important countries are the following: Tunisia (72 million pairs), Egypt (49 million pairs), South Africa (30 million pairs), Morocco (24 million pairs), Zimbabwe (8 million pairs) and Uganda (1 million pairs). The other countries as a whole produce 10 million pairs. Owing to the low per capita consumption, the African footwear sector shows a deficit in production of 312 million pairs (371 million of import and only 59 million of export) to satisfy the current local demand (506 million pairs). The only countries which have a mostly export-oriented production are Tunisia (26 million exported pairs to 3 million imported) and Morocco (13 million pairs exported to 5 million imported). The only country showing a level of consumption near to the world consumption is South Africa: consumption per capita of 1.8 pairs of shoes per person.

Altogether the African market consumes 506 million pairs of shoes, 371 million of which are imported. The most important countries in the footwear tradition are also those with a greater purchasing capability and where fashion element and quality play an important role in the purchasing choices. Those countries, for example South Africa or Egypt, or Algeria or Uganda, are also the countries which attract the importation, especially from China. It has been estimated that the percentage of penetration of total imports is of 73.3%.
Table 1 The Footwear Market in Africa

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>WAGES RATE</th>
<th>PRODUCTION</th>
<th>IMPORTS</th>
<th>MAJOR IMPORTS FROM CHINA</th>
<th>EXPORTS</th>
<th>CONSUMPTION</th>
<th>IMPORT PENETRATION</th>
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<td></td>
<td>US$/month</td>
<td>million/pairs</td>
<td></td>
<td></td>
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<tr>
<td>Algeria</td>
<td>1,8</td>
<td></td>
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<td>Botswana</td>
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<td>Egypt</td>
<td>49</td>
<td>64</td>
<td>52,2</td>
<td>15</td>
<td>98</td>
<td>65,8%</td>
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<td>Gambia</td>
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<td>Ivory Coast</td>
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<tr>
<td>Kenya</td>
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<td>Morocco</td>
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<td>3,8</td>
<td>13</td>
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<td>Mozambique</td>
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<tr>
<td>New Guinea</td>
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<td>Nigeria</td>
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<tr>
<td>Senegal</td>
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<td>South Africa</td>
<td>349</td>
<td>30</td>
<td>49</td>
<td>38,7</td>
<td>1</td>
<td>78</td>
<td>62,9%</td>
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<tr>
<td>Togo</td>
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<td>23,1</td>
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<tr>
<td>Tunisia</td>
<td>301</td>
<td>72</td>
<td>3</td>
<td>1,3</td>
<td>26</td>
<td>49</td>
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<td>Uganda</td>
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<td>4</td>
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<td>0</td>
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<tr>
<td>Zimbabwe</td>
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<td>0,3</td>
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<td>17,2%</td>
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<td>1</td>
<td>251</td>
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<td>Africa</td>
<td>194</td>
<td>371</td>
<td>199,7</td>
<td>59</td>
<td>506</td>
<td>73,3%</td>
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</table>

In relation with the balance of trade, the situation is slightly better, if we consider the single production of leather shoes. The real market is of 174,2 million pairs, while the production is in deficit of only 2,2 million pairs; the trade balance between import and export, with a settlement of 22,4 million less 20,2 million, is disadvantageous only for the 2,2 missing million.
This means that the market is more oriented to the consumption of low-price shoes, which includes mainly plastic shoes.

The African production, apart from some exceptions of medium-high production (Ethiopia), is centred on leather shoes, mostly with leather uppers and synthetic soles, of low price. The market absorbs medium-price leather shoes and low-price leather shoes, but mostly synthetic. The African production isn’t successful in any sector, so the average price of the shoes of each segment, in the local production, is always higher than the price of the corresponding imported shoes, or it can be lower, but always higher if we have the same quality.

For example in Chad the average retail price of the shoes locally produced is of US$ 7-9 per pair, to the US$ 10-13 of imported shoes. Nevertheless the imports overcome the local production a four times.

Another example is Ethiopia that produces medium-price shoes, evaluated to the wholesale about 11 US$, but the main part of the consumption is fulfilled from the offer of Asiatic shoes which cost 3 US$ per pair.

Or Sudan, the country with the highest assets of raw hides of all Africa, where the shoes sector has 550 artisan enterprises, 12 small and medium industrial firms (from 10 to 15 people) and 10 big firms, which employ from 1000 to 3000 people; still in 1999 7,5 million shoes pairs were produced, reduced in 2000 to less than 5 million pairs, while the value of the import is of 25 million dollar, with 6 million pairs imported from China, Dubai, Syria, Egypt and also from Europe.

In South Africa, the leadership of the import is so clear that the local manufacturing sector plays a different role, transforming itself into a commercial division devoted to import and reducing the quote of local production , with 50 million shoes imported on a current market of 79 million pairs.

Obviously there are some positive situations, especially in the Euro Mediterranean zone, thanks to the agreement between the countries of the Maghreb and those of EU. Egypt grows its exports of 14,4% per year, Tunisia of 31,5% and it has reduced the commercial penetration of the shoes from 16,7% in 1999 to the present 6,2%, following a great program of “mise à niveau” which has allowed to face the rising foreign competition: the commercial penetration was grown from 5,6% in 1996 to 17% in 1998,- following the growth of the local consumption market, which passed from 36 million to 47 million shoes pairs in the period 1996-1998.

All this strongly shows the necessity of a process of integration between the markets of developed countries and those of emerging countries, also with the homogenisation of quality standards.
Footwear average prices in some African countries: retail, wholesale, local production, export and import.

**Algeria**
The average price of the shoes for retail trade is 10 US$.

**Eritrea**
The average price of wholesale shoes produced in Eritrea is US$ 3.91 per pair, as regarding men shoes, and US$ 4.91 per pair, as regarding women shoes and US$ 2.2 for children shoes, in the sector leather shoes; in the sector fabrics and synthetics the average price for all the product sectors is US$ 2.82. The main market for exportation are Uganda, Sudan and Kenya.

**Ethiopia**
To satisfy the request of the national market, shoes are imported from abroad, mainly from Italy, China and Indonesia, for 10 million USA dollars, with an average value of US$ 3 per pairs; exports, in the segment of price of 11 dollars, are not many and directed only to the United Kingdom.

**Sudan**
The importation value is 25 million US$, for 6 million pairs with an average price of US$ 4,16.

**Tanzania**
The footwear local market is integrated with the imports, especially from China. Imported shoes have an average value of US$ 1,68.

**Uganda**
The import market is important with 2,9 million pairs for a value of 4,9 million US$, with an average wholesale price of US$ 1,68.

**Chad**
The production is about 250.000 pairs per year, and the average sale price is about 7-9 US$ per pair. The footwear import from abroad, (new shoes from China and second-hand shoes from the European and American charity) is remarkable, but not officially quantifiable. The sale circuit is totally hidden, and it is made by street traders and clandestine importers. The market price of imported shoes is 10-13 USA dollars per pair.

**Ivory Coast**
More than 7.9 million US$ of shoes are imported, and more than 173000 US$ are for Italian and French quality shoes (about 30000 pairs, with an average value higher than 57 dollars).

**Mali**
The average price of the imported shoes is 10 US$ for leather shoes and 8 US$ for those in alternative materials.

**Mauritania**
The official importation value is about 1 million US$, and the average price is US$ 1,6 per pair.

**Malawi**
Malawi, with 3 shoes firms, produces 400000 shoes pairs, for a market which can currently absorb 300000,100000 pairs are for export with a value of 1,8 million US$, and an average price of US$ 1,6.

**Zimbabwe**
The average price of imported shoes is 25 US$, while that of local produced shoes is 10 US$.
The Unsuitability of Technical Specialisation

The lack of technical competence and specialisation of technicians, workers and managers has been identified as one of the most important problems that limit the development potentialities of the leather sector in Africa at all the level of the productive chain. Low salaries could be a competitive advantage, but this is widely defeated by the low level of productivity.

Low productivity, together with insufficient quality, is linked to the low degree of education and specific training of the workers, scant managerial competence of each manager, insufficient strategic vision of the specialised sectors (this is also due to the lack of adequate trade infrastructures). Finally, the lack of a “industrial district” and of an allied technological sector (i.e. component manufacturers and service companies) increase unduly the production cost … and, consequently, the research for the quality improvement and innovation.

The Backwardness of Technology

Africa is considered an industrial reality with low technological levels, where innovation goes very slowly, new productive units are installed with old plants and machinery that are difficult to use for innovative productions. The plant maintenance is also a factor that influences negatively production owing to lack of staff, of spare parts or components; so, the African production suffers from recurrent stops or paralysis in some departments, with a consequent imbalance of production lines, increase of costs and loss of deliveries.

This problem is linked not only to the lack of training and the exiguousness of financial resources, but also to the lack of medium and long-term development strategies that increase the diffidence towards the use of innovative technologies and the introduction of quality procedures.
Box 4 The Euro-Mediterranean integration zone

EU and Mediterranean Africa integration

Euro-Mediterranean, industrial co-operation.

In the EU, the rules on the preferential origin for the footwear articles are easy: the origin can be obtained through “the manufacturing starting from materials whose tariff position is not relevant”, with the exception of the simple assembling of some parts of the shoe. According to these rules, the industry has been taking the adequate investment decision for many years. The sector has adjusted its productive capacity and logistic, in order to get as much advantage as possible from the agreements with the Eastern-Europe countries, countries of central and eastern Europe (PECO), countries of Northern Africa and Tariff union with Turkey.

