

# **THE LEATHER-TANNERY INDUSTRY IN UGANDA**

**Risks to the Environment and to Human Health**

DECEMBER 2009

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## List of Acronyms

ACB	Agrochemicals Control Board
BOD	Biological Oxygen Demand
CITES	Convention on International Trade in Endangered Species
Co	Company
DWD	Directorate of Water Development
EAC	East African Community
GAL	Government Analytical Laboratory
IMDG	International Maritime Dangerous Goods
IPS	Industrial Promotion Services
Kg	Kilogram
LIU	Leather Industry of Uganda
LTA	Leather Tanners Association Limited
Ltd	Limited
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MFPED	Ministry of Finance, Planning and Economic Development
MGLSD	Ministry of Gender, Labor and Social Development
MTTI	Ministry of Trade, Tourism and Industry
MWE	Ministry of Water and Environment
NAPE	National Association of Professional Environmentalists
NARO	National Agricultural Research Organization
NEMA	National Environment Management Authority
NGO	Non-Governmental Organizations
NWSC	National Water and Sewerage Corporation
PEAP	Poverty Eradication Action Plan
PMA	Plan for Modernization of Agriculture
PSF	Private Sector Foundation
SAREC	Department for Research Co-operation
SFT	SkyFat Tannery Co. Ltd
SIDA	Swedish International Development Agency
SPS	Sanitary and plant Phyto-Sanitary
SSNC	Swedish Society for Nature Conservation
TCFC	Training and Common Facility Centre
UIA	Uganda Investment Authority
UK	United Kingdom
ULAIA	Uganda Leather and Allied Industries Association
UMA	Uganda Manufacturing Association
UNBS	Uganda National Bureau of Standards
UNIDO	United Nations Industrial Development Organization
US	United States
WRMD	Water Resources Management Department
WTO	World Trade Organization

## Acknowledgement

The National Association of Professional Environmentalists (NAPE), wishes to express her gratitude and appreciation to all individuals, NAPE staff and management of Leather-tannery industries for the valuable information they provided during this study.

We thank the National environment Management Authority (NEMA) and the Uganda Leather and Allied Industries Association (ULAIA), whose support made it possible for data collection and compilation.

Special thanks go to the Swedish Society for Nature Conservation (SSNC) who supported the study. Acknowledgement also goes to the following members of the project technical team: Dr. David Ogaram, Dr. Emmanuel Kasimbazi, Mrs. Immaculate Kijjagulwe, Mr. Robert Baganda, Mr. Dennis Tabaro and Mr. Geoffrey Kamese who worked tirelessly towards the successful completion of the study.



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## Executive Summary

Livestock is one of Uganda's major natural resources that contribute about 5.2% and 12% of the total Growth Domestic Product (GDP) and agricultural GDP respectively. Smallholder farmers own about 98% of the cattle herd and about 100% of the small ruminant and non-ruminant stock. However, the country is faced with the challenge of sustainable management of tanneries. Leather and leather products have been produced with limited regulations, leading to pollution. There is growing concern over dangerous and harmful aspects of chemicals used in the leather-tannery industry and the disposal of waste from the tannery industries. The evident growth of the industry in a liberalized economy calls for effective regulations. Tanneries are chemicals and water intensive. Workers in tanneries are associated with increasing chemical risks due to high exposure to a wide range of chemicals, some of which have suspected carcinogenic and mutagenic properties.

Tannery effluents are an environmental and health hazard, they contain large quantities of organic and inorganic compounds; including toxic substances such as chromium salts. Poorly treated effluents from the tannery industry if used for irrigation can lead to wide spread contamination of food chains, sharp decline in productivity of food crops, soil, vegetables, livestock including milk production.

This study has been carried out by the National Association of Professional Environmentalists (NAPE) with support from the Swedish Society for Nature Conservation (SSNC). The aim of the study; among other things is to establish available tanneries in Uganda as well as the potential effects of hazardous chemicals used in the tannery industry.

### **The goal of the project**

The goal of the project was to contribute to sustainable socio-economic and environmentally friendly development of the tannery industry in Uganda in particular and East African countries in general.

### **The objectives of the study:**

The study aimed at fulfilling the following objectives;

- i. Identifying environmental laws, trading and policy issues in Uganda that supports the development of sustainable leather-tannery industry,
- ii. Identifying the locations and number of tannery industries in Uganda and
- iii. Identifying and increasing cooperation among cleaner leather-tannery production stakeholders in the country

### **Methodology used during the study**

The study involved field data collection from different parts of the country. The collection of data was done through conducting oral interviews, administering questionnaires, focused group discussions and observations. In addition, documentary and literature review were undertaken; including Internet surfing.

### **The Scope of the Study:**

The study looked at the leather tannery industry in Uganda. It identified existing leather-tannery industries in the country and their associated activities. While this was a country study, its findings were intended to eventually feed into a broader study carried out in other parts of sub-Saharan Africa.

## **The status of Animal Slaughter and the Supply of Hides and Skins**

Most abattoirs are inadequate; virtually no modern slaughter facilities exist in the country. The main slaughterhouses are located in Kampala (3) Jinja (1) Mukono (1) Masaka (1) and Mbarara (1). About 60% of the cattle slaughter and 90% of the goat and sheep slaughters occur in rural areas where the only available preservation method is sun drying. New upcountry slaughterhouses and slaughter slabs are essential for improved quality hides and skins.

## **Policy and legal framework**

The study identified several scattered relevant laws and regulations for the management of hides and skins, leather and leather products. Of these, the ***Constitution of the Republic of Uganda (1995)*** being the supreme law upon which all others are drawn. The aim of these policies is to promote sustainable social and economic development and to control pollution. However, no specific national hides and Skins, Leather and Leather products policy was identified. It was noted that, even the scattered laws and regulations are weak, inadequately implemented while the responsible institutions are not well coordinated.

Unlike other industries, the tannery industry has not been involved in national cleaner production initiatives. Government is however, in advanced stages of putting in place a specific policy; ***The National hides and Skins, Leather and Leather Products Policy***, to guide the industry.

