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RECP Experiences at Leather Industries of Uganda

The efficient and environmentally sound use of materials, energy and water - coupled with the minimization of waste and emissions - makes good business sense. Resource Efficient and Cleaner Production (RECP) is a way to achieve this in a holistic and systematic manner. RECP covers the application of preventive management strategies that increase the productive use of natural resources, minimize generation of waste and emissions, and foster safe and responsible production. Benefits are eminent in many enterprises, regardless of sector, location or size, as demonstrated by the experiences of Leather Industries of Uganda Ltd

Achievements at a Glance

Investing in Cleaner Production, to prevent pollution and reduce resource consumption has proven to be more cost effective than continuing to rely on increasingly expensive 'end-of-pipe' solutions. The environmental benefits of Cleaner Production can be translated into market opportunities for 'greener' products. Since 2010, RECP implementation in LIU has led to a total saving of USD 2,236,450.50 against a total investment of USD; 1,676,120.85 and BODs and CODs have reduced from 268,070.600tons/yr and 376,055.850tons/yr to 39.66tons/yr and 79.056tons/yr respectively.

LIU has demonstrated that implementation of RECP results in improved productivity while reducing the environmental impact of the activities of industries. RECP covers the application of preventive management strategies that increase the productive use of natural resources, minimize generation of waste and emissions, and foster safe and responsible production. Benefits are eminent in many enterprises, regardless of sector, location or size.



Photo 1; Old leaking drums before RECP



Photo 2; New installed drums of RECP



Photo 3; WWTP Before RECP



Photo 4; WWTP after RECP Implementation

Overview

Leather Industries of Uganda (LIU) is a private limited liability company initiative under Aga Khan Development Network (AKDN) and a sole processor of hides and skins up to finished stage in Uganda. It has an installed capacity of processing 1000 pieces of raw hides and 5000 skins per day and exports 95% of its produce to different parts of the world. Currently, LIU processes 800 pcs of hides /day and Consumes approx. 600m³ of water/ day, releases 99% of the consumed water as effluent/day and generates averagely 2000kgs of Solid waste /day which has to be disposed off. Driven by the objectives of addressing the pressing environmental challenges at that time and increasing productivity and competitiveness, LIU decided to implement RECP in the entire processing factory.

Benefits

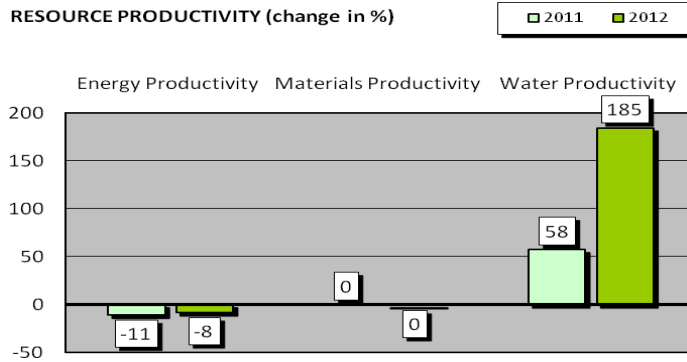
LIU has been able to achieve tremendous improvement because of profound top management commitment but also team spirit from the employees. Notable CP options have been implemented in the beam house, tanning yard, dye house, occupational health and safety, effluent treatment, waste management, energy management, chemical management, water use etc.

Absolute Indicator	Change (%) year 1	Change (%) year 2	Relative Indicator	Change (%) year 1	Change (%) year 2
Resource Use			Resource Productivity		
Energy Use	15	-20	Energy Productivity	-11	-8
Materials Use	2	-27	Materials Productivity	0	0
Water Use	-35	-74	Water Productivity	58	185
Pollution generated			Pollution Intensity		
Air Emissions (global warming, CO2 eq.)	15	-20	Carbon Intensity	12	9
Waste-Water	-35	-74	Waste-Water Intensity	-37	-65
Waste	2	-27	Waste Intensity	0	0
Product Output	2	-27			

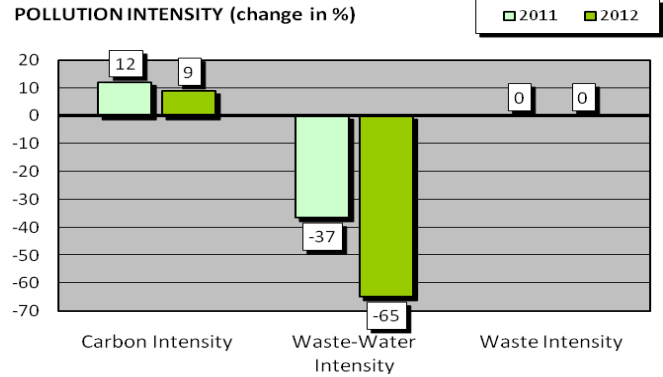
Note: The absolute indicators provide a measurement of how much resource use/pollution output has changed in absolute terms e.g. units of energy used or tons of waste generated. A negative percentage indicates a decrease and a positive percentage indicates an increase. The relative indicators provide a measurement of changes in resource use/pollution in relation to production output. Resource productivity provides a measurement of how much product output can be produced per unit of resource use, from a sustainability perspective, productivity should increase. Pollution intensity provides a measurement of how much pollution is generated per unit of production output, from a sustainability perspective, intensity should decrease.

RECP Profile

RESOURCE PRODUCTIVITY (change in %)



POLLUTION INTENSITY (change in %)



Note: The RECP profile provides a visual overview of resource productivity and pollution intensity shown as change in % compared to the baseline values. Environmental performance is improved when resource productivity increases and when pollution intensity decreases.