Several EU operators make the production of some parts of footwear (such as the bottom) in these countries where salaries are low: this is a method that has become crucial for the competitiveness in the world scenario.

Recent Policies and Initiatives.

In these last years, the European Community has harmonised the rules of origin, contained in preferential agreements, which have created uniform and transparent rules in a wide area.

Moreover, the system of pan-European community of origin has been created; this allows the members of this area to use raw materials and semi-finished products of any other country of the area, taking advantage of the preferential origin for these products. This system is applied both to European Community, Morocco, Tunisia and Algeria.

The advantages of this area are especially for the economic actors of the global area and foster the industrial co-operation (e.g. the advantages of the European technology and experience, on the one hand, the low production costs of Maghreb countries, on the other). In the same way, these countries are familiarising themselves with European policies and working methods.
Services to companies

The weakness of the infrastructure and of technical support to the leather sector.

There aren’t any total statistics of the workers belonging to the leather-footwear sector in Africa, but they can be gathered from estimates.

It is estimated that the workers involved directly in the tanning activities of the African industrial plants are 250,000, whereas those involved in the traditional and artisan tanneries cannot be reckoned.

In the footwear sector, the workers of the bigger companies are more than 1,000,000, with the exception of those working in small companies.

The monthly gross wages are between 100 US$ and 350 US$; we list some examples according to the following countries: Botswana 131 US$, Mauritius 202 US$, Morocco 186 US$, South Africa 349 US$, Tunisia 301 US$, Algeria 300 US$, Uganda 158 US$.

The agencies and the institutions working in the field of training are very weak; they have been established thanks to donations of the co-operation and have been supported by regular investment programmes. Those structures show a lack of trainers and must be renewed and rebuilt.

The agencies dealing with training and technical assistance are concentrated in the areas where the business chain is more developed: Northern and Eastern Africa, South Africa. These are not present in all those countries where the leather sector can be potentially developed, but they are distributed only in some of these countries. Owing to the low degree of regional integration, we can’t think that the present structures can be a reference for the surrounding countries which are unsupplied.

The still active structures and in need of technical assistance and modernisation are 18 in all Africa, placed according to the number of operative companies in the following way: 4 big tanneries, 50 industrial footwear companies and 64 workshops for leather products in Central Africa, devoid of structures for assistance and training; 92 tanneries, 682 footwear companies and 554 leather goods companies in Eastern Africa, where there are 8 still active training centres; in Mediterranean Africa 4 leather institutes operate in the main countries (Algeria, Morocco, Tunisia, Egypt) in the filed of training and quality control. In these countries the leather industrial sector has 407 tanneries, more than 7,000 footwear companies and almost 1,000 leather goods companies; in southern Africa there are 79 tanneries, 125 medium and big footwear companies, 74 leather goods companies, 2 supporting bodies for the sector, one in South Africa and one in Zimbabwe; two leather centres are located in Western Africa, where there are 47 tanneries, 8,206 footwear companies and 1,735 leather goods companies.
Table 2 Tanneries, footwear and leather goods industries and Service Centres in Africa

<table>
<thead>
<tr>
<th>MACRO-REGION</th>
<th>TANNERIES</th>
<th>FOOTWEAR</th>
<th>LEATHER GOODS</th>
<th>TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Africa</td>
<td>4</td>
<td>50</td>
<td>64</td>
<td>0</td>
</tr>
<tr>
<td>East Africa</td>
<td>92</td>
<td>689</td>
<td>554</td>
<td>8</td>
</tr>
<tr>
<td>North Africa</td>
<td>407</td>
<td>7,172</td>
<td>944</td>
<td>4</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>79</td>
<td>125</td>
<td>74</td>
<td>4</td>
</tr>
<tr>
<td>West Africa</td>
<td>47</td>
<td>179</td>
<td>119</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>629</td>
<td>8,215</td>
<td>1,745</td>
<td>18</td>
</tr>
</tbody>
</table>

Services to companies are mainly managed by centres promoted by public administrations, sometimes built as supervision and control units; in some case, they have taken a trade characteristic, selling services to companies and managing projects of research, development, training and updating.

The potential operative framework could be very wide and cover – at least partially – the offer of basic services, training offer, company technical consulting, management of laboratory technical tests, quality control, R&D, including the development of standards and certification.

Considering this, the new structures or the readjusted structures could be defined as complex and polyvalent structures.

The trade character of the service offer by those agencies and the size of the range of the possible offer could give to the service centres in Africa an ambitious positioning. However, this positioning is hampered by some critical factors:

- the weakness of the demand of services expressed by the African companies
- the weakness of the offer in the starting phases of experimentation.

These weaknesses could produce a vicious circle, as it has already happened, due to the scant use of the present structures: this has restrained the development of the service system also in the most developed African industrial systems, such as in Maghreb and South Africa.

In this framework, the support offered by European agencies can break this vicious circle and reinforce the quality of the services offered by the Centres that – together with incentives and international export ties – can increase the demand of the enterprises.
1.3. PLANNING PHILOSOPHY OF THE PATHS TOWARDS QUALITY

The quality has as final beneficiary the African companies belonging to the sector, dealing with the growth of their degree of competitiveness in the international market. This result must be pursued by the support and the re-qualification of the technical services offered by the several service agencies scattered on the territory in the regional areas and national states (specific objective).

The planning philosophy of the paths towards quality is to supply technical assistance and training to the service agencies, which, then, give the resulting benefits to the companies, as qualified services. Planning quality is a contribution to the general technological renewal of the African leather sector, operating at a middle level (see next table).
Table 4 Macro – Middle – Micro levels of assistance (framework)

<table>
<thead>
<tr>
<th>MACRO LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working out of industrial policies</td>
</tr>
<tr>
<td>Definition of the operative instruments</td>
</tr>
<tr>
<td>Actions of diffusion in order to raise the awareness of companies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIDDLE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support to the actors of local, sectorial, technical and professional mediation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MICRO LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct support to companies</td>
</tr>
</tbody>
</table>

So, centres can undergo a specific intervention of updating (mise à niveau) as for the setting up or development of services, standardisation to rules, even European ones; more over, centres are reconfirmed as key actors of quality paths of the African companies.
2. THE QUALITY CONSTRAINTS OF THE LEATHER & FOOTWEAR SECTOR IN EUROPE

2.1. THE LEATHER TANNING INDUSTRY

TECHNICAL OVERVIEW OF THE LEATHER PRODUCTION PROCESS

The steps of the leather production process

The leather industry covers the treatment of raw materials, i.e., the conversion of the raw hide or skin, a putrescible material, into leather, a stable material, and finish it so that it can be used in the manufacture of a wide range of consumer products.

The production processes in a tannery can be split in four main categories, even if the processes employed in each of these categories change depending on the raw material used and the final products produced (see section on outlets):

– **Hides and Skins Storage and Beamhouse Operations** – Upon delivery, hides and skins can be sorted, trimmed, cured (when the raw material cannot be processed immediately) and stored pending operations in the beamhouse. The following processes are typically carried out in the beamhouse of a tannery: soaking, unhairing, liming, fleshing (mechanical scraping off of the excessive organic material) and splitting (by mechanical splitting the thickness of hides and skins is regulated and they are split horizontally into a grain layer, and, if the hide is thick enough, a flesh layer).

– **Tannery Operations** – Typically the following processes are carried out in the tannery: deliming, bating, pickling and tanning.

**Pickling** is carried out to reduce the pH of the pelt prior to mineral tanning and some organic tannages, such as chrome tanning and vegetable tanning. At this stage, pickled pelts, e.g., sheepskins, can be traded.

In the **tanning** process the collagen fibre is stabilised by the tanning agents so that the hide is no longer susceptible to putrefaction. The various agents can be categorised in mineral tannages, vegetable tannins and alternative tanning agents.

Mineral (trivalent Chromium salts) and vegetable (quebracho, mimosa…) tanning agents are the most commonly used tanning agents.

The tanned hides and skins are tradable intermediate products (wet blue) as they have now been converted to a non-putrescible material called leather. However, for being further manufactured into consumer products, leather needs to be subsequently processed and finished.

### Post-Tanning Operations

Post-tanning involves: washing and neutralisation, (the acids that are still present in the leather following the tanning process must be neutralised; according to the desired leather type to be produced the leather is retained and dyed with water-soluble dyestuffs), retaining (to improve the feel and handle of leathers), dyeing (to produce level colours over the whole surface of each hide and skin), fatliquoring (leathers must be lubricated to achieve productspecific characteristics and to re-establish the fat content lost in the previous procedures) and drying.

After drying the leather may be referred to as crust, which is a tradable intermediate product.

Operations carried out in the beamhouse, the tannery, and the post-tanning areas are often referred to as wet processes, as they are performed in processing vessels filled with water to which the necessary chemicals are added for producing the desired reaction.

After post-tanning the leather is dried and operations are referred to as dry processing.

Typically hides and skins are traded in the salted state, or increasingly as intermediate products, particularly in the wet-blue condition for bovine hides and the pickled condition for ovine skins.

