

## WORKSHOP

Sub-regional workshop on  
Environmental Requirements, Market Access/  
Penetration and Export Competitiveness for  
Leather and Footwear

**Bangkok, 19-21 November 2003**

## PROJECT

Project on Building Capacity for Improved Policy  
Making and Negotiation on Key Trade and  
Environment Issues

## STUDY

**DRAFT**

Draft Study on Environmental Requirements,  
Market Access and Export Competitiveness for  
Leather and Footwear in

**Viet Nam**

**ENVIRONMENTAL AND HEALTH REQUIREMENTS TO  
VIETNAME LEATHER AND FOOTWEAR INDUSTRY IN KEY  
EXPORT MARKETS**

**HANOI, OCTOBER 2003**

## PART I

### REQUIREMENTS TO VIETNAM LEATHER AND FOOTWEAR PRODUCTS IN KEY EXPORT MARKETS

#### I. INTRODUCTION

##### 1. The world leather and footwear product market

The total value of world trade in leather and footwear products has increased continuously, in which only the trade in leather and footwear products increased from about USD 16 billion in 1994 to USD 98 billion in 1998 (UNIDO, 2002). Two main supplying sources are the EU and developing countries (Latin America and South East Asian countries in particular). Like the garment market, the market for leather and footwear products of developing countries tends to grow fast thanks to the advantage of low labour cost, and to changes in consumer taste. The EU has been the biggest supplier of leather products, Italy in particular is holding 15% of world leather output (IPTS, 2001). However, EU producers now put emphasis on high class and fashionable products.

##### 2. Overview of Vietnam export of leather and footwear products

Along with petroleum and garments, the export of leather and footwear products brings is an important source of foreign currency to Vietnam. The export value increased from USD 1.468 billion in 2000 to USD 1.560 billion in 2001, and to USD 1.846 billion in 2002. The target of 2010 is USD 4 billion.

Vietnam now ranks fourth, after China, Hong Kong and Italy in export of footwear. There is an increasing trend in export:

Year	1995	1999	2000
Volume (millions of pairs)	85	212	276

**Source: LEAPRODEXIM-2002**

Among the some 40 Vietnamese export markets in leather and footwear products there are 3 key markets: EU, the United States and Japan, with shares (in 2000) as follow:

Market	EU	United State	Japan	Other
%	80	9	5	6

**Source: LEAPRODEXIM-2002**

Some East European countries such as Russia, Czech, Ukraine are also export markets for Vietnam.

Among the key export markets, the EU is the biggest. At the same time, it is the market that sets the strictest requirements related to environment protection and health. The US market accounts for only 9% but it has great potential since the bilateral trade agreement (BTA) between Vietnam and the US has been signed. The Japanese market is also of great potential due to preferential policy granted to Vietnam with no quota applied, and the fact that environmental requirements related to imported leather and footwear products are not as strict as that of EU and the US.

## **II. HEALTH AND ENVIRONMENT PROTECTION REQUIREMENTS SET BY THE KEY EXPORT MARKETS OF VIETNAM**

Along with change in the structure of world supply, the residue limits of chemicals imposed by some importing countries on leather and footwear products have become more rigorous. Nowadays all international famous businesses seeking for leather and footwear products suppliers from developing countries are concerned about not only prices but also the warranty to meet environmental standard requirements.

The approval by importing countries of residue limits of chemicals concerning leather and leather products has increased pressure on the leather industry of developing countries. The limitations relate to chemicals such as formaldehyde, cadmium, some azo dye-stuffs, pentachloride phenol and hexavalent chrome (chrome VI). The most affected countries by these limitations are those which concentrate on leather tanning and finishing such as Argentina, Brazil, China, India, Pakistan and Turkey.

The leather tanning is an input-intensive industry. Raw material (mainly hide) accounts for 50 – 60 % of production cost, and chemicals about 30% (IPTS, 2001). This industry is also a pollution-intensive one. About 90% of leather is tanned with chrome salts; most hazardous is chrome VI residue in leather products. Formaldehyde is popularly used for tanning and finishing leather. Phenol chlorinated, PCP for example, and Azo dye-stuffs are also popularly used in tanneries. Any of those chemicals – most of them are carcinogenic - may be left as residue in finished products

## 1. OECD requirements

Since the beginning of 70s several OECD member countries have adopted measure to limit chemical residues mentioned above in consumers' goods (such as toys, textile, garment, footwear and other leather products). The purpose of those limitations is to protect consumers from the uptake of the harmful chemicals through skin (or through oral way in case of children); some laws also regulates the discharge of heavy metals into environment when the products are disposed at the end of their life cycle (by incineration, for example).

### *Restricted substances in garment and leather products*

The following tables present basic information on substances/ categories of substances included in the restricted substances list . The tables contain a general description of the chemicals that may be found in garment and leather products and their link to health and environment. The information is supplied for general study.

### *Limitation of chemical residue limits in leather products imported to OECD member countries*

Chemicals	Imposing country	Leather	Limits <sup>1</sup>
Pentachlorophenol (PCP)	EU <sup>2</sup>	All types	5 – 1000 ppm <sup>3</sup>
Cadmium (Cd)	EU	All types	75 – 100 ppm <sup>3</sup>
Azo dye-stuffs	Austria, Germany, Netherlands and Norway	All types	30 ppm
Chrome VI (Cr)	Germany	All types	3 ppm
Formaldehyde	Japan, South Korea and some European countries	All types <sup>5</sup>	15 –1000 ppm <sup>6</sup>

**Source: CAC (1991a, 1991b)**

<sup>1</sup> Limits of chrome and azo dye-stuffs in most of cases correspond to detectable quantity in practice

<sup>2</sup> The limits are also applied to countries outside EU

<sup>3</sup> Some EU member countries apply lower limits

<sup>4</sup> Azo dye-stuffs can create 1 – 20 aromatic amines. Limits depend on amount of amines

<sup>5</sup>Textile, footwear, watch strap, furniture...

<sup>6</sup>Varying from case to case and depending on use level (the lowest limit applies to goods for children under two years old, the highest limit applies to clothes for adults)

***List of chemicals with restricted use in leather and footwear products industry***

<b>Azo dye-stuffs (that degrade to form carcinogenic amines)</b>	
Description	Azo dye-stuffs are compounds with one or many azo groups and aromatic compounds. There are thousands of azo dye-stuff types but few of them can cause cancer when decayed
Available in	Textile and garment. The azo dye-stuffs that can form carcinogenic amines are also available in dyed fiber and leather
Reason of the concern	The azo dye-stuffs may decay and form one of the carcinogenic amines

<b>Sensible chromato-dispersive dye-stuffs</b>	
Description	Chromato-dispersive dye-stuffs are soluble in water. They are listed because they are suspicious to be carcinogenic
Available in	Textile, garment (polyester, acetate and polyamide)
Reason of the concern	The dye-stuffs are considered sensible and may cause allergy

<b>Formaldehyde</b>	
Description	Formaldehyde is a volatile compound commonly used in manufacture of textile and garment products, leather and footwear products as anti-shrinking and anti-wrinkling agent. It is moreover usually used in plastic polimer (phenol- formaldehyde and urea-formaldehyde)
Available in	Textile, garment products, leather and footwear products Formaldehyde can be available in artificial hard fiber. As formaldehyde is a volatile compound it can cause poisoning through inhaling
Reason of the concern	Formaldehyde is suspicious to be carcinogenic. It can moreover cause itches

concern	and allergic reaction
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<b>Pentachlortophenol (PCP)</b>	
Description	PCP is an antiseptic compound used for preserving wood, textile and garment products, leather products
Available in	PCP is used as anti-fungus agent for textile and garment products, leather products and some types of wood
Reason of the concern	PCP left in the environment is harmful to human health and can poison water environment. Low quality products containing PCP can produce strong toxic substances

