Livestock Identification, Traceability and Tracking

Its Role in Enhancing Human Security, Disease Control and Livestock Marketing in IGAD Region

Daudi E. Ekuam
2008/2009
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### ACRONYMS

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<tr>
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<tr>
<td>IGAD</td>
<td>Inter-governmental Authority on Development</td>
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<td>CEWARN</td>
<td>Conflict Early warning Response Network</td>
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<tr>
<td>ISS</td>
<td>Institute of Security Studies</td>
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<td>CEWERU</td>
<td>Conflict Early Warning Response Unit</td>
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<td>RRF</td>
<td>Rapid Response Fund</td>
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<tr>
<td>TCEW</td>
<td>Technical Committee on Early Warning</td>
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<tr>
<td>CPS</td>
<td>Committee of Permanent Secretaries</td>
</tr>
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<td>EAPCCO</td>
<td>Eastern Africa Police Chiefs Cooperation Organization</td>
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<tr>
<td>SALW</td>
<td>Small Arms and Light Weapons</td>
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<tr>
<td>OIE</td>
<td>International Organization on Animal Health</td>
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<tr>
<td>NRI</td>
<td>National Research Institutions</td>
</tr>
<tr>
<td>CC</td>
<td>Country Coordinators</td>
</tr>
<tr>
<td>FM</td>
<td>Field Monitors</td>
</tr>
<tr>
<td>DPC</td>
<td>District Peace Committees etc</td>
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<tr>
<td>RECSA</td>
<td>Regional Centre on Small Arms</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>CSO</td>
<td>Civil Society Organization</td>
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<td>CBO</td>
<td>Community Based Organization</td>
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<td>NFP</td>
<td>National Focal Point</td>
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<td>CI</td>
<td>Community Interviews Methodology</td>
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<td>GI</td>
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<tr>
<td>FGD</td>
<td>Focus Group Discussions</td>
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<td>LITS</td>
<td>Livestock Identification and Trace-back System</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<tr>
<td>REC</td>
<td>Regional Economic Community</td>
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<tr>
<td>IGAD</td>
<td>Intergovernmental Authority on Development</td>
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<tr>
<td>VO</td>
<td>Veterinary Officer</td>
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<tr>
<td>AHA</td>
<td>Animal Health Technicians/Assistants</td>
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<tr>
<td>SAP</td>
<td>Structural Adjustment Programmes</td>
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<tr>
<td>DAH</td>
<td>Decentralised Animal Health</td>
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<tr>
<td>EEC</td>
<td>European Economic Commission</td>
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<td>NORAD</td>
<td>Norwegian Agency for Development</td>
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<tr>
<td>FMD</td>
<td>Foot and Mouth Disease</td>
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<tr>
<td>CBPP</td>
<td>Contagious Bovine Pleuropneumonia</td>
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<tr>
<td>CCP</td>
<td>Contagious Caprine Pleuropneumonia</td>
</tr>
<tr>
<td>LSD</td>
<td>Lumpy Skin Disease</td>
</tr>
<tr>
<td>RVF</td>
<td>Rift Valley Fever</td>
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<tr>
<td>ECF</td>
<td>East Coast Fever</td>
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<tr>
<td>PPR</td>
<td>Peste Des Petits Ruminants</td>
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<tr>
<td>PARC</td>
<td>Pan African Rinderpest Campaign</td>
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<tr>
<td>PACE</td>
<td>Pan African Campaign on Epizootics</td>
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<tr>
<td>MT</td>
<td>Metric Tonnes</td>
</tr>
<tr>
<td>USD</td>
<td>United States of America Dollars</td>
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<tr>
<td>KMC</td>
<td>Kenya Meat Commission</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>RFID</td>
<td>Radio Frequency Identification Device</td>
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<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>VHF</td>
<td>Very High Frequency</td>
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<td>GPS</td>
<td>Ground Positioning System</td>
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<td>GSU</td>
<td>General Service Unit</td>
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<tr>
<td>ASTU</td>
<td>Anti Stock Theft Unit</td>
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<tr>
<td>OLF</td>
<td>Oromo Liberation Front</td>
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<tr>
<td>EPARDA</td>
<td>Ethiopian Pastoralists Relief and Development Agency</td>
</tr>
<tr>
<td>CIFA</td>
<td>Community Initiative Facilitation Assistance</td>
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<tr>
<td>RIAM RIAM</td>
<td>Kenyan CBO working on peacebuilding in Turkana</td>
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EXECUTIVE SUMMARY

It is incomprehensible that despite holding the largest concentration of livestock in Sub-Saharan Africa, the livestock industry in the IGAD region is far from becoming a major contributor to the economies of the countries of the region. Besides, livestock marketing infrastructure is skewed and considerably limited and outmoded. Livestock products have never constituted a substantial proportion of export earnings, yet the potential is massive. Restricted entry of animal products to the market economy has translated into low income for stock owners and their national governments.

The overall standards of livestock husbandry, pasture management, disease control and economic efficiency in the region are pathetically low. Public and private investment in the livestock industry is miniscule. Livestock disease incidence is relatively higher with CBPP, CCPP, Lumpy Skin Disease, Anthrax, Tick borne diseases, Diarrheal diseases presenting a major threat to the industry. Veterinary drugs and other animal husbandry services are out of reach for a large majority of pastoralists.

The grim picture is not helped on the other hand by the burgeoning problem of cattle rustling which is increasingly becoming a major security threat in the region. Not only does it claim a high death toll, but it is also contributing, to a great extent, to urban crime and political unrest in the region, particularly within the Karamoja Cluster. The continued build-up of ethnic animosity and the skeletal presence of state security organs in the pastoralist areas have the potential to fertilise organized crime, including terrorist activities.

Arising from their concern over the human security threat posed by this scenario and as their contribution to on-going peace efforts in the region, IGAD/CEWARN, in partnership with the Institute of Security Studies (ISS), commissioned this study between September 2008 and December 2008. Its main thrust was to locate the place of livestock/cattle identification, traceability and tracking in checking livestock raiding/theft related violent conflicts among pastoralist communities in the IGAD sub-region and Tanzania. It was also meant to be an important step towards the implementation of the just signed Protocol for the Prevention, Combating and Eradication of Cattle Rustling in Eastern Africa.

The study methodology adopted a social and institutional dimension to obtain necessary data from the various stakeholders, including relevant government technical ministries and state security institutions - e.g. police, administration and military. Extensive consultations with the CEWARN structure were undertaken. Small Arms Desks/Focal Points, professional bodies, researchers and academicians, field practitioners, NGOs, religious organizations etc, formed a major component of the study’s participants. And above all, pastoral communities in the area of study, who were appropriately disaggregated on gender, youth, minority and disability basis were a major element of the research. Various social science data analysis techniques were used for analysing both qualitative and quantitative data.

The findings of the study, which have been shared and validated by a good proportion of the participants, are expected to not only play a critical role in improving the rate of detection and
recovery of stolen animals in the region, but to also inform policy reforms in the livestock industry.

The study surmises the following findings and recommendations;

1. **Harmonised Regional Approach to Identification and Traceability Systems** – Different Member States are at different levels of development of the livestock industry, including existing systems on livestock identification and traceability. A regional approach that will take into account these variations and facilitate joint regional initiatives on identification, marketing and disease control is recommended.

2. **A Foundational/Primary Identification System** – Hot iron branding is a widespread practice and is generally appreciated by many pastoralist communities in the region. They have used it for centuries as a traditional livestock identification mechanism. An effectual regional identification system will need to build on this as basis from which to anchor any other component of the system, especially electronic identification. Botswana, which is a world leader in livestock identification, began by first making it mandatory for all livestock in the country to have a unique registered brand that could be traced to a particular farm, individual, family, or community. This constituted the primary identification modality, whilst the state provided a secondary electronic identification system in the form of rumen bolus which not only gave identity but also conferred traceability attributes to the animal.

3. **A Harmonised Traceability and Tracking System** – States will not be able to meaningfully gain access to international markets without meeting OIE’s minimum international disease control standards. Traceability of livestock and livestock products availed to market is a primary requirement by OIE. Member States and Tanzania should therefore ensure they put in place necessary conditions to usher an appropriate electronic identification system to compliment the primary system and takes into account the unique characteristics of the different terrains, economic capacities, socio-cultural features, political economies etc.

In this regard, the concurrence by stakeholders is that each country or sub-region be left to freely choose the secondary identification method best suited to its circumstances. Although the primary identification should essentially be visual, the option chosen for traceability and/or tracking need not be visual. It must however be noted that electronic methods are considerably costly, although the benefits may be impressive in the long run. Tracking costs are particularly prohibitive and the system has never had a major roll-out anywhere in the world. It will also be upon each member state, depending on the obtaining circumstances locally, to decide whether to make the process voluntary or mandatory.

4. **Extensive Advocacy, Awareness Creation and Public Education Campaigns** - It is instructive that most stakeholders, including relevant government officials are generally unable to distinguish between the conceptual significance of identification *per se* and traceability or tracking. Similarly, there’s a general lack of awareness or update on technological advancement in livestock identification, traceability, registration and tracking. Field studies reveal that a number of livestock keepers are amenable to new technology but have been limited by paucity of information on the available options. There will therefore be need to build the necessary critical mass for the support of the programme.
Like all new innovations, new technology will always meet resistance, especially among the generally illiterate target communities that are pastoralists. Field enquiries ascertain that a comprehensive livestock branding programme within any of the pastoralists’ areas is likely to face the least resistance as compared to an electronic identification system, especially if it’s not well-publicised. All industry actors from livestock producers to livestock traders, butchers, sale yard operators, abattoir operators, transporters, and government agents require to be sensitized accordingly. In this connection, extensive consultations with a cross section of stakeholders need to be undertaken. Lesson-learning and awareness creation exchange visits by community leaders may be crucial. National advocacy campaigns employing print and electronic media; workshops and seminars; publicity materials such as banners, posters, pamphlets, brochures etc, would also be important. A pilot scheme in one of sub-regions will be necessary for lesson-learning and eventual streamlining of the programme.

It also emerged that some stock owners were opposed to what they referred to as ‘alien system’ merely out of ignorance. What’s more, apart from Kenya, Uganda and Tanzania, the other states have hardly undertaken any comprehensive government-initiated livestock branding programme. Consequently, as a first step, this study recommends a regional community education and awareness programme on livestock identification and traceability – stressing on available options, mechanics and possible benefits.

5. Establishment of Basic Institutional, Legal and Policy Frameworks - Whereas the responsibility of implementing and ensuring the success of an identification and traceability system is with the respective States, a regional coordinating body, preferably under CEWARN/IGAD, is necessary. It’s proposed that for purposes of the general policy direction and harmonization, a regional Livestock Identification and Traceability Coordination Unit (LITCU) within CEWARN/IGAD preferably managed by a LITS Coordinator may be ideal. The LITCU will form the technical body while an inclusive advisory body – regional Livestock Identification Steering Committee (LISC) or Livestock Identification Task Force (LITF) comprising of representatives form member state governments, professionals and other livestock industry actors, and civil society – will provide policy direction and necessary guidance. This body will in turn be responsible to the existing IGAD structure.

Tanzania and Kenya already have legal instruments in place to facilitate primary identification systems. In fact Tanzania is a step ahead since it already putting in place a law that will also accommodate secondary identification including traceability systems. It also has a directorate of Livestock Identification and Traceability within the Ministry of Agriculture. Kenya law CAP 367, is old having been put in place in 1907. It needs to be reviewed to accommodate current realities. The starting point for the member states therefore is to go the Tanzania way; draft an identification and traceability policy; enact the necessary law; and create the necessary national infrastructure to facilitate livestock identification, traceability, and tracking – all with three objectives, i.e. enhance human security; facilitate marketing; and meet necessary disease control requirements. There will also be need for a regional instrument (treaty/protocol etc) to facilitate the operations at that level.

6. Phased Implementation - The implementation of the regional livestock identification initiative should be done over a period of 5 years in an incremental and phased manner.
1.0 INTRODUCTION

1.1 BACKGROUND

This study was commissioned by IGAD/CEWARN in partnership with the Institute of Security Studies (ISS) between September 2008 and December 2008. Its main aim was to undertake a comprehensive study on livestock/cattle identification, traceability and tracking as a mechanism for preventing livestock raiding/theft related violent conflicts among pastoralist communities in the IGAD sub-region and Tanzania. The study seeks to investigate and consolidate the place of livestock identification, including branding in preventing, combating and eradicating cattle rustling as stipulated in the just signed Protocol for the Prevention, Combating and Eradication of Cattle Rustling in Eastern Africa. The findings of the study will also play a critical role in improving the rate of detection and recovery of stolen animals in the region.

During their meeting on the 13th of April 2007, the Council of Ministers of IGAD decided that livestock identification should be included in the efforts of CEWARN as a strategy directed towards controlling the deepening pattern of cattle rustling-related conflicts in the region. Similarly, the meeting of CEWARN Country Coordinators and Member States national CEWERU Heads held in Addis Ababa in July 2007 resolved that cattle branding be made one of the first projects to be funded through the soon-to-be-operationalised Rapid Response Fund (RRF).

In response to this, CEWARN developed a Cattle Branding Initiative proposal for its 5th meeting of the Technical Committee on Early Warning (TCEW) and the 7th Meeting of the Committee of Permanent Secretaries (CPS) which were held between 29th and 31st October, 2007 in Khartoum, in the Sudan. The meeting resolved that a study be commissioned on a Cattle Branding Initiative by CEWARN as part of livestock identification, taking into consideration lessons learnt and experiences shared within the region in order to come up with appropriate steps for implementing the project and, if possible, reducing the incidents of cattle rustling.

Acknowledging the threat to human security resulting from the escalating conflicts in the pastoralist areas, the Eastern Africa Police Chiefs Cooperation Organization (EAPCCO) in partnership with the Institute for Security Studies (ISS) elaborated a Protocol for the Prevention, Combating and Eradication of Cattle Rustling in Eastern Africa. The Protocol’s primary objectives include prevention, combating and eradicating cattle rustling and related criminal activities in the Eastern Africa region; systematic and comprehensive approach to cattle rustling in the region in order to ensure that its negative social and economic consequences are eradicated and that peoples’ livelihoods are secured; enhancing regional cooperation, joint operations, capacity building and exchange of information; and, promoting peace, human security and development in the region. In an effort to realize the above objectives, EAPCCO in partnership with the ISS came up with a regional intervention strategy referred to as the Mifugo Project.

The project’s primary motivation is to facilitate the ratification and full implementation of the Protocol which will hopefully lead to the development of appropriate mechanisms to prevent, combat and eventually eradicate cross-border illicit activities in general and cattle rustling and arms trafficking in Eastern Africa in particular. The Mifugo Project is expected to facilitate the domestication of the Protocol by supporting the Member States in developing best-practice
guidelines to be applied in the promulgation of national policies and legislation. Article six (6) of the Protocol provides for the development of a mechanism(s) for livestock identification including branding, marking and record-keeping of livestock.

1.2 PURPOSE AND AIM OF THE STUDY

The main aim of this study is to only contribute to the greater effort by various other actors towards conflict prevention, peacebuilding and reconciliation in the IGAD region but to also come up with recommendations on appropriate livestock identification system(s) and strategies for preventing, combating and eradicating cattle rustling or livestock thefts, and improving on the detection and recovery rate of stolen animals. This is premised on the belief that comprehensive identification, branding, marking and recordkeeping clearly offer a disincentive to potential livestock thieves and the owners could enjoy relative security in the knowledge that their livestock, once stolen, will be easily traced and recovered.

The research also endeavours to understand the current nature of livestock identification approaches in use in region; exploring the ‘whys’, ‘wheres’, ‘whos’, ‘whens’ and the ‘hows’ of (traditional and conventional) livestock identification by the different pastoralist communities in Eastern Africa; learning and documenting the role of identification as a protection and deterrent measure to livestock thefts; determining the significance of identification in disease control and surveillance, marketing information and conformity; and ascertain the national and regional (conventional) legal aspects of livestock identification etc. The study was also to feed into any other studies that might be there to address case-specific issues in regards to livestock identification, registration and traceability.

1.4 WORKING DEFINITIONS OF TERMS

**Animal Identification**

The combination of the identification and registration of an animal individually, with a unique identifier, or collectively by its epidemiological unit or group, with a unique group identifier (OIE Terrestrial Animal Health Code, 2008);

**Animal Identification System**

The inclusion and linking of components such as identification of establishments/owners, the person(s) responsible for the animal(s), movements and other records with animal identification (OIE Terrestrial Animal Health Code, 2008);

**Animal Traceability**

The ability to follow an animal or group of animals during all stages of its life (OIE Terrestrial Animal Health Code, 2008);

**Animal Tracking**

The study, among other outcomes, seeks to come up with recommendations on appropriate livestock identification system(s) as a mechanism for preventing, combating and eradicating cattle rustling or livestock thefts, and improving the detection and recovery rate of stolen animals.
The ability to establish the relative location of an animal(s) at any given time

**Branding**

Any official permanent mark or permanent representation on livestock, which consists of a designated combination of country and district or tribe in conformity with domestic laws;

**Cattle Rustling**

Stealing or planning, organising, attempting, aiding or abetting the stealing of livestock by any person from one country or community to another, where the theft is accompanied by dangerous weapons and violence;

**Epidemiological unit**

A group of animals with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogen. This may be because they share a common environment (e.g. animals in a pen), or because of common management practices. Usually, this is a herd or a flock. However, an epidemiological unit may also refer to groups such as animals belonging to residents of a village, or animals sharing a communal animal handling facility. The epidemiological relationship may differ from disease to disease, or even strain to strain of the pathogen (OIE Terrestrial Animal Health Code, 2008);

**Small Arms and Light Weapons (SALW)**

include portable weapons designed for use by one or several persons e.g. light machine guns, sub-machine guns, including machine pistols, fully automatic rifles and assault rifles, and semi-automatic rifles, heavy machine guns, automatic cannons, howitzers, mortars of less than 100 mm calibre, grenade launchers, anti-tank weapons and launchers, recoilless guns, shoulder-fired rockets, anti-aircraft weapons and launchers, and air defence weapons;

**Livestock**

Any domesticated animals such as cattle, sheep, goats, camels, donkeys, horses, ostriches, poultry, pigs etc

**Marking**

Making or placing a mark on any livestock by means of tattooing or micro chipping, or any other mark which the local authorities may by notice consider to be a mark;

**Member State** - A member State of IGAD or EAPCCO;

**Stock** - Also refers to livestock/cattle;

**Conflict** - A situation where two or more parties perceive that their interests cannot co-exist and therefore express hostile attitudes, or pursue their interests through actions that damage the other parties. (Lund, 1997:2-2).

**Human Security** - Actions that not only ensure freedom from fear but also freedom from want;

**Pastoralism** - A production system in which 50% or more of household income and subsistence comes from livestock or livestock-related activities; Swift (1988);

**Peacebuilding**
The employment of measures to consolidate peaceful relations and create an environment which
deters the emergence or escalation of tensions which may lead to conflict. (*International Alert,
1995*).

**Livestock Record Keeping** refers to processing and storage of identity details of individual
animals

**Registration** is the action by which information on animals (such as identification, animal health,
movement, certification, epidemiology, establishments) is collected, recorded, securely stored and
made appropriately accessible and able to be utilised by the Competent Authority (OIE
Terrestrial Animal Health Code, 2008);

### 1.4.1 Area of Focus

<table>
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<tr>
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<th>PROVINCE</th>
<th>DISTRICT</th>
<th>AFFECTED COMMUNITIES</th>
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<td>Rift Valley</td>
<td>Turkana, West Pokot</td>
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<td></td>
<td>Ethiopia</td>
<td>---</td>
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<td>Toposa, Merille, Nyangatom</td>
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<td></td>
<td>Uganda</td>
<td>---</td>
<td>Karamojong, Kostido, Nakapiripit, Buuka</td>
<td>Karamojong, Sabiny, Tepes, Pokot</td>
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<td>Sudan</td>
<td>---</td>
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<td>Toposa, Jie, Didinga</td>
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<td>2. Borana Cluster</td>
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<td>Kenya</td>
<td>Borena Region</td>
<td>Moyale, ---</td>
<td>Borana, Gabra, Somali</td>
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<td>3. Mandera Triangle</td>
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<td>Somali Clans</td>
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<td>Ethiopia</td>
<td>Somali region</td>
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<td>Rift Valley, Nyanza</td>
<td>Kajiado, Narok, Transmara, Kuria</td>
<td>Maasai, Kuria, others</td>
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<td>Tanzania</td>
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*Figure 1: Geographical Location of Study Area*
1.5 APPROACH AND METHODOLOGY

1.5.1 General Approaches and Research Design

The study applied social and institutional assessment methodologies for determining the needs of the various stakeholders, including relevant government technical ministries and state security institutions (e.g. Police, Army etc). The CEWARN structure, consisting of the CEWERUs, National Research Institutions (NRI), Country Coordinators (CC), Field Monitors (FM), Peace Committees etc were also consulted and kept abreast at all stages of the study. RECSA, Small Arms Desks/Focal Points, practitioners (NGOs, CSOs etc) were also part of the study. And above all, pastoral communities in the area of study who were appropriately disaggregated on gender, youth, minority and disability basis formed a major component of participants in the research. Details of the approaches adopted are given below.

a) Social Approach

The social approach was based on community interviews, questionnaires and case studies to not only come up with ethnological, genealogical and semiological information on existing traditional livestock identification systems, but also gather local people’s views regarding livestock identification as a measure against cattle rustling, and its role in livestock marketing and disease control in the IGAD region and Tanzania. This included a critical assessment of existing identification systems, and look at all social groups involved in, or left out from these processes. The existing identification systems and the interest and needs of diverse stakeholder groups were to be identified through a structured enquiry and the use of participatory appraisal exercises involving the Karamojong Cluster, Borana Cluster, and Somali Cluster also known as Mandera Triangle. The Maasai Cluster or Southern Rangelands (Kenya, Tanzania border area) was also part of the study.

The participatory model for the study was elaborated in discussions that took place with stakeholders at the grassroots. The Consultant acted as the facilitator in these discussions. The proceedings from these forums will be recorded and documented for further analysis and final documentation.

b) Institutional Approach

The institutional approach involved structured interrogation and analysis of the interactions between local institutions, e.g. Peace Committees, Elders’ Councils, CBOs, governmental bodies, institutions and relevant government ministries. The Army, Police, NFP/NSC, regional intergovernmental bodies (CEWARN, CEWERU, IGAD, RECSA), NGOs, CSOs and the social groups identified in the social approach processes were also targeted. The institutional analysis included a desk review of policies, laws and other documents relating to livestock identification and traceability, disease surveillance, movement control and herd management, and marketing needs and regulations. The responsibilities, experiences, accountability, and the commitment of various institutions and organizations involved in the above processes were also investigated and clarified. The Consultant analysed the existing social and institutional frameworks in a participatory manner.
1.5.2 Methods and Tools

A number of investigative techniques were employed, some of them in combination. However, the social approach basically employed the Community Interviews (CI) Methodology (Krishna Kumar USAID, 1987). Community Interviews are a form of Group Interviews (GI) which also includes Focus Group Discussions (FGD). Unlike the FGD in which participants discuss a subject among themselves, in community interviews, the primary interaction is between the interviewer and the participants. The interviews take the form of community/village meetings involving a fairly representative sample to minimize sampling biases.