### Finishing Operations

The art of the finishing is to give the leather an as thin as possible finishing without harming the known characteristics of leather, its look, its ability to breathe. In this process the upper (grain) surface will be treated and will get its final look. By grounding (applying a base coat to leather e.g. to block pores, before applying the true finish coats), coating, seasoning, embossing (to create a raised design upon a leather surface by pressure from a heated engraved plate or roller) and ironing (to pass a heated iron over the grain surface of the leather to smooth it and/or to give it a glossy appearance) the leather will get, as desired by fashion, a shiny or matt, one or multi-coloured, smooth or with clearly present grain in the surface.

The overall objective of finishing is to enhance the appearance of the leather and to provide the performance characteristics with respect to colour, gloss, handle, etc.

### Classification of products

The European tanning sector is mainly concentrated in the processing of two types of finished leather; leather from bovine rawhides (CN 4101) and the leather processed from small raw skins (ovine and caprine skins CN 4102 and 4103).
Tanners use a residue of the meat industry (raw hides and skins) or start their activities from an initially processed raw material (semi-finished leather such as wet-blue or crust).

Chapter 41 of the Combined Nomenclature (CN) covers all stages of this material from raw hides and skins to finished leather.

Commodity trade patterns have changed in last years and an increasing proportion of trade is now in the form of wet-blue, crust and ready to finish leathers. Despite the significance in volume and value terms of international trade in these items, they are not included in the existing international trade classifications. This tanned hides and skins are typically arbitrarily classified in trade statistics either as raw hides and skins, or as finished leather, whereas they are, in fact, neither of these.

The EU has responded to the industry’s request to review and update the sector’s nomenclature for the classification of products in the Harmonised System (HS). This initiative ensures that the leather industry will probably have by the year 2002 an improved classification of products and better intelligence on trade in the leather sector. The EU proposal for a revision of HS Chapter 41 represents a significant improvement in the logical structure of the nomenclature of products and takes into account the need to identify better certain trade flows such as those relating to intermediate products (wet-blue and crust).

**Supply of raw materials (hides and skins)**

Europe is a net importer of raw materials, i.e. of raw hides and skins of bovine or equine animals, sheep or lambs, goats or kids, reptiles, or of other animals. In 1999, the EU imported 390 883 tons of hides and skins (worth 621 millions euros), and exported 185 640 tons (239 millions euros). Most of that trade concerned bovine or equine animals (82 % of imports, 72 % of exports).

The European leather industry is faced with increasing difficulty in obtaining those raw materials from some major producing countries which have introduced or maintained a series of export restrictions for raw hides and skins. These restrictions are sometimes as prohibitive as outright export bans, or take the form of export quotas, export duties, or export taxes. Such export restrictions constitute significant distortions of world trade in leather products, throughout the entire value chain ranging from raw hides and skins to finished products made of leather, such as wallets, handbags, suit cases, garments, footwear, etc. As the world market for raw materials is dominated by a limited number of supplier countries, downstream operators situated in those countries have a clear competitive advantage over their (European) competitors who have to buy raw materials at artificially high prices.

**Products and innovative processes**

The constant development of new products and processes is fundamental to the continuity and competitiveness of production and distribution in the sector. For instance, to withstand the competition of low-cost leather from certain non-member countries, part of the European leather and tanning industry has specialised in the production of high-quality, high-performance goods. As a result of research and innovation, the European leather and tanning industry is developing innovative products and processes in terms of quality, design, respect for the environment, the recovery and use of by-products and the recycling of waste.
GERIC, the group of European leather research institutes, is a network of technology centres in the EU that are developing R&D for the tanning industry. These centres have laboratories in ten EU countries (A, DK, D, F, GR, I, NL, P, E, UK).

The industry has initiated many projects with financial support from the EU under Community programmes to assist research and innovation. The projects cover, for instance, the development of systems for improving the quality and performance of leather, fault detection, and the speeding-up and improving of all stages of hide treatment (in particular soaking, drying, cutting, dying, etc.). Some projects are also directly linked to the use of leather through the shoe industry and deal with assembly systems and leather performance (e.g. hypo-allergic properties, etc.). Many projects also aim to minimise the impact of the leather and tanning industry on the environment. These concern, in particular, limiting the pollution of water, air and land, saving energy, and reducing and recycling waste. A list of about one hundred projects is attached to this report. Recent projects include a joint action by ten European partners on the factors affecting the quality of leather and hides. The objective of this 38-month project (1 January 1998-28 February 2001) was to develop strategies to improve the quality of the raw materials used by the leather industry. The aim was to develop a network of European researchers working on this subject, to co-ordinate efforts by exchanging information, and to produce a series of information documents and a working paper setting out the priorities for future action.

Electronic commerce and electronic data exchange

In all sectors, including leather and tanning, businesses are turning increasingly towards electronic commerce, which requires general restructuring from all businesses. The key to success lies on the use of information technologies to increase productivity and extend one's presence in networks. All businesses, whatever their size, need to adapt to market evolution.

That is why the Commission has drawn up an "eEurope" action plan, whose aim is to speed up Europe's transition towards information society and to ensure that all Europeans have the skills they need to use the new information technologies. Moreover, the “eLearning” component of the action plan aims at offering to all citizens, especially the younger ones, the skills and instruments they need in order to succeed in the new, knowledge-based economy.

In the leather and tanning industry, many electronic portals have been set up. For example, an ecommerce platform that was created by the Italian Association of Tanners consists of two commercial sites: one is for the pre-tanning stage and is aimed at raw hide suppliers (www.hidesupply.com) and the other is for the stages after tanning and is aimed at leather buyers (www.lponline.com). The purpose of this platform is to simplify the transfer of goods.

The Italian Association of Tanners does not aim to make a profit. It allows each participant to present its products cheaply, to make offers and to negotiate conditions.

Functioning of the single market

The programme for completing the single market has made trade within the European Union easier. The Commission has made a special effort to harmonise the rules and to ensure that the free movement of goods runs properly and that potential risks for environment and consumers are efficiently controlled.
Legal and voluntary framework

The leather sector is subject to various kinds of European legislation. Legislation in areas like agriculture, environment, consumer protection and public health is of particular importance and implications for the sector are discussed in the following chapters.

Apart from that, there is no European legislation devoted to the regulation of the sector as such. In particular, there is no general obligatory labelling requirement covering all leather products at European level. Directive 1994/11/EC exclusively applies to footwear – requiring the labelling of the materials used in the main components of footwear for sale to the consumer. Separate pictograms have been created to distinguish leather from coated leather in the framework of that directive. Labels borne by other leather products - indicating leather as material – exist in some Member States, and on a voluntary basis. The European leather association (COTANCE) has raised the idea of a reflection on the appropriateness of harmonising labels in the leather goods (bags, gloves etc.) and garment sectors for better consumer protection and image promotion for leather.

Furthermore, other labels can be applied to leather products on a voluntary basis—indicating for instance the origin of the product, the manufacturer or importer, or instructions for use.

The European eco-label scheme in particular will be discussed in the chapter on Environmental protection.

Voluntary European industry standards in the leather sector supporting the functioning of the Internal Market are developed by CEN. Technical Committee 289 devotes its work to leather in particular. The Secretariat is run by UNI, the Italian CEN national member. Most of the standards developed concern test procedures for different purposes. Occasionally, performance standards are set. Other CEN Technical Committees cover leather products, e.g. CEN/TC 52 “Safety of toys”, CEN/TC 161 “Foot and leg protectors”, CEN/TC 162 “Protective clothing including hand and arm protection and lifejackets”, CEN/TC 207 “Furniture” and CEN/TC 309 “Footwear”.

Environmental protection

General framework

The leather sector aims at meeting environmental challenges by focussing on areas where improvements in environmental performance go hand in hand with the promotion of competitiveness. The European Leather sector has developed comparative advantages because of the modernity of production tools and as a result of the immaterial patrimony of quality and know-how. These are strengths of the European industry, which place it ahead in a global context.

The European leather industry value chain comprises a number of sub-sectors, ranging from agriculture, chemical and manufacturing industries providing raw materials, through to footwear, clothing, furniture and other industries at the end of the value chain. All stages of production have an impact on the environment, and control is an important issue for the leather value chain.
The tanning industry is both:

– A treatment facility of residual animal material. As such, it contributes to the reduction of meat prices by +/-10 % and to the limitation of waste production of the meat industry. Indeed, tannery effluents of initial production stages carry mostly pollution imported from activities upstream of the tanning sector. Tanneries therefore act as involuntary clean-up facilities assuming the environmental costs of upstream polluters.

– A potentially pollution-intensive industry. EU tanner’s environmental costs are estimated at about 5 % of their turnover on average. The environmental impact from tanneries originate from liquid, solid and gaseous waste streams and they arise from the release of unexhausted or cleavage chemicals in effluents, sludges, and emissions to the air. Furthermore, the nature of some of the processes and the chemicals consumed in those processes need to be monitored regularly, notably with regard to health and safety at work and soil or round water contamination.

Most of the steps of the tannery’s operations are performed in water. Consequently waste water effluent is one of the major concerns in tanneries. According to UNEP estimations, the average water consumption of a traditional tannery lies in the range of 25 to 80 m³/t per processed hide. A Roundtable of the European Leather Industry with the subject “The leather industry and responsible governance in water resources” was held in November 2000 in Bologna and gathered some 100 industry leaders as well as other public and private stakeholders - indicating the importance the sectors attributes to environmental concerns in general and questions related to water management in particular.