## **The role of NGOs in the leather tannery**

NGOs play a central role in promoting cleaner production, in Uganda however; many NGOs are not actively involved in the tannery industry. Even those carrying out activities on the tannery industry, their activities are on not well streamlined. Many institutions that are responsible for promoting clean production lack adequate manpower, finances, technology and the necessary policies required to efficiently and effectively regulate activities of the industry.

## **Findings from the Study**

The study found out that the leather-tanning industry in Uganda is steadily growing. Four bovine tanneries and one fish skin tannery, which mainly produce wet blue leather for the external market, were identified. The installed capacity of these tanneries is estimated at about 1.1 million hides and 2.1 million skins per annum. The other findings of the study include;

- a. Most tanneries workers lack adequate protective gear to protect them against harmful aspects of chemicals
- b. Efforts are being made to promote unity among the different tanneries
- c. Government is promoting processing of hides and skins into finished leather products as a way of adding for better revenues – this will in turn lead to extensive use of tanning chemicals.
- d. Government plans to cluster tanneries so as to promote joint effluent treatment plants
- e. There is limited capacity for handling hides and skins before sending them to tanneries.
- f. Eco labeling of leather products is not practiced in Uganda

## **Recommendations of the study**

The study recommends that;

- (a) **Government moves fast to** put in place a comprehensive hides and Skins, Leather and Leather products policy.
- (b) Through research the industry should identify and promote cleaner leather production initiatives, efforts should be made to promote awareness and training on sustainable leather production

- (c) Government, Civil Society together with other stakeholders should monitor activities of leather-tannery industries and loosely work with them for improved production
- (d) Safe management and disposal practices of hazardous chemical wastes from the industry should be promoted including clustering of tanneries to promote construction modern effluent treatment plants
- (e) Improve the quality of hides and skins from the abattoirs so as to minimize on the amount of rejects
- (f) Inter tannery cooperation should be promoted to enhance sharing of good practices

## 1.0 Introduction:

Uganda is well endowed with natural resources. Livestock is one of the major natural resources in Uganda and it contributes about 5.2% and 12% of the total Growth Domestic Product (GDP) and agricultural GDP respectively. In Uganda, the raw materials for leather; the hides and skins, are usually by-products of the meat industry and are mainly derived from either urban or rural slaughters of cattle, sheep and goats. Smallholder farmers in the country own about 98% of the cattle herd and about 100% of the small ruminant and non-ruminant stock. It has been estimated that livestock in Uganda has over the years continued to grow at a rate of 4% per annum<sup>1</sup>. However like many other countries in sub-Saharan Africa, Uganda is faced with the challenge of sustainable management of its tannery industry. Over the years, the country has been producing leather and other leather products but with limited regulation of the tannery industry. The industry has therefore contributed to serious environmental pollution especially through the disposal of untreated effluents directly into the environment. In recent times, some tanneries have been indefinitely closed while others at one time or the other have received caution or temporary closure.

Leather tanning is a process of converting decomposable skin into leather that is usually non-decomposable in a short term. This is usually done with tannin - an acidic chemical compound that prevents decomposition. Leather tanning is important for converting hides and skins into usable materials for production of leather based consumer products. The tannery industry is one of the most chemical and water intensive industries. The industry is also associated with a number of environmental and human health risks, including cancers among tannery workers. Work in a leather tanning industry involves exposure to a wide range of chemicals, some of them with suspected carcinogenic and mutagenic properties.

Industrial effluents from the tannery industry are a major environmental and health concern in many African countries. Tannery wastewaters contain large quantities of organic and inorganic compounds; including toxic substances such as chromium salts. Tannery effluents deteriorate the physical, chemical and biological properties of the receiving surface water. Poorly treated effluents from the tannery industry that is used for irrigation purposes lead to wide spread contamination of food chains, sharp decline in productivity of food crops, soil, vegetables, livestock and even milk production. Heavy metals contamination of surface and ground drinking water has grave public health implications. Chromium, lead, zinc and copper are examples of metals that have been found in sediments affected by tannery effluents.

Industrial development, poor urban planning and poorly treated industrial effluents are major water stress factors in Sub-Saharan African countries where inadequate access to good quality water is a key problem. Sufficient, safe and acceptable water quality is indispensable for a sustainable socio-economical development, poverty alleviation and biodiversity conservation. Adequate quantities of safe water are a necessary condition for healthy living.

An increasing demand of leather products and strict environment protection laws in industrialized countries have led to increasing localization of tannery industries to countries like Kenya, Uganda and Tanzania among others. In these countries, implementation of environmental protection laws is ineffective. Initiatives towards a cleaner leather-tannery production must be adopted for sustainable leather production. Cleaner production and sustainable consumption initiatives

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1 Uganda's Livestock Industry: [www.ugandainvest.com/livestock.pdf](http://www.ugandainvest.com/livestock.pdf)

must be identified, developed and strengthened in Sub-Saharan countries. Identification and development of stakeholders and NGOs working towards a cleaner production is a premise for network strengthening and development.

The leather-tannery industry in Uganda is steadily growing a fact that has led to increased use of leather tanning chemicals. However, sound management of chemicals which is an essential component of sustainable development of the tannery industry in Uganda is still inadequate. The need for knowledge and skills on leather-tannery regarding chemical use, storage, transportation and legislation is critical. Similarly, the need for managing chemical and other forms of wastes from the leather tannery industry is important.

The hides and skins from Uganda are exported to a range of countries outside Africa including Hong Kong, India, Indonesia, Italy, Japan, , Spain, Turkey, France, Netherlands, Switzerland, United Kingdom, United States, China, United Arab Emirates, Pakistan and Portugal. Within Africa, Kenya is the main importer of hides and skins which are used in the manufacture of shoes and other related products. On the international market, the hides from Uganda are more preferred to those of Kenya because they are seen to be thicker and when split they provide more raw material per hide<sup>2</sup>. It is against the fore mentioned background that a study was carried out by NAPE to establish the status of the tannery industry in Uganda.