Community Interviews were preferable in this case because of their rapid and cost-effective information collection nature. They involve the use of direct probing techniques to gather information from several individuals in a group situation. They not only provide background information on the subject of inquiry, including its implementation but can also help to generate ideas and hypothesis for future interventions and provide feedback on any on-going initiative. They are also important benchmarks in assessing responses to the study’s main themes. The interviewing approach was generally participatory. Case studies were also an integral component of the research process.

The meetings were organized at short notice and were open to selected members of the locality, mobilised by local partner NGOs – at least 15 of them. The partners were impressed upon to ensure a good representation of women – at least one third. Participants were essentially required
to represent the ‘face’ of the locality – characterizing the various shades of people in the community involved with the livestock industry. In these interviews, the main interaction was between the interviewers and the respondents. The investigators led by the Consultant conducted semi-structured interviews while the research assistants administered questionnaires to randomly selected interviewees. The particular communities in liaison with an identified local NGO decided on an appropriate venue within their locality. Care was exercised to ensure that the timing was right so that participants are not inconvenienced in their day-to-day economic or livelihood pursuits.

The Consultant together with CEWARN and ISS officials formulated and followed a structured interview guide, which listed major questions to be posed to the respective communities. A structured guide was found to be ideal mainly because it not only facilitates collection of comparable, systematic data from a series of community interviews but also keeps the discussions focused. It enables interviewer/facilitator to pursue leads, recognize opportunities for questioning, and phrase questions so that all can comprehend them.

To be able to capture the views of women, given that pastoralist communities are highly patriarchal, separate meeting for women were organized in areas where this was possible. Leaders were interviewed separately to avoid them domineering discussions in the village groups. Several such meetings, which averagely lasted 3-5 hrs, were organized for every border community involving mainly the Borana, Gabra, Burji, Gareh, Murulle, Ajuran, Degodia, Turkana, Karamojong, Toposa, and other local communities. Views of people with disability (PWD) prominent elders and tribal “diviners” were also sought.

The institutional approach, paid keen attention will be devoted to institutional documentation, CEWARN, IGAD, ISS, respective governments as well as civil society literature on the subject. Emphasis was laid on all the relevant documentation regarding livestock identification/branding and cattle rustling generally. Attention was also devoted to establishing institutional linkages and relevant legal frameworks. Visits were made to regional state capitals to solicit views of various government institutions and regional public bodies regarding livestock identification, traceability and tracking. These capitals included Kampala, Addis Ababa, Djibouti, Khartoum, Juba and Nairobi are to be part of the process and will also be visited in due course. A learning visit was also made to Botswana at the invitation of the Ministry of Agriculture. Botswana is a world leader in livestock identification and traceability through its Livestock Identification and Traceback System (LITS).

Apart from the structured questionnaires which were analyzed through social science computer application SPSS, the qualitative data was processed manually. Case studies, anecdotal evidence and photographic/film/drawing records will form a major part of this study.
2.0 BACKGROUND - IGAD REGION

2.1 GEOPOLITICAL CONTEXT

This study mainly covers the Intergovernmental Authority on Development (IGAD) member states comprising mainly of countries in the Horn and East Africa and United Republic of Tanzania. IGAD, which is a regional economic community (REC), came into being in 1996 in the place of Intergovernmental Authority on Drought and Development (IGADD) which was founded in 1986.

The organization traces its history to the recurring severe droughts and other natural disasters that befell the region between 1974 and 1984 causing widespread famine, ecological degradation and economic hardship. Although individual countries made substantial efforts to cope with the situation and received generous support from the international community, the magnitude and extent of the problem argued strongly for regional approach to supplement national efforts. Consequently, in 1983 and 1984, six countries in the Horn of Africa, namely Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda established an intergovernmental body for development and drought control in their region through support from the United Nations. An Agreement which officially launched IGADD with Headquarters in Djibouti was signed by the Heads of State and Government in Djibouti in January 1986. On 21 March 1996 IGADD Charter was amended to establish the revitalised Intergovernmental Authority on Development (IGAD) with expanded areas of regional cooperation and a new organisational structure.

The IGAD region represents one of the largest, most complex political, social and economic environments on the Continent. The IGAD sub-region is highly dependent on rain-fed agricultural activities which accounts for approximately 60% of its GNP. Consequently, droughts or desertification phenomena have a strong impact on population and economies.

Conflict perhaps constitutes the single most significant barrier to economic and social progress in the region. The region, which has been embroiled in endless wars for more than four decades, represents one of the most complex conflict systems in the world. It has been the site of several armed conflicts, severe food and livelihoods insecurity, and general environmental degradation. According to Ciru Mwaura, et al (2001), the sub region has to be defined by the number and intensity of destabilizing population movements that it has experienced in the recent past.

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1IGAD website http://www.igad.org/index.php?option=com_content&task=view&id=43&Itemid=53
### Table 1: IGAD Country Population and Growth

<table>
<thead>
<tr>
<th>Member State</th>
<th>Total Area (km²)</th>
<th>No. of people/ km²</th>
<th>Pop. 1960 '000s</th>
<th>Pop. 1970 '000s</th>
<th>Pop. 1980 '000s</th>
<th>Pop. 1990 '000s</th>
<th>Pop. 2000 '000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Djibouti</td>
<td>22,000</td>
<td>133</td>
<td>83</td>
<td>157</td>
<td>327</td>
<td>528</td>
<td>666</td>
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<tr>
<td>Eritrea</td>
<td>266,000</td>
<td>98</td>
<td>1,419</td>
<td>1,831</td>
<td>2,381</td>
<td>3,103</td>
<td>3,712</td>
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<tr>
<td>Ethiopia</td>
<td>1,127,127</td>
<td>125</td>
<td>22,723</td>
<td>29,035</td>
<td>35,688</td>
<td>48,856</td>
<td>65,590</td>
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<tr>
<td>Kenya</td>
<td>582,650</td>
<td>5</td>
<td>8,285</td>
<td>11,370</td>
<td>16,368</td>
<td>23,585</td>
<td>30,549</td>
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<tr>
<td>Sudan</td>
<td>2,505,810</td>
<td>370</td>
<td>11,422</td>
<td>14,469</td>
<td>19,387</td>
<td>24,927</td>
<td>31,437</td>
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<tr>
<td>Somalia</td>
<td>637,660</td>
<td>118</td>
<td>2,820</td>
<td>3,601</td>
<td>6,487</td>
<td>7,163</td>
<td>8,720</td>
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<td>Uganda</td>
<td>236,040</td>
<td>6</td>
<td>6,808</td>
<td>9,428</td>
<td>12,465</td>
<td>17,359</td>
<td>23,487</td>
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<td><strong>TOTAL</strong></td>
<td><strong>5,377,287</strong></td>
<td><strong>855</strong></td>
<td><strong>53,560</strong></td>
<td><strong>69,891</strong></td>
<td><strong>93,103</strong></td>
<td><strong>12,5521</strong></td>
<td><strong>16,4161</strong></td>
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</table>

Source: UNEP Global Resource Database, April 2004

### Table 2: Livestock Population

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
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<tr>
<td></td>
<td>Cattle</td>
<td>Shoats</td>
<td>Cattle</td>
<td>Shoats</td>
<td>Cattle</td>
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<tr>
<td>Ethiopia</td>
<td>26,000</td>
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<td>29,122</td>
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<td>1,930</td>
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<td>Kenya</td>
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<td>12,860</td>
<td>13,442</td>
<td>19,205</td>
<td>12,080</td>
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<td>4,437</td>
<td>27,733</td>
<td>4,100</td>
<td>30,383</td>
<td>4,817</td>
</tr>
<tr>
<td>Sudan</td>
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<td>30,382</td>
<td>21,080</td>
<td>37,560</td>
<td>37,081</td>
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<td>Tanzania</td>
<td>12,616</td>
<td>9,469</td>
<td>13,047</td>
<td>12,085</td>
<td>17,000</td>
</tr>
<tr>
<td>Uganda</td>
<td>4,919</td>
<td>3,932</td>
<td>4,817</td>
<td>5,497</td>
<td>4,817</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>76,766</strong></td>
<td><strong>124,803</strong></td>
<td><strong>85,608</strong></td>
<td><strong>145,783</strong></td>
<td><strong>107,563</strong></td>
</tr>
</tbody>
</table>

Source: UNEP Global Resource Database, April 2004

### Table 3: Pastoralists Population in IGAD

<table>
<thead>
<tr>
<th>Member State</th>
<th>Total Estimated Pop</th>
<th>% Pastoralists</th>
<th>Pastoralists Pop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Djibouti</td>
<td>0.65m</td>
<td>20</td>
<td>0.13m</td>
</tr>
<tr>
<td>Eritrea</td>
<td>4.5m</td>
<td>33</td>
<td>1.5m</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>70.5m</td>
<td>12</td>
<td>8.0m</td>
</tr>
<tr>
<td>Kenya</td>
<td>30.0m</td>
<td>20</td>
<td>6.0m</td>
</tr>
<tr>
<td>Sudan</td>
<td>9.6m</td>
<td>70</td>
<td>6.7m</td>
</tr>
<tr>
<td>Somalia</td>
<td>8.7m</td>
<td>60</td>
<td>5.2m</td>
</tr>
<tr>
<td>Uganda</td>
<td>23.4m</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>147m</strong></td>
<td></td>
<td><strong>27.53m</strong></td>
</tr>
</tbody>
</table>
3.0 PROBLEM DEFINITION

3.1 INTRODUCTION

There’s no doubt that raiding is an age-old and deeply entrenched feature of pastoralist livelihoods which fostered competition between groups that found themselves in harsh and delicate environments. It has unfortunately been transformed over the years, from this quasi-cultural practice that had important livelihood enhancing functions, into a rapacious activity. As an adaptation strategy, pastoralists in the region embraced diverse practices and strategies that responded to environmental and social conditions; a range of customs, cultural and linguistic variables, and different historical trajectories that distinguished the different communities identified with livestock keeping from each other. Over time, most of these coping mechanisms have faced serious challenges whose effect is a continually increasing threat to the survival of pastoralist communities. One of the devastating spin-off effects of this threat has been an escalation in the cases of livestock theft between the pastoralist communities themselves and between them and their adjacent agricultural neighbours.

The theft of livestock is popularly referred to as cattle rustling or cattle raids. However, the theft involves other types of livestock besides cattle. Traditionally, cattle rustling was carried out for socio-cultural reasons, for example, as a rite of passage where young warriors were required to demonstrate bravery or for the purposes of acquiring livestock to pay dowry. However, in the recent past this hitherto traditional mundane practice has transformed into a deadly and indiscriminate violent conflict among pastoralist communities. Among other reasons, this transformation has been largely attributed to two key developments thus, the introduction and employment of small arms and light weapons (SALW) in the raids and the commercialization of cattle rustling.

Cattle rustling has not only exacerbated insecurity, but also indiscriminate killings and destruction of property and livelihoods, and as a result, undermining local and national economies of the affected communities, further marginalising pastoral groups that depend on livestock as a mainstay. This has caused a dramatic shift in the socio-political, economic and cultural authority in the pastoralist areas. Self-imposed restrictions on mobility has negatively affected the vegetation of both grazed and un-grazed pastures and restricted the available survival strategies.

3.2 HISTORICAL PERSPECTIVE OF THE CATTLE RUSTLING MENACE

Cattle raiding or rustling is an ancient practice that refers to the act of stealing livestock – e.g. cattle, horses, sheep, goats, camels etc. The practice dates way back in history. The first recorded cattle raids were conducted over seven thousand years ago (Roger Osborne, 2006). Herodotos, the Greek historian who is regarded as the “father of Western history” reported on livestock raiding by Scythian horsemen 2,500 years ago. Until the end of the Middle Ages, waves of raiders from Central Asia are reported to have posed a major threat Europe.

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2 Roger Blench, 2001; ‘You can’t go home again’ Pastoralism in the new millennium, ODI, London
Barfield (1989) reported a history of the dynamic relationship between the Chinese Empire and its nomadic raiders from the steppes over a period of 3000 years. Chatwin, (1989) describes in some detail the ebb and flow of the association between pastoralism and livestock raiding military cultures across Asia. The domestication of the horse contributed significantly to the evolution of both raiding cultures and large states. Horses made possible the rapid movement of large armies and the transport of goods, personnel and messages in a way that was impractical with any other livestock species. The cyclical nature of the conflict between nomads and the state was first described with some acuity by the medieval North African historian, Ibn Khaldun, in his study of history, the Muqadimah (trans. Rosenthal 1967).

The *modus operandi*, or techniques employed in cattle rustling varies with historical age, continent, state, and culture. They have varied from forceful seizure of livestock in pitched battles, to the far more mundane practices of sneaking away with unattended one or two animals. Whereas nineteenth-century rustlers drove off livestock in huge herds; present-day rustlers go as far as carrying them off in trucks.

In Australia, cattle theft is often referred to as 'duffing', and the thief as a 'duffer'. In the American Old West, Mexican rustlers were a major concern during the American Civil War. Texans likewise stole cattle from Mexico, swimming them across the Rio Grande. These cattle were called 'wet stock'. During this period, failure to brand new calves made them easier target. Conflict over (mostly presumed) rustling was a major issue in the American state of Wyoming during the Johnson County War.

In North America, the transition from open range to fenced grazing gradually reduced the practice. In the 20th century, so called 'suburban rustling' became more common, with rustlers anesthetizing cattle and taking them directly to auction. It often took place at night, and posed problems for law enforcement because on very large ranches, it took several days for loss to be noticed and reported. Convictions were rare and sometimes nonexistent.

In Indo-European mythology, cattle rustling is prominently cited, e.g. Táin Bó Cúailnge (Irish), the Rigvedic Panis (India), and the Homeric Hymn to Hermes, who steals the cows of Apollo (Greece). These myths are often paired with myths of the rape or abduction of women. Abduction of women and theft of livestock were practiced in many of the world's pre-urbanised cultures, the former likely reaching back to the Paleolithic, and the latter to the earliest domestication of animals in the Neolithic (Roger Osborne, 2006).
The problem is not confined to the past ages, even in developed countries. Recently, (2007), the *San Francisco Chronicle* reported that cattle rustling was on the rise in California, USA. In tracing the source of the problem, the paper wrote that “...Over the past 10 years, more than 16,000 head of cattle and calves valued at more than $9 million have been reported missing and stolen from California farms and ranches.” It was evident that as the prices for beef and milk go up, thefts do, too, and the trend isn’t confined to California: Texas and the Great Plains have had the same problems. The rustlers mainly target un-branded calves, often leaving newly delivered cows moaning. Incidentally, close to a quarter of the beef cattle in California are not branded, largely for humane reasons, and up to half of the cows in the state are unmarked.

In South Africa, cattle rustling was, and still remains a common practice. But due to the strict vigilance by security forces, rustlers have of late devised clever ways of stealing livestock. In a recent newspaper caption in South Africa, rustlers had removed the backseat of a small car (Tazz) and trussed up three cows and piled them in. The cows managed to reach their destination unharmed (Fig.7).

![Figure 4: Three cows fitted in the backseat of a small Tazz car (opposite) to avoid detection by law enforcement officers](Image)

Elsewhere in the world, in the Philippines, the locals of a small farming area called Sarangani have lately borne the brunt of cattle thefts to the point that they have elected to do away with livestock altogether. According to Arroyo Watch (2006), they complained of government inaction on the matter, yet livestock constitute a major component of their economic mainstay. A huge percentage of the Sarangani is highly dependent on livestock for labour, including preparing their farms. According to a local farmer, “...lately, cattle rustling activities in the area have gone down, not because the perpetrators were caught, there is simply no animal left to steal”. It’s not therefore surprising that the area has been stricken by poverty.³

In Sub-Saharan Africa, cattle rustling continues to be a major problem. Due to the commercial, subsistence and cultural values attached to livestock, cattle rustling has been prevalent in Africa for as long as the practice of rearing livestock has been in existence.

³ *Arroyo Watch: Cattle Rustling Taking Its Toll on Sarangani Farmers*; Sept 05 2006
3.3 CATTLE RUSTLING IN THE IGAD REGION

In the Greater Horn of Africa, the practice has had devastating consequences on pastoralists and adjacent communities, with most instances resulting in considerable loss of lives, destruction of property, fuelled tensions, war and instability, possession of illegal weapons due to insecurity and general despair and impoverishment on the victims.

Traditionally, most pastoralist communities in the Greater Horn of Africa undertook livestock raiding as a way of restocking to support the complex processes of socio-cultural reproduction and management of pastoral systems. In conducting such raids, which Hendrickson et al. (1998) term ‘redistributive raiding’, care was taken to minimise deaths, especially with regard to non-combatants. It was a benign practice undertaken for both socio-economic and cultural reasons. It was mainly a coping mechanism used to restock livestock lost through drought, or to gain livestock needed for the payment of dowry or as part of a rite of passage for a young warrior. Unlike the modern commercialized cattle rustling, rarely was rustling done purely for the purposes of accumulating individual wealth.

However, cattle rustling has assumed a commercial angle with its ‘predatory’ motives overwhelming the social intention through its sheer intensity and scale. Indeed, cattle rustling has taken on a more ruthless and mercenary form. According to Bujra (2007), cattle rustling in the Horn of Africa, formerly a means of replenishing animals for subsistence is now widely practised as a commercial activity. Bujra goes on to assert that "...conflicts among pastoralists are no longer just small feuds to restock cattle after a dry spell. They have become more frequent and intense and are conducted to obtain cattle for sale elsewhere".

The problem of cattle rustling has further been worsened by the rapid build-up SALW in the region. State-driven attempts at disarmament have generally not been successful. Targeted groups merely cross the porous border in the process acquiring new identity, particularly those from communities that straddle the national borders. These arms have ended up easily flowing into urban areas where crime rates have also risen. The difficult terrain coupled with poor communication, lack of socio-economic infrastructure and poverty aggravates the situation and transforms it into ideal spaces for rustling activities, smuggling, small arms trade and now potential routes for terrorist activities. These conditions have been exacerbated by the ‘absence of state’ that has tended to encourage communities to undertake raids with utter impunity.

The proliferation of small arms and light weapons (SALW) in the region has made the situation worse.4 Like in the American Old West, the new aggressive and violent approach to cattle rustling has sharpened the rustlers’ skills and become a major cause for political discontent and disharmony. Notably, the socio-cultural reasons why cattle rustling was carried out in the past are still prevalent, the main addition being the commercial aspect. This has affected the livelihoods of men and women living in the region, leading to a marked increase in poverty.

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Even as NGOs and other civil society groups are trying to address the fundamental and underlying causes of cattle rustling by adopting a participatory approach with local communities and government, the regional governments’ strategy to combat cattle rustling has mainly been reactive and based on the use of force; which has instead served to harden the perpetrators. The disarmament exercise currently undertaken by the Government of Uganda is a case in point. Though officials interviewed termed it partly voluntary, it was established from local sources that it was basically forceful and hardly consultative. Generally, the regional government’s approach has been criticized as reactive rather than preventive. In addition, cattle rustling has become a multi-stakeholder activity that calls for a multi-pronged approach. Members of Parliament (MPs), civic society organisations (CSOs), and affected communities need to work together to create the conducive environment, tools and political framework necessary to address the problem. Livestock identification is only one of such tool.

Ethnic groups in the Karimojong Cluster for instance, have developed coping mechanisms that revolve around seasonal movements between water and pasture resources. They have also developed well-structured modes of social production based on cattle rustling activities. Over time, the level of rustling activities has remarkably intensified when compared to the traditional modes of socio-economic reproduction of these communities.

According CEWARN report⁵, the fact that these communities in the past used mainly traditional weapons meant that few people lost lives. The numbers of animals stolen were also minimal. This situation changed with the civil wars in Uganda and Sudan. These engendered not only insecurity but also a flow of small arms in the region. Thus, the groups acquired automatic weapons, which changed the balance of power amongst themselves as each sought to acquire more fire power before going on the raids. Absence of strong state presence, socio-economic infrastructure and influx of small arms over time have fuelled and reinforced violent conflicts in the region. Cross border raids and predation have increased in intensity costing lives and loss of economic livelihoods. Livestock raiding in the region has evolved from its cultural significance to a purely commercial activity in a number of the communities involved.

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⁵ CEWARN report on disarmament of armed nomadic pastoralists and the promotion of sustainable development in zone 3: Final Version: 21 September 2006;
Violent conflicts among these groups have generated internally displaced persons in the three states. On the Kenyan side of the triangle for instance, 300,000 cattle with an estimated value of US$ 37.5 million were rustled between 1996 and 2002. During the same period, 1,200 people lost their lives. Between December 2002 and May 2003, raids displaced 3,779 families. 250 people were killed consequent to violence in which small arms were deployed in West Pokot and Trans Nzoia district. An average raid may be carried out by as many as 1000 armed raiders. North-western Kenya has an estimated 127,519 guns. The Karamojong are alleged to possess about 100,000 guns. Other pastoralist groups neighbouring the area such as the Marakwet, Samburu, Merille and Dong’iro are estimated to possess an additional 40,000 guns.

\[\text{Figure 5: Deaths on the Ethiopian side of the Karamoja Cluster}\]

\[\text{Figure 6: Livestock Losses on the Ethiopian Side of the Karamoja Cluster}\]

\[\text{(CEWARN/IGAD, Jan-April 2007)}\]

\[\text{Katumanga M., UNECA. Indicators for Monitoring: Progress towards Good Governance, Instrument C3, ACEG, Nairobi: 2003.}\]

Despite some recent peacebuilding initiatives by governments and civil society groups, conflicts continue to occur across state frontiers where competing groups seek to access water and pastures. During disarmament, perpetrators merely cross the porous borders and in the process acquire a new identity. Urban crimes as a result of infiltration of arms have increased. The difficult terrain in this zone, lack of socio-economic infrastructure and poverty aggravates the situation and transforms it into ideal spaces for rustling activities, smuggling, small arms trade and now potential routes for terrorist activities. It is indeed the absence of state presence on the ground that has tended to motivate communities here to raid each other with impunity.

The main challenges here revolve around facilitating security and how to effectively reduce the high level of armament without exposing the communities to each other’s predatory tendencies; adopting a regional security approach whilst respecting the sovereignty of Member States; and to best confer peace dividends in the region in form of development interventions.