Recent changes in the regulatory context

Environmental regulation can be an incentive to put into place cleaner production methods that are also more cost effective. And harmonisation of environmental legislation on EU level can help establishing a level playing field for enterprises in Europe. However, environmental legislation should not impose a disproportionate burden on enterprises, particularly SMEs, which may face difficulties due to their size and limited resources. In order to meet environmental challenges, the European Union regularly improves and adapts its regulatory framework to better respond to the needs of industry and other stakeholders.

In September 2000, the European Parliament and the Council adopted the EU Water Framework Directive. It covers all waters (rivers, lakes, groundwaters, and coastal waters) and all sources of pollution with the objective of achieving or maintaining "good status" for all waters within a set deadline of 15 years maximum. Member States are required to set up river basin management plans to address the sources of pollution to surface waters or groundwater. The leather industry will be obliged under the river basin management plans to take measures to reduce water pollution in those cases where the discharge from a plant contributes towards the pollution of a body of water, preventing compliance with the "good status" criteria.

The European Commission adopted a White Paper on Environmental Liability on 9 February 2000. The objective of the White Paper is to explore how the polluter pays principle, one of the key environmental principles in the EC Treaty, can best be applied to serve the aims of Community
environmental policy. Avoiding environmental damage is the main aim of this policy. The White Paper explores how a Community regime on environmental liability can best be shaped. Having explored different options for Community action, the Commission concludes that the most appropriate option is a Community framework directive on environmental liability. The White Paper responds to a request from the European Parliament for proposals for legislation in this field.

Council Directive 1996/61/EC concerning integrated pollution prevention and control (IPPC) lays down a framework requiring Member States to issue operating permits for industrial installations. The permits must contain conditions based on Best Available Techniques (BAT) in order to achieve a high level of protection of the environment taken as a whole. As far as the leather industry is concerned, plants for the tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day are subject to the IPPC directive. The respective BAT Reference Document (BREF) which is based on an information exchange carried out in a Technical Working Group (TWG) composed of nominated experts from EU Member States, industry and environmental Non-Governmental Organisations has been drafted and published. Each new installation since 1999 exceeding the capacity threshold and facilities covered by the directive that are subject to substantial modification will have to obtain a license. Other existing facilities will have to abide by the provisions of the directive by October 2007 at the latest given that they fall within the scope of the directive in terms of capacity.

Council Directive 1999/31/EC on the landfill of waste, adopted on 26 April 1999, lays down that by July 2003 Member States shall have established national strategies for the reduction of biodegradable waste going to landfills. The strategies should include reduction measures by means of, in particular, recycling, composting, biogas production or materials/energy recovery. As - according to a COTANCE survey - European tanneries generate more than 300 000 tonnes of dry sludge per year, the directive is expected to strengthen the trend to re-using and recycling in the leather sector.

With respect to the use of certain chemicals in the leather sector, two Commission proposals for Directives amending Council Directive 1976/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations are presently being decided upon in the Co-decision procedure. The modified proposal for the 19th amendment concerns certain azocolorants, some of which can be used in the finishing of leather articles.

The proposal for the 20th amendment relates to short chain chlorinated paraffins (SCCP) which can be used as a softening and lubrication agent in the leather production process.

Furthermore, a Commission Directive now regulates the use of pentachloro-phenol. European Parliament and Council Directive 1998/8/EC on biocidal products, which entered into force in May 1998 aims to establish a harmonised market for biocidal products and to ensure a high level of protection for human health and the environment. It covers 23 types of products including preserving agents for fibres, leather, rubber and other biocidal products suitable for the footwear industry, and establishes that only approved products can be put on the market and used.
Revision of voluntary instruments

Regulatory authorities increasingly encourage enterprises to take an active approach to environmentally oriented management. Taking on board voluntary environmental instruments can foster better cooperation between enterprises and the regulatory authorities. **EMAS**, the Community Eco-Management and Audit Scheme, dates back to 1993 but has been revised in March 2001. The main objectives of the revision are to extend the scheme to all organisations in the public and private sector that are committed to improve environmental performance, to increase public transparency and credibility of the scheme, and to incorporate the ISO/EN 14001 standard. It is a voluntary environmental management instrument that helps enterprises identify the relevant environmental issues, facilitates complying with legal requirements, identifies possibilities to improve environmental performance beyond the basic requirements while reducing costs, and generally makes an organisation more aware of its impact on the environment.

Ecolabel

Another voluntary environmental instrument is the **eco-label**. Eco-labels are designed to give consumers guidance on the environmental aspects of the products they buy. They do not provide the consumer with detailed information on the product but indicate that from an environmental point of view the labelled product falls within the top 10-20% of its product group. The EU Eco-label Scheme was created in 1992 in order to provide harmonised eco-labelling throughout the internal market. The environmental criteria underlying the labels are multiple-issue and are based on a life-cycle assessment. The labels are awarded to specific products and criteria have been established for approximately 15 product groups. The Eco-label Regulation has been revised in order to deal with problems that have existed in the past.

Procedures have been long and difficult, there was controversy over the criteria underlying the eco-label and the involvement of all stakeholders has been insufficient. In order to meet those challenges a European Union Eco-labelling Board was created, comprising the competent bodies of the Member States as well as a large number of stakeholder groups, including industry, trade unions, consumers and NGOs.

With respect to the leather sector, an eco-label has already been established for footwear. It applies to all categories of shoes, including sports shoes, occupational, children’s men and women’s town, specialist shoes for cold, casual, fashion and indoor. The exact criteria for the award are laid down in a Commission decision. They are revised every three years. They encompass ecological criteria as well as performance and durability criteria. So far, three footwear products, one produced in Spain and two in Italy bear the European eco-label. The EU leather and tanning industry is actively involved in environmental issues. Among recent achievements, the COTANCE council (Paris 19 September 2000) to the decision to highlight, at a global level, the European tanners’ commitment to cleaner production, by signing up **UNEP's declaration** on cleaner production.
2.2 THE FOOTWEAR INDUSTRY

RULES OF ORIGIN, EURO-MEDITERRANEAN ZONE, INDUSTRIAL COOPERATION

a) Current situation

The rules of preferential origin for footwear articles are simple: origin can be obtained through manufacture from any materials whatsoever, with the exception of very simple assembly of certain parts of the footwear article.

It is under these rules, that the industry has been taking all the appropriate investment decisions over the years. The sector has adjusted its production capacities and its logistics with a view to deriving maximum benefit from the agreements that were concluded with the countries of the EEA, the applicant countries of Central and Eastern Europe (CEECs), the countries of North Africa and the Customs union with Turkey.

Many operators in the EU, for instance, have certain parts of the footwear (such as the "uppers") manufactured in low-wage countries in this zone - a practice which has become indispensable in order to remain competitive on the international market. The principal value generated within Europe relate to the creation (design), the appropriate processing of the raw materials, the cutting of the leather parts and the assembly of the final product - since all these factors are necessary for the quality of the end product.

b) Policies and recent initiatives

In recent years, the Community has succeeded in harmonising the rules of origin contained in a large number of preferential agreements, thereby establishing transparent and uniform rules over a vast area. It also introduced the system of pan-European cumulation of the rules of origin, which allows the members of this zone to use raw materials and semi-finished products from any other country in this zone, while benefiting from the preferential origin for that product. The cumulation of origin also applies between the Community, Morocco, Tunisia and Algeria (euro-Maghreb cumulation). (It should be noted that there is no link between the Pan-European zone and the euro-Maghreb zone).

The advantages of this zone are thus reserved for the zone's economic operators and help to encourage **industrial cooperation** in the zone. Benefit can be derived from each partner's contribution: European technology and know-how on the one hand, and low production costs in the other partner countries on the other. At the same time, these partner countries are becoming more familiar with the policies and working methods in the Community.

**INNOVATIVE PRODUCTS AND PROCESSES**

**a) Current situation**

The European footwear sector makes extensive use of the most advanced technologies in its design and production systems. It is developing new types of shoe (such as shoes designed for diabetics and hypoallergenic shoes) in order to meet the changing consumer demand. It is also developing new processes to speed the reaction to changes in the market and emphasise quality. Continuous development of new products and processes is crucial if production and distribution are to remain unbroken and competitive.

**b) Policies and recent initiatives**

The social partners welcomed the Commission communication on "**Modernising the organisation of work – a positive approach to change**" (COM(98) 529 final), a response to the Green Paper on "**Partnership for a new organisation of work**" (COM(97) 128 final).

Under the third and fourth research and development **framework programmes** (1992-94 and 1999-98), the Commission supported over 70 projects in the European footwear sector, mainly under the BRITE/EURAM (Basic Research in Industrial Technologies for Europe/European Research on Advanced Materials), CRAFT (Cooperative Research Action for Technology) and SMT (Standards, Measurements and Testing) programmes.

The fifth framework programme (1998-2002) pursues and modernises this initiative with, for example, the new GROWTH programme, whose innovative products, processes and organisations are key objectives.