<b>Mercury</b>	
Description	Mercury exists as a liquid metal in nature, as a gas when heated and in solid state in organic and anorganic compounds
Available in	Fabric, garment
Reason of the concern	Mercury and its compounds affect the central nervous system, including great brain. Some mercury compounds can easily convert into carcinogenic substance
<i>Cadmium</i>	
Description	Cadmium exists as a metal in nature. It has high corrosion-proof and is popularly used for dyeing, coating metal, for plastic as heat-proof agent, and for manufacture of film and battery
Available in	Textile, garment. Cadmium may be associated with dye-stuffs for plastic (particularly in red, orange, yellow, green ones) and used in metal coating.
Reason of the concern	Cadmium and its compounds are considered as carcinogenic agents

<b>Lead</b>	
Description	Lead exists as a metal in nature. It plays an important role in production of

	battery, fuel, paint, plastic (as heat-proof factor), ceramics, pottery, and can be used for sealing, coating and welding
Available in	Fabric, garment, leather and footwear products. Lead may be associated with dye-stuffs, plastics, paint, ink and metal components.
Reason of the concern	Lead and its compounds can easily become carcinogenic. In addition, lead may affect the central nervous system (especially for children), kidney and immune system

<b>Chrome VI</b>	
Description	Chrome is a metal existing in nature under the forms of non-valent, III-valent and VI-valent chrome. In fact, chrome exists mainly in form of III-valent; the non-valent and VI-valent forms are hardly found in nature
Available in	Textile, garment, leather and footwear products. Chrome may be associated with dye-stuffs, plastics, and leather.
Reason of the concern	VI-valent chrome compounds are considered as carcinogenic substances. They may affect the skin and cause allergy

## 2. EU requirements

### *EU leather footwear import volume*

	1996 (1000 pairs)	1997 (1000 pairs)	1998 (1000 pairs)	1999 (1000 pairs)	Import share (1998)	1999 import share (%)
World	804.415	806.130	813.294	904.480	100.0%	100.0%
China	338.086	265.435	271.987	301.986	33.4%	33.4%
Vietnam	96.993	136.462	146.801	176.337	18.1%	19.5%
Indonesia	99.792	84.807	66.975	63.718	8.2%	7.0%
Taiwan, Province of China	22.027	35.531	37.721	44.080	4.6%	4.9%

Source: <http://eroupa.eu.int/comm/enterprise/footwear/trade.htm>

## ***Regulations***

Regulations on using chemicals in leather and footwear production inside EU have been issued according to Committee Instruction 76/769/EEC and amendment. However EU member countries usually impose limitations stricter than those of common Regulations. In some cases EU regulations are set up on the basis of member countries regulation. The Schedule below presents a summary of regulations the most proper to leather products. Cadmium is not used for leather processing but it may be present in dye-stuffs.

The chemical residue in leather products is regulated by four EU Instructions. Instruction on water environment (CEC, 1976a) and amendment, Instruction on control and prevention of pollution (CAC, 1996) related to chemicals in crude leather or wet-blue leather, for example used for protecting animals against epidemic or for preservation of hides. Committee Instruction 88/378/EEC (CEC 1998) specified that maximum level of chrome extracted from the leather used for toys is 60 ppm. Committee Instruction 88/378/EEC (CEC 2000) stipulated that the leather in vehicles put on the market after June 1, 2003 shall not contain Chrome VI or Cadmium. There are no detailed limitations of Chrome VI, however the limitations of Germany are accepted by industries.

Beside the limitations mentioned above 12 schedules of ecological labeling have been established, including criteria for leather and leather products (Frendrup, 2001). 10 of the said schedules are related with processing and production methods and product specifications; 7 schedules have been established by EU, EU member, or EU agencies; 2 schedules have been established by international agencies; 3 schedules established by other countries (Brazil, India, Indonesia)

Requirements on “green consumption” also affect the market. According to a law of Denmark, Government agencies are liable for environmental aspects of purchase policy, for instance instruction on “ecological purchase” of leather products. Products compliant to ecological labeling schedules, suppliers compliant to EMAS (Ecological Management and Assessment Schedule) or having ISO14000 are accepted (Frendrup, 2001)

Chemicals	Limits	Legislation	Test method
Azo dyes <sup>1</sup>	30 ppm	Legal right:	Fabric, garment:
4-Aminodiphenyl Benzidine <sup>1</sup>	30 ppm	Germany <sup>2</sup>	LMBG 82.02-2
4-Chloro-o-Toluidine	30 ppm	Law: Germany Law 4 <sup>th</sup>	Fabric, garment made
2-Naphthylamine <sup>1</sup>	30 ppm	revision on goods	of polyester:
Aminoazotoluene	30 ppm	July 27, 1995	LMBG 82.02-4
2-Amino-4-nitrotoluene	30 ppm		
2,4 Diaminoanisole	30 ppm	Germany Law 5 <sup>th</sup> rev.	Leather products:
4,4 Diaminodiphenyl- methane	30 ppm	on goods	LMBG 82.02-3
3,3-Dichlorobenzidine	30 ppm	1997 (pages 796-800)	
3,3-Dimethoxybenzidine (o- Dianisidine)	30 ppm	Law in force:	
3,3-Dimethylbenzidine (o- Toluidine)	30 ppm	From January 4, 1996	
3,3-Dimethyl-4, 4- Diaminodiphenylmethane	30 ppm		
p-Chloroaniline	30 ppm		
p-Cresidine	30 ppm		
4,4-Methylen-bis-(2- Chloroaniline)	30 ppm		
4,4-Oxydianiline	30 ppm		
4,4-Thiodianiline	30 ppm		
2,4-Toluediamine o- Toluidine	30 ppm		
2,4,5-Trimethylaniline	30 ppm		
O-Anisidine <sup>2</sup>			
p-Amino-axobenzene			

The limitation of azo dye-stuff adopted for the last time by EU (Annexes 76/769/EEC (89/677/EEC), (94/60/EC) and (97/10/EC)) set a limit of 30 ppm for the said azo dye-stuff.

<sup>1</sup>The limits of 30 ppm for the top 20 azo dye-stuffs and o-Anisidine have been adopted by EU [Proposal of Instruction amendment draft by European Parliament and Nineteenth Amendment of Committee Instruction No 76/769/EEC related to marketing and usage of certain hazardous stuff (azo dye-stuffs), in force from January 7, 2002]. The application scope of the regulation is EU member countries. P-Aminoazobenzene is not included in the Regulation because a suitable test methods for these amines has not been established.

Chemicals	Limits	Legislation	Test method
<i>Sensible chromato-dispersive dye-stuffs</i>	Unspecified	Legal right: Germany	DIN NMP 512 WD
Blue dispersive 1	Unspecified	Law: Section 30,	Collecting test
Blue dispersive 35	Unspecified	Law on goods and	sample of
Blue dispersive 106	Unspecified	foodstuff (chromato-	dispersive dye-
Blue dispersive 124	Unspecified	dispersive dye-stuffs)	stuffs (Limit: 5
Red dispersive 1	Unspecified		mg/liter of
Orange dispersive 3	Unspecified	Law in force from:	extraction)
Orange dispersive 37/76	Unspecified	December 31, 1994	
Yellow dispersive 3	Unspecified		

Chemicals	Limits	Legislation	Test method
Fixatives	Unspecified	Legal right: EU	Experimental. Limit: 5 mg/kg <sup>5</sup>
Tri-(2,3-dibromopropyl)-phosphate (TRIS) <sup>3</sup>	Unspecified	Law: Proposal for inclusion of	Analyzing
Polybromodiphenyls (PBB) <sup>3</sup>	Unspecified	Instruction No	Methanol by LC-
Tris-(azirindinyl)-phosphineoxide or (TEPA) <sup>3</sup>		76/796/EEC in	MS
		European Parliament	

phosphineoxide or (TEPA) <sup>3</sup>	Unspecified	Instruction, and 24 <sup>th</sup> amendment of Committee	Analyzing Methanol by LC-MS
Pentabromodiphenyl ether (PBDE) <sup>3</sup>	Unspecified		Analyzing Methanol by GC-MS
Octabromodiphenyl ether (OctaBDE) <sup>3</sup>	Unspecified	Law in force from: December 31, 1994	Solvent extraction and analyzing by GC-MS or LS-MS
Bis (2,3-dibromopropyl)phosphate <sup>4</sup>	Unspecified		Solvent extraction and analyzing by GC-MS or LS-MS

<sup>2</sup> This limitation is based on amended law of EU, instruction No 76/796/EEC. The amendment to TRIS was included in the Instruction No 79/663/EEC dated July 24, 1979; The amendments to TEPA and PBB were included in the Instruction No 83/264/EEC dated March 16, 1973

<sup>3</sup> The limitation is from the Japanese Law on household appliance containing harmful chemicals (Law No 112, dated October 12, 1973)

<sup>4</sup> The test method for fixatives may come in force in late 2002.