3.4 LIVESTOCK DISEASE CONTROL

From the colonial times through to the immediate post-independence period, most clinical veterinary services in the region were provided by private practitioners and the then popular ‘veterinary scouts’. The private veterinarians were mostly confined in agriculturally high potential areas. In the Kenyan case, these were mainly white settler areas then known as the ‘white highlands’. Veterinary Scouts were local livestock keepers who received informal training from veterinary officers and were hired by the respective local authorities. They lived in the villages with other stock-owners, providing them with the clinical and other services in the villages.

Later on, independent governments stepped up public livestock services by establishing veterinary offices in the districts to provide free government services. Vet Scouts at village level were gradually phased out and replaced by veterinary officers (VOs) and Animal Health Technicians/Assistants (AHAs). Most private practitioners went out of business. In Kenya, many of them were expatriates and left the country. Clinical services became available in the hitherto neglected arid and semi-arid areas. There were however fewer veterinary staff in these areas as compared to the agriculturally rich areas, limiting the level of service provided. Moreover, the few veterinary officials could hardly access nomadic villages due to the vast distances, tough terrain and poor communication network.

The 1990s heralded the blanket introduction of the World Bank instigated structural adjustment programmes (SAPs) across all government ministries. Decentralised animal health (DAH) schemes were quietly established. NGOs in pastoralist areas, particularly in Kenya, began training some locals in the model of veterinary scouts to treat common livestock diseases as they travelled around doing their other duties. This model of animal health care delivery gradually evolved into community-based Veterinary Scouts programme promoted by the EEC-funded Turkana Rehabilitation Programme in the late 1980s and the Norwegian Overseas Aid (NORAD) programme in Turkana area in the early 1990s. This initiative suffered a general set-back due to the restrictive nature of the laws governing the provision and administration of veterinary services.

8 Disarmament of Armed Nomadic Pastoralists and the Promotion of Sustainable Development in Zone 3; Final Version: 21 September 2006; Original: English
In Kenya, for instance, the provision of private animal health services was, and still is mainly governed by the Veterinary Surgeons Act (Cap 366) and the Pharmacy and Poisons Act (Cap 244). The Veterinary Surgeons Act was borrowed mostly unchanged from the British Veterinary Surgeons Act. This Act broadly limits the practice of veterinary medicine and surgery to registered veterinary surgeons, and staff under their direct supervision.

However, a slight variation was made by adding some clauses to cater for the many of the large commercial farmers of the time to provide their own veterinary services. These clauses allowed them and other persons to treat their own animals, provided they did not do it for profit. The Pharmacy and Poisons Act in Kenya limits the sale of pharmaceuticals (including veterinary pharmaceuticals) to registered Pharmacists. Veterinarians are allowed to keep limited stocks of drugs for their own use while treating animals, but they are not allowed to sell them. 9

Realizing the problem of privatizing veterinary services and noting the positive impact of the policy on pastoral communities, governments in the region, especially Uganda and Kenya, are progressively reviewing their animal health laws and policies with a view to reverting to the previous policy regime before the advent of SAPS.

What is more, efforts to improve the quality of veterinary services, crucial to the welfare of pastoralists whose livelihoods are contingent on the health of their livestock, were routinely impeded by numerous conflicts in the region. Many were between and among the 14 tribes in the Karamoja Cluster.

Existing tribal conflicts were complicated by the civil war in the Sudan in the mid-1980s, and by ethnic tensions in Uganda, Somalia, and Ethiopia, as well as by interstate tensions in the region. Resource based conflicts and cattle raiding using modern automatic weapons worsened pastoralists’ vulnerability and frustrated gains made in the livestock sector in the respective states.

The sub-region has high prevalence of epizootic notifiable diseases e.g. FMD, Rift Valley Fever, CBPP, CCPP, LSD and ecto- and endo- parasites among others. The ability of the region to fully exploit its potential in livestock production is seriously hampered and undermined by diseases brought about by ticks and tsetse flies or spread through livestock movement. Diseases such as CBPP, CCPP, RVF, ECF, LSD, FMD, Brucellosis, Anthrax, sheep and goat pox, ecto- and endo- parasites seriously limit livestock production, movement, trade and overall returns to investment in the region’s livestock health sector.

The recent outbreak of *Peste Des Petits Ruminants* (PPR) in the region has complicated matters further. The disease, which affects small ruminants, mainly sheep and goats has claimed in Kenya between 400,000 to 1.2 million and infected another 3.6 million sheep and goats (USAID, 2009), since it was first detected in Kenya in 2006. The disease has now been reported in the Borana cluster and the Mandera triangle which comprises the Somali cluster.

As part of its disease control programmes strategy, the IGAD sub-region, including Tanzania, has, over a period of time, been undertaking massive cattle vaccination campaigns against notifiable livestock diseases, particularly Rinderpest (JP15, PARC, and PACE). Vaccinated animals were generally branded to identify them as vaccinated. Despite Kenya having adequate

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legislation on branding of livestock for identification, this requirement was hardly followed, except by private ranches. It took a government directive in 2007, as a result of numerous incidences of cattle rustling involving loss of many lives and livestock, to mount nation-wide branding of livestock in northern Kenya (Turkana, Samburu, Isiolo, Marsabit, Moyale) for identification purposes.

3.5 LIVESTOCK MARKETING

Kenya’s red meat production is estimated at 362,815 MT annually, out of which beef constitutes about 79%. Pastoralist areas supply two-thirds of the national beef demand with 46% coming from within Kenya and 26% supplied through cross-border trade. On the other hand, Ethiopia’s annual red meat production is estimated at 444,500MT, of which beef accounts for 65%, mutton around 19%, chevron (goat meat) 13% and camel meat 2.5%. Sudan estimated its red meat production at 715,000 MT for 2004 with an estimated off-take rate of 19.9% for cattle, 44.4% for sheep, 38.5% for goats and 16.4% for camels in the same year.

Livestock trade in the region has generally remained unreliable due to producer prices that usually fluctuate during droughts and wet season and attain their peak during national holidays – e.g. Christian (Christmas, New Year, Easter) or Muslim (Idd Ul Fitr). However, the price of meat in the major cities of Sudan, Kenya and Ethiopia has remained more or less constant in the last five years. According to Akililu (2001), butchers and middlemen virtually control the meat market in the region. The two actors control the price of livestock at major domestic markets and by extension the volume of the national red meat consumption in the region.

In Sudan, the livestock market chain involves too many middlemen rendering livestock prices in the terminal markets up to two to four times higher than price received by the producer. In Kenya, the producer’s share varies between 47 and 52% depending on the butchery outlet. In Ethiopia, the producer’s share has declined from 76% in 1983/84 to 55% in 1995 and to below 50% in 2001.

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11 FAO Yearbook, 2004
13 ibid
14 ibid
Transport is a major cost factor in livestock trading in the region. In Kenya, 25 to 40% of the total cost of livestock brought to terminal markets from the northern pastoral areas is accounted to transport. Truck owners tend to charge more for livestock than consumer goods. The level of profits accrued by stock traders is basically dependent on the proportion that goes to transport. Traders with their own means of transport tend earn the highest profit margin based on high turnover volume and savings in transport costs. Traders who trek their animals either by choice (to save on transport costs) or by default (due to inaccessibility by trucks) tie their working capital for far too long on ‘inventory on hoof” and may not be able to do more than few transactions in a year due to the long turnaround trip. In many cases, it is not certain whether the perceived benefits from trekking would outweigh the costs of trucking particularly if the trekking involves more than two weeks of journey. For example, according to Akililu (2001), in Ethiopia, an average weight loss of 8.9% was recorded for cattle over a 7-8 day trek in the highland areas.

Livestock is probably the most taxed agricultural commodity in the region. In Sudan, livestock traders pay taxes and transit fees in about 20 places en route to the terminal markets. In Ethiopia, livestock are taxed a number of times as transit commodities within the country, the amount paid per head varying from place to place. In both Sudan and Ethiopia, transit fees and taxes are repeatedly collected by regional governments, despite regulations that livestock should only be taxed at the point of origin. Taxation on livestock is less repeated in Kenya. Nevertheless, the amount paid in one go could be as high as US$10 per head of cattle. Ironically, in all the three countries, livestock taxes and transit fees collected by the respective local authorities are not used to improve the physical infrastructure and the necessary livestock markets efficiency.

The commonly held belief that cross-border livestock trade occurs because of better price offers is not supported by evidence. Conversely, evidence suggests that cross-border livestock trading occurs either due to glutted markets in the country of origin, or because of the proximity of the external market as compared to the domestic markets. Notably, the price of beef in Nairobi and Addis Ababa is more or less the same, except in isolated cases lasting short durations. Cross-border trade thrives in circumstances where the country of origin is not involved in large-scale commerce.

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15 It takes 75 days to trek cattle from West Darfur to Khartoum. Most cattle are also trekked to Mombasa from the Northern and N. Eastern districts of Kenya.
16 This varies with seasons.
live animals and meat exports despite having significant livestock resources e.g. Ethiopia or where the existing export markets are disrupted by conflict, e.g. Somalia (Akililu, 2001).

In the Ethiopian case, trade in livestock from the lowlands is directed towards Kenya and Somalia probably because livestock from the highland areas of Ethiopia dominate the major secondary and terminal markets. Livestock from pastoral areas, by and large squeezed out of the domestic markets, have to be sold at cross-border markets. As for Somalia, disruptions of export trade have resulted in the flow of livestock from Somalia into Kenya. Cross-border markets between South Sudan and Kenya and between South Sudan and Uganda take place mainly due to proximity, although the flow of trade is gradually reversing towards Sudan as demand rises due to the newly attained peace.

As the recurrence of droughts heightens and pastoralists gradually embrace the cash economy, pastoralists are increasingly availing their animals to markets. However, the intent to sell more animals has not been matched by a corresponding growth in per capita consumption of meat due to the stagnation of the economy. Saturation of domestic markets, low pricing of meat, and Kenya’s and Ethiopia’s near exclusion from the export markets has curtailed the pastoralists’ ability to sell more livestock than is currently the case. Sudan, on the other hand, is actively engaged in the export market generating some $170 million annually from livestock and meat exports.

In spite of the re-opening of Kenya Meat Commission abattoir, pastoralists have been limited by vast distances and prohibitive transportation costs from benefitting from it. In Ethiopia, despite the privatization of formerly state-owned industrial abattoirs, the country has not exported canned meat for some time perhaps due to high production costs as compared to international market prices. Ethiopia’s on-going chilled beef/mutton and live animals exports is minimal when compared to its livestock resources. The poor export performance of Ethiopia and Kenya has in turn led to the deterioration of holding grounds, stock routes, watering points, quarantine stations and market yards built at considerable expense in the past. The state of such infrastructure is such that both countries would require substantial amount of funds to rehabilitate them for export services. This is also true for Sudan particularly between the primary and the terminal markets, though the Kadero and Port Sudan quarantine stations are in good conditions (Akililu, 2001).
Tannery and leather industries find themselves in precarious situations in all the three countries. Firstly, there are more tanneries than the locally available volume of raw hides and skins. Supply shortage is exacerbated in Kenya and Sudan by the export of raw hides and skins. Yet, semi-processed skins and hides bring in nearly three times as much in foreign exchange compared to raw hides and skins, e.g. Sudan. Cheap and subsidized imports of leather products and articles are also out-competing the local leather processing industries and forcing them to close down in Kenya, Ethiopia and Sudan. The tannery industry is fraught with cash-flow problems. It is difficult to envisage how these industries can survive for long unless the respective governments take some critical measures to safeguard them from total collapse (Akililu, 2001).

The livestock sector contributes about 12% of the total GDP in Kenya; 18% of the total GDP in Ethiopia and 20% of the agricultural GDP in Sudan (including $170 million in foreign exchange). Despite such significant contributions to the national economies of each country, the sector has received less than 3% of the recurrent agricultural expenditures in Ethiopia and only between 1.3 to 2% of the total recurrent agricultural budget in Kenya for the years 1993/94 and 97/98. Sudan comparatively allocates a higher proportion of its recurrent budget to the animal health sector but still falls far below satisfactory. In all cases, resource allocations for livestock and animal health services are not commensurate with the revenues generated by the sector.

Livestock marketing in region generally calls for a complete review if the region is to exploit its potential market share. The roles and responsibilities of governments,

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trade and producers associations, the private sector and other civic associations need to be reassessed with a view to handing over most of trade related activities to the private sector for sustainability while maintaining the regulatory and supervisory roles of governments. Governments need to purposely scale up investment in the livestock sub-sector in order to promote the productivity of the livestock industry.

Table 4: Meat Production in IGAD and Percentage of World Share ('000s Metric Tonnes)

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<td>1264</td>
<td>2301</td>
<td>2489</td>
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% World share 0.89 0.7 0.96 0.96 0.94

(FAO YEARBOOK 2004)

BOX 1: Kenya Meat Commission

KENYA MEAT COMMITTEE (KMC)

Kenya Meat Commission (KMC), which is the largest abattoir in the region has the capacity to slaughter 500 heads of cattle and 1000 small stock per day at its Athi River factory near Nairobi and 200 and 400 cattle and small stock respectively at its Mombasa abattoir. The main abattoir at Athi River was put up more than 50 years ago. The factory serves both the local and export markets with various products which include full carcasses of cattle, lamb and goats, prime cuts, corned beef and canned ox tongue.

KMC also produces value added products such as meat balls and burgers. Other products include red and white tripe (matumbo) for the local market, hides and skins (raw and wet salted), and meat and bone meal for local pet food market. The commission has recently acquired a new vacuum packaging machine that is set boost the abattoir’s niche market sales through vacuum packed beef that has up to 6 months storage lifespan under refrigeration. This is particularly useful for markets that are strict on quality requirements.

One of KMC’s mandates is to purchase stock from livestock keepers as a buyer of the last resort. This is meant to serve as a mitigating measure to against the effects of drought. This measure is also to assist pastoralists destock their cattle before they die from starvation. It’s also supposed to stabilize livestock prices so that seasonal price variations do not hurt the livestock keepers. In this regard, KMC is one large buyer, processor and market for beef, mutton and chevon for both local and export market.

Cattle, sheep and goats are the most popular sources of red meat in Kenya and this has a wide cultural acceptance among all communities that eat meat. These species also account for over 75% of all livestock marketed in Kenya. Livestock supply chain in Kenya is seasonal, making it unreliable and vulnerable to seasonal variations. KMC specializes more on red meat which poses challenge regarding its acceptability among the health conscious consumers. Other notable challenges for KMC include producer price fluctuations, unreliable beef market inadequate poor disease control systems, low export prices and cheaper plant sources of proteins.
4.0 IDENTIFICATION, TRACEABILITY, AND TRACKING: UNDERSTANDING THE CONCEPTS

4.1 LIVESTOCK IDENTIFICATION

Livestock identification essentially refers to the combination of the identification and registration of an animal individually, with a unique identifier, or collectively by its epidemiological unit or group, with a unique group symbol or identifier. Often, states employ a specific animal identification system in identifying their national herds. An animal identification therefore means the inclusion and linking of components such as identification of establishments/owners, the person(s) responsible for the animal(s), movements and other records with animal identification (OIE, 2008).

In this case, an epidemiological unit refers to a group of animals with a defined relationship that share approximately the same likelihood of exposure to a pathogen. This may be because they share a common environment (e.g. animals in a pen), or because of common management practices. Usually, this is a herd or a flock. However, an epidemiological unit may also refer to groups such as animals belonging to residents of a village, or animals sharing a communal animal handling facility. The epidemiological relationship may differ from disease to disease, or even strain to strain of the pathogen.

There are different types of Livestock Identification Systems (LIS) that are evolving depending on the degree and extent of traceability required. The systems vary in depth, precision and breath (Smith, 1999; Bale and Slade, 2004; Clemens, 2003; Dickson and Bailey, 2002; Lawrence et al, 2003) depending which type one chooses.

However, the choice of a LIS will mainly be determined by several factors, including:

- The level of funding committed to the process;
- Type of livestock production system – communal, pastoral, commercial ranching;
- Preferred mode of identification – whether individually or by herd/group (Smith et al, 2000)
- Purpose of identification – proof of ownership, disease control, for traceability or tracking;
- Preferred tools or devices of identification - brand, ear tag, and ear tag with bar code, ear tag with chip (RFID) or other chips (RFID) (Pinna et al 2005)
- Availability of necessary infrastructure – e.g. animal health services, internet, paper-based solutions, radio, telephone, media hype, etc;
- Level of acceptability – level of consonance with cultural and social norms

Livestock identification is a critical component of any livestock production system because it helps policy makers develop and plan for the sector with respect to disease control and provision of other services like water for livestock production. It also helps in promoting controlled animal movements and marketing.
A viable animal identification system benefits all players in the food chain. Secure and reliable systems contribute to food safety and quality assurance and help prevent and control major disease outbreaks. Animal identification and traceability schemes offer huge long term economic benefits to the livestock industry with regards securing international trade and eradication of diseases such as tuberculosis in cattle. “International trade, disease control and consumer confidence depend on the accountability and traceability that an animal identification system could provide.” (Jim Harsdorf, 2006).

Various forms of livestock identification exist. For an identification system to the test of times, the mark must be visual if it is to serve as deterrent; it must be registered with an independent authority; and it must be permanent. These main characteristics can further be broken down to confer the following desirable qualities (Wiemers, 2000; Amendrup and Barcos, 2006):

- Readable at a distance (visible by the naked eye)
- Readable by scanners or transponder readers
- Tamper proof
- Loss-proof - Less than 0.1% per annum
- Appropriate level of technology
- Safe to the animal – i.e. reaction proof
- Safe to the consumer of final products – e.g. meat, milk or eggs
- Affordable to the majority of the intended group of users
- Symbol or numbering system is database compatible
- For RFID, upgradable

Animal identification systems can be classified generally into three:

1. Mechanical
2. Biological
3. Electronic

### 4.1.1 Mechanical Systems

#### 4.1.1.1 Paint Marks

This identification method is widely used when animals are sold at an auction. The method is also used in many animal husbandry applications such as marking female animals that have been, for instance, served by a male, or to mark animals that is on heat. It can also be used to identify animals needing some form of treatment. Paint marks are not permanent, making them only useful for animal husbandry and health purposes. These marks can be removed easily by use of chemical agents, or by clipping of the hair. In most instances, the user may not bother removing, as the marks simply disappear with time. This identification method is easy to tamper with. For this reason, paint marks will not stand up as credible evidence in a court of law.

#### 4.1.1.2 Ear Tags (Plastic)

Plastic ear tags are probably one of the most widely used identification system in the region, especially by private livestock keepers. They are mostly used on cattle since they are more visible from afar. Smaller versions are available for use on small stock. In both species, the ear tag is placed in the ear using a special applicator.
It is a cost-effective method of identifying individual animals. Sometimes basic information such as year of birth and the individual number (consecutive) of the animals born in that year are written on the ear tag with a special marking pen. In the European Union (EU), and also many other parts of the world, laser-printed plastic ear tags are used. In some instances a one-dimension bar-code or matrix bar code is printed on the plastic tag (e.g. Namibia) using a scanner thus eliminating writing mistakes during the transfer of ownership. The use of two plastic tags is compulsory in EU. The EU is in the process of introducing micro-chips for sheep and goats as secondary identification device in addition to the ear tag. However, plastic ear tags can easily be removed by a stock thief. For this reason, it might not stand a chance as evidence in a court of law. The alternative would be to provide readily marked and coded ear-tags which can fully be accounted for from a central database.

Figure 13: Plastic Ear tags being used by Misenyi NARCO Ranch in Tanzania

(Bahari, M, 2008)

4.1.1.3 Ear tags (metal)

Metal ear tags are mostly used by small stock farmers. The advantage of using metal tags are that they are much smaller and do not tear out of the ear as easily as plastic tags. The major disadvantage is that it is difficult to read from a distance. But, on the other hand it is also much easier to capture and constrain small stock if one needs to read the tag. The fact that one can easily restrain a small animal and apply the tag makes them more useful for small ruminants.

Another advantage of using metal ear tags is that the letters and numbers are punched into the metal and will therefore not fade with time. The tag, just like the other types, may provide little value as evidence in court.

4.1.1.4 Ear Notching

This method is mostly used as a coding/numbering system in on-farm animal recording systems. It however has limited number of combinations since it is basically just a numbering system for individual animals in the herd. It ranges from 1 to 1,690 depending on the number and position of notches cut in the ear. No animal’s ear will ever be as cut up as this. Despite the limited application possibilities, the system is also very easy to tamper with by simply cutting another notch or two into the particular ear. Although the thief could also simply remove the entire ear thereby destroying all evidence, the mere possession of an animal without an ear should be made an offence in the animal identification legislation.
4.1.1.5 Drawings and Descriptions
Drawing as a method of identification is often used to identify stud animals of certain breeds and high value animals. It is the internationally recognized method of identification in the case of the Holstein/Friesian breeds. Every animal is identified at an early stage by drawing the unique colour patterns onto a pre-printed sheet issued by the breeders’ society. The drawing is then scanned and stored on central database system. The same method is also used in many of the horse breeds where colour patterns and the position of the twirls on the animal are drawn onto a pre-printed sheet.

This method is limited to breeds with distinctive coloration and or colour patterns. Colours have been known to alter by use of hot sand. Some communities inter a live animal, leaving the head above the ground to allow the animal to breathe and feed for several days with the aim of changing the coat of the animal (e.g. the Karamojong in Uganda).

Although most African communities do not use this method, most of them describe or name their animals using the dominant colours (e.g. the Banyankole of Uganda).

4.1.1.6 Photographs
The use of photographs is similar to the use of drawings and descriptions. As a result of the development of new technology such as digital cameras, it is much easier to have an exact picture and to immediately electronically transfer the information to a database without having to scan and encrypt the data. The same disadvantages found with drawings and descriptions are also problems associated with the use of photographs. Due to its costly nature, this method can only be useful for fewer animals.

4.1.2 ELECTRONIC SYSTEMS
4.1.2.1 Microchips Implants
This technology is currently in use to mainly identify pets and in some horse breeds. The use of intra-muscular and subcutaneous microchips in the case of animals, however, poses a number of problems. Firstly, microchips tend to migrate in the body. Also, in some instances the microchip implantation process causes abscesses as the implantation is done with a special tool penetrating
the skin. The possibility of meat abscesses as a result of microchip implantation, in itself, poses a major threat to the meat industry. Fixed microchip implants have of late been introduced to address this issue.

4.1.2.2 Rumen Boluses Radio Frequency Identification Devices (RFID)
Rumen Bolus contains a microchip which is encased in a hard ceramic casing. It is usually inserted into rumen of an animal using a bolusing gun. The bolus is only removed from the rumen at slaughter. In order to curb the cost of using microchips, the manufacturers will often propose that the bolus be re-used. The bolus is re-usable and can be recycled many times. If a stock thief can get his/her hands on some microchips, it would be easy to place a second bolus into any animal’s rumen.