The sector has launched many **projects** under the Community programmes, some examples being “Automated computer-based lay planning and interface to leather cutting for footwear SMEs”, “Rapid design system for the footwear industry”, “Development of reliable anatomic insoles for children shoes – assessing and improving functional properties of children shoes”, “A new vegetable tanning process and identification for innovative cycle for manufacturing non-allergenic footwear”, “Development of a fully automatic manufacturing system for industrial footwear”,

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“Automation and linking of post-cutting operations in the footwear industry”, “Modular manufacturing: the development of tools for implementation and management within footwear SMEs”, “Optimising the surface properties of footwear insocks”, “Orthopaedic shoes operation changed from a small shop operation to a large-scale production system with a new arrangement”, “Footwear for the elderly (mechanical and biomechanical measurements)”, “Firefighters’ footwear – focus on the compatibility of functional and protective properties”, “Espoir – applications of just-in-time to the footwear industry” and “Quality assurance system for the footwear industry”.

Within the GROWTH programme, a project called “New orthopaedic shoe production system” was recently launched. The objective of this project is to reduce considerably orthopaedic shoes’ production costs and to provide customers with the best service possible.

**ELECTRONIC COMMERCE AND ELECTRONIC DATA INTERCHANGE**

**a) Current situation**

**Networks** based on electronic data interchange (EDI) already exist in the footwear sector in Member States such as Denmark, France, Germany, Greece and the United Kingdom. Such networks enable businesses to explore the paths leading to full involvement in the dynamics of the new economy, learn the new rules of the game and experiment in using the new information technologies. They offer opportunities to improve the interaction between producers and distributors and with the outside world (integrated supply chains, boutiques, awareness communication, extranet etc.).

Networks can be used to exchange purchase orders, invoices, transport documents and bank transfer documents and so enhance the reactivity of the sector to market fluctuations and reduce distribution and stock management costs. They offer all the advantages of electronic exchange: speed, less room for error, wider catalogue availability, circulation of sales reports and hence fewer risks of sales slumps and dissatisfied customers.

Although every network has developed the same type of message (information on products, orders, invoices etc.), installations differ from one network to the next and hence from one supplier to the next, and software is not always compatible, making it impossible to exchange messages between networks without adapting the software. Moreover, most firms in the sector – above all SMEs – have neither the knowhow nor the resources to set up or permanently change their own systems to suit potential partners. This could bring unforeseen costs, complicate the supply chain and undermine competitiveness in the sector.

**b) Policies and recent initiatives**

Most firms in the sector are now in favour of common European standards for data interchange.
The EFNET 1 (European Footwear Network for Electronic Trading) project, which ended in September 2000 within the ESPRIT programme, aimed to set up a single, standardised electronic commerce system (B2B) for the European footwear sector. The system was designed to be simple to use, so as to boost and facilitate commercial relations between large organisations and SMEs and between SMEs themselves. The project laid down guidelines and application directives to help businesses use B2B electronic commerce in the footwear sector, mainly with a view to introducing concepts and standards. It also determined the technical architecture (in general) and the functions necessary for applying these standards. The results of the EFNET 1 project are available on the project website (see annex), which is open to the public and to businesses.

EFNET 2 is now working on putting into practice the EFNET 1 theoretical results so as to arrive at standards usable by all. EFNET 2 is being developed within the framework of the European initiative ECOM-IS3 (Electronic Commerce Marketplace for Industry Sectors). It is based on the experience of pilot firms that install the results of EFNET 1 (producers, retailers, groups of purchase, software suppliers). It is drawing on the experience of pilot enterprises (producers, retailers, purchasing groups, software providers) which install the EFNET 1 results. The producers and distributors present at the launch of EFNET 2 agreed to emulate the German model of an agreement between purchasing groups and producers aimed at European standardisation. This was a historic step in the development of the footwear market in Europe, the more so because the agreement was concluded unanimously.

In the same logic, the CEC developed with the NEA 19 (European Numbering by Article) the EDISHOE project for developing European standards for the exchange of computerised data (catalogues, transactions) by groups of products (families of products, model, colour, matter). This project was financed by the CEC and the participants. It was inspired by a), with the aim of installing profiles common to several networks and of helping companies to Scandinavian example.

Within the framework of the EFNET 2 standardisation work, a pilot project was launched within the framework of the CEN/ISSS workshop “Footwear Industry Electronic Trade” (FINEC migrate towards these. The pilot project will adapt to advances in EDI and electronic commerce as they happen, e.g. by applying new standards and syntaxes such as XML. The results of the pilot project will be validated and disseminated via the FINEC workshop with the help of producers and distributors.

The pilot project began in September 2000 and the launch meeting of the CEN/ISSS workshop is scheduled for March 2001.

How the single market is working

Although the apparent consumption of footwear rose by 4% between 1998 and 1999 in the EU, most of the increase was absorbed by an upturn in imports, so that the share of European manufacturers in the single market actually fell from 49% in 1998 to 45% in 1999 (see introduction).

In order to regain its share of the EU market, the footwear sector will have to draw on some of its specific strengths as the single market begins to work more smoothly. The physical circulation of the euro in 2002, for example, will remove exchange constraints and simplify consumer information.

The European single market strategy is reviewed each year to ensure that there is constant progress. The conclusions of the Feira European Council of 19-20 June 2000 reinforce the general guidelines set
out in the Commission communication on the review of the internal market strategy as a basis for
future work; the review is to take place in the light of the Cardiff economic reform process in order to
create a consistent framework.

**STANDARDS, LABELLING OF FOOTWEAR AND CONSUMER PROTECTION**

**a) Current situation**

The sector (manufacturers, distributors and trade unions) and the public authorities regularly discuss
the requirements for the standardisation (safety etc.) and labelling of footwear.

The aim of such *standardisation* is to help remove trade barriers by harmonising European practice,
fostering understanding between partners (producers, consumers, laboratories etc.), improving
production quality in this market and promoting a "total quality" approach, and guiding producers on
how to comply with legislation in areas of growing interest, such as environmental protection. The aim
of *labelling* is to foster trade both within the EU and with non-member countries, inform consumers,
and highlight the specificity and visibility of European products in order to promote the development
of market niches.

**b) Policies and recent initiatives**

Concerning *standardisation*, the initiatives launched by the sector in collaboration with specialist
organisations were supported by specific programmes run during the first four R&D framework
programmes, above all SMT (standards, measurements and testing). Some of the projects run were:
“Intercomparison of abrasive testing of synthetic footwear materials”, “Development of a test method
for measuring the slip resistance of protective footwear”, “Development of a validated universal slip
resistance test for pedestrian and workplace floor surfaces”, “Development of a combined puncture
and tear propagation test” and “Improved process control of footwear production processes through
new in-process pressure measurement techniques”. (See "EDI and electronic commerce" above for
current projects under the Fifth R&D Framework Programme.)

The CEN and ISO standards organisations are currently drawing up B2B standards enabling footwear
manufacturers to pursue a "total quality" policy if they so wish.

**CEN/TC 309** is preparing to standardise test methods, terminology and performance requirements
for components for footwear, test methods and terminology for the whole shoe and the environmental
aspects of footwear. These standards concern the end use of footwear. **ISO/TC 216** is working on
extending the CEN/TC 309 standardisation worldwide. Its work excludes footwear for professional
use (already covered by ISO/TC 94) and sizing system designation and marking for boots and shoes
(dealt with by ISO/TC 137). Twelve countries are taking part in ISO/TC 216, and there are 16
observer countries.
Concerning **labelling**, Directive 94/11/EC of 23 March 1994 on the labelling of materials used in the main components of footwear requires Member States to implement procedures for labelling the materials used in the main components of footwear for sale to the consumer. As provided for by the Directive, in 2000 the Commission issued an assessment report on its implementation. The report concludes that the Directive has proved capable of providing consumers with adequate information and protection and provides a guarantee of free trade in footwear throughout the European Union.

The footwear industry has also played an active role in developing an **eco-label** for footwear, finalised by a Commission Decision in 1999. The eco-label enables manufacturers to draw attention to the environmental excellence of their products on the market. Although only two firms in the footwear sector received the eco-label in the first year, a growing interest in the eco-label, particularly amongst SMEs, should quickly make this voluntary market instrument better known.

In 1998 the Commission financed a feasibility study for a **social label** which could be attached to footwear produced in compliance with ILO and environmental protection rules, bearing in mind that codes of conduct, framework agreements and labels will never be a substitute either for collective bargaining or for the social dimension of world trade.

In the **children's footwear** sector, with support from medical and scientific circles, the industry is promoting the development of a set of information and indicators to help consumers identify good-quality children's shoes designed to avoid health problems (foot and skeletal deformities, diseases etc.). In this context the European Confederation of the Footwear Industry sponsored a congress in Zlinn (Czech Republic) aimed at informing consumers about the vital aspects of the quality of children's shoes without inviting competition between manufacturers. Various Member States are also developing systems of measurement, regular checks on physiological changes in Europe and systematic information for parents. The Japanese government has sent representatives to study certain approaches in Germany and Austria with a view to developing its own foot health policy.

Commission Decision 724/99/EC of 28 October 1999 aims to ensure the **traceability of semi-finished materials** required by international authorities so that only materials from animals in good health are used to produce edible gelatine. The Decision stipulates that raw materials used in the manufacture of gelatine intended for human consumption must be accompanied by commercial documents indicating that they are "suitable for the manufacture of gelatine intended for human consumption" but this document is not necessary when the by-products do not enter the food chain. The result is that suppliers of raw materials to the leather industry are under no obligation to supply such commercial documents. The representatives of the tanning sector (which depends financially on sales of their by-products to other industries) consider that their by-products which are not accompanied by the commercial documents guaranteeing safety, have a much lower market value. They are asking that the documents concerned be made compulsory for all raw materials, including those not intended for the manufacture of edible gelatine. The transposition of Decision 724/99/EC differs from one Member State to the next. To date, only Italy requires commercial documents for all raw materials, regardless of whether they are intended for gelatine production.
ENVIRONMENTAL PROTECTION

a) Current situation

The most serious risks to the environment are to be found with suppliers of semi-finished products and
components such as leather, which is processed by tanning (waste treatments, quality and traceability of
products used). The risks in the footwear industry, where all solvent-based products (glues and finishes)
are banned, are less serious.