### **1.1 The Purpose of the Study**

The primary purpose of the study was to establish the status of hazardous chemicals in the leather-tannery Industry in Uganda.

### **1.2 The goal of the Study**

The goal of the study was is to contribute to a sustainable socio-economic and environmentally friendly development of the tannery industry in East African countries.

### **1.3 Specific Objectives of the Study:**

- i. Identifying environmental laws, trading and policy issues in Uganda that support the development of a more sustainable leather-tannery industry,
- ii. Identifying the locations and number of tannery industries in Uganda and
- iii. Identifying and increasing cooperation among cleaner leather-tannery production stakeholders in the country.

### **1.4 Methodology used during the study**

The collection of data during the study was mainly done through interviews, questionnaires, observations and unstructured discussions with different stakeholders. The respondents included government officials, tannery workers, tannery management and local leaders as well as with the communities in areas where some of the tanneries are located. The choice of the institutions that were visited was based on their relevancy to the leather-tannery industry. Literature reviews were undertaken during the study; including Internet surfing, review of policies, laws, and institutional frameworks and other relevant materials.

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2 European Commission (2002) Joint donor agencies study on the performance of and growth prospects for strategic exports in Uganda - case study: livestock, hides, skins and leather products: <http://www.foodnet.cgiar.org/market/Uganda/Reports/Livestock.pdf>

### **1.5 The Scope of the Study:**

This was a national study although special focus was put on the districts of Kampala, Jinja, Busia and Masaka. The of these districts was based on the high number of hides and skins as well as the location of the tannery industry in the districts. Similar studies were carried out parallel to this in Kenya and Tanzania.

## 2.0 Literature Review

### 2.1 The Status of the Leather Industry in Uganda

The livestock industry greatly contributes to the leather industry in Uganda. The industry is faced with a number of challenges regarding sustainable production. In 2008, the National Environment Management Authority (NEMA) ordered the closure of two tanneries in Jinja town over poor disposal of effluents that were leading to pollution<sup>3</sup> of the environment. In March 2008, the National Water and Sewerage Corporation (NWSC) closed off all sewage lines from two leather-tannery industries, which had persistently refused to comply with set effluent standards. Earlier on, government had closed the leather tannery in Mbarara district for failure to meet the required environmental standards.

**Table 2.1 Livestock production estimates in Uganda (1997-2007)**

Year	Cattle ('000)	Goats ('000)	Sheep ('000)
1997	5460	5825	980
1998	5651	5999	1014
1999	5820	6180	1044
2000	5966	6396	1081
2001	6144	6620	1108
2002	6328	6852	1141
2003	6519	7092	1175
2004	6567	7566	1552
2005	6770	7800	1600
2006	6973	8034	1648
2007	7182	8275	1697

Source: Facts and figures for the Agricultural Sector (APD-MAAIF) - 2008

Concerns are growing over dangerous and harmful aspects of some chemicals that are used in the leather-tannery industry and the manner in which effluents from the industry were being disposed off. This has initiated a debate on the need for regulating the tannery industry so as to be able to protect public health and the environment from harmful impacts of the industry. Continued growth of the industry in the country under a liberalized economy has also dictated the need for effective and well-equipped regulating institutions.

### 2.2 Animal Slaughter and the Supply of Hides and Skins

Uganda has the potential to generate sizeable export earnings from the leather industry owing to its annual production of hides and skins. The raw materials for leather; hides and skins, are by-products of the meat industry and are derived from either urban or rural slaughters of cattle, sheep and goats. Most abattoirs in Uganda are inadequately equipped to handle hides and skins. There are virtually no modern slaughter facilities in the country. The main slaughterhouses are located in Kampala (3) Jinja (1) Mukono (1) Masaka (1) and Mbarara (1). About 60% of the cattle slaughters and 90% of the goat and sheep slaughters occur in rural areas where the only available preservation method is sun drying that leads to production of fair to good grades of hides and skins. New upcountry slaughterhouses, slaughter slabs and storage facilities for hides and skins

3 Joseph Mazige (2008); Uganda: NWSC Seals Sewage Lines from Leather Industries - The Monitor News Paper <http://allafrica.com/stories/200803241316.html>

are essential for improved quality of hides and skins. The hides and skins that are produced in the main slaughterhouses are traded as fresh stock and transported directly to tanneries for processing.

**Table 2.2.0 Hides and skins production trends in Uganda from 1990 -1996**

Year	Hides (Pieces)	Goat Skins (Pieces)	Sheep Skins (Pieces)
1990	380,788	706,174	88,723
1991	358,288	621,059	75,723
1992	435,593	649,048	132,157
1993	814,567	976,473	181,380
1994	793,181	2,173,000	229,000
1995	855,000	1,946,169	269,047
1996	1,151,000	1,404,750	369,116
1997	928,200	1,647,500	294,000
1998	960,670	1,799,700	304,000
1999	989,400	1,854,000	413,200
2000	1,129,680	-	-

Source: Annual Reports, 1996 and 1997; Department of Animal Production &Marketing, MAAIF

To reduce on large-scale movement of livestock from upcountry production areas to urban slaughterhouses, government is encouraging the establishment of slaughterhouses countrywide. Processing of fresh hides guarantees high quality leather. The annual production of hides and skins had grown to an estimated 1.2 million hides and 2 million skins over the years. The leather industry is increasingly being recognized as an area of great economic potential. Uganda's leather is characterized as being of high quality and of heavy substance. Uganda bovine hides have a distinct advantage because of their high texture and heavy substance that make them suitable for production of heavy upper leather and vegetable tanned sole leather.

Over 90 per cent of the exported hides and skins from Uganda are usually in their raw form; mainly air-dried and some wet-salted. It is estimated that in the financial year 2000/01, Uganda lost revenue equivalent to US\$ 249.7 million through export of raw hides. In the same year, the export of raw hides and skins was valued at US\$ 22.7 million yet export of finished leather would have been US\$ 68.1 million and the final product should have yielded US\$ 272.4 million<sup>4</sup>. The bovine hides (fresh, dried or salted) and leather forms the bulk of the hides, skins and leather export trade. Even with such a potential, most finished leather products are imported into the country from countries like China, Italy, UK, France and the US when they are already used.