Second-hand boluses may be obtained from previously stolen and slaughtered animals or even from abattoirs where the security is poor. In placing such a used bolus into an animal already identified with a bolus, one creates confusion because the scanner will then give two readings from the same animal. However this problem is being addressed by new technology changes which incorporate specifications under ISO Standards ISO 11784 - for code structure, and ISO 11785 - for technology structure, (Kampers et al 1999; Eradus and Jansen 1999; Sac et al 2005).

The major problem with using microchips as a national identification method is the cost (Tonsor and Schroeder, 2004; Pinna et al 2005), whether it is via implants, incorporated in a specially designed ear tag, or as a bolus placed in the rumen (Eradus and Jansen 1999; Wismans 1999; Pinna et al 2005). The Rumen Bolus has been successfully used in Botswana for livestock identification and traceability purposes by the government of Botswana under its LITS programme.

Figure 15: RFID Animal Identification (Rumen Bolus or Ear-tag) & Data Capture System Layout

4.3.1 BIOLOGICAL METHODS

4.3.1.1 Nose Prints
Nose prints, along with iris identification and DNA fingerprinting, are some of the bio-identification methods that may be used to conclusively prove the identification of an animal or a person. Photographs do not qualify as a bio-identification method because the subject changes as
time goes by. This method involves the making of a scan-able print of the animal’s nose shield. The image is stored on a computer. As is the case with fingerprints, at least seven different reference points on the print are compared in order to conclusively show that the print obtained at a later stage matches the print taken previously. This method of identification has rarely been used as evidence of ownership anywhere in the region.

4.3.2.2 Iris Prints
The iris, which is in the eye of any animal, including humans - is unique in all individuals. The technology, which is relatively new, is being developed for commercial use. Many financial and other high security institutions have investigated this technology to ensure that the correct client is allowed access to either the premises, or to accounts or secure information. Automated Teller Machines (ATM’s) will in future probably be equipped to use this method of identifying individual clients. The technology is still in its infancy and will probably be used to only identify animals with a high monetary value. It’s lack of visibility through the naked eye is a major disadvantage.

4.3.2.3 DNA Analysis
This is also a bio-identification method which can be used to identify a particular animal beyond any reasonable doubt. It involves a laboratory analysis for 12 micro-satellites from the unique DNA found in the nuclei of cells in a biological sample such as hair, blood, meat, etc. Time is not of essence since the cells can be collected from the remains of the animal even after centuries.

The possibility of finding two unrelated animals with exactly the same DNA profile, using the same 12 micro-satellites is remote. Hence, if a sample of meat is compared with a previously taken hair sample while the animal was alive, the chance of wrongly identifying the animal is basically zero. Courts have accepted DNA analysis as a scientifically proven method of identification. Unfortunately the costs are prohibitive.

4.3.3 Branding
Branding has been in use as deterrent against stock theft in pastoral areas for centuries. The branding technique involves the burning of an identifying mark into the hide of an animal as letters; pictographs, symbols their combination using freeze or hot iron branding has been the only method of marking on the animal that lasted for the life of the animal until the invention of the tattoo. Due to its popularity, it may be necessary at this stage to interrogate the system further as below.

4.3.3.1 Hot Iron Branding
The hot iron branding technique involves the burning of an identifying mark into the hide of an animal as letters; pictographs, symbols their combination has been the only method of marking on the animal that lasted for the life of the animal until the invention of the tattoo.

Branding Genealogy

Biblical records, archaeological findings in Egypt and museum records in many parts of the world including the United States (Gus L. Ford, 1936 and Wayne Gard, 1956), Brazil, Argentina, Uruguay, Australia and in Africa Botswana, Kenya, Ethiopia, Sudan, Somalia, Tanzania, the Sahel Region in Western African reveal cattle branding to have evolved for a long time from over 4,000 years B.C
Branding Semiology

As an identifier of the animal branding letters, symbols and pictographs need to be read and interpreted (Manfred R. Wolfenstine, 1970). The majority of traditional brands depicting family symbols, letters or pictures in Eastern Africa are hard to understand and decipher, and ownership can easily be ascribed by people living within the same locality. Traditional brands on their own cannot assist in curbing cattle theft especially when long distances are involved. Some of the traditional branding is so huge covering most of the body of the animal resulting in the quality of the hide being heavily compromised (Hortense Warner Ward, 1953).

Figure 16: Poor cattle branding which damages the hide and injures the animal

(Bahari, M, 2008)

Branding As a Tool of Preventing Cattle Theft

In order for branding to serve as an identification system and help in curbing cattle thefts, it has to be regulated. Another pre-requisite is that it has to be organized – from coding of brands for each individual, family, group, farm/ranch, locality and country – to application sites, record keeping and registration to stock movement control. To be able to trace back the identity of an animal to the owner the identifier (brand) has to be registered in a central database. The practice to brand and register must be backed by the full force of the law.

Figure 17: Brand Symbology Standardization Proposal for Tanzania

(Bahari, M, 2008)

Conditions Necessary for Animal Branding To Serve As a Protection Mechanism to Reduce Cattle Theft

Branding can be perfected to comply with livestock traceability system necessary in curbing livestock theft through a scientific approach on the design of the brand codes, specification of the brand size and brand application sites as done in Botswana where the designing and registration
of brand codes and specifying application sites is done centrally and enforced by law-the Branding of Cattle Act of 1907.

Branding seems to generally meet all the requirements for a primary livestock identification system in the IGAD region. It is well suited to serve as the benchmark to which all other animal identification methods for curbing livestock thefts can be founded. Pastoralist livestock keepers in most parts of IGAD region employ traditional branding with various symbols depicting family meanings. However, traditional branding can only serve the communities well and be acceptable internationally if it is done in accordance with OIE animal welfare guidelines.

**Animal Welfare**

Animal welfare generally refers to how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.
Box 1: Guiding Principles of Animal Welfare

Guiding principles for animal welfare

1. There is a critical relationship between animal health and animal welfare.
2. The internationally recognised ‘five freedoms’ (freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease; and freedom to express normal patterns of behaviour) should guide the provision of animal welfare.
3. The internationally recognised ‘three Rs’ (reduction in numbers of animals, refinement of experimental methods and replacement of animals with non-animal techniques) provide valuable guidance for the use of animals in science.
4. The scientific assessment of animal welfare involves diverse elements which need to be considered together, and that selecting and weighing these elements often involves value-based assumptions which should be made as explicit as possible.
5. The use of animals in agriculture and science, and for companionship, recreation and entertainment, makes a major contribution to the wellbeing of people.
6. The use of animals carries with it an ethical responsibility to ensure the welfare of such animals to the greatest extent practicable.
7. Improvements in farm animal welfare can often improve productivity and food safety, and hence lead to economic benefits.
8. Equivalent outcomes based on performance criteria, rather than identical systems based on design criteria, be the basis for comparison of animal welfare standards and recommendations.

(Source: OIE, 2008)

Figure 18: Traditional and Modern Branding Combined With Ear Tagging

(Bahari, M, 2008)

Due to the limitation on the size of the brand equipment for use on the grounds of animal welfare the brand symbology cannot carry much information needed in pinning down the identity of the animal to the owner, farm and location (village, district and country). The use of two brands one for location identity (village/farm, district and country) and the second for the owner and animal can reduce the problem of cattle theft. The first system can be used to identify animal’s source of origin at livestock markets, on being transported or on-hoof movement or at any point of commingling and the requirement that such marked animals to meet certain specified conditions before being allowed to enter the livestock market or continue with the transactional movement. A secondary system should be introduced based on a retrievable database system to serve and comply with traceability. This system can be developed and expertise exists in the region and can also be outsourced from Botswana or South Africa which have long experience in the system.
Another important aspect concerns the outdated use of wood fires to heat brand irons which not only leads to poor and often unidentifiable marks, but also environmental degradation, especially in pastoralist areas whose ecosystems are very delicate. Brand irons heated in a wood fire usually heat unevenly. This uneven distribution of heat leads to some areas of the letters not leaving a clear scar and in other areas the damage is done below the dermis of the animal’s skin. It is important that a branding system allowing for an even distribution of heat is used. This problem has been overcome in some areas by using mobile electric/gas heaters as shown below and more energy efficient stoves that available in the market.

4.3.3.2 Freeze Branding

Due to the perceived pain caused to an animal during branding with hot iron, freeze branding emerged as an alternative. This involves the cooling of the branding iron to a temperature far below zero. This is done by using liquid nitrogen (-196° Celsius) or by placing the irons in a methylated spirits (alcohol) bath cooled down to -40° Celsius by using solidified Carbon dioxide. The frozen iron is then placed on the shaven skin of an animal and held in place for at least 30 seconds.

This damages the deeper skin cells eventually discolouring the hair that grows on the spot later. Although it has been proposed that this method is less painful to the animal, any person who has had frostbite will testify that the pain is much more prolonged. Although it may seem as if the freezing process does not cause undue stress at the time of the application, the pain during the damaged skin’s recovery period is probably worse. A much larger area of skin is also damaged in the process. The disadvantages of using freeze branding as opposed to hot iron branding are:

- the frost bite-like pain it causes to the animal
- cost of the equipment and liquid nitrogen or solidified carbon-dioxide and alcohol mixture required,
- the much longer time it takes to apply the brand, and the
- the fact that the brand sometimes disappears with time if not done properly.
Tattooing

Tattooing is mostly used on small stock e.g. sheep and goats. It’s one method of identification that meets many requirements of a permanent identification system. One disadvantage is the visibility of the identification mark from a distance. Tattoos can also be changed or altered. The animal has to be restrained to read the identification in the ear. However, the skin of all small stock is too thin to allow for hot iron branding and the second best solution must be the preferred method of identification. It is again important that the proposed registered livestock marking operators be trained properly. If the ink is not applied to the ear correctly, the tattoo may fade with time. Tattooing can be done in the ears of all small stock species, i.e. goats, sheep, pigs and even dogs. Traditional tattoos are however different as can be seen in the photo above.
Animal traceability refers to the ability to follow an animal or group of animals during all stages of their life – i.e. from birth to death (OIE Terrestrial Animal Health Code, 2008). Under the Codex alimentarius, traceability is the “forward and backward tracking of animals and food by paper or electronic means”. International Organization for Standardization (ISO) defines traceability as the “ability to trace the history, application or location of what is under consideration or a series of recorded identifications”.

Identification has been used to benchmark traceability especially in the food chain pathways, and to a lesser extent in taxation and policy development. Traceability contributes to an integrated livestock tracking, monitoring, animal disease surveillance and marketing system. Traceability therefore is an integral part of a livestock identification system. Traceability systems essentially rely on record-keeping for success.

Traceability has become a buzzword in the food industry. It forms the basis of modern food safety control systems. Consumer demands for higher-quality foods and more variety have never been greater. Spurred on by recent food scares around the world, such as mad cow disease and bioterrorism fears, governments are forcing the adoption of food traceability systems.

Trace back systems are vital for the control and eradication of animal disease and contaminated animal products. Experience has shown that a traceability system can reduce the time required to locate diseased animals and reduce exposure of healthy animals to the disease so minimising as much as possible the impact of an outbreak of disease on producers and international trade.

Major players in the livestock industry have recognised the importance of being able to trace disease, residues and physical contaminants in food back to the source. The recent outbreaks of animal diseases such as mad cow disease and avian flu, which have the potential to affect and kill humans and devastate agricultural communities, has lead to an acute awareness of food safety and food production. Food residue scandals and other food scares have done nothing to allay consumer concerns. There is now a demand and a real need for full and accurate traceability for all food products destined for our tables.

There are a number of economic and infrastructural challenges regarding applicability of traceability in developing countries especially in the pastoral livestock systems. The cost of applying a standardized and harmonized identification and traceability system is prohibitive. This is compounded by the disparity of agricultural production systems. The low volume of production output by the many producers/farmers/livestock keepers implies that harmonization is difficult to achieve.
infrastructure and literacy rate, the high cost of coordination and the need to apply mainstream programme activities with traceability makes its application even more difficult.

Developing countries have the option of forming working groups with partner states affected by the same problem in order to take advantage of economies of scale in livestock identification and traceability to enhance their export market potentials, increase production and productivity of the pastoral areas and develop unified infrastructure to achieve equivalence in compliance with respect to livestock identification and traceability (Augsburg, 1990; Golan and others, 2002).

4.3 LIVESTOCK TRACKING

Tracking basically refers to the ability to trace the whereabouts of an animal at any one given time. It’s also referred to as telemetry. It mostly involves use of satellite and active (battery-powered) radio signals detection. It’s an expensive approach that has not been undertaken anywhere else in the world except for highly priced thorough-bred livestock breeds and endangered wildlife species e.g. elephant tracking in Kenya by Kenya Wildlife Service (KWS). It should be a long-term option of last resort for livestock identification.

Radio Tracking

By attaching a small electronic device to an individual animal, movement throughout its environment can be accurately tracked and monitored. There are a number of different tracking techniques, but each involves the transmission of an electronic signal from an attached device – either via satellite, high frequency radio waves, or the mobile telephone network.

Radio-tracking is used worldwide and recent advances in technology make it possible to track a variety of species from terrestrial mammals to deep sea dwelling fish and far ranging migratory birds. Wildlife research studies have been revolutionised, enabling researchers to locate and track the movements of groups of animals or individually identifiable target animals over a period of time. In the days before radio tracking, the study of species movements depended largely on the time-consuming and inefficient live trapping of animals with mark and recapture techniques. Labour intensive field work can now, in many cases, be replaced with remote or automated collection of location information.

The ability to track and monitor species can give important information on their ranging patterns, habitat usage. The system can be very useful for tracking stolen livestock and can go a long way in curbing cattle rustling in the region. The system can also help in monitoring cross-border movements of livestock.

The most common tracking methods generally fall into three categories:

i) VHF transmitters: attached to the animal to send out radio signals which are picked up in the field by users, using large antenna. Fixes can be taken from a number of positions and then, using triangulation techniques, the location of the animal can be pinpointed. This method can be error prone, and not suitable for animals which travel over great distances.

ii) Satellite systems, such as ARGOS, calculate and transmit the location information from earth up to a satellite, and then down again to a receiving station, where the information
is made available via the internet. This method is extremely quick and accurate – and is almost real time - but comes at a prohibitive cost.

iii) GPS units attached to the device regularly to take a location fix and store it for future collection (some collars are programmed to fall off, where they are then collected in the field by researchers and the data then downloaded). Increasingly, mobile phone networks are being used to transit location information via text message

The method used depends on the objectives of the of the project, the accuracy of location data required, available budget, human resources, time constraints of the project, the species to be tracked and the surrounding habitat.

Tracking devices come in a wide range of shapes and sizes – collars for elephants and larger mammals, microchip implants for snakes and small reptiles, aerial units for bats and birds, and back-packs. Sampling programmes, used to receive and transmit location data and additional sensory equipment (e.g. temperature, speed, height or activity), are also available. The majority of manufacturers custom-build units for the specific needs of each user - many have been supplying technology to wildlife researchers for many years. This close collaboration ensures that appropriate devices are produced and that performance issues are reported back, (Adapted from Banks & Burge 2004).

VHF Radio Tracking

This is the traditional method of radio tracking, with a system made up of a transmitting and receiving unit. The transmitter, consisting of a quartz crystal tuned to a specific frequency, and transmitter aerial is attached to the animal to be tracked. The receiving antenna is held by the researcher to detect and identify signals from the transmitter. A basic system consists of a battery power receiver, receiving antenna, cables, a mechanical or human recorder and other accessories (antenna mounting devices for vehicles, scanners to enhance searching for multiple signals, software). There are different types of receivers dependent on the nature of use; number of channels needed; whether signal strength meter is needed; source of power; and environmental conditions. The antennae and transmitter aerial are often purchased separately to ensure optimal efficiency dependant on the animal to be tracked. Animals in the field are tracked by three main methods:

- **Homing** – a user follows the greatest strength signal detected by the receiver antenna, either on foot or by vehicle or plane, until the animal is viewed. The location of the animal is then visually estimated or determined using a GPS unit.
- **Triangulation** – this involves two people obtaining two signal bearings from different locations, which are then plotted on a map to cross at the animal’s location. When more than two bearings are plotted, a polygon is drawn on a map to theoretically show the animal’s position. This requires the bearings to be recorded at the same time; otherwise there is a substantial error in location if the animal moves.
- **Automatic** –bearings are taken automatically by a machine.
Figure 22: Searching for VHF Signal
General Principles on Identification and Traceability of Live Animals

1. Animal identification and animal traceability are tools for addressing animal health (including zoonoses) and food safety issues. These tools may significantly improve the effectiveness of activities such as: the management of disease outbreaks and food safety incidents, vaccination programmes, herd/flock husbandry, zoning/compartmentalisation, surveillance, early response and notification systems, animal movement controls, inspection, certification, fair practices in trade and the utilisation of veterinary drugs, feed and pesticides at farm level.

2. There is a strong relationship between animal identification and the traceability of animals and products of animal origin.

3. Animal traceability and traceability of products of animal origin should have the capability to be linked to achieve traceability throughout the animal production and food chain taking into account relevant OIE and Codex Alimentarius standards.

4. The objective(s) of animal identification and animal traceability for a particular country, zone or compartment and the approach used should be clearly defined following an assessment of the risks to be addressed and a consideration of the factors listed below. They should be defined through consultation between the Veterinary Authority and relevant sectors/stakeholders prior to implementation, and periodically reviewed.

5. There are various factors which may determine the system chosen for animal identification and animal traceability. Factors such as the outcomes of the risk assessment, the animal and public health situation (including zoonoses) and related programmes, animal population parameters (such as species and breeds, numbers and distribution), types of production, animal movement patterns, available technologies, trade in animals and animal products, cost/benefit analysis and other economic, geographical and environmental considerations, and cultural aspects, should be taken into account when designing the system.

6. Animal identification and animal traceability should be under the responsibility of the Veterinary Authority. It is recognised that other Authorities may have jurisdiction over other aspects of the food chain, including the traceability of food.

7. The Veterinary Authority, with relevant governmental agencies and in consultation with the private sector, should establish a legal framework for the implementation and enforcement of animal identification and animal traceability in the country. In order to facilitate compatibility and consistency, relevant international standards and obligations should be taken into account. This legal framework should include elements such as the objectives, scope, organisational arrangements including the choice of technologies used for identification and registration, obligations of all the parties involved including third parties implementing traceability systems, confidentiality, accessibility issues and the efficient exchange of information.

8. Whatever the specific objectives of the chosen animal identification system and animal traceability, there is a series of common basic factors, and these must be considered before implementation, such as the legal framework, procedures, the Competent Authority, identification of establishments/owners, animal identification and animal movements.

9. The equivalent outcomes based on performance criteria rather than identical systems based on design criteria should be the basis for comparison of animal identification systems and animal traceability.

(OIE, 2008)
5.0 FINDINGS

5.1 BORANA CLUSTER

5.1.1 BACKGROUND

This Cluster basically served as a test-run sampling area to check and refine the study tools and methodological approaches. Although the tools and methodologies designed for the study have been employed in other investigations before, the unique nature of this particular study necessitated field pre-testing to determine their effectiveness. Through questionnaires, key informant interviews, focus group discussions and personal observations views from various stakeholders, including positions of relevant government institutions, civil societies and pastoral communities were put together. The outcomes were analysed to determine their position on importance of livestock identification on reducing cattle rustling, improving markets and disease control. Important data was also obtained from records held by a number of stakeholders including government offices and civil society groups based in Marsabit and Moyale Districts.

5.1.2 Marsabit: District Profile

The greater Marsabit District, which was recently (December 2007), subdivided into three districts namely Marsabit, Laisamis and Chalbi, covers 66,000 sq Km with an estimated population of 143,849 people. Though agro-pastoral activities are undertaken around Marsabit mountain area, pastoralism is the predominant livelihood with 80% of the population engaged in it. The predominant livestock are shoats, cattle and camels in varying proportions.

The District is inhabited by various ethnic communities comprising of Borana, Gabra, Samburu, Rendile, Burji, Konsos, Turkana and others. Population density varies between one person per Km² to about 22 persons per Km². High population densities are found in permanent and semi-permanent settlements mainly on the Mount Marsabit and other high elevation areas where agro-pastoralism is practiced, and around permanent water sources where markets and other social amenities are found. Most of the people who have lost their livestock due to droughts and other causes migrate to these areas in search of employments and other sources of livelihoods. Poverty is pervasive, with almost 78% of the population living on less than one dollar.

Cattle Rustling

Cattle rustling has continued to pose a major challenge for the security agencies in the district. The practice has become a major source of conflict and disharmony in the region. Many approaches have been employed, but mainly short-term and disjointed. Most of the approaches have concentrated on peacebuilding initiatives by CSOs; traditional mechanisms e.g. compensation; and a combination of traditional and conventional mechanisms.

Unlike in other areas where cattle rustling has become commercialized, cattle rustling in Marsabit is motivated more by cultural factors. For instance for the Rendille, it’s a cultural norm that has its roots in age-old cultural practices. As for the Boran, although originally cultural, it’s slowly
turning to an alternative economic venture, while the Burji abhor it as culturally repugnant and retrogressive. Development efforts in the district have been greatly hampered by cattle rustling.

There’s a general perception among local people that many development agents do not appreciate the value of livestock as an important pastoral asset. Pastoralist themselves are seen as underestimating the economic value of their own assets-livestock. This presents a challenge with regard to the definition of poverty in pastoralist communities in northern Kenya. Effort to have the communities destock in times of drought have on many occasions been unsuccessful. Intensified patrols by security forces have helped to bring about temporary peace - especially when GSU, ASTU and regular police were deployed to the problematic areas. But the situation has reversed after the security agents were recently inexplicably withdrawn. Elders in all the communities have generally lost control over the youth who perpetrate the rustling, especially the Rendille elders.

**Livestock Identification in Marsabit**

Apart from the numerous ethnic-based traditional identification systems, branding is the other mode of livestock identification that is used in the district. It was last undertaken by the government a year ago. A total of 34 brands were used for Marsabit, representing the number of administrative locations in the district. It was undertaken as a region-wide security measure in response to rising cases of cattle rustling in the region. Communities were not involved during the initial stages and were only brought on board much later during the actual implementation. The main mover of the initiative was the Office of the President with technical support from the Veterinary Department.

Although local communities and security agents have expressed reservations as to the viability of branding, other viable alternatives were lacking. Legal aspects of branding and their relevance to communities needed to be interrogated. During the trial run introduced by the Office of the President, a number of challenges were observed; viz. unwillingness and open resistance by some communities, difficulty in prosecuting defaulters and cattle thieves, the high level of resource outlay, inadequate manpower, and infrastructural difficulties.

Some of the measures that have been adopted by the administration against cattle rustling menace in the district include intensified patrols, establishment of the District Peace Committee (DPC), convening of public peace forums involving community elders, women and youth, and targeted interventions e.g. with morans (young warriors). Other measures include increased security personnel, engaging specialized forces e.g. GSU, ASTU and transparent hiring credible KPRs.