Chemical	Permissible limit	Legislation	Test method
Formaldehyde <sup>6</sup>	<b>30 ppm</b>	<b>legal right:</b> Norway/ Finland	ISO 14184-1 or JISL1041
For children's clothing (up to 2 years old): underwear,	100 ppm	<b>Law:</b> <i>Norway:</i> Regulation related to requirements on chemicals and textile chemicals -April 8, 1999	
For adults' clothing not in direct			

contact with skin, such as outer wear <sup>7</sup>	300 ppm	1999 <i>Finland:</i> Decision of Ministry of Commerce and Industry on formaldehyde maximum content in textile, garment, leather, and footwear, issued at Helsingfors on November 18, 1986 <b>These rules came into force from:</b> April 8, 1999 for Norway April 1 <sup>st</sup> , 1988 for Finland	
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<sup>6</sup> This limit is based on Norway and Finland law; any company which wants to sell goods to Japan should know that the content limit of this chemical in clothes in direct contact with skin is 20 ppm [Japanese Law on controlling household appliance containing hazardous substance: Law N<sup>o</sup> 122 dated October 12, 1973, partly modified in 1978 and 1981, coming into force on December 10, 1975.]

<sup>7</sup> This limit is based on Norway and Finland law; any company which wants to sell goods to Japan should know that the content limit of this chemical in clothes in direct contact with skin is 75 ppm [Japanese Law on controlling household appliance containing hazardous substance: Law N<sup>o</sup> 122 dated October 12, 1973, partly modified in 1978 and 1981, coming into force on December 10, 1975].

Chemical	Permissible limit	Legislation	Test method
Pentachlorophenol (PCP) PCP salt and ester <sup>8</sup>	5 ppm	Legal right: Germany	Reference method for textile and

		<p><b>Law:</b> law on chemical dated October 14,1993</p> <p>Federal law of 1993, part I, pages 1720 to 1773; part III 8053-6-20</p> <p><b>In force from:</b> October 14, 1993</p>	<p>textile and leather products: LMBG</p> <p>B82.02-8</p> <p>June 2001</p>
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<sup>8</sup> If test method noted in right column is applied, it will check content of PCP salt and ester.

<b>Chemical</b>	<b>permissible limit</b>	<b>Legislation</b>	<b>Test method</b>
Metals in apparent trim <sup>9</sup>			
Cadmium	75 ppm	<p><b>legal right:</b></p> <p>European Union</p> <p><b>Law:</b> EU EN 71: part III</p> <p><b>Law currently in force</b></p>	<p>Total metal content tested by microwave burning and ICP analysis or by solvent extraction according to EN71: part III</p>
Lead	90 ppm		
Mercury	60 ppm		
Total chrome	60 ppm		
Antimony	60 ppm		
Arsenic	25 ppm		
Barium	1000 ppm		
Selenium	500 ppm		
Cadmium		<b>Legal right:</b>	<p>Total metal content tested by microwave burning and ICP analysis</p>
Cadmium in plastic and PCV	75 ppm	<p><b>Denmark<sup>10</sup></b></p> <p>Law promulgated by ordinance N<sup>o</sup> 1199 dated December 23, 1992 on prohibition of sale, import and production of</p>	

Cadmium in surface coatings of apparent trim <sup>9</sup>	75ppm	cadmium containing products. <b>In force from:</b> <b>January 1<sup>st</sup>, 1993</b>	ASTM E1645-01; ASTM E1613-99
Chrome VI in textile and leather	<b>Unspecified</b>	<b>Legal right:</b> Germany <b>Law:</b> Section 30 -law on commodities and foodstuff <b>In force from:</b> January 1 <sup>st</sup> , 1996	DIN 53314; C18- Filtration and reanalysis of positive results [with testing method limit of 3 ppm].

<sup>9</sup> Clothing accessories include button, fastener, clamp.

<sup>10</sup> European Union legislation limits cadmium content in plastic dye-stuff and surface coating within 100 ppm [Amendment of instruction 76/769/EEC dated June 18, 1991 and instruction 91/338/EEC]

### 3. Requirements of USA

#### 3.1 Statutory regulation

- Federal law on water pollution
- federal act on hazardous waste (FHSA).
- Act on legal responsibility for response to and compensation of common environment. (CERCLA)
- Clean air act (CAA)
- Clean water act
- Resource Conservation and Restoration Act.
- Consumer Protection Act

#### ***Detailed requirements:***

*Cadmium and cadmium compounds* [ CAS reg. N<sup>o</sup> 7440-43-9]

1998 report on discharge of hazardous gas into air environment at Great Lakes area in 1993 has assessed cadmium discharge source as follows: secondary non-ferrous metal (69%), power generating equipment (6%), metal coatings and concerned services (4%), other sources (21%). The said cadmium discharge into air in the USA has been mentioned in the draft of statistical analysis prepared by EPA in 1999 autumn. The discharge of this substance to underground and surface water is caused by industrial equipment, waste water treatment plant and leakage from land fill. There are many federal instructions on cadmium relating to drinking water source, in which cadmium waste discharge must be treated and stored. According to RCRA requirements, with this property, cadmium must be treated as hazardous waste, and must be treated before disposal. Incineration of cadmium waste is not specified ; metallic waste and batteries containing cadmium can be recycled.

*Pentachlorophenol:* PCP is currently in very common use [CAS reg.N<sup>o</sup> 87-86-5]

PCP is listed as a hazardous air polluting agent in Clean Air Act. Using standards require leakage measuring equipment for volatile organic compounds (VOC) in synthetic organic compounds manufacturing industry (SOCMI) which creates chlorophenols (40 CFR 60.489). PCP is considered as an air pollutant in Clean Water Act and therefore must be strictly limited (40 CRF 401.15). In federal law on water pollution, section 311 (b) (2) (A), it is also considered a harmful agent. Water quality Standard accepts a content limit of 30 Mg/L. According to CERCLA, PCP is considered a harmful substance and any discharge of over 10 pounds must be reported to National Reaction Center. As required by RCRA, with such property, PCP must be managed as harmful discharge. Any formula with tri, tetra, pentachlorophenol bond must be excluded; in the same way any formula of compounds derived from the said chlorophenols must be excluded as well. PCP must be managed in compliance with state/ federal requirements on hazardous waste. PCP has properties linked with cancer, gene mutation, congenital deformation that are mentioned in FIFRA act. Some of applications already registered will be therefore cancelled (such as application of PCP in refrigerating tubes, in pulp factory and oil mine).

## *Formaldehyde*

**Section 1500.13, part 2 (k)** of Consumer Protection Act (repeated in section 1500.3 (b) (9) stipulates that Formaldehyde and products containing 1% or more formaldehyde , are substances listed among “very sensitive substances”.