**Table 2.2.1 Export of raw hides/skins (salted and dried) in tons 1991-2000**

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Tons	2,798	3,679	5,781	6,955	4,359	4,916	8,541	11,552	6,351	12,875

Source: Uganda Leather and Allied Industries Association, Leather Profile; 1999 and Dept. of Animal Production and Marketing MAAIF (Feb 2001)

4 Nakaweesi D, & Mazige J (20-09-2007): Tanneries go unnoticed, <http://www.myuganda.co.ug/news/?more=176>

**Table 2.2.2 Export of wet blue hides/skins in tons & its value for 1994-2000**

Year	1994	1995	1996	1997	1998	1999	2000
Tons	19	36	276	1127	202	106	412
Ug. Sh. (millions)	31	88	480	2094	355	185	742

Source: Uganda Leather and Allied Industries Association, Leather Profile, 1999  
Dept. of Animal Production and Marketing MAAIF (Feb 2001)

### 2.3 Leather from the Fish Industry

The fish processing industry in Uganda continues to grow. More than 12 companies have set up plants for fish processing and export. Nile Perch and Tilapia combined form 90% of the fish catch and are of most commercial value in Uganda. Similarly, the growing fish farming activity in the country today offers a reliable resource base for the fish skin processing industry. Previously, fish skins were thrown away because of lack of a tannery. But today these skins are tanned by the Uganda Fish Skin Tannery into leather. Uganda Fish Tannery Ltd was set up with support from UNIDO and is currently the only tannery processing fish skins from Nile Perch.

### 2.4 Leather from Crocodile

Uganda is signatory to the Convention on International Trade in Endangered Species (CITES)<sup>5</sup> and has an export quota of 2,500 crocodile skins annually granted in 1992 although this has never been met. Crocodile farming started in the 1980's although the practice has remained low. There is only one officially known crocodile farm – the Uganda Crocs Ltd with more than 4,000 crocodiles. Uganda Crocs produces about 3,000 wet salted crocodile skins and plans to expand production to an estimate of 20,000 skins per annum<sup>6</sup>.

### 2.5 Small-scale enterprises for shoe and other leather goods

There are many small-scale leather enterprises in Uganda. UNIDO has helped in supplying essential machines to some selected cases, through a revolving fund, but demand far exceeds the agency resources. Most proprietors and their employees have received training from the Training and Common Facility Centre (TCFC). This group comprising about 160 of the cottage manufacturers each producing 1-3 pairs per day is located in various parts of the country.

### 2.6 Efforts to improve the Hides and skins Industry in Uganda

The Uganda Leather and Allied Industries Association (ULAIA), was established with support and assistance from, Uganda Manufacturers Association (UMA); Ministry of Agriculture Animal Industry and Fisheries (MAAIF), Ministry of Tourism, Trade and Industry (MTTI), United Nations Industrial Development Organization (UNIDO Leather Projects). The Association has the following functions:

- To promote, advise and assist the development of the leather sector. The sector also receives support from the Swedish Government through SIDA-SAREC.
- ULAIA is assisting in providing a policy framework designed to strengthen the country's leather industry, support and coordinate activities related to: production of quality hides and skins, the manufacture of leather and increased value addition on hides and skins for the domestic

5 CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention) is an international agreement aimed at ensuring that international trade in specimens of wild animals and plants does not threaten their survival.

6 United Nations Industrial Development Organization (UNIDO); Project Profile Uganda - Leather (6): <http://www.unido.org/index.php?id=o44218>

and international market. ULAIA also helps in the processing and grading of green hides to approved standards.

## 3.0 Policy and legal framework related to tannery and chemical management in Uganda

### 3.1 Relevant laws

#### 3.1.1 The Constitution of the Republic of Uganda 1995

The Constitution of the Republic of Uganda 1995 is the supreme law in the country upon which all other laws are drawn. It has a number of provisions referring to trade, human health and the environment. These include:

- The government of Uganda is required to take all measures to prevent or minimize damage and destruction to land, air, and water resources resulting from pollution or any other kind of natural resource degradation.
- The State is required to take all practical measures to promote a good water management system at all levels;
- The state is required to promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generations;
- Under Article 39 every person has a right to a clean and healthy environment;
- Under Article 40(1) the Parliament is required to enact laws to provide for the right of persons to work under satisfactory, safe and healthy conditions
- Article 245 Parliament is required by law to provide for measures intended to protect and preserve the environment from abuse, pollution and degradation; to manage the environment for sustainable development; and to promote environment awareness;

#### 3.1.2 The National Environment Management Policy for Uganda, 1994:

The policy aims at promoting sustainable social and economic development. It addresses the Control of Pollution as well as the management of domestic and industrial waste and hazardous materials. The main objective of the policy is to control pollution of water, land and air from domestic, commercial, industrial and other emissions and discharges, and promotes environmentally sound management of wastes and hazardous materials.

#### 3.1.3 The National Environment Act, Cap 153:

The National Environment Act is the most significant law on the management of chemicals and the environment. Under the act, discharge of hazardous substances into any part of the environment except with the guidelines of the National Environment Management Authority is prohibited; The Act prohibits pollution contrary to established standards. prohibits the illegal traffic of hazardous wastes; and gives any person generating hazardous wastes the duty of managing his/her wastes.

#### 3.1.4 The Agricultural Chemicals (Control) Act, No. 1 of 2006:

The Act controls and regulates the manufacture, storage, distribution and trade in, use, importation and exportation of agricultural chemicals and other related matter.

#### 3.1.5 Occupational Safety and Health Act No 9, 2006:

This Act provides for the safety and health of persons at work such as in factories, plantations and businesses. The Act provides for measures such as, labeling of dangerous materials, guarding against dangerous machines, and training of persons to work at any dangerous machine. Section 96 provides for the provision of required chemical data sheets containing essential information

regarding the identity of the chemical, its hazards, safety precautions, emergency procedures and its supplier.

