

**REGIONAL LIVESTOCK STUDY
IN THE GREATER HORN OF AFRICA**



ICRC

INTERNATIONAL COMMITTEE OF THE RED CROSS (ICRC) LIVESTOCK STUDY IN THE GREATER HORN OF AFRICA



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ACAD	Abyie Community Action for Development
ACF	<i>Action Contre la Faim.</i>
ACORD	Agency for Cooperation and Research in Development
ADB	African Development Bank
ADRA	Adventist Development and Relief Agency
AFD	Action for Development
AHA	Animal Health Auxiliary
AHPF	Animal Health Providers Forums
AHS	Animal Health Services
AHS	African Horse Sickness
ALDRED	(Local NGO in N.E. Kenya)
ALRMP	Arid Lands Resource Management Project
AMREF	African Medical Research Foundation
APDA	Afar Pastoralist Development Association
ASAL	Arid and Semi-Arid Lands
CAHS	Community Animal Health Service
CAHW	Community Animal Health Worker
CARE	(International NGO)
CB	Community Based
CBO	Community Based Organisation
CBPME	Community based Planning, Monitoring and Evaluation
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
CEAS	Church Ecumenical Action in Sudan
CEFA	Consortium of EU funded NGOs in Somalia
CEWARN	Conflict Early Warning and Response Mechanism
CHW	Community Health Worker
CIDA	Canadian International Development Agency
CIFA	Community Initiatives Facilitation Assistance
CINS	(Local NGO)
CIP	Community Intervention Project
CISP	<i>Comitato Internazionale per lo Sviluppo dei Popoli</i>
CJPC	Catholic Justice and Peace Commission
CONCERN	(International NGO)
COOPI	<i>Cooperazione Internazionale</i>
Cordaid	Catholic Organisation for Relief and Development Aid
COSV	(Italian NGO)
CRS	Catholic Relief Services
DANIDA	Danish Donor agency
DFID	Department for International Development
DPPB/C	Disaster Preparedness and Prevention Board / Commission
DRC	Democratic Republic of Congo
DSG	District Steering Group
EARS	East African Rangeland Society
EC	European Commission
Ecosec	Economic Security
EDF	Eritrean Defence Force
EGS	Employment Generation Scheme
ELCK	Evangelical Lutheran Church

EPAG	Emergency Pastoralist Action Group
EPARDA	Ethiopian Pastoralist Relief and Development Agency
ERCS	Ethiopian Red Cross Society
ERP	Emergency Response Plan
ERPr	Emergency Response Preparedness
ERREC	Eritrean Refugee and Relief Commission
ERW	Explosive Remnants of War
EWS	Early Warning System
FAO	Food and Agriculture Organisation
FAR	Fellowship for African Relief
FEWER	Forum on Early Warning and Early Response
FEWS	Famine Early Warning
FFW	Food for Work
FMD	Foot and Mouth Disease
FO	Field Officer
FRRRA	Fashoda Relief and Rehabilitation Association
GAA	German Agro Action
GDP	Gross Domestic Product
GHA	Greater Horn of Africa
GIS	Geographic Information System
GL-CRSP	Global Livestock Collaborative Research Support Programme
GNP	Gross National Product
GoK	Government of Kenya
GoS	Government of Sudan
GRIP	Gravity Irrigation Project
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit (German Donor agency)</i>
HAC	Humanitarian Aid Commission (Sudan)
HCS	Haraghe Catholic Secretariat
HIS	Health Information System
HMPL	High and medium potential land
HS	Haemorrhagic Septicaemia
ICC	Information Coordination Centre
ICRAF	International Centre for Research in Agro-Forestry
ICRC	International Committee of the Red Cross
IDP	Internally Displaced Person
IDS	Institute of Development Studies, Sussex, UK
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activities
IGAD	Inter-Governmental Authority on Development
IIED	International Institute for Environment and Development
ILRI	International Livestock Research Institute
IMC	International Medical Corps
IRC	International Relief Committee
IRD	Integrated Rural Development
ITDG	Intermediate Technology Development Group
IUCN	International Union for the Conservation of Nature
JICA	Japanese International Cooperation Agency
KARI	Kenya Agricultural Research Institute
KCA	Kenya Camel Association

KETRI	Kenya Trypanosomiasis Research Institute
KPF	Kenya Pastoralist Forum
KRC	Kenya Red Cross Society
KRF	Kuwaiti Relief Fund
LICUS	Low Income Countries Under Stress
LMD	Livestock Marketing Division
LUA	Livestock User Association
LWF	Lutheran World Federation
MEM	Micro-Enterprise Management
MoA	Ministry of Agriculture
MoAR	Ministry of Animal Resources
MoARD	Ministry of Agriculture and Rural Development
MoH	Ministry of Health
MSF	<i>Medecins sans Frontières</i>
MSF Holland	<i>Medecins sans Frontières</i> - Holland
Msf-B	<i>Medecins sans Frontières</i> - Belgium
NAHA	Nomadic Animal Health Auxiliary
NCA	Norwegian Church Aid
NCD	Newcastle Disease
NDO	National Development Organisation (Sudan)
NFI	Non-Food Items
NGO	Non-Government Organisation
NOPPO	Northern Pastoral Peoples Organisation (Local NGO in Kenya)
NOVIB	Dutch Donor agency
NRI	Natural Resources Institute
NRM	Natural Resources Management
NRSZ	Northern Red Sea Zone
NSCC	New Sudan Council of Churches
OIE	<i>Organisation Internationale des Epizootics</i>
OLF	Oromo Liberation Front
OLS	Operation Lifeline Sudan
ONLF	Ogaden National Liberation Front
ONS	Operational National Society
OWDA	Ogaden Welfare and Development Association
Oxfam	Oxford Committee for Famine relief
PA	Pastoralist Association
PACTA	Programme for Advancing Conflict Transformation in Abyie
PCAE	Pastoral Concern Association Ethiopia
PCI	Pastoralist Concern International
PDN	Pastoralist Development Network
PECOLIDO	Pokot Environmental Conservation and Livestock Development Organisation
PENHA	Pastoralist and Environment Network in the Horn of Africa
PET	Pastoralist Extension Team (in MoA Ethiopia)
PHC	Primary Health Care (Centres)
PINEP	Pastoral Information Network Programme
PIP	Pump Irrigation Project
PISP	Pastoralist Integrated Support Project (Local NGO in Kenya)
PLUP	Participatory Land Use Planning
PNS	Participating National Society
PPR	<i>Peste des Petit Ruminants</i>

