Module Title:
Introduction to Cleaner Technology and Environmental Management of Leather Processing

Module Endorsed by ALLPI Curriculum Review Committee

Africa Leather and Leather Products Institute (ALLPI)

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<th>Module title</th>
<th>Introduction to Cleaner Technology and Environmental Management of the Leather Processing</th>
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<td>Module code</td>
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<td>Total hours</td>
<td>5 days</td>
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<td>Target group</td>
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**Description of module**

Introduction to cleaner technology and environmental management towards leather processing is a middle level course targeting SMEs and established tanners. Critical aspects such as greener production of leather processing, energy efficiency methodology, processing audit and effluent treatment will be discussed in depth. This module will further prepare the participants to comprehend on how to comply with eco-labeling conditionality as a niche market entry initiative. In exploring the principles of cleaner technology a close link to appropriately designed environmental management will be discussed. With an intensive training approach to the participants of this module orientation will be adopted with advanced institutions at global level collaborating with ALLPI to train the participants. The main objective is to ensure skills are developed in transforming the participating leather processing units to adoption of cleaner technology and appropriate environmental management system and lead to sustainable development of the leather sector.

**Learning outcomes**

At the end of this learning module, the participant must be able to demonstrate a basic knowledge, skill, understanding and attitude of:

- Purposeful learning about cleaner technology and environmental management towards leather processing;
- Applying greener production of leather processing and energy efficiency;
- State eco labeling conditionality;
- Demonstrating commitment to the 3R’s (reuse, reduction and recycling);
- Basic record keeping.
- Explaining and performing processing audit capacity of effluent and remediation;
- Adopting Eco friend technology that could lead to eco-labeling;
- Adopting to terms of cleaner technology in production for purpose of attaining brand marks.

**Content**

**Processing**: Introduction to cleaner technology, production of chrome free leather, Environmental management and disposal, solid and liquid waste management: introduction to 3Rs: Reduction, Re-use and Recycle, energy efficiency, processing audit, certification: eco-labeling and National Standards. Safety and health hazards: policy and legal review of appropriate National framework, the Factory Act, ecosystems management, Brand development, and keeping of appropriate records.

**Teaching strategy**

- Class room teaching
- Field trips to industry
- Assignments
| Assessment criteria          | Group work  
|                             | Practical sessions    |
| Assessment strategy         | Individual Assignment  
|                             | Group assignment and presentation  
|                             | Practical work    |
| Role of Trainer and Trainees| Continuous assessment basis:  
|                             | Class attendance  
|                             | Written exams  
|                             | Reports of assignments  
|                             | Practical demonstration    |
| Teaching support and inputs | Trainer should organize classes and field sessions, conduct lectures, give guidance to do assignments, motivate trainees to actively participate in class and field sessions.  
|                             | Trainees should attend classes and field sessions, actively participate in class and field sessions and submit duly completed reports of assignments.    |
| Reading materials           | Lecture materials (handouts, Slides, Reference books)  
|                             | LCDs and laptops, photocopier and photocopy papers, flip charts    |

- Is the Kenyan tanning industry integral to prioritised environmental sustainability targets set in the quest to industrialisation by 2020 and Journal of Environmental Sciences Vol. 3(2): 113-134 (2006).
- Pollution control and remediation of the tanning effluent. The Open Environmental Pollution and toxicology journal.
- *Ecological Risk Assessment (ERA) as a tool to pollution control of the tanning industry*. Resources and Environment journal. Resources and
Environment, 1(1); 1-12 (2011).

- http://www.nene.ac.uk; Common Fund for Commodities, Amsterdam
- International Council of Tanners, Leather Trade House, UK; sec@tannerscouncilict.org;International Organization for Standardization