**The US 16 CFR 1303 law on Prohibition of consumer goods and paints containing lead** stipulates that lead available on surface of textile products must not exceed 600 ppm (This limit is based on USA legislation; any company that wants to sell goods to Denmark should know that in this country the lead limit is 100 ppm for all types of commodities).

## *Chrome*

Chrome sulphate is widely used in the tanning industry. In the US, the tanning sector consumes a great quantity of inorganic Chrome compounds. Chrome in the form of oxyde VI is defined by EPA as toxic chemical among 17 “strongly toxic substances” harmful to people health. Hexavalent chrome (ChromeVI) is available in ammonium dichromate, chromic acid, sodium dichromate, sodium chromate and potassium dichromate. Acute symptoms of skin infection include itches and appearance of mucosa. Penetrating into the digestive system, these substances may cause internal injuries, even death. Frequent inhalation of these substances may cause ulceration of the inside nose. Chrome provokes gene mutation as well as cancer and is listed among carcinogenic agents of A class. In the Act on legal responsibility for response to and compensation of common environment (CERCLA), all chrome compounds are toxic. In the list of chrome and chrome compounds, EPA has specified in detail that chrome available in water supplied by public network must not exceed 0.05 milligram/litre. According to the Resource Conservation and Restoration Act provisions about disposal of hazardous waste, chrome waste is also considered hazardous.

**Section 1500.14, part 3(b)** of Consumer Protection Act stipulates that products related to the said substances must have special labels.

## ***3.2. Other voluntary operations and trends***

Research programs on cadmium include: IADN control, statistical project on discharge of hazardous waste into air of Great area, national research on chemical residue in fishes, discharge of hazardous waste into air of urban areas, an EPA program.

### *Checking operations*

In a specific material, some substances among that of limited use can be detected easier than other ones. In order to ensure that checking operations can be implemented to suitable substances and with reasonable cost, some companies has carried out checking operations following an appropriate order. Checking packages are specified in order to instruct laboratory on the check purpose and time, on a periodical basis for such substances which are easiest to find in a specific material. The check will be less regular for other substances. Below are substances that retailers often check, more or less frequently, according to specific material.

### *Leather*

Regular check: heavy metals, chrome VI, formaldehyde, Azo dyestuff, sensitive chromato-dispersive dye-stuff.

Non-regular check: PCP

## **4. Requirements of Japan**

The Japanese law controls very rigorously domestic production enterprises, through legal instruments on environment and chemicals used in production.

Regarding to regulation on chemicals, below are 2 Japanese legal documents most recently issued.

1. Law concerning Reporting, etc of releases to the Environment of Specific Chemical Substances and Promoting Improvements in their Management (Law N<sup>o</sup>86 of 1999, promulgated on July 13, 2003)
2. Cabinet Order for Law Concerning reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvement in their Management (Cabinet Order N<sup>o</sup> 138 on March 29, 2000).

These 2 documents aim at encouraging all enterprises to voluntarily improve the management of chemicals in use or for exchange. Enterprises governed by regulation in

these 2 documents belong to specified industries (23 industries), which exclude the sector of leather and footwear. Chemicals in use or for exchange in such enterprises, are divided into 2 classes:

1. Class I designated chemical substances include 354 chemicals
2. Class II designated chemical substances include 81 chemicals.

Moreover, products manufactured in Japan and imported from other countries must comply with MSDS Regulation (Material Safety Data Sheet) on providing information about products, including environmental and health information.

- Name of chemicals (to be reported according to regulation) available in product.
- Necessary handling measures when any chemical leaks or catches fire.
- Level of toxicity and volatility.
- Stability and chemical reaction.
- Information on environmental affect (if any), including:
  - Ecological toxicity
  - Biodegradability, transferability in the environment, accumulation in plant or animal life.
  - Environmental standards applied to the chemical.

However, Japan has no explicit instruction on environmental requirements for imported leather and footwear, especially no requirement on consumer health as well as on environmental affect at disposal of the product.

## **5. Requirements of Russia**

Russia had very large imports of footwear in early 1990s, then they were reduced to US\$ 550 million in 1994, US\$ 450 million in 1995, US\$ 400 million in 1996, more than US\$ 200 million in 1997 and less than US\$ 100 million in two years 1998 and 1999. Recently the demand for imported footwear tended towards an increase, but will not come close to the level of early 1990s.

The Russian footwear market is characterized by the fact that people consume mainly goods manufactured by Russia. Therefore imported as well as exported quantity are both small.

Environmental requirements of Russia for footwear are almost unavailable. Regulation on environmental aspects is focused only on domestic manufacturing processes. Regulation concerning polluting factors of goods have not been issued yet.

### ***5.1. Available regulation***

- Law on Environment of Russia N<sup>o</sup> 167 November 16, 1995
- Law on waste discharge- June 1998
- Law on protection of air environment-July 14,1982
- Law on protection of environment-December 19,1991 N<sup>o</sup> 2060-1 (ed. June 20,93 N<sup>o</sup> 5076-1)

### ***5.2. Standards***

By now, no standard nor ecological label of Russia is destined for leather products. However chemicals used in leather tanning and finishing are regulated and restricted in the following documents:

- Procedure of assessment and compensation of emergency environmental damage - Order of Russian Ministry of Environment on June 27,1994, N<sup>o</sup> 200.
- Instructions concerning discharge of harmful waste on ground surface (modified in 1997).
- Sanitation methods for concentrated liquid waste and solid waste in different types of enterprise - Ministry of Health service, Kemerovo, 1984.
- Standards concerning toxic compounds in industrial waste and their danger- Ministry of Health Service, 1984.
- Methods of controlling the protection against poisoning by industrial waste- Ministry of Health Service, 1985.
- Temporary classification of harmful industrial waste and danger identifying methods. Ministry of Health Service 1987.

- Methods of identifying different movements of metals (Copper, lead, zinc, nickel, cadmium, cobalt, chrome, manganese) assessed in soil samples (according to the weight) by method of atomic absorption analysis N<sup>o</sup> 52.18.289-90,1990.
- Methods of identifying different dissolution of metals (copper, lead, zinc, nickel, cadmium, cobalt, chrome, manganese) assessed in soil sample (according to the weight) by method of atomic absorption analysis N<sup>o</sup> 52.18.289-90,1990.

### ***5.3. Other voluntary activities and trends***

The project of sustainable cooperation between ECOLOGIA (USA) and Ecoline (Russia) in 2000 aims at a sustainable development in F.R. of Russia through encouraging the community to take part in making decision on modern environment management on the basis of studies of access to internationally recognized environment management system.

## **PART II**

### **INFORMATION MANAGEMENT AND ITS EFFICIENCY**

#### **I. AWARENESS OF DOMESTIC PRODUCERS ON ENVIRONMENTAL AND HEALTH REQUIREMENTS**

Vietnam leather and footwear industry is made up of 2 main parts: 1- manufacturers of tanned leather and 2- manufacturers of footwear and leather products.

The leather tanning sector has been set up and developed very early, since the first decades of 20<sup>th</sup> century, in order to meet consumers' demand and for other purposes such as industrial and national defense use.

Footwear manufacturing sector at industrial scale has been developed only since the middle of the last century and has made a leap in its growth in the last decade, thus ranking Vietnam among 10 leading countries of the world in manufacture and export of footwear.

##### **1. Tanned leather manufacturers**

Before 1988-1990, the Vietnamese economy had almost no foreign economic relationship with developed countries in western Europe, Northern America and North-Eastern Asia. Therefore awareness of domestic tanned leather manufacturers was much limited regarding health and environmental requirements, even in many simple cases, not to mention requirements of the export market. Typically, tanned leather manufacturers used to apply Chromic tanning solution prepared by themselves from dichromate, but without determination of chromate residue (Cr+6) in tanning solution before use; or to apply directly Phenol as mold-proof substance for exported wet-blue leather (1987-88).