### **3.1.6 Uganda National Bureau of Standards Act, Cap 327:**

The Uganda National Bureau of Standards Act, Cap 327 Section 21(1) prohibits any person to import, distribute, sell, manufacture or have in possession for sale or distribution any commodity for which a compulsory standard specification has been declared unless such commodity conforms to the compulsory standard or unless the commodity bears a distinctive mark.

### **3.1.7 External Trade Act, Cap 88:**

This Act provides for the regulation of external trade and other matters incidental thereto and connected therewith. Specifically, Section 3 of the Act provides for restrictions on certain imports into the country.

### **3.1.8 Access to Information Act No. 6 of 2005:**

This Act provides for the right of access to information pursuant to Article 41 of the Constitution of Uganda. Under Section 5 it is provided that “Every citizen has a right of access to information and records in possession of the state or any public body, except where the release of the information is likely to prejudice the security or sovereignty of the state or interfere with the right to privacy of any other person”.

### **3.1.9 Control of Agricultural Chemicals Act, Cap 29**

The Act establishes an Agricultural Chemicals Board. The Board is charged with ensuring that agrochemicals are properly managed through registration, labeling, issuance of licenses regulating quality and importation.

### **3.1.10 Investment Code Act Cap 92**

Under this law, a mechanism is put in place to help guide relationship of both local and foreign investments in Uganda. Under the Act, an investor may be required to take necessary steps to ensure that the operations of his business enterprise do not cause injury to the environment.

### **3.1.11 The Public Health Act Cap 281 LOU:**

This Act provides for the prevention of diseases to the public. Consumer products that contain hazardous chemicals and therefore cause disease also fall under this Act. It regulates the use of chemicals for public health and sets up the Health Inspectorate to ensure compliance.

### **3.1.12 Inland Water Transport (Control) Act Cap 348:**

This Act requires any person interested in conveying goods by means of a ship on inland waters of Uganda, to apply for a license. The licensing board is empowered to attach to any license condition that certain classes or descriptions of goods shall or shall not be carried or any other conditions deemed necessary, in public interest.

## **3.2 Relevant Regulations**

### **3.2.1 Environmental Impact Assessment Regulations (1998):**

These regulations provide for project briefs; Environmental Impact Studies; Review process of the Environmental Impact Studies (Reg. Nos. 10 -16), etc.

### **3.2.2 Agricultural Chemicals (Registration and Control) Regulations, 1993:**

The regulations among other things address the control of manufacture, use, etc. of agricultural chemicals; the import, export, etc. of agricultural chemicals; and the seizure and disposal of agricultural chemicals.

### **3.2.3 National Environment (Waste Management) Regulations 1999:**

Under sections 52 and 107 of the National Environment Act;” Regulations (Nos. 5 – 19) include, among others; the packaging of waste, labeling; the duty to treat waste from industries; the application for a license to operate a waste treatment plant or disposal site.

## **3.3 Regional Laws/Treaties**

### **3.3.1 East African Community Customs Management Act No.1 of 2005:**

This is a regional legislation within the EAC member countries, of which Uganda is a state party. The treaty specifically provides for the prohibition and restriction of some imports. In Section 18(1), the goods specified in Part A of the Second Schedule are prohibited goods and their importation thereof is prohibited.

## **3.4 Relevant International Conventions**

### **3.4.1 The Rotterdam Convention on the Prior Informed Consent: 1998**

Uganda acceded to the convention in 2007. The convention helps participating countries to learn more about the characteristics of potentially hazardous chemicals that may be imported; and promotes shared responsibility between exporting and importing countries in protecting human health and the environment from harmful effects of certain hazardous chemicals and pesticides being traded internationally.

### **3.4.2 The International Maritime Dangerous Goods (IMDG) Code:**

It is a uniform international code for the transportation of dangerous goods by sea. It covers such matters as packing, container traffic and storage, with particular reference to the segregation of incompatible substances.

## **3.5 The Role of Key Stakeholders in the tannery industry**

### **3.5.1 Ministry of Water and Environment (MWE)**

This Ministry is in charge of coordinating, promoting and ensuring sustainable utilization, development and safeguard of water and the environment for sustainable socio-economic development. The key institutions under this ministry include:

#### **a) National Environment Management Authority (NEMA)**

NEMA was established under the Ministry of Water and Environment. It was set up under the National Environment Management Act Cap 153 LOU. NEMA is mandated to oversee, coordinate, supervise and monitor all activities in the field of the environment. It coordinates the implementation of Government policy and the decision of the Policy Committee. It also ensures the integration of environmental concerns; including chemical trade, in overall national planning through co-ordination with the relevant ministries, departments and agencies of Government.

#### **b) Directorate of Water Development (DWD)**

This Directorate is responsible for regulating the development and utilization of the water

resources and the entire water sector in Uganda. Its mandate also includes control of pollution of water resources such as rivers, lakes, etc. The most relevant section to chemicals under this body is the Water Resources Management Department (WRMD), but specifically the Water Quality Division whose responsibilities among others include; storage, analysis and management of water quality management data.

### **c) National Water and Sewerage Corporation (NWSC)**

The National Water and Sewerage Corporation is an autonomous entity responsible for the treatment and delivery of safe water and sewerage services. NWSC has one central laboratory and 17 satellite laboratories that analyze water and wastewater.

### **3.5. 2 Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)**

The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is mandated to support, promote and guide the production of crops, livestock and fish in order to ensure improved quality and increased quantity of agricultural produce and products for local consumption, food security and export.

The Ministry's functions are derived from the 1995 Constitution, the Local Governments Act, 1997, the implementation of the Poverty Eradication Action Plan (PEAP) and the adoption of the Plan for Modernization of Agriculture (PMA). Among other things the ministry of Agriculture is responsible for:

- Formulating and reviewing national policies, plans, legislation, standards and programmes relating to the agricultural sector;
- Controlling the use of agricultural chemical, enforcing zoo sanitary and phytosanitary regulations including seed quality standards;
- Providing technical advice, quality assurance, technical audits and support and supervision in the areas of agricultural advisory services for crop, livestock, fisheries and entomology;

The Ministry, through the Fisheries Resources, Crop Protection Directorate and the Animal Resources Directorates is mandated to implement and enforce the application of animal Sanitary and plant Phyto-Sanitary (SPS) measures. The Ministry therefore, spearheads the country's compliance with the requirements of the World Trade Organization/SPS Agreement to ensure competitiveness of the national exports and a framework has been established for this purpose.