Ramati	Local NGO in Samburu district, Kenya
RASS	Relief Association of Southern Sudan
RCM	Red Cross Messages
RCSE	Red Crescent Society of Eritrea
ROOF	Relief Organisation of Fazugli
RRC	Relief and Rehabilitation Council
SACB	Somali Aid Coordination Board
SAIDIA	Samburu Aid in Africa
SCF	Save the Children
SIDA	Swedish Integrated Development Agency
SIM	Sudan Inland Mission
SNV	Netherlands Development Organisation, Kenya Office
SP	Samaritans Purse
SPLF	Sudan Peoples Liberation Front
SRC	Sudan Red Crescent
SRRA	Sudan Relief and Rehabilitation Association
SSIM	South Sudan Independence Movement
SWG	Sectoral Working Group
SWOM	Samburu Wings of Mercy
TBA	Traditional Birth Attendant
TDA	Taposa Development Association
TNG	Transitional National Government
ToT	Terms of Trade
ToT	Trainer of Trainers
TSZ	Temporary Security Zone
TTF	Technical Task Forces
UN	United Nations
UNA	(Italian NGO)
UNCT	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Childrens Fund
UNMEE	United Nations Mission in Ethiopia and Eritrea
UNOCHA	United Nations Office for the Coordination of Humanitarian Assistance
USAID	United States Agency for International Development
UXB	Unexploded bombs
VETAID	(International NGO)
VSF- B	<i>Vétérinaires sans Frontières</i> - Belgium
VSF-CH	<i>Vétérinaires sans Frontières</i> - Switzerland
VSF-G	<i>Vétérinaires sans Frontières</i> - Germany
VSO	Voluntary Service Overseas
Wathab	Water and Habitat
Watsan	Water and sanitation
WB	World Bank
WFP	World Food Programme
WHO	World Health Organisation
WV	World Vision
WVI	World Vision International

FOREWORD

Livestock is a productive asset, and mankind has relied on it for survival. Animals have therefore been coveted - and looted - in the course of armed conflict, while the opposing parties have attempted to protect their own herds. As a result, many early writs governing the conduct of hostilities have mentioned specifically the protection or preservation of livestock. Four thousand years ago, the Hammurabi Code already set the penalty for livestock theft; later, the 12th Century Pax populi and the 14th Century Tamerlane Code, for example, both referred to the safety or protection of livestock. Traditional dispute settlement in the livestock-dependent areas of Africa has consistently addressed the issue, and some examples are discussed in this study.

More recently, the Geneva Conventions and their Additional Protocols have condemned attempts to undermine the survival of civilians; the examples provided include livestock. Humanitarian and academic studies into the impact of such recent conflicts as Afghanistan, Iraq, the Balkans and Darfur have all documented the importance of livestock loss, and underscored its consequences for civilians. In other words, not only has livestock long been associated with conflict, but this association has been recognised and integrated into legal provisions accordingly.

The Horn of Africa currently accounts for the ICRC's greatest operations in the world, and half the region's population relies on animals to a significant extent for its survival.

The region also faces increasingly harsh climatic conditions. In the struggle of pastoralists and farmers to preserve their vital assets, competition and sometimes conflict arise over access to the resources necessary to the survival of both animals and crops. Where conflict has in the past often aimed at expanding the attacker's own herds and, thus, his power and influence, it is today aggravated by climatic parameters.

In addition, mobility is crucial to the pastoralist way of life, and modern national boundaries frequently cut across the traditional migration and trade routes. An overall regional approach is therefore called for, rather than separate contextual analyses of the situations prevailing in individual nation states.

The ICRC has long been involved in the livestock sector: already in the late 1980s, it conducted large-scale vaccination campaigns in Sudan.

This study contributes to the ICRC's understanding of the circumstances and current challenges faced by a significant proportion of the population in one of its major operational areas. The ICRC's main interest in this realm is thus not the condition of the animals per se, but rather the consequences of armed conflict on those that depend on them, in an attempt to improve its alleviation of human suffering.

Christoph Harnisch,
ICRC Delegate General for Africa
Geneva, July 2005



EXECUTIVE SUMMARY

Background and Methodology for the Livestock Study

During internal discussions in August 2002, the International Committee of the Red Cross recognised that it needed to acquire a better understanding of the livestock sector, tension and/or conflict generated by competition over natural resources, and thus be able to respond more appropriately to conflict related emergencies amongst livestock owners. A study was commissioned and this report is the output from the resulting 9-month study from June 2003 to March 2004.

The main **aims** of the study were:

- To provide a comprehensive picture of the current livestock/pastoralist situation and any anticipated future developments, and a working basis/reference for the next five years;
- To design and submit regional livestock assistance guidelines, and a proposed course of action for the ICRC at both regional and country level.

The study was also to document:

- The changing role of livestock in agro-pastoralist, agriculturalist and nomadic pastoralist systems.
- Any current livestock related tension or conflict elements and likely future developments.
- Alternative support mechanisms for these livelihoods (beyond direct livestock interventions).
- The link between animal and plant production in the area under consideration.

Whilst the main theme of the study is to document and identify how to deal with emergencies caused by conflict amongst livestock owning communities, reference is also made to emergencies caused by other factors such as drought, flood, pestilence, market access and trade embargoes that also lead to, or exacerbate, conflict.

Chapters 1 to 4 provide a background to the Greater Horn of Africa, the types of tension and conflict in the region, and their effects on livestock owners and their herds. These chapters provide information on how the livestock management system operates and how organisations such as the ICRC can best intervene at different stages of the crisis. This section includes an analysis of the problem in each country, and a discussion of the changing role of livestock.

Chapters 5 to 7 provide a history of past interventions, current policies, and existing networks, databases and early warning systems (EWS) in the region. **Chapter 8** discusses the links between livestock and other ICRC activities in the region, whilst **Chapter 9** identifies key interventions in the livestock sector and alternative livelihoods.

The main study proposes a regional course of action; individual country profiles are provided separately, and include specific recommendations for livestock interventions in each country.

Competition and tension over natural resources is already widespread in the Greater Horn of Africa. The pastoralist and agro-pastoralist population of sub-Saharan Africa is estimated at 260 million, and the human population is growing faster than the capacity of the livestock sector to support it; tension is thus likely to escalate. In terms of livestock, the region hosts an estimated 11 million camels,

¹ Definitions of what differentiates pastoralists, agro-pastoralists and farmers are provided in Chapter 2.

94 million cattle, 93 million sheep, 80 million goats, 5 million equines and 110 million poultry; livestock contributes significantly to the national economies (25% of the GDP on average), but up to 41% of pastoralists live below the poverty line.

Emergencies in the Horn of Africa are related to natural, economic, political or social causes; livestock owners are vulnerable to all these factors, and often face violence. Conflict in the Horn of Africa has been described in different ways by different authors: based on its **intensity** (as “management problems, disputes or conflicts”), **stage** (“formation - escalation - resolution - transformation”), or **scale** (“micro” or “macro”).

Competition over resources is one of the most common causes of conflict, but other causes have also been identified. The direct and indirect impacts of violence have been documented in livestock areas, and livestock keeping systems in the Greater Horn of Africa have adapted to conflict over centuries, including a shift from traditional “redistributive” to “predatory raiding”.

In many cases, the livestock owners themselves are the arms carriers. Interventions that involve livestock owners will thus result in a more comprehensive understanding of situations of tension and conflict in the Horn. This in turn should improve the definition of response to observed needs in the area, and should be based on the **tracking strategy** approach as required by the new thinking on management of **equilibrium** and **non-equilibrium** livestock systems (as layed out in Chapters 2 and 9). By undertaking a regional approach, and incorporating cross-border issues, this study supports the ICRC's attempts to harmonize its approach to observed needs in the Horn of Africa, and to improve its regional coherence and reduce potential double standards in its response mechanisms.