Since Leather and shoes Research Institute was entrusted with VIE 85/013 project of strengthening research capacity on leather tanning, financed by UNDP and UNIDO (1989-92), Vietnam tanned leather manufacturers have started accessing to new technology, new chemicals as well as increasing awareness of new requirements on health and environment of developed countries regarding leather tanning industry, through short term training course and practice at NCDG Institute conducted by project experts.

Many important changes have been recorded in leather tanning units, such as:

- The use of imported standardized, chromic tanning substance under powder form.
- The use of preventol WB mold- proof agent (from Bayer firm) for wet-blue leather, as Phenol or PCP substitute.
- In recent years, the use of Azo dye-stuff has been prohibited for textile and leather industry, because it can release aromatic amines which are carcinogenic agents, as reported on specialized reviews. However, enterprises are not able to measure and analyse these dye-stuffs in tanned leather products.
- In leather tanning finishing operation, many aqueous dressing substances are used by many tanning units as substitute for formerly used solvents.

Environmental requirements toward leather tanning industry have also been introduced by international organizations and foreign countries which have provided assistance on their application in Vietnam, e.g. project VIE 85/013, and the project of EU and Italian tanned leather manufacturer association (EU-UNIC in 2000-2002). This has resulted in:

- Some waste water treatment facilities at state owned establishments (Leather and Shoes Research Institute, Hanoi Leather and Footwear Company, Saigon Leather Company; Tay Do Leather company), have been constructed with different treatment levels.
- Standards of treated waste water, standards on discharge of hazardous chemicals and solvents, requirements on rational use of water supply and power supply during tanning process, all have been introduced through workshops and through diffused publications.

Although the environmental requirements related to tanned leather products have been presented in many workshops and training sessions held by international organizations and domestic environment management agencies, it needs to be stressed that awareness of domestic tanned leather manufacturers about requirements of main export markets on people's health and environment, still is at low level, and practical production still lacks efficient measures for meeting these requirements

This situation can be explained by the following reasons

- Awareness of leather and footwear enterprises on the influence of their industrial waste on environment and community health is rather low.
- The effect of the Law on Environmental Protection, through activities of local environmental authorities, is weak.
- There is a lack of support from central and local administration in the relocation of leather tanning units treatment facilities.
- There is some governmental control of production-related environmental and occupational effects, but general enforcement of the laws and punishment of violations are weak.

## **2. Manufacturers of footwear and leather products:**

At present, throughout the country there are nearly 200 domestic manufacturers of footwear and leather products (not including joint enterprises with foreign capital). Most of these units were founded for taking over the footwear manufacture transferred from their partners in South Korea, Taiwan, Hong Kong... Therefore enterprise owners have rapidly learned from their partners requirements on health and environment of export markets.

### ***For canvas shoes production:***

Canvas shoes producers have understood following issues:

- Some Azo dye-stuffs are prohibited when canvas are used for making shoe uppers
- Selection of some additives (accelerator, accelerator aid...) for the vulcanization of rubber parts in Canvas shoes, so that toxic compounds type N-nitro samine are not created.
- Use of closed machine systems for the treatment of rubber, and other technical solutions in order to reduce the diffusion of additive powder in working space and surrounding areas.

### ***Production of leather shoes, sport shoes and imitation leather shoes:***

- In the production of material for shoe sole, beside natural rubber as in case of canvas shoes, other materials such as TPR/TPE (soft plastic rubber), EVA, PU are processed from synthetic material.

In particular, the production of PU sole often starts from primary components, of which Polyisocyanate is a very toxic agent, with very small permissible maximum diffusion limit ( $0.02\text{mg}/\text{m}^3$  air) Solidifying agent in two-component colloidal system is also a polyisocyanate chemical.

- In all processing operations of the above types of shoes, many chemical and organic solvents harmful to peoples' health and to environment must be used. Starting from shoe upper glueing operation, through toecap fixing (using latex glue, solvent glue, plastic activating solvent) shoe upper preparation with imitation leather, preparation of sole material (using solvent and chemical for surface treatment of upper and sole, fixing shoe upper to shoe sole (using solvent, solidifying agent) up to finishing operations for shoe sole, heel, cleaning finished product (dressing substance, cleaning solvent), the workers must constantly face with these harmful chemicals.

Recently the project "Vietnam Footwear Industry Business Links Initiative" set up by "The Prince of Wales Business Leaders Forum" have built up, together with the Vietnam Leather and Footwear Association and experts, documents on the use and reduction of production effects, and have organized many training sessions for managerial cadres of enterprises over the country.

### ***General assessment***

Over more than the past ten years, in the context of Vietnam economy first step of integration into regional and international economy, thanks to assistance given by many international organizations and foreign countries, domestic manufacturers of leather and footwear industry have noticeably raised their awareness on health and environmental requirements related to this sector. However, due to different reasons, the transformation of awareness into action in practical production is very limited. These shortcomings, if not in time to be overcome, will certainly cause disadvantages to the long-term sustainable development of Vietnam leather and footwear industry.

## **II. EXISTING ENVIRONMENT MANAGEMENT MECHANISM IN VIETNAM**

### **1. Policies:**

In the implementation of Renovation strategy, the Vietnam Government has applied a lot of important policies and measures to push up the economic development. The Vietnam communist Party's IX<sup>th</sup> congress has affirmed that the target of the party and the Government is to make the country become an industrial one by 2020. The industrialization and modernization will push up the growth of the national economy but they are closely linked with some environmental issues such as the over exploitation of natural resources, pollution and environmental degradation. Therefore, to cope with these issues, Vietnam has applied a lot of policies related to environmental protection such as:

- Strategy for socio-economic development up to 2010;
- National strategy for eradication of hunger and alleviation of poverty;
- Strategy for environmental protection up to 2010 and orientation for 2020.
- Some strategies for development of industry, agriculture and other sectors.
- Program for flood control and reduction of damage caused by natural calamities of the Ministry of Agriculture and Rural Development;
- Program for use of waste lands, alluvial lands along the rivers and sea coast, and water surface in the plain areas (following Instruction No 773/TTg dated 21-12-1994 of the Prime Minister);
- National orientation for development of water supply in urban areas up to 2020 (following Decision No 63/1998/QĐ-TTg dated 18-3-1998 of the Prime Minister);
- Orientation for development of drainage system in urban areas up to 2020, approved by the Prime Minister's through Instruction No 35/1999;
- Program of protection of water sources and fortification of irrigation and drainage canals.

### **2. Mechanism of environment management:**

The mechanism of environment management is under the leadership of the Ministry of Natural Resources and Environment. Three departments of this Ministry are directly concerned with environmental protection, namely: the Vietnam Environment Protection

Agency (EPA), the Environment Department and the Department of Environmental Impact Appraisal and Assessment.

The EPA manages and implements environmental projects and environmental studies. The Environment Department is responsible for the development and formulation of plans, policies, and regulations on environmental management. The Department of Environmental Impact Appraisal and Assessment manages and implements activities related to the assessment of environmental impacts.

### ***Effectiveness of management mechanisms at national and sub-regional levels***

The present management mechanisms have some constraints due to following reasons:

- The regulatory provisions on waste management are not coherent enough; most of provisions are general; specific methods of waste water treatment are not specified yet.
- Lack of a comprehensive set of laws or regulations on waste management, where as many legal rules on this matter remain overlapping.
- The implementation of regulations on waste management is not effective.
- The management of hazardous waste represents an urgent issue, but the permissible pollution degrees have not been clearly defined and effectively implemented;
- Incentive policies have been issued, but lack coherence, concrete details and attractiveness.
- The law on chemical safety is still absent.
- Lack of strategy and orientation for development of the healthy air environment and for air pollution control.
- Lack of many legal documents such as laws on management of air quality, water quality, on the control of air pollution and gaseous waste emission and regulation on controlling air composition and air pollutants;;
- Lack of guiding provision for working environment to protect workers' health.