According to the Marsabit DPC members branding has been practiced by communities in the District since time immemorial. The practice has been handed over from generation to generation. As for the Borana and Gabra, ear notching and hot iron branding have been the main modes of livestock identification. The markings are similar for each clan; differences only exist between different families.

Clans have historically used identification marks on animals for purposes of traceability; as a deterrent to stock thefts or for fostering clan identity and solidarity. Clans have also used the marks as a source of pride, particularly when the particular clan is held in esteem by the rest of
the community. The marks also served as sources of good omen/luck. In this regard the Borana have a saying that “poverty disturbs the cow’s ears!” – which refers to the action of a poor person who mutilates his cow’s ears in the hope of striking a lucky notch that will lead to an increase in the number of his livestock.

Most livestock rustling in the district is committed across ethnic lines. Most of them currently occur between the Borana and Rendille, although this is bound to shift to involve other communities with time. Rustling usually picks up during dry season. The most common livestock markings in the district are ear notching – common across all the communities; branding – both traditional and conventional; and tattooing of camels - commonly practiced by Rendille who regard camels as sacred and therefore not warranting burning by a hot object. Most clan/tribal animals possess similar identification marks. The Law (Cap 357 – Branding of Stock Act, 1972) does not recognize traditional brands. Even then, the law is not enforced as per its letter.

The brand marking is put on the left just above the knee joint. Other recommended sites of branding are the hump, cheek, neck and below the knee jack.

The local communities in Marsabit presented different modalities and historical perspectives. The Gabra have five major clans – each with its own marking system. Normally, the Gabra do not rebrand newly acquired animals from another clan or tribe. Some of the marks used by this community are similar to those of the Rendille and Borana.

The history of livestock branding among the Boran dates back five centuries ago. It began with the Gadha system – which spells out rules for all aspects of the social life of the community. It was initially meant to curtail thefts. The Boran is composed of many clans and sub-clans. For instance the Karayu clan alone has 17 sub-clans. Karayu Danqa is reputed to have the most cattle.

For the Rendille, the main purpose of branding is for identification. The culture of branding is as old as the community itself. Brands go as per clans – 9 clans all together. Some clans combine ear notching with branding while others only carry out ear notching. Sale clan only brands during soriro which is observed six days after the sighting of the moon. The Rendille do not encourage changing of the mark already made on an animal acquired from outside the clan. Instead, they
only brand the offspring from such an animal. A goat is usually slaughtered during soriro and its blood is spread on the branded animal. Branding goes by a definite calendar similar to the Somali and Borana ways of branding.

The local Kenya Agricultural Research Institute (KARI) which is at the moment involved in a hides and skins processing project faces challenges in procurement due to the fact that the local communities’ brands are very damaging to the hides and skins. As a result, KARI has embarked on an awareness creation campaign on the value of hides and the need not to spoil the hide through branding.

**Major Challenges in the Livestock Industry**

The following were cited by the local communities, the administration and security officials and other stakeholders in the industry as major challenges facing the district:

i) **Livestock Marketing** – e.g. inadequate outlets, ignorance on the part of pastoralists regarding market chains and process, lack of market information or poor market intelligentsia, infrastructural challenges, and insecurity. Other issues involve the existence of cut-throat cartels and segmentation of markets.

ii) **Cross-border challenges** - The fact that district shares its northern border with Ethiopia which has security problems mainly as a result of OLF insurgents, poses major cross border challenges in the area. Key among these are frequent cattle rustling incidences, existence of related communities on both sides of the border thus affecting effective service delivery and governance, perpetuated insecurity occasioned by criminal elements taking advantage of the border, and general cultural and customary challenges between the different groups residing along the border.

iii) **Inadequate funding/allocation of resources** and irregular funding to the Veterinary Department for branding and livestock identification generally;

iv) **Cultural issues** - Reluctance of Rendille tribesmen to “burn” their camels, and the size of characters since the branding iron is normally made for large stock and so presents a challenge when branding small stock.

v) **Wood fuel availability** - Availability of wood fuel and dependence on only this source of energy for heating the branding iron, and difficulty in restraining the animals to be branded (due to frequent rustling, animals have become generally restless and wild) are also some of the challenges.

vi) **Outdated laws** – e.g. existing law only recognizes branding for control of Rinderpest and so its focus remained on only cattle and horses. Even though it’s an offence not to brand, the law has not been duly enforced. Similarly, though the law provides for individuals to apply to registrar of brands in order to register their own marks – pastoralists have not taken advantage of this provision to register their clan/tribal marks. There is need for change of the law, Cap 357 Laws of Kenya to not only focus on disease control but also take into account insecurity/rustling and marketing challenges.

**Recommendations**

i) **Type of mark** - Hot iron branding of large stock is the best option available for Marsabit residents although other modes are welcome so long as communities are exposed and sensitized to the other options available for them to make an informed choice. The DPC
was of the view that further consultations with communities should be undertaken to agree on a more acceptable system of branding; one that is culture sensitive. Communities should also be allowed to unanimously agree on the most appropriate part of the animal to be marked or branded.

ii) **Role of tribal mark** - The use of a tribal mark is paramount and should be incorporated in the mark used by the Veterinary Department. This is mainly because cattle rustling occurs between tribes, even when they reside in one district.

iii) **Accompanying initiatives** - Branding alone is not a deterrent to cattle rustling. It should be accompanied by other developmental initiatives.

iv) **Exchange of animals in formal markets** - Parties to livestock marketing transactions should enter into a formal agreement witnessed by local administration/county council official.

v) **Branding equipment** - Every individual stock owner should be afforded the opportunity to brand his/her own animals whenever the need arises –this will ensure that branding is updated in the region. By this way, every livestock *manyatta* (Kraal) should have common branding equipment which should be accessible to all *manyatta* members whenever needed. Chiefs and Assistant Chiefs could also be made the custodians of the branding equipment. Community Based Animal Health Workers (CBAHWs) could also be made custodians of the branding instruments.

vi) **Regularity** - There should be general branding and vaccination exercises every two years on a regular basis.

vii) **Legislation** - especially the Branding of Stock Act, Cap 357, Laws of Kenya, needs to be updated to conform to the development of the livestock sector, technological progress, and the requirements of international agreements.

viii) **Livestock Census** - A proper record of livestock census and brandings needs to be kept by department;

ix) **Incorporation of Traditional brands** - The traditional brands or tribal/clan marks should find a place in the contemporary branding. According to the veterinary department, branding/identification of livestock can reduce cattle rustling by up to 80%.

** Emerging Issues**

i) There’s a general sense of frustration on the part of the provincial administration regarding cattle rustling especially as relates to traceability of stolen stock, livestock recovery rate by security agents, and lack of long-term strategy to eliminate cattle rustling;

ii) The government has tended to place too much emphasis on security forces rather than communities to eliminate the vice of cattle rustling – rendering pastoralists virtual bystanders in the process;

iii) The progressive loss of tribal elders’ authority over youth is greatly undermining the communal efforts to prevent and combat cattle rustling. The government’s administrative set-up, which does not place much value to the authority of elders, has not helped the situation;

iv) The thinking behind the formation of the District Peace and Development Committees (DPC) is noble. However, the formulation process and the structure of these committees significantly dent their effectiveness. The DPC has a potentially critical role to play in livestock identification/branding – a role they are currently not performing now;
v) The local Kenya Police Reservists (KPR), who understand the local dynamics well and can be quite useful in the fight against cattle rustling have their recruitment mired in corrupt deals. In the end, criminal elements, who end up engaging in cattle rustling themselves, find their way into KPR force.

vi) There’s need to establish the correlation between early warning and the severity of cattle rustling. What is the role of early warning mechanisms in curbing cattle rustling?

vii) Communal punishment by security forces to curb cattle rustling is commonplace in northern Kenya. This strategy has not been effective in curbing cattle rustling. Instead, it has resulted in gross violations of human rights and loss of innocent lives. It may be time to review this strategy and adopt a more viable policy.

viii) There are a number of good practices in curbing cattle rustling that have not been documented or shared, especially by security services and the Provincial Administration officials. Moreover, institutional frameworks that safeguard the use of these models do not exist, making it hard for officers to pass over the models to their colleagues during change of guard.

ix) Elephants on Mt Marsabit National Park are currently tracked through electronic radio devices. Local communities are questioning the logic behind the Government’s colossal expenditure of public funds on elephants and yet being unable to invest on veterinary care and traceability of their livestock.

x) There’s a general disconnect between the Veterinary Department and other actors as regards disease control, livestock identification and marketing. The law on Stock Branding (Cap 367) is only known to the Veterinary Officials. Most Police officers interviewed were ignorant about the provisions of the statute and yet they were supposed to prosecute violators. Pastoral communities were even worse off. For instance, virtually none of them was aware of the illegality of their traditional marks or brands in the face of the exiting statute.

5.1.3 MOYALE DISTRICT

Background

Moyale District covers an area of 9,749km2 with a population of around 61,368 people. The District, which forms part of the northern arid lands of Kenya, is divided into four administrative divisions namely Uran, Obbu, Central and Golbo. Central and Golbo Divisions have the highest concentration of population.

Pastoralism is the predominant livelihood activity in the District. Agro-pastoral communities are mainly concentrated in the northern parts bordering Ethiopia. They mainly grow maize, beans, sorghum, teff, green grams and cowpeas. Communities within the urban centres are engaged in formal employment, business or petty trade with concentration mainly in Moyale town ship, and Sololo market centre. Rainfall pattern is bimodal with short rains falling between October and December while the long rains fall between March and May. Rainfall ranges from 300mm to 800mm with an average of 500mm per annum.
Cattle Rustling

Cattle rustling is a major challenge for both the administration and security agencies mainly due to its cultural convolution and ever-changing nature. Indeed culture is credited for encouraging cattle rustling. This has made it difficult to combat the menace. The District Peace Committee is helpful but not a sufficient mechanism to curb cattle rustling, especially cross border incidences. Pressure on resources like water and pasture has greatly exacerbated conflicts in the region.

The main problem that preoccupies the Police force in the area is cross-border cattle rustling. According to the local Officer Commanding Police Division (OCPD), branding does not deter cattle rustling. It only helps in identification after recovery of stock. In the local situation, the common market for cattle for both countries is on the Kenyan side whilst the camel market is on the Ethiopian side. Evidently, strong cross-border peace committees enhance security and traceability and resource sharing. There’s need for local inter-state security personnel collaboration. Little is known about the branding law, even by senior police officers. This has made it difficult to enforce it. In Police work, marks on livestock are not conclusive evidence to jail livestock rustlers, but are used by chiefs to decide on non-controversial cases, all the same. Marks should be as conspicuous as possible to serve as a deterrent.

There’s necessity to ‘de-culturise’ cattle rustling and treat it basically as crime. Cattle rustling is mainly undertaken by youth who are otherwise idle. Illiteracy greatly contributes to rustling. Young men should be encouraged to join school. Incidentally in Kenya and its neighbours, communities living along the borders tend to be the most disadvantaged economically and this may be a cause of such crimes as cattle rustling. There’s need to empower them economically by improving infrastructure and tackling the poverty scourge. Communities’ natural resilience has been undermined greatly by climate change among other hazards. It is important may be important to restock them as they are worse off now than before. It may be also necessary to address the underlying causes of cattle rustling alongside identification/branding. Pastoralist communities have probably experienced exclusion in resource allocation than other communities in Kenya. There’s need to put in place policies that promote equitable resource sharing and address underlying causes of marginalization in pastoral communities.

Livestock Identification

Evidently, the government needs to come up with a policy on livestock identification to curb the seemingly intractable conflicts over cattle rustling in pastoralist communities. It can without doubt contribute to reduced incidences of cattle rustling, although initiatives related to economic empowerment can contribute more to cattle rustling. As a position, local administration does not recognize traditional branding – regards it as unimportant and can only contribute up to 10% to reduction of cattle rustling.
5.14 SUMMARY OF THE FINDINGS

Study Demographics

- A total of 84 questionnaires were administered; 50 were sorted for analysis
- 75% of the populations interviewed were male while the rest 25% were females.
- 70% of those interviewed were pastoralists while 30% were agro-pastoralists.
- Average age of respondents 47 yrs

Figure 24: Age Profile

Figure 25: Ethnic Composition

Figure 26: Location

Figure 27: Duration with Livestock
Livestock Identification

- 100% of the participants have been identifying their animals using brands, ear notches, breed characteristics or personal information.
- 100% of the communities had recommended use of a conventional brand, out of which
- All (approx. 100%) recommended representation of the country and the ethnic group in conventional.
- 87% of the communities represented supported a representation of the lower locations such as the district in the conventional brand while only 13% opposed it.
- 18% re-branded their animals after exchange, while 82% do not re-brand but would brand the off spring with their own mark
- Only the Garre (13%) felt that livestock identification by country will affect cattle markets in Nairobi thro’ increased charges and that they will not benefit from vaccination services across the border.
- Garre also preferred a system that can benefit their kin across the borders;
- 85% of the communities supported use of other identification methods apart from branding such as: microchips, radio frequency ID.
- Only the Borana have been observed to be changing their brands due to situations such as misfortunes, but the rest of the communities did not change their brands.

Figure 28: Common Type of ID and Position of Mark

Livestock Identification

- 80% of those interviewed recommended improvement of current GoK identification system
- 85% of the population had never experienced and problem with their marks, meaning there was an understanding of the various marks used
- 15% percent however had experienced problems with their marks.
- 90% of the population concurred that the government had not supported, approved or encouraged the traditional ID, while 10% had said that government had supported the system, by respecting resolutions that had been arrived based on the brand.
- On multiplicity of brands, 75% of the respondents had their herd having more than one brand, while 25% said their herd had only one brand.
- 70% of the respondents received receipts without any authentication by the local authority, 5% did not receive any kind of receipt, while 25% sold to undefined markets.
- On whether they keep any records of their stock, 30% said yes, while 70% said they did not keep records, but had adequate proof of their animals though unwritten
Cattle Rustling

Figure 29: Causes and Effects of Cattle Rustling

![Diagram showing causes and effects of cattle rustling]

Figure 30: Duration of Response and Distance to Nearest Police Post

![Diagram showing duration of response to raid and distance to nearest security post]
Ways of Mitigating Cattle Rustling

- On whether they received any help from civil society organizations such as NGOs or ALRMP after a raid, 36% said affirmed while 74% said they had not received any help from any such organizations.
- 60% said they were aware of existing anti-cattle rustling measures while 40% were not aware of any such efforts (the measures mostly suggested were peace building)

Disease Control

Figure 31: Animal Susceptibility to Diseases and Health Services Available

Prophylactic and Curative Services

Animals Most Susceptible to Diseases
Marketing

Distances to markets

- On access to single or more than one market; 70% had access to only one market while 30 percent had access to more than one market.
- On the animals mostly sold, 80% were cattle, 14% were shoats and others were 6%.
- On how the buyer/market authorities identified the seller; 79% used the personal information of the seller, 14% used the brand while 7% others.
- All the sellers said they incurred such as local government fees, transport expenses, broker fees.
- 80% of the sellers had no market association and all the buyers who bought the animals were irregular but not contracted buyers.

Prices

Price Variation during low and high season

- Series 1
- Series 2

<table>
<thead>
<tr>
<th></th>
<th>Cattle</th>
<th>Shoats</th>
<th>Camels</th>
<th>Cattle</th>
<th>Shoats</th>
<th>Camels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marsabit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moyale</td>
<td></td>
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</tr>
</tbody>
</table>
5.2 MANDERA TRIANGLE/SOMALI CLUSTER

5.2.1 Background

The field study was conducted in Wajir and Mandera Districts of North Eastern Province of Kenya. Ten participants from the Gedo area of Somalia representing security officials, livestock keepers and local administration were invited to the Mandera consultations.

The Mandera Triangle, also known as the Somali Cluster, comprises of the tri-border region of north-eastern Kenya, south-eastern Ethiopia, and southern Somalia that corresponds to the Juba and Shebelle river basins, with the Kenyan town of Mandera as its geographic centre point. The region is one of the most conflict-prone areas in the world, experiencing large-scale violence as a result of the civil strife in Somalia, regional inter-clan warfare, rival pastoralist livestock raids, targeted attacks, and frequent banditry. The area is inhabited by the Somali people.

They speak Somali language which is related to Eastern Cushite family of languages. Although the language is generally mutually intelligible, different forms of it are spoken in Djibouti, (Ethiopia) and the northern areas of Somalia, as well as in Kenya.

The history of the Somali people dates back to only about AD 1000. Linguistic, cultural and historical evidence, however, indicates they came originally from the southern highlands of what is now Ethiopia. They are most closely related to the Rendille and the Afar, and distantly related to the Oromo, all Eastern Cushite peoples.

Somali people are not a unitary group of people, but a grouping of broad clan federations divided by language and by clan conflicts. They were never under any unified political structure. Sporadic attempts such as the Gareen dynasty from the Ajuran in Central/Southern Somalia in the 1500s (Cassanelli, 1992) and the Bartire around Jigjiga, Ethiopia, in the late 1700s were overthrown violently by other clans.

The clans, with various genealogical ties, or political or military alliances, provided a broad, loose identity. In the colonial era, the various European powers easily established hegemony, then a dominance over various divisions of the Somali peoples. The British, French and Italian Somalilands roughly followed geographical areas of clan alliances or federations and actually helped limit clashes between different clans. In 1960 Britain and Italy combined their territories into a unified independent Somalia. The French territory remained separate and gained independence in 1977 as Djibouti.

Although all Somalis profess strong allegiance to Islam, they hold stronger primary loyalties to self, family and clan, in that order.

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Apart from causing food insecurity, conflict in the region has resulted in the disruption of migration routes for pastoralists; lack of essential social services and underutilization of prime grazing lands. The scarcity of water and grazing land has contributed to conflicts among pastoralists. Conflicts due to cattle rustling and the competition for natural resources have restricted livestock movements to better grazing locations. This has resulted in abnormal livestock deaths, loss of body weight of animals and their market value. Long-standing conflicts in the region have triggered population displacement and hampered deliveries of basic humanitarian assistance. Cattle rustling in the Somali cluster is relatively low as compared to the Karamoja and Borana Cluster.

5.2.2 History and Evolution of the Current Livestock Identification

Traditional marks are the most common modes of livestock identification in the Somali Cluster. Hot iron branding and ear notching are particularly widespread practices besides other means such as breed characteristics, naming and ink marks for marketed animals. The veterinary department has also been utilizing district and administrative locations codes provided by the government during vaccination campaigns.

Traditionally, each Somali clan has its own kind of livestock mark which goes further to identify the sub-clan from which the livestock owner comes from. In some cases, the livestock can be traced to a family lineage.

Table 5: Conflict Incidence in Somali Cluster - Starting July 2003 through August 2008.

<table>
<thead>
<tr>
<th>State</th>
<th>Violent Incidences</th>
<th>Reported Deaths</th>
<th>Livestock Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>77</td>
<td>87</td>
<td>11,000</td>
</tr>
<tr>
<td>Kenya</td>
<td>130</td>
<td>255</td>
<td>16,433</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>342</td>
<td>17,358</td>
</tr>
</tbody>
</table>

Group discussions and consultations with communities in the area reveal that the practice marking livestock among the Somali has its roots in the ancient times and has been passed on from generation to generation. Myths abound on the origins of livestock marking among the Somali. For instance, the Garre clan associates the origin of their numerous marks with their ancestral father, Garre, whose 20 sons grouped into two major sub-clans – the Tuff and Quranyow. Each of the 20 sons devised their own livestock marking system which is basis of the twenty different markings employed by the Garre today.

The Murule clan, on the other hand, associate their marks to their eminent religious leaders (Sheikhs) who allegedly went into seclusion and prayed to God to show them how to brand their animals. According to them, on the seventh day, God showed them the sign, and this what they use to date. Similarly, the Degodia believe that their current marks originated from a prominent Murule religious leader who had the marks revealed to him during a dream.

Over time, some of the marking systems have been altered. For instance, the sabdawa sub-clan of the Garre who were lent livestock by the leysaan sub-clan ended up altering the mark by inserting a dot between two parallel brands. In cases where brands were similar, one of the clans ended up branding on a different part of the animal such as the front, middle or hind. Further, most Somali clans - Garre, Murule, Marehan and majority of the corner tribes - mark all types of livestock in
the same manner – e.g. cattle, camels, small stock. The Degodia are exceptional in that they did not mark all types of livestock in the same way.

Figure 32: Some Traditional Marks Used in Mandera, Kenya

5.2.3 Identification Challenges of Traditional Marks

Generally, disputes over ownership of livestock are almost non-existent with clans since almost all members of the same clan are expected to be conversant with kinsmen’s marks.

- **Inter-clan similarities** – some clans have been known to share similar marks which have ended up creating confusion and disputes in ownership of animals, especially when one of the parties is being dishonest. For instance, during community consultations in Mandera and Moyale it emerged that the Kulo sub-clan of Murule clan shared the same brand with the Afar-shid of Marehan. Dishonest persons have taken advantage of this loophole to dispossess unsuspecting stock owners of their livestock, especially through the support of corrupt provincial administration officials.

- **Multiplicity of brands** - the presence of more than one brand or mark on an animal poses a challenge regarding ownership of the particular animal. Animals in pastoral areas are continuously changing hands. For this reason, cases of rebranding or ‘burning of the brand’ in some Somali clans are rampant. This tends to weaken the dynamism and significance of initial traditional marks.

- **Restriction of access to pasture and water** – certain water points and grazing areas are only open to members of the same clan. This is normally done to regulate usage of dry and wet season communities believe that traditional marks have greatly contributed to denial of pasture and access grazing. Marks of other clans automatically disqualify such animals from accessing certain water points and grazing areas.

- **Source of communal punishment** - marks on animals have been employed by security forces to mete out communal punishment to communities where raided animals are recovered. The whole community usually suffers even when they may not be aware of the theft by some members of their clan.
• Cross border challenges – reluctance of clans across borders to cooperate in tracing stolen livestock by taking advantage of border immunity. Moreover, existence of same clans across borders who employ different sets of dispute resolution mechanisms and legal frameworks, presents a challenge when a dispute over ownership of an animal arises.

5.2.4 Recommendations

• In spite of the existence of different traditional marks in the region, governments of the region need to urgently introduce a regionally acceptable marking/identification system to combat cattle thefts along common borders. The traditional marks can go together with the conventional mark. Every country should be provided with its own alphabetical code. Before introducing the system, communities in all countries should be adequately sensitized.

Figure 33: Traders at Mandera Livestock Market

• Form strong and credible committees or task forces to assist in the implementation of the system. The committees should be cross-border and inclusive enough;

• The identification system to be adopted should be made mandatory for all those who wish to engage in livestock marketing activities in the region. It must be mainstreamed in the marketing process.