The types and wealth of livestock owner in the Horn show wide variations, and several definitions are available. This study discusses the three following categories:

1. **Pastoralists:** people who derive most of their income from keeping livestock in conditions where most of the livestock feed is natural forage rather than cultivated fodders and pastures.
2. **Agro-pastoralists:** farmers who keep livestock fed on crop residues and field by-products for a significant period of the year, but also make use of natural pastures and may need to migrate periodically; or nomads who practice random agriculture when rains are good.
3. **Mixed farmers:** people who depend on vegetables, cereals or fruit crops for their main source of income but also own livestock which normally remain on the farm all year round and do not migrate.

In all systems, the relationship between crops and livestock is interdependent, and in some cases critical.

In livestock dependent systems a number of fundamental rules need to be grasped for interventions to have any impact. Understanding the issues, principles and standards in Chapter 2 are essential to understanding the proposed ICRC approach to livestock. This involves distinguishing between two concepts:

- **Equilibrium** environments: those found in Europe, America and the Mediterranean, in which range resources are affected by livestock densities or the number of animals.
- **Dis-equilibrium** environments: those most commonly found in Africa, where the number of animals is less of an influence than rainfall, drought or warfare, and the ability of the herds to move to exploit opportunities.

Managing equilibrium environments is much easier than managing dis-equilibrium environments. In equilibrium environments, the response is simply to increase or decrease animal numbers. Traditional equilibrium systems actually under-graze the pastures and effectively reduce productivity. In dis-equilibrium environments a more flexible response is required; interventions to increase productivity are concentrated in the “soft” (i.e. when conditions are good) periods of the cycle, whilst during the harsh periods pastoralists are “helped to cope”; this is achieved by making use of local resources before they lose value or are destroyed. It is feasible by ensuring that livestock cover human demands (i.e. in providing protein and energy), or by reducing the human demands on livestock by diminishing the number of people who depend on the animals (i.e. by controlling demographic growth, or emigration and diversification).

Managing dis-equilibrium systems requires what is called a **tracking strategy** (matching animal numbers and feed supply) and/or **opportunistic management**, and is associated with drought contingent programming with different responses and interventions at different stages of the cycle. Thus:

- **Mobility** and **access** are essential in balancing human and livestock numbers and feed supply;
- In order to be successful, the communities involved have to understand the reason for a tracking strategy and different interventions at different times. Thus **participation, contribution** and **community ownership** are all crucial;
- In order to balance human and livestock needs, a **livelihoods approach** and diversification outside of livestock is vital.

TLU - Tropical Livestock Unit

250 kg =

- 1 cow
- 6 goats or sheep
- 0.8 camels.

AAME - African Adult Male Equivalent

- Any adult male over 16 years old = 1 AAME
- Adult females over 16 years old = 0.8 AAME
- Children of either sex less than 16 years old = 0.6

A minimum number of animals is required to support a family in the extensive, free-range, arid pastoralist system common in the GHA. Sandford and Habtu estimate that any household with less than three Tropical Livestock Units (TLU) per African Adult Male Equivalent (AAME) is “famine vulnerable” and will not survive even in the short-term. Households with more than three but less than four TLU/AAME are “livelihood vulnerable” and may be able to survive in the short-term, but to survive the medium-term will have sell off some of their herd and will not be able to survive the shocks in the long-term. **4 TLU/AAME is considered the minimal “livelihood norm”**. Existing threshold values in different livestock areas are documented in Chapter 3.

Climatic change, demographic growth and increased pressure on resources due to a multitude of reasons appear to be resulting in a greater frequency of shocks. Sandford and Habtu predict that if a household has lost 50%, or only possessed 50% of the TLU required to maintain their independence from food aid (i.e. 3 TLU/AAME), it will take 10 years after the end of the “shock” to achieve self sufficiency if they only owned cows, 6 years if they owned only smallstock and 12 years if they owned only camels. Herd recovery rates are no longer sufficient to sustain the human population between shock cycles; this development suggests a terminal decline in the viability of pastoralism in its present form, and an urgent need for diversification.

Thus a change in the appearance of pastoralism is inevitable. One such change is the need to change traditional subsistence livestock rearing to commercialised or market-oriented livestock production. However, international trade barriers and existing traditional constraints are likely to heighten pressure and tension in areas such as north-western Kenya and south-western Ethiopia, which have least access to the main markets.

No pastoral development or emergency response blueprints exist. Key issues and management systems differ between areas and between groups within the same area, and project designs must therefore differ. As a result, any regional approach to emergency livestock interventions can only be based on a few very broad principles, and adopt the tracking strategy approach with interventions differing according to the different stages of the crisis and the status of the livestock system both in time (season) and space (country/area).

Although many emergency livestock interventions have been attempted, little information is available on their impact. One of the reasons is that single interventions over a short period of time are unlikely to have affected the long-term viability of pastoralism. No organisation has attempted an integrated tracking strategy to respond to different issues at different times.

Three main changes have been noted in the approach to emergency interventions:

1. A change from interventions led by governments and donors to those led by non-governmental organisations, in turn shifting to community-based interventions. The next step is *community owned* interventions. Examples of this include the evolution and involvement of National Red Cross/Red Crescent Societies, community health workers, community based animal health workers, pastoralist associations, indigenous non-governmental organisations, and likely future private sector involvement. Such interventions are based on famine relief, food-for-work, dryland farming, flood diversion and irrigation, destocking/restocking, emergency slaughter, cash-for-work, community based early warning systems, and community based disaster management.

2. A change in emphasis from saving lives to protecting livelihoods. Examples include emergency animal health inputs, support to livestock marketing, transport subsidies, “famine relief for livestock”, livelihood diversification, income generation activities, and micro-enterprise management.
3. Lastly, the original projects on early warning have now incorporated disaster cycle management, and adopted poverty monitoring through the household and food economy approaches (e.g. normal - alert - alarm - emergency - recovery). The gap between early warning and timely response remains considerable, a shortfall that the ICRC is well placed to address.

Finally, lessons learned from past interventions are discussed and used to form the basic tenets or principles upon which interventions should be based.

The key ICRC livestock and intervention areas are currently identified as follows:

- The Temporary Security Zone (Gash Barka and Debub zobas) in Eritrea;
- Afar, Somali Region 5 and Gambella in Ethiopia;
- Turkana district in Kenya, between the Turkana and Pokot in the south and the Turkana and Toposa/Merille/Karamojong cluster in the north;
- Most parts of central & southern Somalia but especially Mudug, Gaalgadud and the Shabelle and Juba rivers;
- Darfur, Abyie, Kassala and southern Blue Nile in Sudan;
- Djibouti is of low concern at present.

Interventions in the livestock sector are discussed according to the stage of the crisis: **pre-crisis** (prevention), **acute crisis** (emergency relief), **chronic crisis** (transition) and **post-crisis** (rehabilitation and development) interventions. This is based upon the wording of the recent ICRC Assistance Policy. As emphasised earlier, specific interventions will be applicable to specific countries at specific times - interventions based on the tracking strategy - but emphasis is placed on the emergency interventions as being the ICRC priority.

Pre-Crisis Interventions

Most pre-crisis, or prevention, activities in livestock or pastoralist systems are based on conflict resolution, peace building, drought preparedness, livelihood strengthening, livelihood diversification and disaster early warning.