- Provision and implementing rules for ecological labeling, environmental auditing, fees and taxes for environmental pollution and exploitation have not yet been approved.

***Environmental impact assessment (EIA):***

- In 1994, the Ministry of science, Technology and Environment established a body responsible for assessment of environmental impacts within the National Department of Environment. This body is responsible for assessing important projects, the projects of Group A (following the classification specified by Decision 175/CP.);
- Similarly, the Departments of Science, Technology and Environment of cities and provinces can fulfil the same function for the projects of Group B and C. However, a lot of important projects in Vietnam, such as the projects of urban development or regional development, have been approved without clearance by the bodies responsible for EIA. In some cases, the environmental impact assessment is done after the completion of construction work.

Many provinces do not fully comply with regulation on environmental impact assessment; in many cases, the Provincial People's Committees approve projects without any reference to the Department of Science, Technology and Environment.

No strategic or sectional EIA has been conducted in spite of the fact that the Government has recognized that environmental impact assessment must be applied not only for specific projects, but also as an overall strategy for development of the regions, cities and provinces.

Poor national EIA information base: there is no national comprehensive data-base on environmental impact assessment reports at provincial level throughout the country or on substantive issues stated in these reports.

Too many legal documents are available for guiding the implementation of provisions on environmental assessment, which may lead to misunderstanding during compliance with the law.

There is no provision on particular subjects that must be implemented for establishing EIA reports.

***Impact on human health:***

- Except the Law on People Health Care with many general provisions, Vietnam lacks legal documents for regulating the impacts of environmental pollution on occupational diseases.
- The regulatory provisions on working environment standards for particular industries, which may cause occupational diseases and affect human health, are not yet formulated.

**3. Major environmental legislation**

***3.1. Environmental Protection Law and By Law***

***Environmental Protection Law, approved on 27-12-1993***

On the management of wastes, this Law has comprehensive provisions, including encouraged activities, prohibited activities, responsibilities of individuals and organizations for technical equipment, import and export of wastes, hazardous wastes radioactive disposal, waste treatment, transport, land fill and dumping.

According to the Law, cleaner production, application of advanced technologies are encouraged; but specific methods to be used are not stipulated yet.

The Law has clearly and fully listed the activities which may cause dangerous pollution, but the items in the list are overlapping.

- *Decree No 175/ND-CP. dated 18-10-1994 of the Government guiding the implementation of the Environmental Protection Law.*

This Decree explains in detail the provisions of the Environmental Protection Law such as the responsibilities of different production units and business, organizations.

The detailed provisions of the Decree have made important contributions to the strengthening of legal power in environmental management.

- *Decree No 26-CP. dated 26-4-1996 promulgating the regulation on administrative punishment and reward in environmental protection activities.*

This is an important legal document for ensuring the respect of regulations on environmental protection. However, in reality, the fine imposed by the decree is rather insufficient, hence gives less effect on people.

- *Instruction No 29/1998/TTg dated 25-8-1998 on strengthening the management of plant protection chemicals and undecomposable organic substances.*
- *Decision No 155/1999/QD-TTg dated 16-7-1999 of the Prime Minister promulgating Regulations on the management of hazardous wastes.*
- *Decision No 82/2002/QD-TTg dated 26-6-2002 of the Prime Minister on the establishment, organization and activities of the Vietnam Environment Protection Fund.*
- *Decree No 67/2003/ND-CP. dated 13-6-2003 of the Government on environmental protection fees levied on emission of waste water.*

Formerly, the Ministry of Science, Technology and Environment has promulgated many regulations, circulars and instructions on the assessment of environmental impact, control of pollution, delivery and retrieval of certificates of compliance to environmental standards and other activities.

The People's committees of provinces and cities in the country have also promulgated regulations on environmental protection in their localities.

### **3.2. Civil Code and Penal Code:**

The Civil Code provides the obligations of the owners on environmental protection when they use, maintain and give up their property. It has also specified the obligations of all citizens and organizations in the compensation for damages caused by the pollution resulted from their activities.

The Chapter XXVII on environmental offences (Articles 182-191) has stipulated different forms of punishment, from non-custodial re-education to imprisonment, inflicted on offenders of air pollution, water pollution, land pollution, illegal import of technology machine, equipment, wastes and materials which fail to meet environmental protection standards.

### **3.3. Some other related legal documents:**

This law has created an important legal basis for the control of pollution and for an effective exploitation of water resources.

This law has concentrated on regulating economic aspects in the exploitation and use of water resources while environmental protection aspects have not been properly addressed.

### ***3.4. Environmental standards:***

The Ministry of Science Technology and Environment has issued the VN standards of industrial waste water (TCVN 5945-1995). These standards restrict the concentration of pollutants in waste water. Besides, the standards of surface water quality TCVN 5942-1995, the standards of underground water quality TCVN 5944-1995, the standards of coastal water quality TCVN 5943-1995 have also been promulgated.

Vietnam standards of air environment quality TCVN 5937-1995 and 5938-1995 have been published neither ?? (*Have they been published or not*).

Provisions for defining hazardous wastes and toxic chemicals have not been published as well.

Although the industrial standards are available, the environmental standards for each specific industry are still absent.

### ***3.5. Environmental inspection***

- The Environmental Protection Law has provided inspection and control over the implementation of laws and regulations on environmental protection.
- In order to improve the implementation of legal regulations on environmental protection in enterprises and other entities, the Ministry of Science, Technology and Environment has issued Circular No 1485/MTG dated December 12, 1994 guiding the organization, power and scope of activities of environmental inspection.
- Irregular control and inspection can be carried out to factories which are in operation.

However, there is a lack of collaboration between inspection bodies and a lack of measures and means for inspection activities.

### **III. EFFECTIVENESS OF INFORMATION MANAGEMENT**

#### **1. Current status of information management:**

At present, in Vietnam, there is not any mechanism or network which can connect functional sections of concerned ministries/sectors such as ministry of Trade, Ministry of Natural Resources and Environment, Ministry of Industry, Ministry of Health, the Vietnam chamber of Commerce and Industry... for systematically collecting, treating and broadcasting information on new and future requirements on environment and people's health of the main export markets. However some of these requirements in the leather and footwear industry have been learned by domestic manufacturers in different ways such as:

- Through the specialized magazines of leather and footwear industry and related industries such as textile and garment industry, rubber industry, plastic industry, chemical industry...
- Through the presentation of new chemicals recently studied and produced as substitute for the old chemicals of whose use is forbidden.
- Through the documents presented by foreign experts in international seminars or through investigation or development assistance projects in Vietnam.
- Through the participation of Vietnamese producers, businessmen, managers in international fairs and exhibitions.

*The said information from different markets, after being collected by the industry Association or the corporations of this sector, will be transmitted through specialized magazines and bulletins to all enterprises throughout the country. For important and urgent issues, the information can be communicated through seminars and workshops.*

Most of these pieces of information are not properly treated because they are passively gathered, and no conditions are available for a careful assessment and test.

## **2. Effectiveness of information management mechanism:**

Due to the lack of unified information management mechanism, the information on environmental and health requirements from major import markets often reach the enterprises with some delay, and in a scattered way, therefore has no impressive effects on enterprise production. This phenomenon mainly occurs in domestic leather enterprises of small and medium size, with their products mainly destined for local consumption and with only a very little quantity for in situ export.

As for shoe making factories, their products are mainly for export; therefore the heads of factories and contractors must constantly grasp the requirements of import markets in order to preserve market shares. However, the measures applied in production only aim to restrict the impacts of harmful chemicals, but not to eliminate them from the production process, i.e. an end-of-pipe approach.