Nevertheless, environmental protection is a general preoccupation which is growing as new, potentially
hazardous products and processes appear (such as PCPs, azo dyes and inhalation of dust from shaving
or rubbing machines).

b) Policies and recent initiatives

The use of certain chemicals in raw materials processing and footwear components is being
harmonised. Council Regulation (EEC) 793/93 on the evaluation and control of risks presented by the
existing substance envisages the evaluation of the risks of existing chemical substances and the
identification of a suitable strategy to limit these risks in order to protect human health and the
environment. In particular, the Commission Recommendation of 12 October 1999, issued under
Regulation 793/93, summarised the results of the evaluation of the risks for the chloroalcanes in C10-
13 (SCCP), which are used as a softening and lubrication agent in the leather industry. It recommended
limiting the marketing and the use of this substance in order to protect the environment. The limitation
of the marketing and of the use is currently included in a proposal for a Directive dated 10 December
1999 also covering azo dyes.


May 1998 aims to establish a harmonised market for biocidal products and to ensure a high level of
protection for human health and the environment.

It covers 23 types of products including preserving agents for fibres, leather, rubber and other biocidal
products suitable for the footwear industry, and establishes that only approved products can be put on
the market and used.

Tanneries having a treatment capacity higher than 12 tonnes of finished products per day are subject to
an obligation to get an authorisation. This obligation arises from Council Directive 96/61/EC on
integrated prevention and reduction of pollution (IPPC).

Each new installation since November 1999, and the facilities which are subject to «substantial
modification » have to obtain a licence. This licence lays down conditions covering the reduction of
pollution by using the « best techniques available » (BAT) and conditions relating to waste management and to the effective use of energy. Other existing facilities exceeding the threshold of 12 tonnes have to abide by the provisions of the directive in October 2007 at the latest.

The European Commission is organising an exchange of information between EU Member States and the tanning industry concerning the Best Available Technologies (BAT) in this sector. A draft reference document was published on the Internet and the final document should be available in May 2001.

The European institutions also support projects undertaken by the industry in collaboration with research establishments to develop new, environmentally friendly products and processes. For example, the LIFE programme is a financial instrument for environment. Under the Third and Fourth R&D Framework Programmes, support was given via programmes such as BRITE/EURAM (Basic Research in Industrial Technologies for Europe/European Research on Advanced Materials), ENV (Environment), SPRINT (Strategic Programme for Innovation and Technology Transfer) and LIFE (Financial Instrument for the Environment). Several projects have been successfully completed in this context, some examples being "Leather ash re-use", "Process technology for recovery and recycling of chromium from leather waste and sludge", "Prevention of damage to the environment by organic solvents in the footwear industry" and "The recycling of waste materials within the footwear industry and trans-sectoral recycling of waste materials between footwear and other industries". Under the Fifth R&D Framework Programme, support for this type of project is continuing, particularly via the key action "Sustainable water management and quality" and the key action "products, processes and organisations".

Under the Leonardo programme, projects have been launched to make entrepreneurs and employees aware of the need for continuous training in quality and the environment. The project "Improving the quality and protection of the environment in the European footwear industry", for example, aimed to develop a training module on a European scale and to train teachers and researchers to train employees and new teachers in turn.
3. A TECHNICAL OVERVIEW ON THE MAIN ISSUES ABOUT QUALITY

3.1. INTRODUCTION

If we want to outline a scenario of development as regards the African industry in the sector of leather, tanning and footwear manufacturing, we have to take into consideration at least some basic areas of work. Firstly, we must take into consideration the dimension of the final consumer and of the distribution structures which have grown according to his needs. In fact, it is undeniable that in north-western countries (United States and Europe) the consumer has been developing a new awareness on the quality of the product. Quality is linked not only to the technical characteristics of the product (which are still important from the point of view of the product life cycle, of the consumer's health, of comfort) but also to environmental and ethical ones. In a word, the consumer is getting accustomed to evaluating the products according to their added value.

The organized large-scale retail trade is trying to meet this exigency and has structured in order to define working parameters with its own suppliers. In some cases these parameters derive from national and international technical standards issued by several standard organizations (ISO, EN and so on); in other cases, they derive from specific provisions worked out according to the exigencies and the requests of the consumers. Considering that this is the evolution of the distribution sector, this is the first working area that we take into consideration in this study. Here we make a distinction between technical standards (for the safeguard of the consumer) and the criteria adopted by the distributors.

The second working area is the environmental one. Even if this derives from a precise environmental awareness of the consumer, together with the wider necessity of environmental safeguard, it leads to a new case: a mark certifying the global environmental contents of the product and the processes. The European mark is discussed, together with a reference to the environmental problem of tanning and its solutions.

Then the several categories of physical-mechanical and chemical tests are faced, which can be used to the product certification. These are the operative instruments to certify the characteristics explained in the two previous paragraphs.

In the end, we speak about the structure of the services which it is important to develop in a system in order to meet these exigencies: the factors of development, the use, the structure.

This has an aim: to supply a draft of guidelines for the African industry.
3.2. ORGANIZED LARGE-SCALE RETAIL TRADE AND QUALITY PARAMETERS

The combination price/product cannot be surely sufficient to maintain the company competitiveness. In order to explain better this concept, we must carry out a brief, but careful analysis of the sales channels in the American and European markets.

These markets are characterised by the organized large-scale retail trade. This is made up of big companies that are hardly ever vertical integrated on footwear and, in many cases, operating in related sectors, such as clothing and accessories. For their dimension they are run by managers that are not necessarily technicians specialised in a certain product. They base their organizational power on very strict operative procedures that make up the “company quality system”. And it is with this system one must cope with this system.

In fact this system is structured on standard procedures, such as ISO 9000 for the company system certification, ISO 14000 for the environment certification, ISO 8500 for ethical certification, in case integrated with operative procedures regarding the product quality and the relations between organized large-scale retail trade and its own suppliers. In many cases, these companies adhere to voluntary product certifications, with a particular reference to the eco-compatibility of the materials, taking great care of the environmental direct and indirect impacts.

In a shoe, the important parameters are not only those of conformity to product quality standards, but also those linked to ethical principles of respect of the environment and the workers’ health. Considering that, in Europe and North America, the consumer is asking more and more for these features, the aim is to produce footwear with an added value which can satisfy the expectations.

Organized large-scale retail trade needs to work with suppliers that can meet these requirements. For this reason the guidelines for the suppliers, deriving from the company vision and mission, are extremely important. Let’s analyse them.

SUPPLIER’S SELECTION CRITERIA

In the first place, the requirement is to have at disposal innovative products, holding elements of high quality in comparison with the purchasing price.

Direct consequence is a list of priority requirements that can try sorely a supplier who is not sufficiently equipped:

- High number of samples during the year (in practise the company will have to organize in order to produce continuously and in very short times ever new samples, in line with the ever changeable market demands).

- High quality/price ratio according to the market of reference.
– Definite quality in accordance with precise parameters (the big companies of the organized large-scale retail trade have their own performance standards of reference – we will discuss this later on).


– Small production lots for each pattern

– Short time of order servicing

– Definite time of delivery.

We must note that, even if these requirements are onerous, they are the assumption for the suppliers’ fidelisation. This implies an investment of the organized large-scale retail trade on the supplier, who is helped to grow in order to satisfy the contractual requests.

**PRODUCT PERFORMANCE STANDARDS**

Considering the product, the performance standards on the physical, mechanical or chemical characteristics, supplied by the organized large-scale retail trade, are a complete guide for the approval procedures and the performance levels of footwear: if they are correctly used, considerable production quality levels will be reached. These are guided by international and national standards and have been enriched by the customer’s requirements, as they are felt by the organized large-scale retail trade.

**PERFORMANCE STANDARDS DERIVING FROM QUALITY STANDARDS**

More and more attention will be paid to guarantee that all the products holding the company trade mark or sold in the company point of sale are manufactured in accordance with legal requirements applicable to the product in question.

The standard UNI EN 12745 defines a testing method for insoles, particularly as regards heel pin holding strength.

This standard also defines the wider reference, such as standards EN 12222 (Footwear – standard atmospheres for conditioning and testing of footwear and components for footwear); prEN 13400:1998 (Footwear – Sampling location of components for footwear); ISO 5893 Rubber and Plastic test equipment – tensile, flexural and compression types (constant rate of traverse) – Description.

More over, the standard defines the terms (e.g. what the pin holding strength means) and the equipment to be used. This is clearly a complete guide, as well as all these types of standards.
**CLAUSES REGARDING THE PRODUCTION ORGANIZATION**

Another brief analysis must be dedicated to the study of some points of the contracts “customer/supplier”, where the supplier is asked to undersign the acceptance of behavioural and organizational schemes to be respected. Among these:

- To know in which factory the production is carried out (in a sector characterised by the subcontracting of the single manufacturing which make up the productive cycle).