### **a) Agrochemicals Control Board**

The functions of the board include;

- Ensuring that agricultural chemicals are duly registered and that those agricultural chemicals are used in a manner consistent with the labeling and in conformity with the regulations made under the Act;
- Regulation of the quality and importation of agricultural chemicals into the country and their distribution
- Consideration of applications for registration of agricultural chemicals, certified commercial applicators and fumigators, and issuance of licenses;

### **b) National Agricultural Research Organisation (NARO)**

The National Agricultural Research Organization (NARO) is established under S.2 of the National Agricultural Research Organization Act, Cap. 205. The objects of the organization among others are to undertake, promote and streamline research in agriculture, livestock, fisheries and forestry.

### **3.5.3 Ministry of Gender, Labour and Social Development (MGLSD)**

Ministry of Gender, Labor and Social Development (MGLSD) is the governmental agency whose mandate is to promote dialogue and to ensure good labor administration that prevents injuries, diseases, strikes and industrial unrest. The relevant departments include:

#### **a) The Department of Occupational Safety and Health**

The origin of this department is traceable back to 1952. It has developed over years and it is now a fully-fledged department headed by a Commissioner. The department has inspectors whose powers derived from the Factories Ordinance of 1952. The inspectors ensure safety and health of workers in factories. However, with developments over the years, the Occupational Safety and Health Department has now become the Directorate of Labour of the Ministry of Gender, Labour and Social Development.

#### **b) Directorate of Labour**

The Directorate is mandated to ensure the existence of safety and health at all workplaces and work environments. It is further mandated to evaluate and control the physical, chemical, psychological, physiological, social and technical factors that affect a person at work and the working environment, including such facilities and institutions that deal in chemicals trade. The directorate also controls the keeping and use of chemical substances, which may be explosive or highly flammable, or toxic, otherwise dangerous substances or generally preventing the unlawful acquisition, possession and use of such substances at work.

### **3.5.4 Ministry of Trade, Tourism and Industry (MTTI)**

The mandate of the Ministry of Tourism, Trade and Industry (MTTI) is derived from the Constitution of Uganda under the Sixth Schedule Article 189, which provides functions and services for which government is responsible and the mandate of the MTTI is covered under sections 6, 8,10,11,20 and 23; and the National Objectives and Directive Policy of State contained in XIII - Protection of Natural Resources and XIV - General Social and Economic Functions.

Among other things, the Ministry formulates and supports strategies, plans and programs that promote and ensure expansion and diversification of trade, environmentally sustainable industrialization, appropriate technology, conservation and preservation of other tradable national products, to generate wealth for poverty eradication and benefit the country socially and economically. Under this the relevant institution is;

#### **Uganda National Bureau of Standards**

The Uganda National Bureau of Standards (UNBS) is mandated by an Act of Parliament (1983) to develop and promote standardization; quality assurance; laboratory testing; and metrology to enhance the competitiveness of local industry, to strengthen Uganda's economy and promote quality, safety and fair trade. UNBS is important because it supports trade through:

- Provision of information on standards and quality requirements of export markets.
- Conformity assessments of export products through laboratory testing and inspection. Certificates of analysis and/or certificates of conformity are issued whenever required.

- Providing training and technical advisory services to export-oriented industries and businesses on standardization and quality assurance to enable them improve on the quality of exports.
- Assisting in export-oriented industries and businesses in establishing Quality Management Systems (e.g., ISO 9000) in their processes to improve their capability of producing products that conform to the export market standards and quality requirements.

### **3.5.5 Ministry of Finance, Planning and Economic Development (MFPED)**

MFPED is involved in the management of chemicals due to its attributions of State finance and national planning. Adequate planning, budgeting, financial appropriation, monitoring and evaluation are required for a timely, effective and successful trade in chemicals in Uganda. All these are provided for by the MFPED, which is an important institution in national planning. Under the Customs Department, an officer may refuse to allow the import of any restricted goods or any goods, the import of which are limited under section 8 until an import license is produced. An officer may also refuse the export of any restricted goods under section 8 until an export license in respect of the goods is produced.

### **3.5.6 Ministry of Internal Affairs**

The ministry coordinates, supervises and oversees Law enforcement activities in the country and ensures that all Government activities are in line with the Constitution. The ministry is divided into several departments some of which may be important in the sustainable management of the leather and tannery industry. The following department plays an exclusively important role:

#### **Government Analytical Laboratory (GAL)**

The mandate of GAL is to safeguard the people of Uganda and the environment. It is also responsible for enhancing the market competitiveness of products through provisions of forensic and general scientific services. GAL does Statutory testing for enforcement of public health, environmental standards and regulations. Among other things GAL offers advisory and investigative services and carries out analysis of environmental samples, water, wastewater, leachates, sediment, sludge, biota, chemical waste as well as industrial and trade effluents for purposes of compliance with set standards. GAL provides analytical support to NEMA, government departments and private sector. GAL is important in regulating the leather-tannery industry.

### **3.5.7 Ministry of Justice and Constitutional Affairs**

Ministry of Justice and Constitutional Affairs is mandated with advising Government on issues pertaining to law and to develop the necessary legal instruments, laws and regulations for the country. The ministry also plays an important role in discussing, reviewing and putting in place appropriate legislation relating to trade, transportation, storage and disposal among other things. In the event that the country has no law to regulate the leather – tannery industry, the ministry of justice has an important role to play in putting in place policies, laws and regulations.

### **3.5.8 Non-Governmental Organizations (NGOs) and other Stakeholders working towards a cleaner Leather-Tanning industry**

While NGOs have a central role to play in promoting cleaner production in the tannery industry in Uganda, NGOs are not actively involved in the tannery industry. Even those that are carrying out activities on the tannery industry, their activities are on not well streamlined. The Uganda

Leather and Allied Industries Association (ULAIA), has put a lot of efforts towards promoting production of good quality hide and skins and less on cleaner production.