1. General

- Fodder production, improved marketing, identifying areas to support livestock in emergencies and the provision of alternative livelihoods would all reduce the impact of shocks, and protect civilians from the violence and trauma that often result.

2. Diversification

- To strengthen the recommended “livelihood support” approach. Diversification of and protection to livelihoods will contribute to the prevention (or at least mitigation) of future livestock-based catastrophes or disasters.

3. Participatory land use planning (PLUP) and “pastoralist friendly” policies

- Irrigation interventions should also integrate the perspective of pastoralists, and should be encouraged where access to water and fodder crops or crop residues for pastoralist use are part of the planning and design process.

Relief and Production Support Interventions in Acute Crisis

1. Emergency marketing support

- Destocking: the purchase of livestock for immediate slaughter and meat distribution.
- Transport subsidies: for the few animals that are still in good condition at this stage, the provision of subsidies allows traders to buy the fat stock that is suitable for the commercial market.
- Purchase for slaughter.

2. Fodder or water supply

- Emergency trucking of fodder to livestock areas, including prickly pear and crop residues.
- Repair, rehabilitation or installation of strategic key water points.
- Emergency water trucking to enable livestock to move to distant grazing lands, or alternatively the trucking of livestock out of shock areas to less affected areas if appropriate.
- The purchase and distribution of urea/straw feed blocks to breeding stock and animals used for ploughing.

3. Animal health support

- Internal parasite control campaigns in displaced herds, or for all livestock in shock areas.
- The provision of emergency veterinary drug supplies (mainly anthelmintics and acaricides) to government clinics or contracted private sector veterinarians.
- The re-training of emergency vaccinators or parasite control personnel.
- Cold-stress preparedness and the provision of shelter.
- Environmental clean-up days to clear plastic bags; these are fatal to animals if ingested.

4. Cash-for-work and employment generation

- The provision of cash-for-work for displaced or resident livestock owners who have lost most of their animals and require alternative form of income. Cash-for-work activities should aim to benefit future livestock keeping and include:
 - 25 sqm micro-catchments and bunds for fodder trees and grasses.
 - Soil erosion control, terracing and fodder and fuel tree planting.
 - *Prosopis* and other pest species control.
 - The rehabilitation of water points

5. Humanitarian dialogue

- Negotiating access to grazing or water.

6. General

- The distribution of modern beehives and training of farmers in bee-keeping in selected areas.
- Regular and active participation in food security and Sectoral Working Group meetings in-country.

Production Interventions in Chronic Crisis:

1. Animal survival and production can be improved within the following fields.

Improved animal nutrition

- The development - or support to the development - of fodder crops and innovative feed sources.
- The provision of urea and straw feedblocks.
- Temporary exclosures and reseeded or planted fodder using micro-catchments on cash-for-work.
- The investigation of fodder supply possibilities from oceans, oases and the fodder supply factories in cities, waste paper, wood shavings, seaweed and cactus plantations, neem seed cake, and fishmeal, among others.
- The investigation of the under-sowing of cereals in highlands with Rhodes grass and legumes, and fodder crops under cotton on irrigated farms.
- Strategic water development in waterless areas: digging ponds or wells using cash-for-work.

Improved animal health

- The training of emergency vaccinators to community animal health worker level.
- Tsetse fly and trypanosomiasis control.
- Support to privatisation and veterinary voucher schemes.

2. Livelihoods can be strengthened in the following manners.

- Restocking the herds of selected displaced persons or refugees returning to their areas of origin with improved goats and poultry in conjunction with a community animal health worker training programme to ensure compliance with necessary health requirements.
- Restocking herds belonging to internally-displaced persons and residents with poultry, but **only** if follow-up can be guaranteed.
- Restocking host communities or residents but only in combination with an “upgrade” programme.
- Establishing micro-credit/micro-finance systems in villages and camps for internally-displaced persons.
- Cash-for-work bonus systems based on area protection and tree survival rates.
- Problem analysis in each region/village.

3. Humanitarian Dialogue, Diversification and Dissemination.

- In suitable agro-pastoralist areas, provide displaced and resettled populations with the means to plough, but only based upon participatory land use planning to include access routes to water and pastures.
- Supporting governments and non-governmental organisations in developing strategies on emergency livestock interventions through meetings, workshops and visits to neighbouring countries.
- Identifying methods of reducing livestock losses to predation - e.g. suitable night enclosure made out of renewable materials (dry stone walling).
- Investigating the possibility to cultivate fallow land with fodder grasses and leguminous food crops. This could take the form of a pilot project by providing ploughing oxen, seed and diammonium phosphate (DAP) fertiliser to farming areas. The DAP will replace nitrogen in the

soil due to loss of fallow period and in emergencies can be fed to livestock.

- Regular and active participation in food security and livestock sector meetings.
- Agricultural and water development schemes must address livestock access and mobility issues.
- Continued migration must be ensured.
- The issue of sustainable community animal health services should be integrated into official dialogue efforts with host governments.

Structural Interventions in Post-Crisis

1. Humanitarian dialogue, diversification, information, and networking:

- Diversification and adding value to livestock and their products.
- Links to research stations and forestry research centres for improved fodder.
- The investigation of the potential for improved beekeeping and honey production.
- Linking exchange rates for destocking to the terms of trade for cereals.
- The investigation of the potential for diversification in agriculture areas into off-farm opportunities or livestock improvement.
- Collaborating with sectoral working groups and the private sector supplying veterinary drugs, and promoting the adoption of voucher systems linked to private sector delivery to ensure sustainability even in emergencies.
- The participation in emergency response and development planning at village level, and the investigation of potential areas to operate “animal holidays” where fodder is sufficient without stress to local livestock or environmental damage. This could be linked to vouchers for stock, where livestock owners buy animals back after the emergency.
- Coordination and harmonisation: building partnerships for complete tracking strategies.

Key issues that must be avoided (i.e. pitfalls) include the following:

- The destruction of traditional safety nets and restocking systems;
- The restocking of herds belonging to internally-displaced persons whilst still displaced or in insecure areas;
- Restocking herds belonging to internally-displaced persons or returnees with imported poultry without a strong government (or private) ability to provide Newcastle Disease (NCD) vaccination services;
- Excluding the community in planning and implementation;
- The supply of an insufficient number animals to support a family sustainably (**i.e. minimum of 4 TLU/AAME**);
- Restocking herds belonging to the permanently destitute (or long-term poor); it is preferable to consider alternative sources of revenue for this category;
- Being the intermediary for returned stock in “passing on the gift” restocking programmes;
- Restocking herds belonging to internally-displaced persons or expellees before they return to their home areas or are settled permanently; in addition, the host community in the settlement area must confirm there are no problems of competition from yet more livestock;
- Undermining long-term development;
- Creating dependency;
- Expecting livestock alone to support growing human populations.

In spite of the current poor prognosis for the livestock system in the Horn, opportunities exist for impact and positive change during and following conflict. Although alternatives are few for many livestock owners, diversification opportunities and alternative livelihoods to livestock keeping are provided with suggestions on effective targetting.

Success will depend on the following parameters:

- The identification of suitable partners or National Red Cross/Red Crescent Societies to implement interventions (or assist in their implementation);
- The further development of the integrated livelihoods plan for livestock owners affected by conflict;
- The completion of the indicator matrix (intervention timing and modalities, impact appraisal and exit modalities) and the adoption of a tracking strategy approach.