- The impossibility to transfer or to subcontract, without a written authorisation, the manufacturing expressed in the contract.

- This clause means that, if the supplier, for any reason, wanted or had to carry out the manufacturing in a different factory and by a different juridical person, he should send a written communication in order to ask for the customer’s written authorisation. This has strong implications if the supplier’s company organization is based on an agile company marked by outsourcing policies. In a word, suppliers who don’t use subcontractors or outworkers are preferred, except when it is agreed and approved; and it is the supplier’s responsibility to assure and give proofs on the employment of subcontractors and outworkers, according to the criteria of the company ethical code (see below). More over, the supplier must guarantee that, in case the local legislation defines standard of higher level in comparison with those foreseen in the code, these standards are satisfied.

**DELIVERY DATE AND TIME**

Regarding this there are other conditions:

- Date of delivery, i.e. the fact that the supplier strictly observes the specified date of delivery, as timeliness is an essential requirement (it is not unusual to read in contracts clauses such as: …. It is crucial that the goods are delivered on the date specified in the contract. The non-delivery on the specified date can cause serious problems, as well as potential non-sales for…… Such breach shall entitle the customer to refuse the delivery of the goods and to ask for the consequential damage.).

**ETHICAL CODE**

Many companies have their own detailed ethical code which defines standards. This means that they select suppliers who, in carrying out their activity, pursue ethical standards, compatible with those of the organization. It is not unusual to find contractual clauses which expressly refer to:

The supplier’s duty to offer his employees a safe and healthy working environment and to observe entirely the law of the country of production, as regards work, health and safety.
The commitment of the supplier to observe the national law and the international standards regarding the protection of the environment.

An encouragement to supply training to employees, in particular to young workers, in order to make them carry out their task better.

It is usual to find the principle that the organization does not enter into business agreements with companies that use child labour in their factories. Please note that minor workers are under fifteen years.

Nonetheless, the organization commits itself to support the suppliers engaged to develop real and important training programmes for the youngest employees, or to replace gradually the youngest workers with their adult relatives, as well as to improve the condition of the adult workers and their income, so that child labour isn’t a necessity any more.

**SAFETY AND WORK**

The conditions regarding safety and work are the following:

– Suppliers must work in order to reduce the number of accidents and to guarantee the welfare of their workers.

– Suppliers must place at disposal and maintain a safe and healthy environment.

– The employers must guarantee that the present working equipment is fit for the foreseen use, maintained in an efficient and functional way. Dangerous machinery must be equipped with safety protections;

– The supplier must guarantee the adoption of procedures that ensure the delivery, the storage, the use and the disposal of the dangerous substances in safety conditions. In case of use of dangerous substances, it is advisable to enquiry if it could be possible the use of different or less dangerous substances, as well as if a mechanical ventilation system can be used. Moreover, it is necessary to guarantee the use of protective equipment for the staff.

– When risk cannot be adequately controlled in this way, the employer must supply for free equipment fit for the personal protection, such as glasses, gloves, etc.

– The supplier must give the necessary information, the instructions, the training and the supervision in order to guarantee the health and the safety of his employees in the workplace. Please note that for each worker documents of training must be kept.
3.3. ENVIRONMENT: ECOLABEL AND EMAS

The environmental compatibility of the products and the productive processes are becoming a factor of company competitiveness. Consumers are more and more aware of its importance and are asking to highlight it. In Europe, there are two schemes of certification: one has a global approach to the product, the other to the system. These are, respectively, Ecolabel and EMAS: let’s examine them, as they could be the basis of what the market is going to demand in the next years.

WHAT IS ECOLABEL?

The Ecolabel system, set up with Regulation EEC 880/92 is an instrument of an environmental and industrial policy on a voluntary basis aimed at increasing the presence in the market of “cleaned” products. The European ecological label certifies that the product has a reduced environmental impact during its entire cycle of life and it gives to consumers – more and more aware of the importance of the preservation of the natural resources and available at playing an active role in the environmental safeguard – prompt information on its conformity to strict requirements defined on European level.

In a complex market, where the consumer shows difficulty in evaluating objectively the product characteristics, Ecolabel is a reliable source of information which is valid in all Europe and represents an important element of development and competitive comparison.

The use of Ecolabel is given by the several national committees (in Italy, by the Italy Ecolabel-Ecoaudit-Ecolabel section Committee).

The concession of the label goes through the evaluation of the general ecological proprieties of the product and the verification of the correspondence to the established criteria, the resolution of the Competent Organization, which is notified to the European Commission, and the drawing up of a contract on the conditions of use.

The label is given for a limited period of production which can never be over the period of validity of the criteria (three years), except an extension of the same criteria.

Information collected during the product evaluation are confidential. Once the decision of concession has been taken, information regarding name of the product, manufacturer or importer, reasons for the decision are not considered confidential any more.

Charges for the applicant are the analysis costs (which must be carried out at certified laboratories), payment of inquiry rights and, once the label is given, the right of user and the control costs.

The Competent Organisation can suggest to the European Commission new groups of products.
WHAT IS EMAS

The EMAS System, set up with Regulation EEC 1836/93, is an instrument of environmental and industrial policy on a voluntary basis aimed at promoting ongoing improvements of the environmental efficiency of the industrial activities. This is a global certification of the environmental impact of the productive processes.

This system is collecting a widespread success. The improvement of the environmental performance and of the relations with the people and the institutions, the better guaranties on safety, the rationalisation of the production processes and of the entire system of company management linked to EMAS: all these factors are surely increasing the competitive advantage of the companies.

In Italy the Competent Organisation for the accreditation of the environmental tester and the site registration (Regulation 1863/93) is the Italy Ecolabel-Ecoaudit-EMAS section Committee.

Companies willing to agree to EMAS must send to the Competent Organisation an environmental declaration validated by accredited environmental testers; at the end of the procedure, the site is registered to a relevant community register.

The validated environmental declaration – reporting synthetically the commitments undertaken by the company – is public and is periodically updated.

A PRACTICAL EXAMPLE: THE ENVIRONMENTAL PROBLEM OF THE TANNERY

The relation with environment has always been one of the critical factors of the tanning sector, considering the polluting potential of hide processing. It is well-known how from the tanning process a series of losses occur: from 1.000 kg of raw material, only 188 kg of leather come out. This gives a good idea of the quantity of wastes resulting from the tanning process.

The following scheme gives an overall evaluation of the solid wastes and of the effluents resulting from the tanning process:
Environmental input of leather processing

1 tonne raw hide

50 m³ liquid effluent

200 kg leather

containing

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>235-250 kg</td>
</tr>
<tr>
<td>BOD5</td>
<td>c. 100 kg</td>
</tr>
<tr>
<td>Suspended solids</td>
<td>c. 150 kg</td>
</tr>
<tr>
<td>Chromium</td>
<td>5-6 kg</td>
</tr>
<tr>
<td>Sulphide</td>
<td>c. 10 kg</td>
</tr>
</tbody>
</table>

Solid wastes and by-products

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untanned</td>
<td></td>
</tr>
<tr>
<td>Raw trimmings</td>
<td>120 kg</td>
</tr>
<tr>
<td>Fleshings</td>
<td>70-230 kg</td>
</tr>
<tr>
<td>Tanned</td>
<td></td>
</tr>
<tr>
<td>Blue sheeting</td>
<td>115 kg</td>
</tr>
<tr>
<td>Trimming +</td>
<td></td>
</tr>
<tr>
<td>Shaving</td>
<td>100 kg</td>
</tr>
<tr>
<td>Dyed/finished</td>
<td></td>
</tr>
<tr>
<td>Buffing dust</td>
<td>2 kg</td>
</tr>
<tr>
<td>Trimming</td>
<td>32 kg</td>
</tr>
</tbody>
</table>
So, considering this, the environmental issue is going to define the economic geography of this sector. In this sense, quality means to have the capability to manage this problem and to show it to the consumer within schemes and certification like Ecolabel.

How to intervene on this? The basic terms, even if they are well-known, are explained in Enclosure 1.

3.4. LIST OF THE MOST COMMON PHYSICAL-MECHANICAL TESTS AND THEIR MEANING

Thanks to the tests, we can check the physical-mechanical and chemical standards of the products and we can prepare what is required for the attainment of certifications, such as Ecolabel.

In order to explain better the most common tests, we group them according to some working macro-areas:

**FOOTWEAR CHARACTERISATION**

This group of tests has the aim to define the critical factors of the footwear. The tests regarding sole bond adhesion strength (according to European standards such as EN 1392 o to methods determined by private companies, such as MS) belong to this group. The sole-upper adhesion allows to define not only the resistance to the surface peeling, but also issues linked to manufacturing (e.g. the imperfect distribution of the adhesive, wrong roughing, problems linked to the wettability of the materials, reactivation, pressing. Other tests are foreseen in order to determine problems which could come up during the use of the footwear.