## PART III

### ACCESSING TO NEW TRENDS

#### I. ANALYSIS OF CURRENT MODIFICATION TRENDS

At present, some trends of amendment to legal regulations on environment can be clearly seen in many countries. The following analysis may show some rough outline of the new approaches

The first trend reflects the inadequacy or incompatibility between national regulations and international practice. This trend reflects the diversity and the different levels of response to requirements of the markets. These constant changes directly concern the goods import and export of Vietnam. One can say that the regulation system of developed countries, including common regulation of a group of countries and that of each specific country, are very complicated. It is clear that in this context the access to the market of each country or group of countries must be gained by different way.

In the preceding parts, we have studied and identified the regulations/rules on environment and people's health related to the export to key international markets. These rules differ from one country to another and constantly change. For this reason, the early forecast of trends toward any change becomes very important for export activities. This will be a basis for the comparison with current regulations and for deciding access way to the common regulation and that of specific country.

The second trend has a wider space and concerns many fields, including the field of investment and finance. The evidence suggests that regulations on environment and people's health are not only related to goods import and export but also influence decisions on investment and finance. Banks in other countries show more and more a trend towards bonding the loans for investment to the ***certificates on environment and people's health***. The main purpose of these requirements is to reduce the risks in investment in case the borrowing enterprises are entangled with complications in environmental and people's health, thus directly influencing their financial viability. The enterprises which produce commodities for export must not only face with regulations of

international markets as mentioned above, but also financial problems linked to environmental and health regulations.

Because of the second trend, the fields to be re-adjusted are very wide. It is obvious that to secure the environmental issues (environmental licence), the enterprises must pay more attention to and invest more capital in their environmental solutions. They have not only to improve the levels of pollutant discharge but also to ensure the industrial safety and hygiene and to assume responsibility to the surrounding community. Besides, the re-adjustment at macro-level related to the development planning, the sector structure, the renewal of technologies and the management mechanism, is needed as well.

In the new situation of commercial competition, the background has now a lot of changes as compared with the past. The process of development of free trade and globalization tends toward abolishing usual customs and non-customs barriers for setting up barriers of regulations on environment and people's health instead. The difficulty is that these regulations are often linked to technological standards, mostly hi-tech ones. This really constitutes new barriers of high technologies that developed countries are imposing on developing countries.

The competition on the basis of technological gaps becomes one of major challenges for the development nowadays. In order to bridge the technological gaps between Vietnam and other countries, the Government has formulated the strategy for industrialization and modernization, "taking a short cut" for overcoming the present technological backwardness. But, in order to achieve this target, determination, time and significant investment are needed.

Besides, it is necessary to fully recognize that challenges and barriers are endless. Developed countries constantly search new plays by imposing more sophisticated regulations to create their highest advantage. For this reason, in the forums of globalization and that of the World Trade Organization (WTO), developing countries have to constantly fight for equality and abolishment of imposed competition between the countries. Vietnam, has contributed and continues to contribute its efforts in this struggle.

Another trend which has recently appeared is the introduction of extended producer responsibilities for their products, including their disposal already quite widespread in

Germany. Formerly enterprises had no more responsibility after the ex-work delivery of their products, but now they have to be "responsible to the bitter end" and must anticipate and contribute to the destruction of their products. The objective of the crafters of this trend is to lead manufacturers to minimize waste generation, and to reduce the expenses for treatment of waste. However, the concept of extended producer responsibilities seems to be too new for many enterprises, and certainly will cause many difficulties for re-adjustment in practice, especially in the production of export commodities of many developing countries.

The crucial point is that there are numerous participants and beneficiaries in the process of production and circulation of goods. According to the principle of equality of interests, the responsibility must also be equal; all beneficiaries from the products must share the charge with producers. But, what model will be applied in this transnational share, this still remains an assumption.

## **II. ACTIONS FOR COPING WITH REGULATIONS ON ENVIRONMENT AND HEALTH OF EXPORT MARKETS.**

On the basis of the analysis in the previous section, some actions for coping with these challenges and regulations may be designed.

### **1. Action 1: Improvement of enterprises' environment**

Pollution in leather and footwear industry at present mainly originates from the leather tanning sector. All tanneries of Vietnam, including big ones as Vinh tannery, Saigon tannery, and private tanning enterprises in Ho Chi Minh city, Pho Noi have no proper waste water treatment system, and these wastes are directly discharged into the cities' sewerage system. The volume of liquid waste at present is 80-100m<sup>3</sup> per ton of hide. According to data collected from the last surveys, the composition of waste water discharged from the tanneries is as follows:

### *Quality of waste water discharged from tanneries*

Parameter (mg/l)	pH	BOD <sup>5</sup>	COD	S <sup>2-</sup>	Cr <sup>3+</sup>	H <sub>2</sub> S (gaseous waste)
Surveyed data	11	500	1400	100	65	0.1
Permissible limit	6 - 7	80	200	1	2	0.01

There has not yet been a comprehensive evaluation of the impacts of tanning industry on the environment and occupational health. However, according to the surveys on industrial hygiene, the dust pollution in the tanneries is 4-5 times higher than permissible limit; the noise pollution is also clearly higher than permissible limit (100dBA/90dBA). The above table shows that all indexes of waste water exceed permissible levels while the solution for solid waste is very difficult, and there is no thorough treatment; until now the solid waste is mainly incinerated, seriously polluting air environment.

Obviously, the first action is to quickly improve the enterprises' environment; especially the emission of pollutants from tanning enterprises must be definitely treated. New projects are obliged to comply with national environmental standards and progress on the compliance with international ones. New investment projects are also encouraged to apply environmental management systems such as ISO 14.000.

In parallel to action at enterprise level, re-adjustment at macro-level in the planning for development and re-structuring of this industry following the environmentally friendly orientation must be firmly implemented in order to create a favorable investment environment and to ensure the good origin of Vietnam's commodities.

### **2. Action 2: Participation in the global system of harmonized standards**

The participation in the global system of harmonized standard is very necessary for getting international acceptance. This is a system recognized by many countries able to help the enterprises reduce expenditures and time for checking the origin and quality of commodities. With the participation in such a system, Vietnam can be quickly provided with updated information related to import and export (including the regulation and legal

requirements on environment and people's health) in the group of countries, which have the similar standards and the enterprises' production can be timely re-adjusted.

By this way, necessary systems for an early warning on the gaps between different countries in environmental regulations for imported commodities can be established. The enterprises may base on such forecast to formulate their itinerary for overcoming the shortcomings to satisfy the requirements of different markets.

### **3. Action 3: Development of specialized environmental services**

This is a dynamic and active way in the background of integration. The environmental services represent special services which help the enterprises in solving the problem related to environment, without the need of maintaining a permanent apparatus at the enterprises themselves, thus reducing expenditures and raising the enterprise's competitive capacity. In some countries, these services can help the enterprises in treating commodities of low quality to reach environmental standards and become exportable. Concerning regulations on environment and people's health, recently the Federal Republic of Germany has regulated that the contents of such materials harmful to the people's health as lead, mercury, arsenic... in leather and shoes exported to this country must be at permissible limit. In order to solve these problems, the environmental services can give advice to the enterprises on the use of input raw materials and chemical substitutes. The environmental services can even help in treating non-compliant commodities so that these commodities can be exported. For small- and medium-sized enterprises, the use of services is obviously the most effective and most convenient way.

In Vietnam, these services are still under-developed, partly because of the lack of support offered by the legal framework, but basically because the enterprises are not used to harnessing such services. In the near future, when the pressure of environmental issues increases, these services will become more commonly used.

### **4. Action 4: Development of intermediary channels or by pass export markets**

As mentioned above, the regulations and requirements are different each from one target market to the other. For this reason, one can base identify ways for coping with these

regulations through intermediary channels or otherwise speaking, through by-pass markets for export. Because of the difference in regulations between the countries, for example NAFTA Countries, a lot of commodities of Vietnam can not be directly exported to USA, but in fact, the export can always be implemented, firstly to an intermediary country-Mexico, and then onto the US. There exist a lot of similar canals, for example Singapore, Japan. This method has been applied by Vietnam for many years.