Success Areas

Resource Efficient and Cleaner Production (RECP)

Resource Efficient and Cleaner Production (RECP) entails the continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment.

RECP addresses three sustainability dimensions individually and synergistically:

- *Production efficiency*

- > Through improved productive use of natural resources by enterprises

- *Environmental management*

- > Through minimization of the impact on nature by enterprises

Human development

- > Through reduction of risks to people and communities from enterprises and supporting their development





RECP Experiences



Table 2: some of the Opportunities implemented

Principal Options Implemented	Benefits			
	Economic Investments (USD)	Annual Economic Savings (USD/Yr)	Annual reductions in Resource Use	Environmental Impact
Water Management				
<ul style="list-style-type: none"> Installed new drums to replace the old worn out leaking drums. 	22000	10000		<ul style="list-style-type: none"> Reduced chemical loss
Wastewater Management				
<ul style="list-style-type: none"> Construct a secondary waste water treatment plant 	297,860	500,000		<ul style="list-style-type: none"> Reduced pollution load and Environmental Legal compliance
Materials Management				
<ul style="list-style-type: none"> Recycle chrome and tanning bath solutions 	50,000	13,700		<ul style="list-style-type: none"> Reduction in the chemical pollution load of the effluent.
Energy Management				
<ul style="list-style-type: none"> Installation of iron sheets with translucent sheets in the beam house and tanning yard 	280	300		<ul style="list-style-type: none"> Reduction in input costs
<ul style="list-style-type: none"> Installation of energy savers for all lights and security lights 	320	8,000		<ul style="list-style-type: none"> Reduced energy consumption
<ul style="list-style-type: none"> Raise the main water supply tank and make use of gravity to supply water to the factory instead of using electric pumps. 	4,000	48,434		<ul style="list-style-type: none"> Reduction of energy used for pumping water
Solid Waste Management				
<ul style="list-style-type: none"> Obtain equipment to process animal feed from fleshings and green trimmings Ensure proper treatment and disposal of organic waste 	50,000	2,736		<ul style="list-style-type: none"> Legal compliance, Reduced soil/water contamination, Odour management, Improved aesthetics (beauty), Reduced public complaints, Income generation



RECP Experiences



Approach taken

Driven by the commitment for sustainable productivity and growth, LIU was introduced to RECP by UCPC staff in 2010. A CP team was formed at LIU and this team was taken through a series of trainings by UCPC on RECP. In order to identify and quantify opportunities for improvement, the UCPC team and LIU CP team conducted an in-depth RECP assessment in the entire factory. UCPC presented the findings of the assessment to the top management and CP team for implementation. In order to facilitate smooth implementation of the identified RECP options, UCPC further organised an awareness raising seminar for the shop floor workers. UCPC team has always continued providing technical assistance to LIU in addition to involving LIU in workshops and seminars for more knowledge acquisition. LIU has evolved a well defined environment management policy and sound environment practices for minimizing environmental impact arising out of tanning operations and preserving the natural ecology. The policy also envisages efficient utilisation of resources, thereby minimising waste, maximising chemical utilisation and providing a green belt all around the plant for maintaining ecological balance.

Business case

Realizing the importance of protection of the environment, LIU has constituted different groups on the production chain to carry out specific environment related functions. The Environment Management Groups (EMG's) implement measures to mitigate the impacts of production processes on the environment and preserve ecology in the vicinity of the factory. The environment friendly approach to leather tanning has already begun to show results in conservation of natural resources such as; water and energy as well as control of environmental pollution through reduced chemical consumption. With better awareness and appreciation towards ecology and environment, LIU is continually looking for innovative and cost effective solutions to conserve natural resources and reduce wastes. Some of the measures include: Reduction in land requirements for sludge disposal area by directly applying it on land as manure for our green belts, Reduction in water requirement for main plant through process optimization and reduction of water wastages and Efficient use of Energy and reduction in energy requirement through more efficient processing and adoption of better technologies such as automated switches on drums.

Testimony Box

National Cleaner Production Centre (NCPC)

UCPC was established in October 2001 as part of the UNIDO-UNEP Cleaner Production Programme. UCPC is part of a family of over 50 National Cleaner Production Centres (NCPCs) worldwide and operates under the auspices of Trade, Industry and Cooperates.

In 2010, the Centre in partnership with Lake Victoria Basin Commission embarked on promoting RECP as a tool for Sustainable Consumption and Production in enterprises within the Lake Victoria Basin and has worked with over 140 enterprises.

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English Abstract (where applicable)

N/A



RECP Experiences



ABOUT RECP EXPERIENCES

Through the joint Resource Efficient and Cleaner Production (RECP) Programme, the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Programme (UNEP) cooperate to improve the resource productivity and environmental performance of businesses and other organizations in developing and transition countries. The Programme is implemented in partnership with the Global Network for Resource Efficient and Cleaner Production (RECPnet). This series of enterprise success stories documents the resource productivity, environmental and other benefits achieved by enterprises in developing and transition countries through the implementation of RECP methods and practices.

These successes were achieved with the assistance of the National Cleaner Production Centres, which are part of RECPnet established with support of the UNIDO and UNEP. The success stories employ the indicator set described in *Enterprise Level Indicators for Resource Productivity and Pollution Intensity*, UNIDO/UNEP, 2010. The primer with accompanying calculator tool and further case studies are available at www.recpnet.org, as well as on www.unido.org/cp and www.unep.fr/scp/cp.