CHAPTER 1

Introduction: Livestock, People, Conflict, Disaster Management and ICRC Operations in the Horn of Africa

“Livestock production compared to other sectors has experienced less deterioration during war time.”

European Commission, 1999.

But:

“It takes longer for pastoralists to recover from a drought than for farmers who can recover within 1-2 years of cropping.”

Lautze et al., 2003.

1.1 Livestock and People in the Greater Horn of Africa²

The Greater Horn of Africa (GHA) comprises eight countries and covers six million square kilometres. The entire region has experienced conflict and/or disturbances in some form during the past five years. This study and the resulting policy document concentrates on the six GHA countries included in the ICRC's Horn of Africa Region (Djibouti, Eritrea, Ethiopia, Kenya, Somalia and Sudan³).

Table 1.1. overleaf presents the key parameters for each country. According to Field⁴, livestock occupy 44% of the total surface of the eight countries. The Sudan is the largest country, accounting for 40% of the total surface, whilst Ethiopia hosts the largest human population.

There are an estimated 260 million pastoralists and agro-pastoralists⁵ in sub-Saharan Africa⁶. Thornton *et al.*⁷ estimate that the population of pastoralists in the eight Horn of Africa countries will grow from 25 million in the year 2000 to 63 million by 2050, an increase of 250%. This natural population growth alone will have a major impact on the future of pastoralism and livestock keeping.

The GHA countries possess 76% of the world's population of camels, 8% of the cattle, 9% of the sheep, 30% of the goats, 14% of the donkeys and 5% of the equines (horses and mules).

² There are many sources and estimates of livestock and human populations. Thus various livestock and human population numbers may be found in this report depending on the source of information utilised.

³ Due to developments in the Darfur (Sudan) crisis and its spillover into neighbouring Chad, the latter was incorporated into the ICRC's internal management set-up for the Horn of Africa (which already included Sudan), so as to harmonise the ICRC attention devoted to the crisis as a whole. This shift became effective in early 2005, that is, after the completion of this report. As a result, Chad is not discussed separately here but, where relevant, Eastern Chad is mentioned in sections pertaining to Darfur/Sudan.

⁴ In preparation.

⁵ Definitions of what differentiates pastoralists, agro-pastoralists and farmers are provided in Chapter 2.

⁶ De Haan, Steinfeld and Blackburn, 1997.

⁷ 2002.



Table 1.1. Summary characteristics of the GHA countries.

	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
Area (sq km)	23,200	124,000	1,221,900	582,646	738,000	2,505,813
Human population ⁸ (million)	0.7	4.4	74.2	32.8	10.7	35 (5-8.2 in South)
Growth (% p.a.)	5.5	2.7	3.2	2.6	3.2	2.2
% Urban population	65-80	35	17	37	23	36
GNI (US\$) per capita	1030	180	110	460	NA	530
Refugees	28,500	750,000	100,000 IDPs ⁹	200,000 IDPs	350,000 IDPs and 440,000 refugees	4 million IDPs and 440,000 refugees
% Popn. involved in agriculture	<1	79	82	75	35	56
% Popn. livestock owners	25	NK	15	NK	60	28
% Pastoralists ¹⁰	25	33	7.9	14.5	60	13.8
Camels (millions)	0.07 (0.04)	0.075	1 (0.33)	0.9 (0.83)	6.2	3.2
Cattle (millions)	0.27 (0.05)	2.2	34 (35.5)	13.5	5.3	38.3
Sheep (millions)	0.475 (0.4)	1.56	22.5 (11.4)	8	13.1	47
Goats (millions)	0.512 (0.6)	1.7	17 (9.62)	9	12.5	39
Donkeys (millions)	<0.01 (0.0065)	NK	3.4	NK	0.021	0.75
Equines (millions)	NK	NK	1.83	0.002	0.02	0.026
Chickens (millions)	NK	1.37	38	32	3.3	37.5
Human density (/sq km)	24	36	58	58	15	14
Life expectancy	46	53	46	46	(47)	55
HDI world rank (/175)	153	155	169	146	NK (159 reported and 172 in 1996)	138

NK: not known,

Brackets () indicate estimates for pastoral areas.

⁸ United Nations 2004. Numbers vary according to source. Livestock figures from the Food and Agriculture Organisation, 2002, based on the last livestock census data of 1978.

⁹ Reliefweb figures for 2001

¹⁰ Salih and Abdel Ghaffar 1993, quoted in Al-Massar, 2003. Pastoralists are defined here as deriving more than 50% of their revenue from livestock; livestock owners include people whose animals only contribute partly to their revenue (including agro-pastoralists and peri-urban farmers).

1.2. Pastoralism and Agro-Pastoralism in the Horn of Africa

“Rendille grandmothers live in very small huts, because they have given away most of their mats. This is an indication of their generosity rather than poverty.”

Field, 2003.

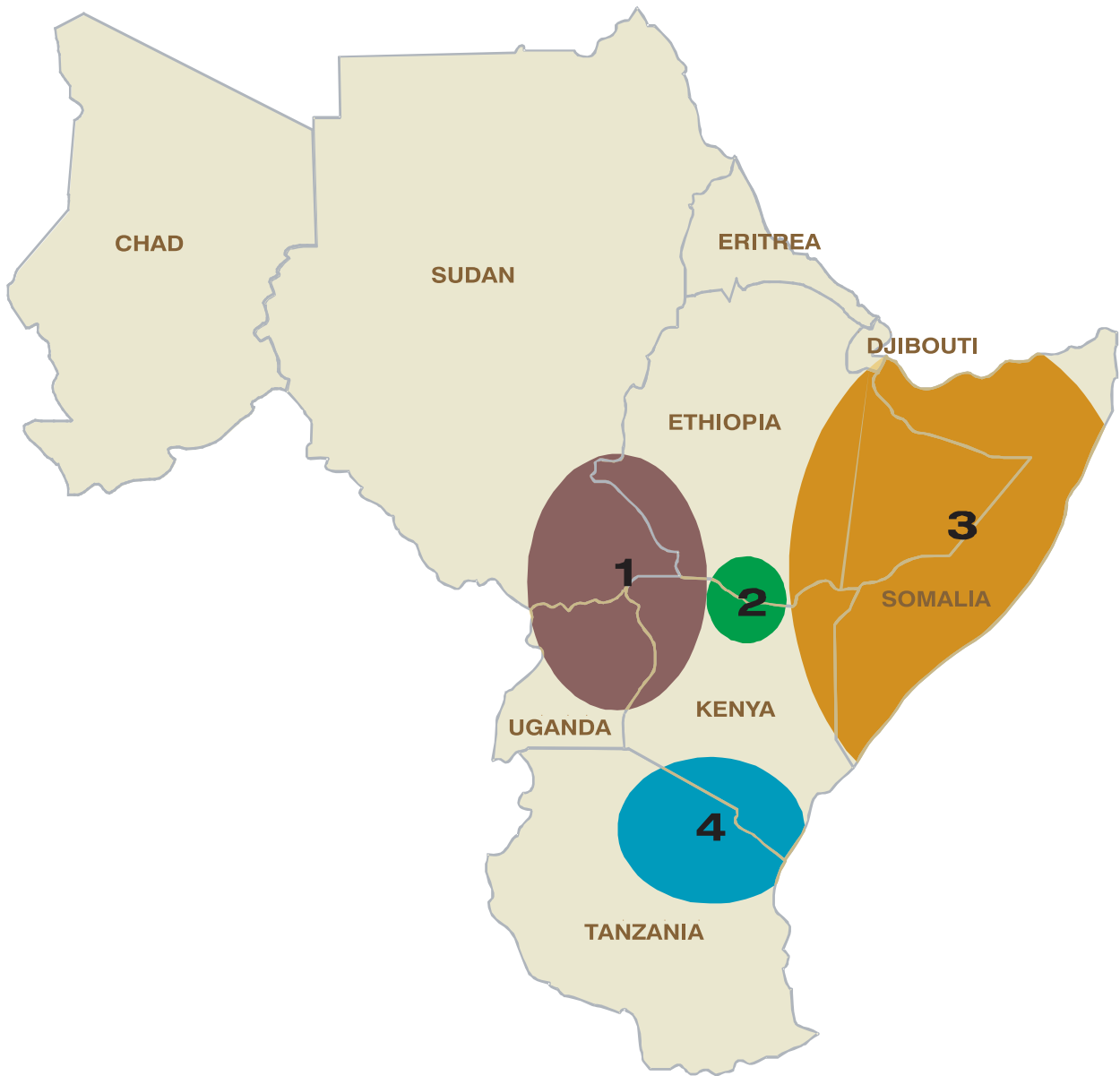
Chapter 2 describes the pastoralist and livestock systems in the Horn of Africa, and the current theories on how to “manage” pastoralism. Chapter 3 discusses the current situation in each country, the roles of livestock, and comparisons in livestock holdings (herd size) and values; it also discusses present trends and changes, and predicts future trends. Much of the information in this chapter has been summarised, and the reader is referred to the Individual Country Profiles to obtain more exact information.