• Similarly, the system should be used for disease control initiatives. For instance, only pastoralists who participate in the scheme access subsidized state animal health services, including veterinary drugs and vaccines.
Figure 34: One of the brands currently used in Mandera District by the Veterinary Department

Figure 35: Community Consultative Forum (Community Interviews)
5.3 REPORT ON THE KARAMOJA CLUSTER

5.3.1 Background

The “Karamoja cluster” commonly refers to the confluence between Kenya, Uganda, Sudan and Ethiopia borders mostly occupied nomadic pastoralists. The Ugandan side of the border is occupied by Karamoja sub tribes and is commonly referred to as the Karamoja Region; whereas the Kenyan part is occupied by the Turkana. The Pokot who also occupy the north-western parts of Kenya, are found south of Turkana close to the Uganda border. The Toposa, who are closely related to the Dodoth live in southern Sudan while the Nyang’atom and the Merille (Dassenach) in the south-western part of Ethiopia.

The region is characterised by violent conflicts resulting from stiff competition for natural resources. The region is plagued by chronic food insecurity, paucity of social services, poor or non-existent infrastructure, and widespread poverty. Some of the ethnic groups in the area share a common language and culture. In CEWARN terms, it refers to the conflict system encompassing four IGAD member states; Uganda, Kenya, Sudan and Ethiopia.

Figure 36: Conflict Incidences in Karamoja Cluster - starting July 2003 through August 2008.

<table>
<thead>
<tr>
<th>State</th>
<th>Violent Incidences</th>
<th>Reported Deaths</th>
<th>Livestock Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>209</td>
<td>267</td>
<td>18,945</td>
</tr>
<tr>
<td>Kenya</td>
<td>409</td>
<td>566</td>
<td>60,268</td>
</tr>
<tr>
<td>Uganda</td>
<td>1,665</td>
<td>2,841</td>
<td>189,821</td>
</tr>
<tr>
<td>Total</td>
<td>2,283</td>
<td>3,674</td>
<td>189,034</td>
</tr>
</tbody>
</table>

Source: (CEWARN)

For centuries, pastoralists within the Karamoja Cluster have acquired and defended the territory in which they live and rear livestock, among other livelihood activities. Gradually, systems of natural resource management evolved generally based on common tenancy of land organized around kinship ties and modes of use that promoted efficient utilization of available resources; primarily for livestock keeping.

Boundaries between different ethnic groups have been fluid, particularly given the changing rainfall patterns as a result of climate change. Survival has depended on forceful or negotiated livestock movements and a social network of good relationships that promote mutual resource sharing and collaboration. Traditional pastoralism was characterized by finely honed strategies such as herd splitting, livestock loaning, reciprocal relations between farming communities and herders, mobility between dry and wet season grazing, and negotiated movement between groups in times of hardships.

Presently, livestock keeping in the Cluster has been negatively affected by several factors. Central among them has been the tendency of governments in the region to confine pastoralists within national boundaries even when the range conditions are limiting. Wars and civil strife in the region have led to an explosion of the numbers of small arms and light weapons. Due to increased weaponry, livestock raiding, which used to be an adaptive strategy, has become predatory and
assumed a commercial anger – with various cattle rustling entrepreneurs emerging. Lack of 
public investment in the development of the region and harsh climatic change realities have not 
helped the situation. A growing reservoir of impoverished unemployed youth has continued to be 
drawn into cattle rustling as way of earning a living.

One consolation is that cattle rustling in the region is not a continuous and relentless undertaking 
as it’s intermittent and experiences periods of peaceful co-existence – i.e. it peaks and drops as 
situations warrant.

5.3.2 Status of Cattle Rustling

Cattle rustling is still a common phenomenon between various communities in the Karamoja 
Cluster. In south Sudan, it’s prevalent amid the Toposa and Didinga, and common in other tribes 
as well. In Uganda, all Karamojong sub tribes are engaged in vicious internal raids against each 
other, aside from frequent raids between them and other tribes in the same country. Cross border 
raids among Turkana and Toposa of Sudan and between Turkana and Karamojong of Uganda is 
rampant. Other tribes in the cluster that experience the same problem are Didinga, Buya, Lotuko, 
loran, mandarin of Sudan, Bokora, Jie, Matheniko, Tepes and Dodoth of Karamoja sub tribes.

Personal interviews with local administrators, security agents, politicians and church leaders in 
these areas revealed that most of them viewed cattle rustling as driven by cultural and commercial 
motives. Culture was seen as an overriding factor because all the communities have a very close 
attachment to their culture. Nevertheless, in Kenya and Uganda a new phenomenon of 
commercialization of livestock raids is slowly emerging around Pokot area in Kenya and Moroto. 
Smaller numbers of livestock are raided and immediately driven to urban centres for immediate 
slaughter or alternatively slaughtered in the bush and meat sold in urban centres.

According to the police in Moroto, cattle raids in the region have become reciprocal and cyclic. 
After raid, there is always a counter raid targeting the raiding community or a different 
community altogether. The prevalence of small arms in the region is blamed for the persistence of 
raids in the region, according to the police. Firearms used by raiders have become sophisticated 
more devastating to both lives and property. However, all is not lost since it seems that when the 
government intervenes in a resolute manner, the problem seems to subside, e.g. in recent 
instances in the South of South Sudan.

5.3.3 Approaches Used to Address Cattle Rustling

Peace initiatives: - most of the non- governmental organizations and government security and 
administrative organs are engaged peacebuilding initiative e.g. peace meetings, peace projects to 
encourage communities interactions through resource sharing, etc. Most of these initiatives are ad 
hoc, inadequate and only undertaken after a raids have occurred. Most of the initiatives are NGO 
driven as opposed to community driven.

Disarmament: - Uganda is way ahead in the disarmament process of the Karamoja area. The 
programme was initially met with tough resistance due to its forceful nature but it seems to be 
gradually gaining acceptance. Kenya has occasionally carried out half-hearted disarmament of 
pastoralists, which has more or less been considered as a public relations exercise and politically 
instigated. More often than not, the exercise is incomplete and often unsuccessful; as it’s done 
with less commitment from politicians, partner government and local communities.
Support for Diversification of livelihoods: - most of the NGOs in Uganda and Kenya have introduced trainings in improved animal and crop husbandry practices and providing of business loans to pastoralists so as to diversify livelihoods. These programmes have mostly been poorly designed rendering them unsustainable and complete flops. There are also ambitious efforts by the governments and other organizations to encourage enrollment in schools with the hope that education among pastoralists would in future reduce the dependence on pastoralism, hence reduce cattle rustling.

Improved security surveillance – This seems to be the common song among government officials in the region although actual implementation is yet to be realized. Uganda government has managed to provide security to what they refer to as ‘safe kraals’. These are essentially groups of livestock keepers households who have been disarmed and as a resulted provided with security by the military (UPDF) on a twenty four hour basis. In situations where raids have occurred, the soldiers undertake to track the raided animals until they recover and return them to the owners. To ease tracking, all the animals in the ‘safe kraals’ are branded with coded identification marks.

5.3.4 Challenges

Armament: - most of the efforts are frustrated by the high prevalence of small arms and light weapons in the area. Raiders are capable of putting up pitched battles lasting several hours and sometimes several days. Criminal elements have also taken advantage of the arms to not only commit criminal acts along the major roads but also thwart community efforts on peacebuilding with the neighbouring communities. In Uganda for example, the large presence of firearms in Karamoja has served to hinder progress in conventional branding initiated by the government recently.

Communities’ cooperation - communities in the area are generally not only suspicious of each other but also with governments - hence do not cooperate in efforts or initiatives by government and NGOs. More often, they agree to cooperate not out of their own volition but for fear the repercussions by government.

Conflict of interest – some civil society organizations working in the area have conflicting approaches to peacebuilding and more often than not engage in duplicated efforts. Governments’ approaches and strategies for pacifying the region are not in harmony. This has served to undermine well intended programmes by some governments for the good of the region. Suspicion between governments and civil society, including faith based organizations has led to them not working in tandem. In South Sudan for example, the government may not be comfortable with initiatives done by the church and the church may not be comfortable with the activities of other NGOs, as such peacebuilding efforts are in disharmony.

Lack of a common approach - despite the numerous regional cooperation treaties and institutions, there lacks a common effort from all the government on cross border issues. Lack of cooperation is also observable in disarmament at the local level where all governments do not agree on the approach, strategies and time of disarmament, making authorities to view these as lack of commitment from partner governments.

Lack of clear alternative livelihood strategies – even the common traditional alternatives livelihoods systems have been undermined by governance structures. Intractable conflicts, adverse climate change effects, reduced mobility, lack of infrastructure and general neglect have
all worked to deny pastoralists in the region the opportunity to diversify their livelihoods as was the case in the past.

*Lack Funding* - lack of funds has been cited by Kenya, Sudan and Uganda as the reason behind little progress made towards conventional branding. In Sudan, the program has been developed, marks agreed on and tools have been bought but lack of funding has hindered the whole process from taking off.

*The youth problem* – the burgeoning youth population in the region is increasingly becoming an issue of concern, particularly because most of them are not meaningfully engaged in gainful activities. The youth in these areas seem to have readily embraced ‘the culture of the gun’ and have found ‘gainful employment’ in cattle rustling. The traditional authority of elders over them has been eroded by the ‘power of the gun’. Armed youth have also taken to highways to rob and maim travelers.

5.3.5 **Recommendations**

- There’s need for the introduction of a more comprehensive means of identification of animals of a particular country, tribe and location by preferably branding on the left hind legs or other methods that may be acceptable to the communities. In any case traditional brands must be preserved.
- Community based veterinary scouts need to be trained and equipped with the necessary skills and materials to be not only responsible for branding at the local level, but to also be community educators and awareness creation agents. Pastoralists (herders, warriors, elders) must be made amply aware of the purpose, intentions and importance of livestock identification.
- Governments need to increase security surveillance and provide communities with adequate facilities and necessary financial and logistical support. They should patrol all the borders to discourage movement of stolen animals.
- Systematic and comprehensive joint disarmament initiatives of all pastoralists living along the common borders needs to be undertaken simultaneously;
- Security personnel and local administrators need to work closely in all initiatives involving the respective communities;
- Establishment of raid reporting and early warning stations.
- Sensitization and awareness of herders on modern identification methods such as RFID, this will include training and experimentation by the government and other organizations involved.
- Reduce migration and movement by provision of important social services such as boreholes, vaccines and other health services to reduce movement of livestock away from market centres.
- Diversify livelihoods; give business loans to help start up marketing groups to improve marketing and provide another form of livelihood.
- Only conventionally branded animals must be allowed to sell in markets or be allowed to move across the districts.
Traditional livestock identification

All the communities in the Cluster have a long history of livestock identification. Livestock, large and small stock, were branded, ear-notched and tattooed for identification and aesthetic reasons long before the advent of the colonialists. The historical background of branding for the communities in the Karamoja Cluster is closely related. The clan marks are similar and are found across the region, making it difficult sometimes to trace a particular brand to a country or its ethnic origin. Unlike other clusters studied, branding in the Karamoja cluster is mainly performed by designated family elders. While the Turkana trace their current identification system to their ancestral roots in Morua Nayece, the Matheniko in Karamoja trace their current identification system to a place called Nakadany, where all the clan elders of Lopia, Bokora, Matheniko, Upe, Jie and Dodoth met and resolved to brand their animals so as to ease identification and reduce thefts that were gradually rising. All the clans that were represented were allotted their brands and have since been using them.

Challenges Faced By Communities

- **Brand similarities** – there’s similarity of brands between different ethnic groups and between different clans in the region. This is particularly so because clans that are found among the Turkana in Kenya may also be found among the Matheniko in Uganda and the Toposa in Sudan. For instance you whereas, Ngikatekok may be a clan in Turkana, they may also be found among the Karamojong or the Toposa. Regardless of where they are found within the Cluster, they will be found to employ the same brand symbol on their livestock. This causes complications in establishing ownership of recovered stock.

- **Multiplicity of brands in the same herd** - it’s common to find one herd of animals with differently branded animals. This is mainly due to inter-marriages, or the practice of bringing together animals from different families for ease of herding and security provision.
5.4 SUMMARY OF FINDINGS

5.4.1 Study Demographics

- A total of 442 questionnaires were administered in this cluster.
- 83% of the respondents were men and 71% were women.
- Majority of the respondents (71%) were between the ages of 30 – 60 years.
- 54% of the respondents from the Turkana Community.

Figure 37: Age Cohorts and Ethnic Composition

![Age Cohorts and Ethnic Composition](image)

5.4.2 Involvement in Livestock Industry

Figure 38: Types of Livestock kept

![Types of Livestock kept](image)

- All respondents are livestock keepers. Majority of the respondents are pure nomadic pastoralists.
- 45% of the respondents kept sheep and goats while 28% were cattle keepers.
- 76% are involved in livestock trade.
- 47% have kept livestock for twenty years and above.
5.4.3 Mode of acquisition of Livestock

- 32% of the respondents acquired livestock through inheritance while only 5% have acquired them through raiding of neighbouring communities.

5.4.4 Use of Identification Mark

- All respondents employ an identification mark on their livestock.
- 47% of the respondents branded their own stock while 37% were branded by clan elders.
- 67% branded their animals on the hind part of the animal.
- 65% of the respondents used traditional brands on their animals.
- 86% of the brands are similar across ethnic groups/clans
Figure 41: Brander and Part Branded

Responsibility of Branding Livestock

<table>
<thead>
<tr>
<th>Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELF</td>
<td>47%</td>
</tr>
<tr>
<td>ANY MEMBER</td>
<td>7%</td>
</tr>
<tr>
<td>OTHERS</td>
<td>9%</td>
</tr>
<tr>
<td>CLAN ELDER</td>
<td>37%</td>
</tr>
</tbody>
</table>

Part Branded

- MIDDLE PART, 1: 8%
- UPPER PART, 1: 5%
- HIND PART, 6: 7%

Figure 42: Role of Livestock ID in Curbing Cattle Rustling

Importance of ID in Reducing Cattle Rustling

- VERY IMPORTANT: 82%
- IMPORTANT: 18%
- NOT IMPORTANT: 0%
5.4.5 Cattle Rustling

- Majority (82%) aver that countrywide branding would reduce cattle rustling.
- 75% have suffered a cattle raid in one way or the other.
- 63% of them have been raided more than twice
- The main effect of cattle rustling has been destitution.
- Most of the respondents undertook cattle raids mainly as retaliatory measure.
- Most respondents stated that they were mostly reliant on local militia for security against cattle rustling.

Most security posts are at least 50 km away.
- 67% of the respondents keep weapons mainly for the purpose of guarding their livestock against cattle rustlers.
- CSOs have proved helpful in promoting peace and aiding cattle rustling victims.
- Most of the respondents agree that the main cause of cattle rustling in their area is resource scarcity.
Figure 45: Reasons for Raids and Helpful Arm of Security

- **REASON FOR LATEST RAID**
  - Retaliation: 60%
  - Predation: 36%
  - Others: 4%

- **MOST HELPFUL SECURITY ORGAN**
  - Police: 28%
  - Local Militia: 28%
  - Army: 22%
  - Other: 22%

Figure 46: Frequency and Mode Response

- **FREQUENCY OF RAIDS**
  - Once: 10%
  - 2 to 5 times: 60%
  - > 5 times: 30%

- **RESPONSE TO RAIDS**
  - Counter RAID: 50%
  - Report to Police: 40%
  - Relocate: 10%

Figure 47: Effects of Raids on Victims

- **EFFECTS OF RAIDS ON VICTIMS**
  - Destitution: 50%
  - Death of Relatives: 40%
  - Migration: 30%
5.4.6 Livestock Diseases

- Most of the respondents rely on respective governments and NGOs for control of major livestock disease outbreaks
- CBPP, CCPP, Lumpy Skin Disease, Anthrax, Tick borne diseases, Diarrheal diseases – were said to be the most prevalent diseases in the area. There’s currently an outbreak of PPR in small ruminants. Vaccination against Rinderpest was undertaken through AU-IBAR
- 46% of them are able to access vet drugs and services
5.4.7 Livestock Marketing

Figure 51: Trade in Hides/Skins and Types of Livestock Buyers in the Area

- Markets are fairly accessible but exploitative and unreliable.
- Goats and Sheep are the most frequently sold stock.
- Buyers, local authority, and security officials at market outlets mainly rely on the information by the seller to determine ownership.
- 65% of the respondents sell their hides and skins in exchange for money while 35 retained their hides and skins.
- 80% of the respondents asserted branding reduces the value of the skin by a considerable margin.
- Most expenses incurred by the producer involve government taxes and rates.
6.0 COST ANALYSIS – RADIO FREQUENCY IDENTIFICATION (RFID)

BRIEF DETAILS OF COMPONENTS OF A RADIO FREQUENCY IDENTIFICATION (RFID) SYSTEM

Transponder (Electronic Tag)
The transponder (electronic tag) is applied in the left ear of an animal prior to leaving its herd of origin. The most common eID tag is the small “doughnut” ear tag partly concealed inside the ear of the animal. Others come in the form of visual panel tags with the electronic chip placed within it. The component should comply with ISO 11784 and 11785.

Electronic Reader
The RFID electronic reader activates and transfers the data contained on the transponder to a data interrogator. This device, which must comply with the specifications of ISO 11785, may either be handheld or permanently mounted in an alleyway. It should also include wedge software failure to which it should be acquired separately as “standalone” wedge software.

Data Accumulator
A data accumulator can be any device (wired or wireless) such as a laptop or handheld computer or scale head that is capable of interfacing and accepting data from the electronic RFID reader.

Software/Web-Based Analysis and Storage
The purchase of herd or health management software, subscriptions to web-based analysis tools and/or data storage options should be placed in this section.

Other
Miscellaneous costs such as software or hardware technical support and upgrade plans, internet/long distance telephone costs should be included in this section. Labour costs associated with any extra labour required at the chute to capture information as well as time spent inputting extra data or generating reports should be included in this section as well.
Figure 52: Estimated Costs for a Radio Frequency Identification (RFID) System

<table>
<thead>
<tr>
<th>Description</th>
<th>Initial Cost (USD)</th>
<th>RFID Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Per Head</td>
<td>Useful life, yrs</td>
</tr>
<tr>
<td>eID Transponder (electronic tag)</td>
<td>2.25</td>
<td>---</td>
</tr>
<tr>
<td>Electronic tag</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Tags for cows(one-time purchase)</td>
<td>2.25</td>
<td>5</td>
</tr>
<tr>
<td>Electronic reader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wand/stick reader</td>
<td>850</td>
<td>4</td>
</tr>
<tr>
<td>Data accumulator</td>
<td>1,000</td>
<td>4</td>
</tr>
<tr>
<td>Software /web-based analysis &amp; storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer software</td>
<td>700</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subscriptions/upgrade fees</td>
<td>480</td>
<td>---</td>
</tr>
<tr>
<td>Labour</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>Total Annual Cost</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from a methodology used by Kevin C. Dhuyvetter, and Dale Blasi; Kansas State University, 2007 in “A Guide for Electronic Identification of Cattle”

Notes:

1. Average herd size, (expected number of head RFID will be used annually) – 250 head
2. Interest rate to charge on investment and one-half of operating costs – 7.5%
3. Note that sometimes, hardware associated with new technologies often become obsolete before physically wearing out

Figure 53: Total Annual RFID Cost per Head (USD)

<table>
<thead>
<tr>
<th>Description</th>
<th>Base 40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
<th>120%</th>
<th>140%</th>
<th>160%</th>
</tr>
</thead>
<tbody>
<tr>
<td>eID Transponder (electronic tag)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Electronic tag</td>
<td>$2.33</td>
<td>$2.33</td>
<td>$2.33</td>
<td>$2.33</td>
<td>$2.33</td>
<td>$2.33</td>
<td>$2.33</td>
</tr>
<tr>
<td>2. Tags for cows(one-time purchase)</td>
<td>$0.56</td>
<td>$0.56</td>
<td>$0.56</td>
<td>$0.56</td>
<td>$0.56</td>
<td>$0.56</td>
<td>$0.56</td>
</tr>
<tr>
<td>Electronic reader</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Wand/stick reader</td>
<td>$1.02</td>
<td>$2.54</td>
<td>$1.69</td>
<td>$1.27</td>
<td>$1.02</td>
<td>$0.85</td>
<td>$0.73</td>
</tr>
<tr>
<td>2. Data accumulator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Laptop computer</td>
<td>$0.51</td>
<td>$1.27</td>
<td>$0.85</td>
<td>$0.63</td>
<td>$0.51</td>
<td>$0.42</td>
<td>$0.36</td>
</tr>
<tr>
<td>Software /web-based analysis &amp; storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Computer software</td>
<td>$0.69</td>
<td>$1.73</td>
<td>$1.15</td>
<td>$0.87</td>
<td>$0.69</td>
<td>$0.58</td>
<td>$0.49</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Internet access</td>
<td>$0.50</td>
<td>$1.25</td>
<td>$0.83</td>
<td>$0.62</td>
<td>$0.50</td>
<td>$0.42</td>
<td>$0.36</td>
</tr>
<tr>
<td>2. Subscriptions/upgrade fees</td>
<td>$0.42</td>
<td>$1.04</td>
<td>$0.69</td>
<td>$0.52</td>
<td>$0.42</td>
<td>$0.35</td>
<td>$0.30</td>
</tr>
<tr>
<td>Labour</td>
<td>$2.08</td>
<td>$5.19</td>
<td>$3.46</td>
<td>$2.59</td>
<td>$2.08</td>
<td>$1.73</td>
<td>$1.48</td>
</tr>
<tr>
<td>Total Annual Cost</td>
<td>$8.09</td>
<td>$15.90</td>
<td>$11.56</td>
<td>$9.39</td>
<td>$8.09</td>
<td>$7.23</td>
<td>$6.61</td>
</tr>
</tbody>
</table>

Source: Adapted from a methodology used by Kevin C. Dhuyvetter, and Dale Blasi; Kansas State University, 2007 in “A Guide for Electronic Identification of Cattle”
Figure 54: Total Annual Cost Vs Size of Herd
7.0 COUNTRY CASES

7.1 ETHIOPIA

Ethiopia, which is a member of IGAD, is located in the Horn of Africa and is bordered on the north and northeast by Eritrea, on the east by Djibouti and Somalia, on the south by Kenya, and on the west and southwest by Sudan. The country covers a total area of 1.1 million km², with an estimated population of 83 million people growing at approximately 3.2% annually. The terrain is mainly composed of high plateau, mountains and dry lowland plains. The climate is temperate on the highlands and hot in the lowlands. The main ethnic groups comprise of Oromo, Amhara, Tigre, Somali, Sidama, Gurage, Wolaita, Afar and other nationals. It has more than 77 different ethnic groups with their own distinct culture and languages.

The Gross Domestic Product (GDP) is estimated at US$25bill (2008). The economy is estimated to grow at 8.5% with a per capita income of US$800. Agriculture is the mainstay of the economy. Ethiopia has a total livestock population of 38.1 million and exports approximately 593,000 Metric Tonnes (FAO) of meat to the world market annually.