## 4.0 Key Findings from the Study

### 4.1 Location and status of the leather tannery industry

The study established that the leather-tanning industry in Uganda is steadily growing. There are four bovine tanneries and one fish skin tannery are owned by foreign investors. The tanneries include; SkyFat Tannery Co. Ltd (SFT), Balawi Hides and Skins, Leather Industries of Uganda (LIU), and Novelty Investment Tannery Ltd. There is one tannery in Jinja district that processes fish skins into leather, under the names of Uganda Fish Leather Tannery Ltd. The SWT Tanners is constructing another bovine tannery in Jinja.

**Table 4.1 Tanneries in Uganda**

Name	Products	Location of industry
Uganda Leather Industries Ltd, Jinja	Wet blue and finished leather	Jinja district
SkyFat Tannery Co. Ltd (SFT)	Wet Blue Hides and Wet Blue Skins	Jinja district
Novelty Investment Tannery Ltd	Wet blue and Hides/skins	Masaka district
Uganda Fish Leather Tannery Ltd, Jinja	Crust and finished skin from Nile Perch	Jinja district
Balawi Hides and Skins	Wet blue and Hides/skins	Busia District
SWT Tanners Ltd. (Under construction)	-	Jinja District

All the tanneries mainly produce wet blue leather. Only one tannery; the Leather Industries of Uganda (LIU), has the capacity to produce both wet blue leather and finished leather which mainly serves the local market. The installed capacity of these tanneries is estimated at about 1.1 million hides and 2.1 million skins per annum.

Government is promoting production and export of finished leather and leather products to maximise revenue from the leather business. A levy on export of raw hides and skins has been introduced to help government reduce export of raw hides and skins and promote the production of finished leather and leather products. However the study established an increase



Work environment and risk of Exposure to harmful chemicals at one of the tanneries in Jinja

## Case Studies of Some tanneries in Uganda:

### a) SkyFat Tannery Co. Ltd (SFT) – Jinja:

This is a Chinese owned leather tannery industry that is located in the Eastern town of Jinja. The tannery was initially at the centre of conflict with the National Environment Management Authority (NEMA), the National Water and Sewerage Corporation and the Jinja Municipal Council. The tannery was initially connected to the National Water and Sewerage Corporation sewer system but it has recently put in place its own waste treatment plant to conform to environmental regulations. The industry was initially allowed to dispose its industrial effluents in the municipal landfill but it was able to acquire land for disposal of its solid wastes in 2008 where it is currently constructing its own landfill.

### Some Leather-making Chemicals used by SkyFat Tannery Co. Ltd (Jinja)

No.	Item	Specification
a)	Ammonium Chloride	99.5% min.
b)	Chromium Sulfate, Basic	60/65% min
c)	Monosodium Phosphate	98% min.
d)	Sodium Sulfide (Flakes, solid)	60% min.
e)	Sodium Bicarbonate	99% min.
f)	Sodium hydrosulphide	70% min.
g)	Soda Ash	99.2
h)	Salt	-
i)	Lime (Calcium)	-
j)	Sulphuric Acid	-

SkyFat finds it difficult to get all the chemicals that it requires to treat the waste because chemicals in Uganda are more expensive than in many parts of the world; for example, transportation of chemicals cost US cents 0.26 per Kg in Uganda while the same chemicals cost US cents 0.15 in China and almost the similar costs in Pakistan.

SkyFat only processes hides and skins to wet blue and unlike other tanneries in the country, SkyFat does its splitting in lime and not in chrome. The industry mainly supplies its leather to the Chinese market and not any other market because their quality of products can only meet the Chinese standards.

Based on its new waste treatment plant, SkyFat demonstrates a cleaner leather tannery production process in the country.

in export of wet blue and unprocessed hides and skins although this was greatly being affected by the global economic crisis.

It was observed that many tanneries had not benefited a lot from the Uganda cleaner production centre.

## 4.2 Effects of the Tannery industry on the workers and to the surrounding communities

Most tanneries have inadequate protective gear for the workers to protect them against harmful aspects of the chemicals used. Some employees lack even the simplest form of protection. Visitors to these tanneries are often allowed to move freely in the industry with no protective gear.

Efforts were being made to unite the tanneries under an association of tanners the Leather Tanners Association Limited (LTA) and under the Uganda Leather and Allied Industries Association (ULAIA). ULAIA was helping in improving the quality of raw materials supplied to the leather and tanning industry while LTA was a lobby tool for influencing government policies. The decomposing organic wastes and the consequent bad odor from the industry greatly affect the surrounding communities. During the study, the communities reported that the stench the tanneries is overwhelming and poses a health risk to them.

As a way of maximizing the benefits from the leather industry, government was promoting processing of hides and skins into finished leather as a way of adding value to the leather. This was expected to lead to extensive use of leather tanning chemicals.

## 4.3 Waste Handling in the Tannery Industry

In addition to generating a lot of chemical wastes, the tannery industry also generates and disposes-off a lot of organic wastes from poorly managed hides and skins; due to limited knowledge and expertise. Effluents from the industry are heavily contaminated with heavy metals and nutrients from organic wastes; most tanneries lack the capacity to effectively treat and safely dispose-off their effluents. While the tanneries had resorted

## b) Leather Industries of Uganda (LIU) (Jinja)

The Leather Industry of Uganda (LIU) is located in Jinja and is owned by the Industrial Promotion Services (IPS) of the Agha Khan group of companies and it is probably one of the oldest leather-tanning industries in Uganda. The Agha Khan operates leather-tanneries in the three East African countries of Kenya, Uganda and Tanzania. The industry has a processing capacity of 300 tonnes of hides per month and a capacity for 700 hides and 2500 skins per day. It is the only leather tannery industry in Uganda that has capacity to process hides and skins into leather. LIU can produce about 100,000 square ft per month of finished leather mainly for export and about 1000 hides per month of finished leather for the domestic market.