Using data from the International Livestock Research Institute (ILRI), Field estimates that out of the 190 million inhabitants in the 8 GHA countries living at an average density of 31 per square kilometre, there are about 25 million pastoralists living at a density of 1-20 per square kilometre. 90% of the pastoralists are based in Sudan, Somalia, Ethiopia and Kenya. In Somalia and Djibouti pastoralists comprise over 70% of the population, whilst in Sudan and Ethiopia they comprise 28% and 15% of the population respectively. Pastoralist populations in Uganda, Tanzania, Kenya and Eritrea represent less than 10% of the total population.

Approximately 80% of the GHA pastoral people are found in the arid and semi-arid lands rangelands, 14% (mainly in Sudan, Ethiopia, Tanzania and Uganda) in the sub-humid and humid rangelands, and only 6% (mainly in Ethiopia and Kenya) in the temperate, highland rangelands.

The population in the Horn is often broken up into ethnic groups or clusters (see Table 1.2. and Map 1.1 overleaf).

Map 1.1. Cluster groups in the Greater Horn of Africa.



Key:

1 Karamojong cluster
2 Boran cluster

3 Somali cluster
4 Maasai cluster

Table 1.2. Ethnic pastoralist (P) and agro-pastoralist (AP) groups in the Greater Horn of Africa¹¹

Country	Cushites	Oromo	Hamites	Nilotes	Kalenjin	Bantu	Arabs
Djibouti	Afar (P), Issa (P)						
Kenya	Somali (P), Rendille (P), Wardei (P),	Boran (P) Gabbra (P), Orma (P), Sakuye (P)	Maasai (P), Samburu (P), Njemps (AP)	Luo, Turkana (P) Teso (AP), Maasai (P),	Nandi (AP), Kipsigis (AP), Pokot (AP), Tugen (AP), Elkeyo (AP), Marakwet (AP)	Wakamba (AP), Kikuyu (A),	Swahili (AP)
Eritrea	Afar (P), Tigre (AP)			Kunama (AP), Nara (AP)			
Ethiopia	Afar (P), Issa (P), Arbore (AP), Daasanach (AP)	Kerayu (P)		Murle (AP), Anuac (AP), Mursi (AP), Nyangatom (AP)			
Sudan	Beja (P)			Twic Dinka (AP), Ngok Dinka (A), Nuer (AP), Shilluk (AP), Taposo (AP), Didinga (AP), Mandari (A), Kakwa (A),			Kababish (P), Reshiat (P), Misseriya (P)
Somalia	Most Somali clans (P)					Most riverine clans (AP)	

The **Karamojong cluster** comprises 14 ethnic groups in north-eastern Uganda, south-eastern Sudan, north-western Kenya, and south-western Ethiopia¹². In Uganda they comprise the Karamojong (Matheniko, Boora, Pian, Upe, Jie, Tepes, Dodoth), and Teso; in Kenya, the Pokot and Turkana; in Sudan, the Toposa, Nyangatom and Didinga; and in Ethiopia the Merille.

The **Somali cluster** covers Somalia, Somaliland, Puntland, Djibouti, the Ogaden (Region 5) of Ethiopia and north-eastern Kenya. Six major clans or families are included, namely Darod, Hawiye, Rahanweyne, Isaq, Digil and Dir.

¹¹ This table is not an exhaustive table of all groups. The Cushites, Hamites and Oromo are sometimes grouped as having one origin and the Oromo group as a sub-group of the Cushites.

¹² Akubwai, 2002.

The **Maasai cluster** is found in southern Kenya and northern Tanzania, and includes one or two smaller agro-pastoralist groups affiliated to the Maasai.

The **Boran cluster** includes the Boran, Oromo, Sakuye, Gabbra and Garreh straddling the southern Ethiopian border and northern Kenya.

1.3 Pastoralism and the National Economy.

In Ethiopia, agriculture accounts for 55% of the GDP. Livestock accounts for 40% of the agricultural GDP, and more than 20% of the total GDP¹³, whilst livestock activities employ about 31% of the agricultural labour force¹⁴.

In Kenya, livestock production contributed 10% of the 2002 GDP and 30% of the Farm Gate Value of agricultural commodities. In 2001, the livestock contribution to GDP was estimated to be 25%. The livestock sub-sector accounts for 90% of employment, and more than 95% of family income in the arid and semi-arid areas.

Surveys conducted in Somalia in 1989 showed that nomadic pastoralism accounted for 44% of the GDP. More than half the population was involved in livestock keeping, with an estimated 2.6 million pastoralists and 2.2 million agro-pastoralists. More recent (1999) European Commission (EC) reports showed livestock contribute 60% of the income, or subsistence, of the Somali people. The EC concludes that nowhere in Africa is nomadism of greater significance than in Somalia.

In Sudan, the Ministry of Animal Resources and Fisheries¹⁵ estimates that 90% of the nation's 37 million cattle, 46 million sheep, 38 million goats and 3 million camels are to be found in the north, where they account for 22.4% of the GNP.

1.4. Pastoralism and Poverty

Data from the International Livestock Research Institute¹⁶ (ILRI) indicates that 41% (10 million) of pastoralists in the Greater Horn of Africa fall below the poverty line of US\$ 1 per day. The authors show that the highest proportions (47%) falling below the poverty line were to be found in Djibouti, Eritrea, Somalia and the Sudan. All of these countries accommodate extensive arid and semi-arid lands (ASAL) areas. However, data from Eritrea indicated that 65% of the population lies below the poverty line, with poverty worst in the urban and highland areas.