### **5. Action 5. Establishment of environment management system according to the line hierarchy**

This action concerns the field of management, aiming to help the enterprises solving difficulties related to environment and occupational safety. Its mechanism is to combine different efforts: policies, institutions and support of the state... Such a system can also help offering early forecasting and warning of dangers related to the regulations on environment and occupational safety through the establishment of the system of periodic report on environment and through gathering information from specialized monitoring facilities, firstly the ones related to export.

The basic components of the system should include the contact points set up at the level of enterprises, Department of Industry of cities and provinces, Leather & Footwear Export Association, consultancy centers and the network of enterprises and monitoring enterprises.

### **6. Action 6: Promoting technological renovation**

The technological renovation represents an issue of key importance for coping with the change of regulations and laws on environment. Besides the strategy for development of markets and products, the enterprises must identify the itinerary to have access to the technological standards of advanced countries (standards on emission of dust, noise, heat... pollutants)

A lot of topics related to this itinerary may be considered as sub-actions, such as:

- (1). To change and replace raw materials, on the basis of environmentally friendly materials.*
- (2). To reasonably re-organize the production for raising the effectiveness and reducing the consumption and loss of material.*

*(3). To practice a cleaner production.*

*(4). To improve energy efficiency.*

*(5). To apply environmental and quality management systems such as ISO 14,000, ISO 8000*

*(6). To tap information Channels on technologies of foreign countries.*

**7. Action 7: To participate in international conventions, fulfil commitments on environment and contribute our voice to the fight against the imposition in key export markets inadequate environmental and health requirements**

Up to date, Vietnam has participated in and signed a lot of important international legal instruments related to environment and people's health. Such actions have raised Vietnam's international prestige, creating a basis for mutual confidence between Vietnam and other countries. Such actions are very necessary and need to be encouraged not only at the national level but also at the enterprise level.

In addition, it is necessary to use international forums in the fight against the imposition of inadequate environmental and health requirements by government and big companies in key export markets.

## **PART IV**

### **PRO-ACTIVE APPROACH AND THE NEED FOR INSTITUTIONAL CAPACITY BUILDING**

#### **I. PROSPECT OF VIETNAM'S EXPORT OF THE LEATHER AND FOOTWEAR INDUSTRY**

Vietnam's leather and footwear exports are in good prospect. The demand for footwear in general in the world market tends to an unceasing increase in quantity as well as in models and types. This is favorable for all exporters of leather and footwear products, including Vietnam. The ratio of leather and footwear exports from developing countries in volume terms to the world market shows an increasing trend. Another advantage of Vietnam is that the country's enterprises now have got access to the US market, one of the biggest in the world, after the signature of a bilateral trade agreement between Vietnam and the US. This new market has opened good opportunities for Vietnam to export footwear and other products.

However, beside this advantage, there also exist difficulties. The requirements in the EU market become more and more severe, especially as regards the standards related to environment and health, and the treatment of non-compliant goods. Therefore, the risk for Vietnam's products exported to this market will be higher. Although the US market represents a significant potential export market, Vietnamese exporters should anticipate eventual similar difficulties as in the EU market. The Vietnamese enterprises should also pay attention to raise the flexibility in production, the diversity of products, the quick adaptation to the change of taste of consumers in export markets. Membership of China and Cambodia of the WTO creates difficulties for Vietnam in effectively competing in export markets. But, among the above difficulties, the problems related to environment and people's health bear a long lasting and decisive character. This obliges the Vietnamese leather and footwear industry to have a pro-active strategy and a comprehensive development policy.

In the future, in order to secure the increase of incomes from export, Vietnam must pay special attention to build up the image of the country's products in international markets, including the commitment to satisfy all standards required by the export markets. At

present, concerning environmental aspects, Vietnam is actively developing the following activities:

- Approving the national strategy for environmental protection up to 2010 and orientation up to 2020;
- Building up a set of compulsory standards of waste gas and waste water for manufacturing enterprises;
- Collecting environmental protection fees levied on waste water, and preparation for the fee levied on gaseous waste and solid waste;
- Delivering certificates of Compliance to environmental standards;
- Studying the formulation of a mechanism for issuance of ecological labels.

Moreover, as regards people's health, many mechanisms for ensuring the goods quality, preventing bad influence on the health of consumers, are in application, such as: registration of goods' quality, issuance of the label of "Vietnam's high-quality products", activities of the Consumers' Protection Association, etc...

In order to satisfy the above mentioned requirements, the enterprises must gradually renew technologies; apply environmentally friendly technologies, economically use materials and resources, discharge less wastes into environment, and produce safe goods for consumers. By those changes, the economic efficiency of their production will accordingly increase; the capacity of enterprises producing export commodities which require high standards on environment and health will be improved, so that the Vietnamese goods can be easily accepted in developed country markets such as EU and US.

### **III. SOME SOLUTIONS TO THE PROBLEM:**

**1. It is necessary to evaluate the potential impacts** from the application of measures related to environmental requirements of developed countries on the quantity and quality of export leather and footwear.

Firstly, it is necessary to evaluate the actual situation of technologies in enterprises manufacturing shoes for export, the level of their compliance with national standards on environmental aspect; their capacity of renewing technologies, applying environmentally friendly technologies, time required to recuperate market shares lost because of company

weakness in satisfying the requirements on environment and people's health set by importers. It is also necessary to evaluate and forecast the quantity of shoes exported for each market. Besides, one also needs to analyze diversification of export markets, Besides, we should not neglect the possibility of expanding the export market to other so as to reduce dependence on a few target markets and thus reduce risks related to their environmental and health requirements.

2. However, for the long term interests, the **formulation of a pro-active strategy** for satisfying the requirements on environment and people' health is extremely important. The main objective of the strategy is to reduce the adjustment costs for satisfying importers' higher environment and health requirements. Below are some concrete actions:

- To strengthen the relationship between the country's manufacturers of export leather and footwear through the Vietnam Leather and Footwear Association (LEFASO) for establishing an effective collaboration, cooperation, mutual help and for exchanging information, especially on environmental and health requirements as well as the necessary measures to be timely updated by the enterprises. LEFASO must play the main role as a support center for supplying information, ensuring the enterprises' interests, protecting their rights in competition and conflict with foreigners.
- To build up a system of quality standards for products domestically consumed, including the standards related to environment and people's health, so that the domestic standards can gradually get access to export markets standards. Besides, it is necessary to openly inform all enterprises about the requirements on environment and health.
- To satisfy the requirements of very demanding markets. Enterprises producing export commodities must study every information and thoroughly grasp all requirements of these markets in order to take proper adjustment measures. The enterprises need also the support of managing institutions and LEFASO in terms of advice on the renewal of technologies, the installation of pollution treatment systems, and the training and retraining of human resources.
- To diversify export markets. EU and USA are two big markets, but they have severe requirements on the standards of environment and people's health (the extent of pollution caused by production technologies, the level of use of materials and

resources, the standards of working environment for labourers, the impacts of commodities on the health of consumers and users, the pollution in the import country after the use of commodities...). One cannot expect that all footwear manufacturing enterprises can develop capacity or try to have capacity of accessing these markets right away. Therefore, as a short-term strategy it is very necessary to also look for more easy-going markets, thus reducing the risks for the leather and footwear industry in general.

- To bring into play the advantage of low-cost manpower, increase labour productivity for the purpose of strengthening Vietnam's competitiveness against such competitors as China and Cambodia, especially in the context when these two countries have become WTO members.

### **3. Building up institutional capacity**

The building of institutional capacity helps the Government increase the ability of making strategic decisions on export. Concerning the requirements on environment and people's health in the export of leather and footwear, the building of institutional capacity should not be restricted to the field of leather and footwear, but must be extended to other fields such as chemicals. Besides, it is necessary to build up the partnership between the leather and footwear industry with some other industries which produce export goods such as textile and garment industry.