LIU is probably one of the leather-tannery industries that use a lot of chemicals. Like other tanneries in the country but unlike SkyFat tannery, LIU uses a lot of Chrome that is almost used in all its processes up to sky blue. From the study it was also noted that converting hides and skins from sky blue to the final leather product is more chemical intensive than converting skins and hides to wet blue only.

It was also observed that unlike at SkyFat, at LIU the surrounding was much smelly as a result of the decomposing organic matter due to poor waste treatment

to burying organic wastes, the quantities of the wastes require a lot of land than is available.

It was established that all these poorly treated wastes end up into Lake Victoria resulting into pollution and eutrophication of the lake. Only SkyFat Tannery is constructing a waste treatment plant as a way of developing its own capacity to address the waste problem. Poor treatment of effluents is attributed to the high costs required to establish waste treatment facilities. In order to address this problem, it is being proposed by Government that tannery industries in the country be clustered.

### 4.4 Identified gaps, Policies, Laws and Regulations in the Sector

The study established that there was no national policy on hides and skins and leather products to regulate leather tanning, its impacts on the environment and the export of leather and leather products among others. It is only the Hides and Skins trade Act of 1964, which is more specific but it is mainly important for regulating trade in raw hides and skins. Although there are several scattered laws and regulations that can help promote cleaner production in the leather tannery industry, these laws are not adequately implemented. Government is in advanced stages of putting in place a specific policy; the ***National Hides and Skins, Leather and Leather Products Policy***, to guide the industry.



Section of a Waste treatment plant at SkyFat



Wet blue leather ready for export – SkyFat

#### **c) Novelty Investment Tannery Ltd (Masaka)**

one of the oldest major leather-tanning industries in Uganda. The plant, like SkyFat, only processes hides and skins to the wet blue level and exports them.

Like other tanneries in Uganda, Novelty Tannery is faced with the challenge of treating its effluents, which are eventually disposed off into a nearby wetland. It was also observed that the environment surrounding the tannery has a bad odour resulting from decomposing organic waste matter from the industry.

The tannery was started by a local investor but later sold to a foreign investor of Lebanese origin. It is also

#### **4.5 Eco-labeling in the Leather Tannery Industry in Uganda**

Eco-labeling is a voluntary method of environmental performance certification and labeling practiced around the world. An eco-label identifies overall environmental preference of a product or service within a specific product/service category based on life cycle considerations. An eco-label is awarded by an impartial third-party in relation to certain products or services that are independently determined to meet environmental leadership criteria.

In Uganda, government, the private sector and civil society have not been actively involved in eco-labeling programs. This study was not able to identify institutions that are recognized or accredited to assign eco-labels to locally manufactured leather products. Most of the leather is exported to a number of countries; including the USA and China, when half processed. Under these circumstances, eco-labeling of the leather products from Uganda leather require the cooperation and involvement of a number countries some of whom have not had a good environmental track record.

## 5.0 Conclusions

- a) The tannery industry in Uganda generates a lot of chemical wastes most of which may be characterized as being potentially hazardous to public health and to the environment. The industry has a number of management problems including storage, transportation and disposal of effluents. There are a number of environmental concerns that among others include a bad odour.
- b) Uganda Leather and Allied Industries Association (ULAIA) and the Leather Tanners Association Limited have not effectively brought all tanners and stakeholders in the sector together under one umbrella.
- c) Government is promoting the processing of hides and skins into finished leather, which will require heavy investment into waste treatment and purification.
- d) The extensive use of heavy metals in leather tanning processes the exposure to high levels of chemical effluents and to decomposing biological/organic matter, adversely affect human health and the environment.
- e) The tanneries lack the facilities, expertise and skills to mitigate the adverse impacts of chemicals on health and the environment.
- f) There is inadequate infrastructure for transporting, handling, storing, formulating and applying while the majority of the people who handle the chemicals are less aware of the adverse impacts the chemicals they use pose to their health and to the environment.
- g) The leather-tannery industry in Uganda is scattered making it difficult for them to attract assistance from government towards constructing a common point for effluent discharge and treatment.
- h) The laws governing the sector are scattered, inadequate and poorly implemented.

## 6.0 Recommendations of the study

Based on the findings of the study and on the need for responsible production in the sector for enhanced health and environmental sustainability, the following recommendations are being suggested:

(a) **Put in place a national policy:** There is need for government to move fast and put in place a comprehensive national hides and Skins, Leather and Leather products policy. Absence of policy was greatly affecting economic and environmental benefits from the leather-tannery industry. The policy is important and will help regulate leather tanning, the export of raw (wet blue) hide/skin and set procedures on how the animals will be skinned and transported to maintain the quality of the skins before processing.

(b) **Minimize use of Chemicals:** There is need for the industry to identify and promote actions that are aimed at reducing the amount and/or toxicity of chemicals. The practice of reducing chemical use should be encouraged so as to minimize the costs of waste treatment and the risks of such waste to human health and the environment. This will need prudent chemical management practices in the leather-tannery industry to help minimize the quantities and risks of the chemicals being used.

(c) **Raise Awareness:** There is need for providing awareness and training programmes on sustainable leather production; focusing on effluent management and treatment, management of health risks from the plant and the management of environment pollution among others.

(d) **Monitor:** There is need for government, Civil Society and other stakeholders to monitor activities of leather-tannery industries and to loosely work with them and other regulatory organs for improved production in the industry

(e) **Improve waste management:** There is need for clustering the leather-tannery industries in the country so that they may be able to pull resources for a common treatment plant of effluents since individual plants are finding it difficult to construct their own treatment plants. Upon clustering of the leather-tannery plants, government should also come in to support the industry by contributing towards a common modern waste treatment facility for leather-tannery industries.

(f) **Improve Standards and Technologies:** There is need for improving the standards and technologies used in the abattoirs since the poor standards contribute to massive rejects of the hides and skins

(g) **Enhance Cooperation:** There is need for cooperation between the different tanneries so that they can be able to learn from each other's experience for improved production, management of human health and the environment