Field¹⁷ shows that the poorest regions in East Africa (where more than 60% of households fall below the poverty threshold) are located furthest from the capital cities. In addition, in Kenya and Uganda, they correspond to the northern pastoralist areas, which also face problems of insecurity.

¹³ European Commission/Inter-Governmental Authority on Development, 2000 in Lautze et al., 2003.

¹⁴ UN Integrated Regional Information Networks (IRIN), 2003.

¹⁵ 2003. In Sudan, it is difficult to know whether reports refer only to populations in the north, or the south or both. Data from the Ministry of Animal Resources and Fisheries is for 2003 and varies from the 2002 Food and Agriculture Organisation estimates. GDP figures, for example, do not adequately reflect the massive difference between north and south.

¹⁶ Thornton et al., 2002.

¹⁷ In preparation, using International Livestock Research Institute data.

1.5. Disaster Management in the Horn of Africa

Sandford and Habtu¹⁸ classify emergencies in the Horn of Africa as resulting from natural, economic, political or social causes, or a combination of these. The more causes involved, the more complicated it is to address the emergency.

Disaster management is an evolving profession, originally dominated by international and non-governmental organisations; it is now increasingly coordinated by national governments. Africa, with its rich history of political upheavals, *coups d'Etat* and civil wars fought in the arena of drought and pestilence, remains an important continent for humanitarian agencies.

1.6. Conflict in Africa

This section does not intend to discuss the global concept of conflict in Africa; instead, and in line with the subject of this study, it focuses on the links and interaction between livestock and conflict. Livestock ownership (be it of small stock, cattle or camels) implies a certain degree of mobility and access to quality natural resources. In securing these conditions, livestock owners frequently encroach upon land otherwise used for agricultural purposes, especially. Conversely, livestock migration routes often offer quality cultivation soil (because of manure), and segments of these routes are also increasingly cultivated by farmers¹⁹. Where climate is propitious and land occupation is scarce, this cohabitation poses little problem; where available quality resources shrink (due to erratic climate or land tenure issues, for instance), on the other hand, it often leads to friction, even overt conflict. This competition in turn increases the need, for both agriculturalists and pastoralists, to defend their assets.

In most livestock systems in the GHA, the distinction between civilians and fighters is hard to draw, since men frequently alternate between civilian and arm carrier status.

Some authors²⁰ describe pastoral conflict as consisting of three different issues or intensities:

- **Management problems** - arising from differences between persons sharing the same goals and interests. These require problem solving, and improved communication and personal interaction.
- **Disputes** - requiring a settlement process, such as judicial procedures, negotiation and bargaining.
- **Conflicts** - arising from cultural differences or competition over natural resources. These require resolution processes based on in-depth knowledge, and sometimes the assistance of a third party.

Other authors describe pastoral conflict according to its stage: formation - escalation - resolution - transformation.

Al-Massar²¹ define conflict according to scale:

Micro-scale conflict involves individuals, villages or communities, and is geographically focused. The causes of micro-conflict include the following:

¹⁸ 2000.

¹⁹ Examples include parts of Darfur, Sudan, and southern Niger.

²⁰ Burton and Duke, 1990.

²¹ 2003.

- Access to water points;
- Livestock trespass;
- Closure of stock routes;
- Stock theft;
- Range enclosure.

Macro-scale conflict, on the other hand, involves larger groups, is ethnic or tribal in nature, and results in widespread death and destruction. Causes include banditry, tribal disputes and trans-national violence. Competition over resources may also fuel this type of conflict.

1.6.1. Causes for Tension and Conflict in Livestock Areas

The causes for tension and conflict in pastoralist and agro-pastoralist areas are multiple. Climate, settlement, resources, tradition, politics, access and crime have all been blamed, and may be interrelated. The link between pastoralist livelihoods and potential conflict over natural resources in particular has long been recognised. Secure access to grazing land and water facilities has, more than ever, become one of the main causes for tension in the Horn of Africa during the last decade or so. Tension between pastoralist communities and more sedentary groups (and indeed among pastoralists themselves) is also well documented, and has been exacerbated by increasingly erratic rainfall patterns. An otherwise “normal” feature of the pastoralist livelihood, drought, has begun to undermine the assets of the wealthier segments of society, and totally impoverish the most vulnerable.



ICRC/Piers Simpkin

In the Horn of Africa, it is now common for civilian herdsmen to carry firearms.

Pastoralist communities have, in their search for acceptable grazing land, often clashed with other pastoralists seeking the same resources. More recently, however, pastoralists are impinging increasingly on fertile land cultivated by sedentary groups near waterways. This development fuels tension and conflict with new groups who do not necessarily share the same goals or needs as the pastoralists. In the past, pastoral conflict usually involved pastoralists with common interests; the causes for conflict were thus well understood, and could easily be resolved. New conflicts involving members of different livelihoods are more complicated, harder to resolve, and consequently tend to reoccur and escalate.

²² Niamer-Fuller, 1999.

Other causes for tension and conflict in pastoral areas include the following:

- A breakdown of the “moral economy”, community spirit, or reciprocity between clans and tribes, caused by predatory raiding, and now a cause for more raiding²²
- Loss of respect or control by local elders and traditional bodies
- An increasingly sedentary or mixed lifestyle
- National boundaries²³
- Increasing populations²⁴
- The proliferation of firearms²⁵
- Increasing needs and marginalisation²⁶
- Theft for poverty alleviation²⁷
- Theft for recognition and entertainment²⁸
- Conflict for appeasement²⁹
- Commercial raiding³⁰
- Identity³¹
- Excessively high bride-price³²
- Land tenure³³

1.6.2. Conflict Management

Although severely affected by conflict, the whole pastoral system is shaped by, or has adapted to, conflict. Houses are grouped in a defensive ring around the livestock pens located in the middle; stout wooden or thorn fences surround the houses and livestock pens; openings or gates into the homestead require visitors to bend down to enter; age-set systems are based on military service; owners split herds to reduce risk, and to avoid attracting raiders; herders show as many guns and armed men as possible, and combine herds in times of insecurity to maximise their defence .

“An important characteristic of the Hamitic people is their age set system, which is designed to apportion significant roles to the males in their society. From the age of about eleven to twenty years males are circumcised and enter the warrior age group whose main role is to protect livestock from theft and predation, defend the homestead and when need arises to plunder neighbouring sources of livestock and women in order to add to their wealth or enable them to pay the bride price before marrying. The next older age set is the junior elder who concentrates on setting up house and raising a family. After this comes the senior elder who makes policy decisions. Older than this, is considered too old to play an active part in community life”.

Field (in preparation).

²² Niamer-Fuller, 1999.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Ibid.

³² Bollig, 1992.

³³ Field, in preparation.