- Determination of the sole bond adhesion strength EN1392
- Determination of the sole bond adhesion strength MS
- Determination of the sole bond adhesion strength (sole-bottom)
- Determination of the sole bond adhesion strength (upper –bottom)
- Determination of the sole bond adhesion strength (sole-insole)
- Determination of the sole bond adhesion strength (sole-upper)
- Determination of the sole bond adhesion strength (sole-upper of the sandal) PLSS
- Determination of the sole bond adhesion strength (sole-bottom of the article BIRK)
- Determination of the adhesion strength leather-lining
- Determination of the heel attachment strength
- Determination of the sole flexing endurance (EN 344)
- Determination of the sole flexing endurance
### CHARACTERISATION OF LACES, BUCKLES AND FASTENERS

These tests aim at verifying the wear resistance of laces, buckles and fasteners. These are traction tests aiming at determining the maximum load of resistance to traction of a buckle, of its hook, as well as the attachment of the buckle on the upper. More tests of resistance to traction are made on buttonholes and other fastening materials, such as velcro.

- Determination of the attachment strength of the buckle hook
- Determination of the attachment strength of the buckle-pin-tape
- Determination of the attachment strength of the tape-pin-tape
- Determination of the attachment strength of the hook-buttonhole (PEELING VELCRO)
- Determination of the attachment strength of the hook-buttonhole (SHEARING VELCRO)
- Determination of the attachment strength of the tape with buckle

### LEATHER CHARACTERISATION

This is a group of physical-mechanical tests aimed at the leather characterisation. First of all, the measurement of the leather area, whose aim is to solve the ongoing issues of leather yield, which usually happen between leather cutters and footwear companies and between these and tanneries.

In addition to this, adhesion tests and flexing endurance tests simulate what normally happens when the shoe is used. Finally, there is the test of abrasion resistance and rubbing resistance in order to determine the values of wear resistance of leather finishing.

- Measurement of leather area
- Determination of tear strength of leather
- Determinazione della resistenza alla trazione della pelle
- Determination of leather flexing endurance  BALLY
- Determination of the apparent density
- Determination of the colour fastness to rubbing (dry felt)
Determination of the colour fastness to rubbing (wet felt)
Determination of the colour fastness to rubbing (ammonia)
Determination of the colour fastness to rubbing (water-ammonia 2%)
Determination of the colour fastness to rubbing (leather for furniture UNI)
Determination of the colour fastness to rubbing (leather for furniture INGL)
Determination of rubber resistance (hard rubber)
Determination of colour fastness to water
Determination of colour fastness to artificial light.

SOLE CHARACTERISATION

Regarding soles, it is very common the wear resistance. The tests of this group allow to check the abrasion resistance and flexing endurance. More over, tests of traction resistance of the adhesion between the layers of multi-layer soles are foreseen. Essential tests to determine minimum acceptance readings that are not always foreseen in the national standards and can be agreed between the footwear company and the sole one. These tests can be applied to the different materials used in the sole manufacturing.

Determination of the sole abrasion resistance
Determination of the sole flexing endurance (EN 344)
Determination of the sole flexing endurance
Determination of the peel resistance between the layers of the sole

INSOLE CHARACTERISATION

The insole is the basic structure of the shoe. These two tests allow to check the minimum acceptance readings. These change according to the typology and height of the heel.

Determination of the elastic deformation of the sole
Determination of the residual deformation
Determination of the heel attachment strength
### Heel Characterisation

Heels are mainly made of polystyrene and ABS and must respond to the minimum acceptance readings. A heel with low reading can cause the breaking of the shoe and, in some cases, the company can have responsibility for the damages caused to the customer. These tests allow to see if there are sufficient requirements for the use of the heel.

<table>
<thead>
<tr>
<th>Test</th>
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<tbody>
<tr>
<td>Determination of the top-piece attachment strength</td>
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<td>Determination of the top piece abrasion resistance</td>
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<tr>
<td>Determination of the heel resistance to repeated shocks</td>
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<td>Determination of the heel pin holding strength</td>
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</tbody>
</table>

### Synthetic and Coated Fabrics

Synthetic materials and coated fabrics are used instead of leather in the footwear manufacturing. However, their conditions of use and output must satisfy the customer’s expectations.

So, it is important to check the technical characteristics pointed out by manufacturers, as well as to verify if these characteristics are suitable to manufacture that particular kind of shoe. In many cases, synthetic products with certain characteristics are suitable for some patterns and unsuitable for others. Our tests help the footwear company to choose the right product.

<table>
<thead>
<tr>
<th>Test</th>
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<tbody>
<tr>
<td>Determination of breaking load of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of tear load of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of flexing endurance of synthetics and coated fabrics.</td>
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<td>Determination of extension of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of peel resistance of synthetics and coated fabrics.</td>
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<td>Determination of apparent density of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of colour fastness to rubbing (dry felt) of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of colour fastness to rubbing (wet felt) of synthetics and coated fabrics.</td>
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<tr>
<td>Determination of abrasion resistance with VESLIC apparatus (hard rubber)</td>
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</table>
3.4. INFRASTRUCTURES FOR QUALITY

Manufacturers and customers: what services to guarantee quality? We have seen that quality is the result of a global approach to the product and to its relation with the wishes of the final customer. So, what is the relation between the customer and the manufacturer? Is it possible to define categories of customers and manufacturers? What kind of services are requested by these categories? And what is the logic of these services? We will answer to these questions and, then we will pass to analyse the ways of creation of the service infrastructures suitable for the development of the sector in Africa.

MANUFACTURERS AND CUSTOMERS: ONE CATEGORY?

Another important point to outline is to classify customers and manufacturers belonging to the footwear sector.

Manufacturers:

- Qualified craftsmen with a direct contact with points of sale.
- Qualified craftsmen working for the biggest names of fashion.
- Craftsmen specialised in tailor-made products.
- Medium-large sized companies working within the framework of subcontracting scheme on behalf of the organized large-scale retail trade.
- Small-medium sized companies working for buyers, importers, other customers.

Customers:

- Shops
- Shop chains with centralised purchasing offices.
- Shops specialised in tailor-made products.
- Big fashion names.
- Importers/buyers/other customers.
- Organized large-scale retail trade.
SERVICES FOR CUSTOMERS AND MANUFACTURERS

The different typology of manufacturer/customer implies a different request of services, in order to guarantee the product quality. In fact, quality means to have a global approach. We list the services which are very often asked together with tests and quality certifications.

Service asked by the manufacturers

- Shoe design
- Organisation of the production process
- Technological transfer
- Control test / footwear testing (determination of the critical factors)

Services asked by the customers

- Last control / determination of the fitting
- Fitting trial
- Chemical analysis on materials
- Physical-mechanic tests for the footwear testing
- Determination of the footwear critical factors.
- Quality certification according to the customer’s performance standards.
- Product certification.

We have a process of the tertiarisation of production which leads to a request of “industrialisation” of the services. In fact, in the most industrialised countries, the cost structure of the manufactured goods points out a growing weight of the value of the services (in accounting terms, the weight of the indirect costs is growing on the total of the production costs).

It is often affirmed that the modern production system would be rather “neo-industrial” than “post-industrial”. Not only. As a matter of fact, today the production of services is a neo-industry, which integrates a production of goods and services in a Value Creating System that supplies both goods and services, looking mainly at the needs of the customer.

This means that the success of the service economy involves all the companies, apart from their sector and is gradually modifying the traditional competitive rules.
Obviously, we are speaking about “real” services, i.e. those services whose supply modifies the structure of a production cycle, in order to allow the strategic adjustment not only of each company, but also of the relations among companies and between these and their environment.

The characteristics of the real services are the following:

– “prosumer oriented”: the customer plays an active role in the production of service
– “time based”: being innovator is not enough, the innovator must be fast
– “agile”: able to auto-size according to the events
– “value driven”: driven by a strong ideality
– “knowledge-based”
– “eco-friendly”

**SERVICE CENTRE AND QUALITY LABORATORY**

If we classify the categories of services affecting development, we have the following services:

– Quality (certification and control).
– Technological and organizational services
– Innovation and technological transfer (R&D)
– Vocational training
– Telematics, data banks and communication.

It needs to have at disposal a service centre operating in the service areas, considering that these are integrated one with the other. So, the result is a centre equipped with:

– A physical-mechanical-chemical laboratory for quality tests, to be connected with foreign high-tech laboratories.
– Pilot production plants to carry out vocational training, technical assistance and technological transfer.
– R&D department connected with the most important foreign research centres.
– A vocational training centre with classrooms, etc.

– A CAD/CAM laboratory in order to plan according to quality standards.

– Qualified technical consultants (trained abroad in the most important productive districts).

More closely, regarding laboratories it is important to integrate the functions of the CAD/CAM design with those of the quality control of the products of the tanning-footwear industry. The philosophy of the quality laboratory (analysis, tests and research) is to satisfy the requests of its customers, even if these can differ one from the other. Besides carrying out nearly all the tests according to the national UNI standard and European EN one, the laboratory has a complete equipment for tests in accordance with international ISO standards, IUC-IUP-IUF standards for the tanning industry and so on.

More over, the laboratory must be accredited by a European body (in Italy: SINAL) and must eventually work within a European Network of laboratories and Service Centres with activity of Research and Technological Transfer.

But it is the integration in general service structures offering the above mentioned services, that can qualify the offer. The activities of R&D and training can also push in the same direction and contribute to the diffusion of a culture of quality and to the definition of proper researches.

**CONCLUSION**

Aim of the study is to affirm that quality is a global concept, including a series of considerations, starting from the requests of the final consumer. An African company willing to undertake a path towards quality should organize according to the considerations of this study. However this requires infrastructural investments at promoting the setting-up of well-equipped service centres which are in network with the main European realities. Only this structural intervention can break the bottleneck towards the wealthier countries.