7.1.1 Cattle Rustling

The problem of cattle rustling in Ethiopia, like in most of its neighbours is an issue of concern to security officials. Large numbers of livestock and human lives continue to be lost, particularly in the south along the border with Kenya in areas inhabited by the Nyangatom and Merrile or Dasnatch who border the Turkana of Kenya. The problem is also pronounced around Moyale and in the Afar-Issa region. Between July 2003 and August 2008, within the Ethiopian side of the Somali Cluster alone, 77 violent incidences and 87 deaths were reported and 11,000 animals were lost (CEWARN).

To mitigate cattle rustling, the government of Ethiopia has mainly relied on the security forces and the local administration. The government has encouraged dialogue between neighbouring communities to resolve the conflicts and bring about peaceful coexistence between communities. Civil society organizations led by EPARDA and CIFA have been actively involved in peacebuilding initiatives that bring together warring communities from neighbouring communities to promote peaceful coexistence. EPARDA works mainly in the South Omo region with Nyangatom, Dasnatch, Hama, and Benatsemay Wereda residents. It has also managed to bring RIAM RIAM (a Kenyan NGO working on peacebuilding in Turkana) on board. CIFA works in the Moyale region on both sides of the Kenyan and Ethiopian border.

7.1.2 Livestock Identification

According to civil society and government officials interviewed, though livestock identification has been practiced by the different communities for a long period, it has never been officially viewed as a possible solution to cattle rustling until recently, when a research institution took interest in using electronic gadgets to identify livestock in Afar region on a pilot basis. Livestock had only been branded as a way of identifying animals vaccinated against notifiable diseases such as Rinderpest – particularly during the JP15 and PARC/PACE campaigns.

According to the people interviewed, livestock identification as a way of not only curbing disease outbreak, but also as a way of accessing market and enhancing human security is an “idea whose
time has come”. The Government financed Pastoral Community Development Project (PCDP) in the Ministry Of Federal Affairs is prepared to take up livestock identification and traceability as one of its projects among the pastoral communities in Ethiopia. According a Foreign Affairs Ministry official, Ethiopia is keen on implementing the project to curb cross-border insecurity between Kenya and Ethiopia.

The enthusiasm is equally displayed by the Ministry of Agriculture which already has in place a directorate of Livestock Identification in place. The Ministry had initially developed a strategy for group identification, dispatching its officers to Botswana and Namibia to learn the system used there with a view to introducing one in Ethiopia.

### 7.1.3 Recommendations

- An identification programme that is accompanied by other development initiatives stands better chances of succeeding;
- Pilot the ID system first before introducing it fully
- Seek the approval of communities first. Awareness creation and public education are critical components
- Necessary legal and policy reforms may follow once governments give necessary approval
- Start with border areas first – especially the most populated and conflict prone areas along the common borders. Then organize exchange visits to secure buy-in by other communities
- Undertake cross-border branding campaigns simultaneously
- Ministry of Agriculture and Veterinary Department should take the lead/responsibility – including undertaking the design and implementation plan of the ID process
- The Ministry of Agriculture should identify and apportion tasks to other stakeholders
- Plan every step with the concerned communities
- Involve the local political and administrative leadership
- For cross border, involve Ministry of Foreign Affairs and the Border Commissions
- For marketing – use individual ID as opposed group ID
- The new identification system should build on existing traditional systems – i.e. it should accommodate traditional methods of ID. It should factor the way of life of affected communities
- Element of cost-effectiveness should be taken into consideration when designing ID system
- IGAD should play the facilitative role while existing country frameworks should be strengthened to implement the new system
7.2 DJIBOUTI

7.2.1 Background

Djibouti, a member of IGAD, covers a total area of 21,883 sq. km. It’s mainly composed of a coastal desert with a torrid and dry climate. It has an estimated population of between 466,900 and 650,000; with an annual growth rate of 2.6%. The main ethnic groups are Somali, Afar, Ethiopian, Arab, French, and Italian. It’s mainly an Islamic country with 94% of the population being Muslim. The official languages are French and Arabic while Somali and Afar are widely used.

Economically, its Growth Domestic Product (GDP) is estimated at US$768 million, with a per capita income of $850 per capita for expatriates, $450 for Djiboutians. Agriculture contributes a paltry 3% to the economy. The main economic activity is trade, especially re-exports of hides and skins, coffee etc. Substantial income is also derived from foreign troops stationed in Djibouti, foreign businessmen and tourists.

About two-thirds of the Republic of Djibouti's 650,000 inhabitants live in the capital city. The indigenous population is divided between the majority Somalis (predominantly of the Issa tribe, with minority Issaq and Gadabursi representation) and the Afars (Danakils). All are Cushitic-speaking peoples, and nearly all are Muslim. Among the 15,000 foreigners residing in Djibouti, the French are the most numerous. Among the French are 3,000 troops.

Livestock population figures for Djibouti were unavailable.

7.2.2 Cattle Rustling

Cattle rustling is not a major concern in Djibouti, according to government officials and civil society officials interviewed. However, isolated incidences have been occurring between the Afar and Issa communities. Crime reports at the Police headquarters indicate less than 5 deaths annually and a loss of less than 500 camels per year, around Dikhil area.

7.2.3 Livestock Identification and Traceability

Djibouti’s main interest in the IGAD-instigated livestock identification and traceability is with regard to disease control and market access, particularly due to its proximity to the lucrative Arab market. Due to unrest in most parts of Somalia, Djibouti has become a major re-export point for Somalia and parts of Ethiopia and Eritrea.

According to the Government officials interviewed, Djibouti government is keen to support the process and wants IGAD to play the coordinating role. Most respondents are in favour of building on the existing traditional systems for a basic identification system. They are also in favour of the electronic system for food safety assurance purposes. The Ministry of Agriculture is willing to invest in a national ID system that conforms with other IGAD member states.
7.3 TANZANIA

7.3.1 Background

Tanzania, which includes the island of Zanzibar covers an area of 945,000 sq. km. Its terrain is varied with a climate that also varies from tropical to arid to temperate. It has an estimated population of 39.3 million, including Zanzibar's 1.0 million. It has one of the highest literacy rates in the region at 67%. The population distribution in Tanzania is extremely uneven. Density varies from 1 person per square kilometre in arid regions to 51 per square kilometre in the mainland's well-watered highlands to 134 per square kilometre on Zanzibar.

More than 80% of the population is rural. It has more than 120 ethnic groups with the main being the Sukuma, Haya, Nyakyusa, Nyamwezi and Chagga. The national language is Kiswahili, a Bantu-based tongue with strong Arabic borrowings.

Administratively, Tanzania is divided into 26 regions (21 on mainland, 3 on Zanzibar, and 2 on Pemba). The GDP stood at US$16.18 billion in 2007. The economy in 2007 grew at 7.3% with a per capita income of US$ 400. Agriculture accounts for 42.5% of its GDP.

7.3.2 Cattle Rustling

Tanzania has a total livestock population of approximately 17.8 million animals. Its meat export to the world market tops 362,000 metric tonnes. Cattle rustling, though uncommon in the past, is gaining notoriety along its common border with Kenya around Tarime, Musoma Districts and Trans Mara District in Tanzania and Kenya respectively (Jacob Mugini, 2008). Kagera region alone in Tanzania has recorded between 2005 and 2007 a total number of 1,792 incidences of cattle theft involving 17,664 livestock worth about US$ 2,360,000 (Ministry of Home Affairs Tanzania, 2008) reflecting the seriousness of the problem to warrant national and regional intervention measures.

7.3.3 Livestock Identification and Traceability

Most livestock keeping communities in Tanzania have some form of traditional livestock identification systems. However, these systems have not been helpful in curbing cattle rustling or playing a role in the enhancement of disease control or marketing. The reasons why the existing cattle branding practice in the pastoral communities have failed to curb cattle theft are on the part of the brand system itself, the poor organization and regulation of livestock marketing contrary to international animal health requirements and willingness of the neighbouring countries to stop the practice by ensuring that livestock from other countries or within the country without proper documentation indicating the identity of the animals and ownership transaction are not offered for sale or slaughter in their establishment.

Tanzania is quite advanced in its bid to introduce modern livestock identification, registration, and traceability. In 2006, Tanzania developed a national livestock policy that caters for livestock identification, registration and traceability. After identifying that the current livestock identification, registration and traceability system is constrained by lack of infrastructure and facilities, insufficient expertise, and low awareness amongst stakeholders, the government sets out to have in place a livestock identification, registration and traceability system for increased productivity and trade.

In its policy statements, the government of the United Republic of Tanzania commits itself to among other things; establish a system for livestock identification, registration and traceability in collaboration with other stakeholders. The Government will also strengthen and support technical
services for livestock identification, registration and traceability, and undertake efforts to promote and create awareness on identification, registration and traceability for livestock and livestock products.

The proposed National Livestock Identification System envisages the following features:

- Computer database and centrally coordinated with national & district registrars for livestock identification devices and property identification
- Initially will be a double ear tag system with coded numbers issued & coordinated by the registrar with high technology systems such as chips & RFIDS allowable as personal identification systems and not national to cater for specific needs/interests
- Registrars will be at district administering the district livestock registry and at the national level administering the central/national livestock registry
- Hardened plastic material will be adopted for the ear tags as they are light, corrosion free, can be moulded and coloured per preference.
- Identification to start with will be voluntary, progressively phased and involving trade or high value stocks that can meet the premium costs of identification and derive benefits from it.
- Identification can be at farm level at birth for all animals or for animals destined for the livestock market
- The livestock keeper will administer the ear tags themselves assigned to them by the registrar

Tanzania is not a member of the IGAD but included in this study as a signatory of the Protocol on Combating, Controlling, and Curbing Cattle Rustling in the Eastern Africa Region.
Figure 55: Tanzania National Livestock Identification, Registration and Traceability Proposed System

TANZANIA NATIONAL LIVESTOCK IDENTIFICATION, REGISTRATION AND TRACEABILITY SYSTEM- PROPOSED NUMBERING SYSTEM

Principle
The identification number of the animal to bear the following information
(i) number of the animal-one to five digits/numerals
(ii) owners code
(iii) village code-Epidemiological Surveillance Sampling Unit
(iv) district code-
(v) regional code
(vi) country code

Proposal 17: Alphanumeric characters standing for location specificity, owner and the animal

<table>
<thead>
<tr>
<th>Field</th>
<th>Alternatives</th>
<th>Proposed System</th>
<th>Reasons for the choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country Code</td>
<td>International Code Number from the International Livestock Recording Commission</td>
<td>Alphabets-one or two T or TZ for Tanzania</td>
<td>TZ Easily deciphered</td>
</tr>
<tr>
<td>Regional Code</td>
<td>Alphabets</td>
<td>Given Code Number</td>
<td>Two Alphabets from the name of the region commonly used e.g. AR for Arusha &amp; MG for Morogoro Easily deciphered</td>
</tr>
<tr>
<td>District Code</td>
<td>Alphabets</td>
<td>Given Code Number</td>
<td>Given Code Number 1-9 as there not more than 10 districts in any one region in the country Common coding system and tried in Kagera region deciphering of the village name referred to the database</td>
</tr>
<tr>
<td>Village Code</td>
<td>Alphabets</td>
<td>Given Code Number</td>
<td>Given Code Number - 001-999 as there not more than 1000 villages in any one district in the country Common coding system and tried in Kagera region deciphering of the village name referred to the database</td>
</tr>
<tr>
<td>Owners Code</td>
<td>Alphabets</td>
<td>Given Code Number</td>
<td>Given Code Number - 0001-999 as there not more than 10,000 livestock owners or inhabitants in any one village in the country Common coding system and tried in Kagera region deciphering of the village name referred to the database</td>
</tr>
<tr>
<td>Animal Identification Number</td>
<td>Numerals-as working number</td>
<td>Numerals-as working number</td>
<td>Five digit 00001-99,999 as rarely any one farmer may have more than 99,999 animals in one holding Working number of the animal adopted in most countries practicing centrally coordinated national livestock identification &amp; registration system</td>
</tr>
</tbody>
</table>

Example: TZMG1001000100001 is an animal from Tanzania (Tz), Morogoro Region (MG), and Kilombero District (District Number 1) in village 0001 given identification number 00001
7.4  UGANDA

7.4.1  Introduction

Uganda covers an area of approximately 241,040 sq. km. The terrain generally forest, woodland, and grassland, with inland waters and swamps in a few areas. The climate varies from semi-arid to high potential agricultural land. It has fast growing population of 30.9 million people with an annual growth rate of 4.0%. Uganda’s GDP in 2008 stood at US $12.3 billion. The main contributor to the economy is agriculture.

The country’s population is predominately rural, and its population density highest in the southern regions. The main ethnic groups include the Baganda, Banyankole and Bahima, Bakiga, Banyarwanda, Banyoro, Batoro, Langi, Acholi, Teso, Karamojong, Basoga and Bagisu.

7.4.2  Cattle Rustling

Uganda has an estimated livestock population of 6.55 million animals and contributes 267,000 metric tonnes of meat to the world market (FAO, 2004).

Cattle rustling in the Karamoja sub region of Uganda has existed for decades. The region has suffered greatly due to the devastating of cattle rustling. Initially, the Karamojong employed rudimentary weapons in their rustling escapades e.g. spears, bows, arrows etc; but this changed after 1979 (during the fall of the Idi Amin regime), when Karamojong warriors acquired sophisticated automatic and semi automatic weapons from raiding government armouries and stockpiles.

From then on, the problem has become widespread and has sucked in many actors including politicians, business men and the youth. The problem has continued to rise due to the ease with which weapons can be accessed within region. This has in turn led to general lawlessness and break down institutions of law and order in north and north eastern Uganda, north western Kenya, Southern Sudan, the whole of Somalia and parts of southern Ethiopia.

Currently, approximately fifteen districts are directly or indirectly affected by cattle rustling in Uganda. Five of these are located in the Karamoja sub region (Kaabong, Kotido, Abim, Moroto and Nakapiripirit). Ten are within the neighbouring regions - two in Acholi sub region (Kitgum and Pader), one in Lango sub region (Lira), four from Teso sub region (Kumi, Katakwi, Bukedea and Amuria), and Sironkho, Kapchorwa and Bukwa districts in Bugisu and Sebei regions.

7.4.3  Livestock Identification

Livestock identification is an important aspect of livestock disease control in any country. (Aisu, 1996). Soon after independence, Uganda enacted the Animal Branding Act, 1964; The Animal (Straying) Act, 1964; The Cattle Grazing Act, 1964; The Cattle Traders Act, 196; and The Animal Diseases Act 1964. All these laws were introduced in a bid to curb animal diseases and control movement of animals and animal products. As expected, the laws played an important role curbing the spread of diseases and facilitated livestock identification and traceability. Of paramount importance was the control of Rinderpest in the 1970s through mass vaccinations. Vaccinated animals were clearly marked with the letter R on the hump or were ear notched. However, the ear notches for Rinderpest were withdrawn by the government from the districts upon the eradication of Rinderpest in the country.

The political turmoil in Uganda after the fall of Idi Amin led to collapse of law and order. This also meant that livestock and livestock products were moved haphazardly without inspection or livestock movement permits. This led to the resurgence of hitherto controlled livestock diseases.
For a long time, livestock keeping communities in Uganda have employed various identification methods or systems for their livestock. These include naming according to colour patterns (mainly practiced by the Banyankole), based on the shape of horns or lack of horns, ear notching, hot iron branding, and use of ear tags (plastic and or metallic). RFID or any other electronic systems have not been common.

Ear tags, both metallic and plastic are commonly applied in pure breed dairy and beef cattle in the central and western parts of Uganda. Name calling is widely used by the Banyankole and Hima.

In Karamoja and Teso regions, ear notching and serration have also been greatly and extensively used as a form of livestock identification. In some instances, whole pinnae are unilaterally or bilaterally removed. This form of identification however has encountered problems due to the ease with which it can be replicated. Ear notching has also been known to cause great haemorrhage during application.

Cattle tattooing is common among livestock keepers in the Karamoja sub region, though not widely practiced. This form of identification is used more as decoration rather than an identification mark *per se*.

Lately, as a move by the Government to deal with the problem of cattle rustling in Karamoja region, the military, UPDF, have in liaison with local leaders, has embarked on a major programme to brand all Karamoja livestock and provide drugs and vaccines. Though controversial, the programme is slowly gaining acceptability among the Karamojong. Over 20,000 head of cattle have so far been covered under this programme. The brands used by UPDF were developed by the Veterinary Department which had planned to undertake nationwide branding but lacked the necessary budgetary support.

Uganda government is keen to see the semi voluntary branding programme succeed because early outcomes indicate that branding cannot only considerably reduce cattle thefts in the sub-region, but also curb cross-border incursions if undertaken together with disarmament. Apart from an executive order, there’s not a law or national policy to support the initiative. Ironically, Uganda had a Branding law before it was repealed in 2006 to become the Animal Breeding Act.

According to government officials interviewed, the plan is to eventually hand over the branding to the Veterinary Department and the local communities for technical and logistical support.

### 7.4.4 Recommendations

- Assign each of the IGAD country with an alphabet or letters of alphabet - e.g. TZ for Tanzania, K for Kenya, U for Uganda etc;
- It’s important to undertake a piloting scheme first before rolling out the programme in order to determine its viability;
- Most feasible forms of ID in the region may be Branding and Electronic ID
- Legal backing necessary – need to undertake a mapping of the national laws to determine their ability to accommodate ID and realign them;
- Need for a well-thought-out implementation structure:
  - Form a Regional Branding Unit or Consultative Forum/Committee
  - Define its role and mandate clearly
  - Need to first harmonize regional legislations in this regard
  - Bring together line Ministries, security agencies, and civil society – to form the technical steering committee – which should regularly meet to provide implementation guidelines
- Make the design of the brand participatory – for acceptance and ownership by affected communities. Involve communities in the conceptualisation and planning
• Design should be based on ethnic considerations since theft occurs mainly between ethnic groups – current system is based on electoral units
• States should pool together resources to undertake the exercise
• Kenya and Sudan should also initiate a disarmament exercise like Uganda – they may borrow from the UPDF “Protected Kraals Concept”
• Accompany branding with programmes to address chronic food insecurity in the pastoralist areas
• Recognize and work with existing traditional institutions
• Need to empower village authorities to anchor the process and conduct adequate sensitization
• Livestock Census should be undertaken together with identification/branding – this will assist to curb exaggerations during raids
• Tie it to essential livestock management services – e.g. drugs, vaccines, water, relief assistance
• Liaise with AU/IBAR which enjoys cross-sectional trust in the region
• In Uganda, the military must be involved for the exercise to succeed
• Facilitate law review to accommodate the process – there are policy gaps and legal lacunas
• Employ District, County, Sub-County codes – or for Kenya case, District, Division, Location and Sub-Location code
• Need to track animal movements for grazing purposes – e.g. allow Turkana animals to cross border as long as they are clearly marked with Kenyan ID
• Branding is the best mode of identification:
  o Cheaper and
  o More readily understood by local people
• Let traditional brands go hand in hand with the conventional brand
• Brand only during the wet season when there is plenty of water and grazing
• Recruit more veterinary officers and staff
• CSOs should undertake cross-border coordination role
• Use existing CEWARN structure but expand to include respective livestock ministries of the Member States – the national steering committee of CEWERU.
• Carry out a livestock census at the time of branding to ascertain national livestock populations as well as individual household livestock holdings
• Form a representative Task Force to implement the project
7.5 SOMALIA

7.5.1 Introduction

A joint FAO/World Bank/EU report (2004), indicates that in 1990 about 55 per cent of Somalis were directly engaged in livestock production and another large segment was employed in ancillary activities. The livestock sector accounted for at least 40 per cent of Gross Domestic Product (GDP) and provided the main source of Somali livelihoods. Exports of livestock and their products account for 80 percent of exports in normal years but exports have been periodically interrupted by bans imposed by importing countries mainly on the grounds of livestock disease.

The most recent ban in this series was imposed by the Kingdom of Saudi Arabia (KSA) — which has traditionally taken up to 95% of Somalia’s livestock exports — in late 2000. Some 70 % of the population is rural of which about 55% are pastoralists and agro-pastoralists, 24% are crop farmers and 1% are fishermen. FAO data indicates that Somalia has about 37.5 million grazing animal. Camels are most important in terms of biomass (41 percent) followed by goats and sheep combined (35 percent) and then by cattle (24 percent).

According to the newly appointed Somali Minister for Livestock, Hon Abubakar Abdi Osman together with his predecessor, the new Somalia government is keen to see the livestock sector regain its prominence in the Somalia economy. According to them, livestock is the only intact resource after many years of looting and plundering. The new government is keen to enter into partnerships that would enhance marketing and disease control. It recognizes that disharmonized policies are detrimental to regional trade and progress. Somalia recently lost its lucrative Saudi Arabian market to Australian firms due to food safety considerations. The new Somalia government is prepared to implement a regional initiative that would enhance marketing, disease control and curb cattle thefts.

Cattle rustling is not really a major problem in Somalia except in areas bordering Kenya and Ethiopia. Somalia is keen to dovetail this process mainly for marketing and disease control.

7.6 IGAD SECRETARIAT

Insecurity in the pastoralist areas occasioned by cattle rustling is an issue of concern for the IGAD Secretariat. The Secretariat is therefore looking forward to the findings of the study. However, whatever identification system member states settle on, it’s important that its pastoralist communities-focused. It should also focus on addressing conflicts in the region – particularly those related with cattle thefts.

Cattle keeping among pastoralists is an insurance against the delicate environmental conditions found in pastoral areas. The concept of using livestock identification is noble since the economy of the region is dependent on livestock. The approach needs to be that of starting ‘from the known to the unknown’ – i.e. build on the existing traditional mechanisms while transiting to modern identification systems. Communities must be adequately consulted and their views incorporated in the final design. It’s important to borrow from communities’ common practices in this respect. The initiative, if it succeeds, will help in regional integration – i.e. policy harmonization which is the main aim of IGAD
7.9.1 Operational Framework

- Project will be implemented under the guidance and supervision of the Director CEWARN
- The Steering Committee of PSs will provide policy back-up
- CEWARN will need to recruit a Livestock Identification and Traceability Programme Manager who will be responsible to the Steering Committee of PSs thro Director CEWARN
- Link up with Regional International Livestock Agencies (e.g. AU/IBAR, ILRI etc) and the CEWERUs through to the National Steering Committees and to the DSGs
- Resources for implementation should be part of the CEWARN Budget
- Target cattle rustling hotspots for initial piloting
- Train and conduct capacity building for all stakeholders
- Needs to work closely with LPI
- Major challenges
  - Acceptability across the region
  - How to achieve harmonization of the numerous forms of ID
7.7 KENYA

7.7.1 The Kenyan Case of a Legal Framework – Branding of Stock Act, CAP. 357

BRANDING OF STOCK ACT (1964), CHAPTER 357, LAWS OF KENYA

⇒ The law empowers the Minister responsible for the Veterinary Department to appoint an officer in the Veterinary Department to be the Registrar of Brands. The Minister may also appoint such persons as he may deem fit to be Inspectors of Brands. The Act also confers the responsibility of appointing Inspectors of Brands to the Director of Veterinary Services.

⇒ The Registrar of Brands is required to keep a detailed Register of all brands allotted under the Act. And during January of each year, the Registrar should essentially publish in a Gazette Notice a statement of all brands registered during the preceding year, with the names and addresses of their respective owners. Similarly, the Registrar is obligated to cause to be compiled each January, a Brand Directory containing all the brands registered up to that date; indicating the names and addresses of their owners. A copy of the same should be forwarded as soon as possible to the Commissioner of Police, all Provincial Police Officers (PPOs), every Inspector of Brands and every Pound Master.

⇒ To obtain a brand, one is required to complete an application form and transmit it to the Registrar with a fee. If the combination is available and within the law, the Registrar will allot it to the applicant in the order in which the application is received. The Brand will be in conformity with a predetermined brand for the district of abode of the applicant. An applicant who occupies or plies between more than one districts is not required to apply for more brands. He/she can elect one of the district’s brand for all his/her livestock. A Certificate of Registration of Brand will be issued to a successful applicant.

⇒ The type of brand to be allotted to an applicant is predetermined by the Registrar of Brands, and is normally an alphabetical letter followed by numerical. However, one may apply to the Minister to adopt any other form of brand. The size of the characters branded on horses, cattle and ostriches shall not be less than 1¼ inches in height. The first brand should be imprinted on the near hind leg below the stifle joint of the animal. Subsequent brands, when there is space, fall on the same part of the animal at a distance of not less than 1½ inches directly below the last brand. Where there is not sufficient space, subsequent brands should be imprinted on one of the following: hind leg below the stifle joint; side of neck; or on the cheek.

⇒ Any person wishing to transfer his/her right to a registered brand and the person intending to take up ownership are required to sign a prescribed document (Form D), which is filed with Registrar of Brands to confer the exclusive right to the use such brand to the new owner. However, if the original owner has not disposed of all the livestock bearing his brand by the time of transferring his rights, the Registrar shall decline honouring the new arrangement. A record of transfers of the brand will be maintained and updated by the Registrar. Any brand found not to be in use for no good reason, will be recalled by the Registrar. The Registrar is also empowered to allot a brand to any public body, including the Veterinary Department which may be used on any stock by any persons authorised by the Veterinary Department.

⇒ Any Local Authority may register a brand of any device, provided it is easily distinguishable from any other brand registered. Such brand may be lawfully used by the Local Authority in accordance with its by-laws on any stock by any person or persons authorized by such local authority. In such a case, the Local Authority may specify what part or parts of any animal to be branded.

⇒ Despite the provisions in the law requiring registration of individual brands, the law allows use of distinctive traditional marks by stock owner as long as it does not employ letters or figures. The mark should also not be similar to any registered brand. The Registrar may prohibit the use of certain distinctive marks. As mentioned earlier, the Registrar of Brands provides Dominant Letters for brands to be applied for every district.

⇒ Every butcher is required to keep a separate book open at all times to inspection by any Inspector of Brands. The butcher should enter in the book the brands imprinted on every animal slaughtered or sold by him/her. All hides and skins should be retained without any alteration and made available to any Inspector of Brands or Police Officer within a period of at least five days. Every Inspector of brands and police officer is authorised to enter into any livestock holding to inspect any stock, hides, branding-irons or brands with the intention of comparing the same with the certificate and diagram which is produced to him/her. The Brand Inspector or Police Officer may seize any suspect livestock or hides. They should then make a report and provide evidence on oath to the nearest magistrate who should pass sentence or order for forfeiture. For this reason, every Inspector shall keep the latest copy of the Register and Directory of Brands.

⇒ The law prohibits anyone from fabricating, using or trading in branding instruments or any such tools without authorization from the Minister. The Minister will from time to time make rules for better implementation of the provisions of this law by prescribing the shape and pattern of branding-irons and other marking instruments; and the persons or companies who may manufacture or sell branding-irons and branding instruments. (Source: Government Printer, GoK)
Cattle rustling in Kenya is a major security concern for the Government of Kenya. The rising trend, the massive loss of livestock to cattle rustling, the un-matched loss of lives, and the destitution brought about by it is a matter that the government is keen to curb. The current drought ravaging the pastoral areas is believed to contributing to the increased spate of livestock thefts. Commercial raiding is increasingly being observed in pastoral areas. The government is eager to partner with other stakeholders with new and innovative ways of handling the vice.

The government, through the National Steering Committee on Peacebuilding and Conflict Management (NSC), is investing in non-violent means of conflict management in partnership with communities and civil society. As a step towards devising innovative solutions towards managing the devastating conflicts brought about by cattle rustling, the government is continuously engaging communities in the affected districts through the respective District Peace Committees (DPCs).

The NSC has been involved in capacity building, including training and institutional strengthening of the DPCs, giving priority to districts affected by cattle rustling. Administrative officers in these districts including District Commissioners (DC) and District Officers (DO) have been exposed to various levels of peacebuilding and conflict management training to equip them with the necessary knowledge and skills to resolve conflicts in their respective jurisdictions. Policy and legal dialogues with legislators and other policy actors have also been undertaken. The process on Policy on Peacebuilding and Conflict Management in Kenya which began in 2004 is coming to fruition. The Policy will soon be put to the public through a pull out in the daily newspapers to solicit final reactions and issues to be incorporated before it’s passed for implementation.

The NSC will soon be equipping the DPCs with computers through a partnership with UNDP. It also hopes to partner with the National Focal Point on Small Arms and Light Weapons (NFP) and UNDP to conduct a national survey on small arms and light weapons (SALW) to determine the extent of the problem of illicit SALW in Kenya. This will be done as contribution towards addressing the problem of violent conflicts in Kenya, especially those brought about by cattle rustling.

The government has also began the process of reviewing the Branding of Stock Act, Chapter 357 of the Laws of Kenya to bring to terms with new technological advances in the sector, particularly with regard to livestock identification, traceability and tracking. The government realises the need to invest in security and development in pastoralist areas. Although the government of Kenya is pro-branding, arguing that branding is familiar to most stock owners and therefore easily adaptable, most stakeholders, particularly livestock marketing actors, NGOs, and some security agencies prefer use of electronic implants, especially the rumen bolus.

Some stakeholders in government are of the view that the government should ideally meet the initial cost but encourage stock owners to bear subsequent costs. This will ensure sustainability. Other recommendations by stakeholders include hinging the livestock identification process into the current national ICT programme to be introduced in all the Constituencies in the country under Vision 2030. Suggestions were also advanced on formulating a phased programme commencing with branding and later embarking on electronic system of identification in phase two. Others, especially civil society and the Provincial Administration in Rift Valley, felt both
branding and electronic identification can be undertaken simultaneously. The Veterinary Department is also keen on the commencement of an electronic system.

Most stakeholders were agreed that for whichever way the programme will go, a comprehensive sensitisation and awareness campaign needs to be mounted around the country, particularly in the pastoral areas. There’s also need to incorporate peace dividend projects funding as part of the programme. A strong and well resourced inter-ministerial committee to implement the programme would be necessary. Above all, all stakeholders should be consulted and involved.

THE KENYA ANTI STOCK THEFT UNIT

The Kenya Police Anti Stock Theft Unit (ASTU) as a unit of the Police force was formed in September 1965 in response to increased cases of livestock thefts that had been observed in some parts of the country, especially in areas previously occupied by white settler ranchers.

The Unit is responsible for investigation & prosecution of stock theft cases, supportive services to other Police units, breeding of Police horses and camels, and training of police riders and horses. They are also charged with patrolling urban and rural areas to not only detect crime but also trace and arrest villains. The Unit uses its horses and riders to cover state functions, stage mounted parades during national days, crowd control functions, and perform during Agricultural Society of Kenya (ASK) shows. They also assist in anti-poaching undertakings of the state.

Figure 56: A Horse is saddled up with universal saddle for patrol duties (source http://www.kenyapolice.go.ke/anti-stock%20theft%20unit.asp)
Although the administration, the courts and the police in Sudan generally rely on traditional systems of identification in deciding disputes over livestock ownership arising out of thefts, the country is yet to incorporate the identification systems into its statutes.

Sudan has a vast population of livestock – the highest in the region, with over 80% reared under pastoralism and agro-pastoral conditions. Virtually all kinds of livestock are bred in the Sudan. The largest concentration of livestock is mostly found in the Eastern, Western, Southern and Central States. Different types of livestock can be attributed to different regions of the country – e.g. camels in central; cattle in the south; other areas have mixed types. Apart from perennial thefts that occur in the South around Sudan-Kenya and Sudan-Ethiopia border, Cattle rustling is not considered as a major problem in Sudan as such.

Tribal marking of livestock for identification purposes is a deep-rooted and long-held cultural practice with every tribe having some form of ID system commonly referred to as “Washam” (which in Arabic loosely translates to “tree-branch”-like marks) or “Erif” (numbers or letters). And there are traditional experts on Erif who are able to trace the mark to the owner or owners of the particular animal. Most regions also mark or identify animals with its generation or regional dominance, e.g. “Karau” cattle are found along the Ethiopian border; “Majok” (small-bodied and big horns) are found in the South; “Kinana” cattle in Central region (Alboutan). The cattle are confined within definite movement patterns or lines known as “Masarar”. During colonial times, every locality had its animals also identified for taxation purposes. Hot iron branding is the most common traditional mechanism of ID.

The Veterinary Department still maintains an identification system from the colonial times which provides for identification of vaccinated or disease-free livestock especially for movement to external markets. The main export markets for meat and live animals for Sudan are Gulf and Saudi Arabia, Jordan, UAE and for hides and skins – Italy, Greece, and Turkey.

The Federal Ministry of Animal Resources and Fisheries is however conducting trials on an identification system that can serve the whole national herd through its research arm led by Dr. Amari.

7.8.1 Recommendations

i) Diverse cultural consideration is primary to any identification system gaining acceptability by local communities.

ii) There’s need for further consultations with not only the communities concerned but also civil society, academic research institutions, livestock experts, and marketing associations and stakeholders generally

iii) The livestock identification process should be closely linked to the on-going policy development and legal reform processes in the livestock industry and the country as a whole;

iv) Public education and awareness will be of great essence in the whole process, particularly the legal aspects of the identification process. Introduction of a new system needs a concerted awareness campaign to be acceptable.
Mobile police is not only an integral part of pastoralism in Sudan but also an important security measure against cattle rustling among pastoral communities. It’s therefore vital that this unit be revived and revamped to effectively perform its tasks as it did in the past.

Since Sudan is a federal state, each state should be given the freedom to choose a system most appropriate to its people. For the North, livestock ID would best be useful for disease control and marketing purposes.

Apart from some communities in the South who seem to vigorously oppose branding, branding is a generally acceptable system of livestock identification to most communities in the Sudan.

It’s necessary to initially pilot the LITS before full introduction. The most appropriate areas to pilot the programme in the North would be Gadarif State – Buta area in the North and Upper Nile State in the South.

The success of the identification programme will depend on the level of cooperation between the stakeholders in the industry. No stakeholder should therefore be excluded during planning and implementation of the programme.

The countries of the region need to promote joint markets for livestock along the common borders. This will not only help to promote regional markets but also help in identifying stolen livestock leading to reduced cattle rustling.

Provide a ‘complete package’ of development needs, include vital social amenities to marginalised pastoral communities along the borders as an incentive to reduce cross-border resource based conflicts that lead to cattle rustling.

Establish a joint border commission to look into the problem of the marginalised border communities.

Carry out comprehensive disarmament in post-war communities and other armed groups to reduce the large number of small arms and light weapons (SALW) in the country.

Provide the necessary capacity building and training for all stakeholders including ministry staff, stock traders, local authorities, livestock herders etc.

7.8.2 Challenges

The huge budgetary implications
Geopolitical variability
Cross-border nature of some communities – e.g. those who share more than one nationality
The high illiteracy and therefore ignorance rates of most pastoralists
The high presence of small arms and light weapons among pastoral communities.
8.0 CONCLUSIONS

- Left in its current state, cattle rustling is bound to become a major security threat in the region. Not only will it claim a higher toll of lives in the pastoralist areas, but it will also contribute considerably to urban crime and political unrest in the region as was observed recently in Kenya. The build-up of ethnic animosity in the pastoralist areas and the virtual absence of government is fertile ground for the proliferation of organized crime, including terrorism;
- This study clearly establishes that livestock identification, traceability and tracking have an important role to play in the overall enhancement of human security and overall standards of livestock husbandry in the IGAD region;
- The overall standards of livestock husbandry, pasture management, disease control and economic efficiency of the industry in the region are generally low. With the renewed focus on the development of the livestock industry, the situation is set to improve;
- At present, the livestock industry is not a major contributor to the economies of the region. Limited entry of products to the market economy means low monetary returns. This initiative by IGAD has the potential to turn this around, as clearly attested in this study;
- Livestock products in the region have never constituted a substantial proportion of export earnings, yet the potential is massive;
- Investment in the livestock industry takes long to realise returns. This has discouraged many investors in the industry including governments. Regional governments and partners therefore need to be aware of this long-established fact when investing in the livestock identification and traceability programme;
- Restricted off-take of livestock for markets in the region has sociological roots that have negatively impacted on livestock marketing. Even though identification and traceability initiatives are bound to spur livestock marketing in the region, considerable resources require to be invested in public education of pastoral communities to encourage them to participate in the market economy;
- Whereas emphasis in the past was placed on gaining economic earnings from livestock, the emphasis now in some states in the region seems to be on the industry’s contribution to food security. This approach needs to be re-examined.
9.0 RECOMMENDATIONS

9.1 Harmonised Regional Approach to Identification and Traceability Systems

There’s no doubt that the ground is generally uneven with regard to the status of formal livestock identification and traceability systems in the IGAD region – both intra and interstate. Whereas branding has evolved in Kenya over a long time (Branding of Stock Act, 1907), and more recently in Tanzania and Uganda; Sudan, Ethiopia, Djibouti and Somalia have not been branding livestock for identification purposes except during campaigns against notifiable diseases, e.g. Rinderpest. Majority of the pastoral communities in the region have relied on traditional marks while commercial ranchers have adopted modern systems of identification. Moreover, even within states that practice some form of livestock identification, the processes are at varying stages of evolution. The immediate challenge that this scenario poses is on the feasibility of adopting a common method of identification.

Whereas this study does not advocate for a “one-fits-all” regional livestock identification system, evidence from the field clearly points to the fact that there’s need for a coordinated approach to livestock identification and traceability, especially if the region is to meaningfully address the seemingly intractable problem of cattle rustling and the general aspect of human security in the region. There’s also a general consensus in the region that, apart from enhancing security, animal identification can play an important role in improving livestock disease control and in laying a firm foundation for enhanced livestock marketing.

9.2 Adoption of a Basic/Primary Identification System

Experience from this study reveals that livestock identification is not a one-off activity. It’s a process that transcends different levels – particularly when its traceability tracking components are integrated. Experience from Botswana indicates that a successful identification system is anchored on a common, visual primary identification technique. In the case of Botswana, an individual hot iron brand or traditional mark constituted the primary identification modality, whilst the state provided a secondary electronic identification system in the form of rumen bolus which not only gave identity but also conferred traceability attributes to the animal.

This study points to the importance of a primary identification system in the region, particularly because most states in the IGAD region are in favour of branding as the basis of identification. Most communities interviewed also felt at home with hot iron branding. It’s however instructive to note here that most stakeholders are generally unable to distinguish between the conceptual significance of identification per se and traceability or tracking. This may be the reason why, apart from professionals in the relevant government ministries and experts, their recommendations did not go beyond visual identification. For its popularity and general acceptability, this study recommends the adoption of branding as a primary identification modality within IGAD. This can be coded and coordinated at the national level with regional guidance from a specific secretariat within IGAD working under the aegis of an inclusive Regional Livestock Identification Steering Committee/Task Force (LISC or LITF). States may assume the responsibility of maintaining their own Central Registry Centres of Central Database
Units. The LISC or LITF should draw its enforceability capacity from a regional legal instrument or treaty.

9.3 Adoption of Traceability and Tracking System

For the regional states to harness the benefits of internal markets and achieve minimum international disease control standards, it will not be enough to stop at Primary Identification level. As they embark on achieving basic livestock identification requirements, Member States and Tanzania should simultaneously put in place mechanisms to introduce appropriate electronic identification system (complimentary to the primary process) that takes into account the unique characteristics of the different terrains, economic capacities, socio-cultural features, political economies etc. The general consensus is that each country or sub-region should be afforded the opportunity to freely choose the secondary identification method best suited to its circumstances. Although the primary identification should essentially be visual, the option chosen for traceability and/or tracking need not be visual. It must however be noted that electronic methods are considerably costly, although the benefits may be impressive in the long run. Tracking costs are particularly prohibitive and the system has never had a major roll-out anywhere in the world.

It will also be upon each member state, depending on the obtaining circumstances locally, to decide whether to make the process voluntary or mandatory.

9.4 Extensive Advocacy, Awareness Creation and Public Education Campaigns

As mentioned elsewhere in these recommendations, most stakeholders, including relevant government officials are generally unable to distinguish between the conceptual significance of identification per se and traceability or tracking. Similarly, there’s a general lack of awareness or update on technological advancement in livestock identification, traceability, registration and tracking. Field experience in the course of this study revealed that a number of livestock keepers are quite receptive to new technology but have been hindered by lack of information on the available options. There will therefore be need to build the necessary critical mass for the support of the programme.

The adoption of a new technology or concept will always meet resistance, especially among the generally illiterate target communities that are pastoralists. This study has reliably established that the adoption of branding by local communities will face the least resistance while any secondary method like electronic ID would definitely meet stiff resistance if not ‘marketed’ well. All industry actors from livestock producers to livestock traders, butchers, sale yard operators, abattoir operators, transporters, and government agents should be sensitized accordingly.

Extensive consultations with a cross section of stakeholders need to be undertaken. Lesson-learning and awareness creation exchange visits by community leaders may be crucial. National advocacy campaigns employing print and electronic media; workshops and seminars; publicity materials such as banners, posters, pamphlets, brochures etc, would also be important. A pilot scheme in one of sub-regions will be necessary for lesson-learning and eventual streamlining of the programme.

Although most respondents were clearly in favour of branding as the primary mode of identification, most of them were less knowledgeable about traceability and tracking as critical
components of identification. What’s more, apart from Kenya, Uganda and Tanzania, the other states have hardly undertaken any formal government-run livestock branding programme. Consequently, as a first step, this study recommends a regional community education and awareness programme on livestock identification and traceability – stressing on available options, mechanics and possible benefits.

### 9.5 Establishment of Basic Institutional, Legal and Policy Frameworks

Whereas the responsibility of implementing and ensuring the success of an identification and traceability system falls squarely on the respective State, a regional coordinating body, preferably under CEWARN/IGAD, is a basic requirement. It’s proposed that for purposes of the general policy direction and harmonization, a regional Livestock Identification and Traceability Coordination Unit (LITCU) within CEWARN/IGAD headed by a Coordinator should be established. The LITCU will form the technical body while an inclusive advisory body – regional Livestock Identification Steering Committee (LISC) or Livestock Identification Task Force (LITF) comprising of representatives from member state governments, professionals and other livestock industry actors, and civil society – will provide policy direction and necessary guidance. This body will in turn be responsible to the existing IGAD structure.

Tanzania and Kenya already have legal instruments in place to facilitate primary identification systems. In fact Tanzania is a step ahead since it already putting in place a law that will also accommodate secondary identification including traceability systems. It also has a directorate of Livestock Identification and Traceability within the Ministry of Agriculture. Kenya law CAP 367, is old having been put in place in 1907. It needs to be reviewed to accommodate current realities. The starting point for the member states therefore is to go the Tanzania way; draft an identification and traceability policy; enact the necessary law; and create the necessary national infrastructure to facilitate livestock identification, traceability, and tracking – all with three objectives:

- Enhance human security
- Facilitate marketing, and
- Meet necessary disease control requirements

There will also be need for a regional instrument (treaty/protocol etc) to facilitate the operations at that level.

### 9.6 Phased Implementation

The implementation of the regional livestock identification initiative should be done over a period of 5 years in an incremental and phased manner as shown below:
### Table 6: LIVESTOCK IDENTIFICATION IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>PHASE</th>
<th>SCHEDULE</th>
<th>TASKS</th>
<th>RESPONSIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>2009/2010 – 12 months</td>
<td>Putting in place necessary infrastructure for a comprehensive identification and traceability system, including availing necessary funds; Dialogue with stakeholders and development of publicity materials; Staffing needs Regulatory and legislative processes Establishment of regional and national task forces Roll-out of a pilot branding programme in one sub-region Strategy development Central database units establishment</td>
<td>Member states and partners</td>
</tr>
<tr>
<td>Phase 2</td>
<td>2010-2011 – 12 months</td>
<td>Continued dialogue with stakeholders Upscale livestock branding Evaluate existing RFID and select appropriate Develop and pilot strategy for RFID Complete development of regulatory and legislative processes</td>
<td>Member states and partners</td>
</tr>
<tr>
<td>Phase 3</td>
<td>2011-2012 – 1 year</td>
<td>Continued dialogue with stakeholders Continue to brand as primary ID Complete design of selected RFID system Continue to Pilot RFID for traceability</td>
<td>Members states and partners</td>
</tr>
<tr>
<td>Phase 4</td>
<td>2013-2014 – 1 year</td>
<td>Continue industry dialogue and education Upscale RFID Develop and test strategy for Tracking Introduce tracking mechanism</td>
<td>Member states and partners</td>
</tr>
<tr>
<td>Phase 5</td>
<td>2014-2015 – 1 year</td>
<td>Continue education and dialogue with industry players Upscale identification, traceability and tracking systems Evaluate progress and realign strategy</td>
<td>Member states</td>
</tr>
</tbody>
</table>

### 9.7 Implementation Principles/Strategies

Going by the experiences of other regions on animal identification and traceability schemes, it may be necessary for the IGAD states to adopt the following strategies in the implementation of their scheme:

a) The identification system adopted should be flexible enough to allow stock owners to incorporate their traditional identification system or mark. The method chosen should build on the existing system(s);

b) The system selected for traceability must ensure data/information confidentiality as an essential part of the identification process;
c) The electronic system chosen should be technologically neutral so that users are not boxed in as a result of advancement of technology. Users can opt to change to new technologies without much problems;
d) Livestock keepers should not be burdened with multiple identification numbers, systems, regulations or requirements;
e) The system should allow producers to enable livestock keepers to use it with production management systems that respond to market incentives – i.e. the system should be compatible alternative management to improve animal health and quality;
f) The system should as much as possible community-driven to avoid undue increase in costs as a result of increased role and size of government.
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