1.6.3. The Changing Face of Conflict in the Livestock Systems of the Horn of Africa

In the past, traditional pastoral conflict was termed “redistributive raiding”, and was subjected to strict rules (for instance, the killing of, or violence against, women and children was widely condemned). To some extent, it was also predictable as it was intended to rebuild herds after droughts or raids, or was linked to the “current relationship” between tribes. Traditionally raiding was a “rite of passage”, or statement of maturity and independence. There was a degree of ritualisation involved with raiding, challenges were issued, weapons were prepared, tactics were planned, and elders would supervise or mediate the conflict. Recently, redistributive raiding has changed to “predatory” raiding, orchestrated by individuals external to the system with criminal, political or commercial intent.

Originally, raiding had the blessing of the whole community to restock after drought or calamity. It also benefited the individual, enabling him to marry and establish his own herd. Recently, most conflict stems from the isolated pursuit of private gain, either commercial or political.

Pastoral conflict has become noticeably more violent, particularly due to the use of automatic weapons. Whilst large-scale raids involving several hundred raiders still occur occasionally, most raids are now carried out by smaller groups of 5-15 young men, are more opportunistic, and require less planning and preparation.

Included in politically motivated conflict is the killing of farmers, livestock owners or women and children, with no attempt at actually stealing or targeting livestock herds.

1.6.4 The Effects of Conflict on the Livestock System

1.6.4.1 Effects of conflict on livestock

- Slaughtered in a “burnt earth” policy;
- Wounded in the crossfire;
- Looted or stolen;
- Deprived of water and grazing (food);
- Exposed to diseases or unfavourable climates;
- Suckling animals starve if their mothers are stolen.

1.6.4.2 Effects of conflict on livestock owners

1.6.4.2.1 Direct effects

- The loss of property and the asset base (including livestock) - destitution;
- The loss of livestock products (milk, meat, fat and ghee);
- The loss of mobility - looting of transport animals;
- Forced migration to secure areas;
- Increased workload due to the remoteness of grazing areas from water points;
- The loss of house making materials (hides and skins);
- A fall in livestock prices and access to markets;
- Death or injury;
- The loss of family members or employees / herders;
- The loss of the breadwinner, and an increase in widows and female headed households;

- Rape and abduction;
- Psychological trauma and a permanent distrust or revenge mentality;
- The loss of access to key resources (firewood, water, pasture, etc.) through fear or threat of conflict.

1.6.4.2.2 Indirect effects

- Reduced field fertility and crop yields due to the lack of manure from livestock;
- The loss of draught power (loss or death of ploughing animals);
- The reduced availability of essential goods and medicines;
- The closure of facilities such as clinics and schools;
- A rise in commodity prices and transport charges;
- The loss of revenue and foreign exchange from tourism;
- The diversion of development funds to expensive emergency response, conflict resolution or peace building activities;
- Lack of services;
- Weakened livelihoods;
- Reduced coping strategies;
- Isolation and marginalisation;
- Poverty.

1.6.4.3 Effects of conflict on the livestock environment

- Destruction of habitat and deforestation;
- Overgrazing in safe areas³⁴;
- Pollution;
- Mines and Explosive Remnants of War (ERW).

Catley³⁵ lists the effects of conflict on pastoralists in general to be:

- The establishment of internally-displaced persons', returnee and refugee camps;
- An increase in the number of female-headed households with children, the elderly and disabled;
- Reduced movements, overgrazing and altering patterns of livestock disease;
- The loss of markets and cultural identity.

Livestock owners who are agro-pastoralists or mixed farmers tend to lose all their stock as their ability to move and escape with their animals shrinks. The effects on individuals thus tend to be more acute. Agro-pastoralists and farmers may also face chronic problems induced by conflict that also commonly affect nomadic or mobile pastoralists, such as fodder or grazing shortages, and depressed market prices, but generally for shorter periods.

1.6.4.4 The impact of conflict on women

The African Union Inter African Bureau for Animal Resources (AU-IBAR) Community-based Animal Health and Participatory Epidemiology (CAPE)³⁶ Unit showed that women both gained and lost from conflict.

³⁴ One benefit is that the vegetation areas perceived to be insecure recover and regenerate, improving the biodiversity.

³⁵ 1999.

³⁶ 2003.

Gains include:

- Improved food supply from stolen stock. Mothers of raiders are given a milking cow. In commercial raids, however, women rarely benefit.
- Prestige as the mother of a brave warrior.

Losses include:

- Constant fear and worry;
- The loss of children;
- The loss of access to collect wild food and firewood;
- The loss of food sources;
- Increased diseases in herds;
- Lack of services - health, education, trade, communication;
- Death and injury to self or family members;
- Widowhood and low esteem in community;
- Robbery, abduction and rape;
- Theft of household equipment and clothes;
- The loss of trade;
- Reduced social relationships.

1.6.4.5 The role of women in pastoral conflict

Women in some societies do incite raiding through:

- Songs;
- Ridicule and abuse;
- Encouraging revenge;
- Cooking food for raiders;
- Blessing before and welcoming back raiders;
- Sharing the spoils of raiding;
- Encouraging gun ownership for protection.

But women are also fully involved in peace building through trade and social relations, marriage ties, curses and blessings, songs and ceremonial roles.

1.6.5 Conflict Resolution and Prevention in Pastoralist Environments

Niamer-Fuller³⁷ provides a comprehensive background to current conflict issues and management methodologies (see Table 1.3 below), whilst Pendzich³⁸ and Anderson *et al.*³⁹ provide procedures for conflict management (see Table 1.4. below).

Niamer-Fuller describes potential new mechanisms for conflict resolution as follows:

- Inter-tribal committees for land use planning and resource negotiation / allocation;
- Vocational schools for young warriors;
- Herders' associations and the professionalisation of herding;
- Good governance.

³⁷ 1999.

³⁸ 1994.

³⁹ 1996.

Table 1.3. A summary of traditional and recent conflict management mechanisms⁴⁰

<p>Traditional mechanisms for pastoral conflict prevention:</p> <ul style="list-style-type: none"> • Informal sanctions - social ostracism, ridicule, satire. • Reciprocity - giving and receiving, bonding, creating favours to be returned. • Adapting - living with increased stress without reverting to conflict, changing livelihood, • Negotiated alliances - with allies and potential enemies through gifts and bonds either as individuals, families or clans / tribes. 	<p>Traditional mechanisms for pastoral conflict resolution:</p> <ul style="list-style-type: none"> • Informal sanctions - social ostracism, ridicule, satire. • Tribal mediators • Tribunals • Colonial based judiciary • Vigilantes • Peace talks • Elders councils
<p>Recent mechanisms for pastoral conflict prevention:</p> <ul style="list-style-type: none"> • Settlement - villagisation • Negotiation • Lobbying • Policing • Education • Alternative livelihoods • Improved livelihood security • Vigilantes - local policing and home guards 	<p>Recent mechanisms for pastoral conflict resolution:</p> <ul style="list-style-type: none"> • Punitive reprisals • Fines • Modern law • Peace talks

Table 1.4. Procedures for conflict management in the Horn of Africa ⁴¹

Fact finding: Investigation of key issues by a neutral third party, as an input into the negotiation process.
Facilitation: Assistance by a neutral third party in running a meeting and making it productive
Collaborative planning: Parties agree to work together to prevent a conflict.
Negotiation: Parties meet voluntarily to agree to an acceptable solution.
Mediation: Neutral assistance offered by a third party to a negotiation process.
Conciliation: Attempt by a third party to communicate separately with the disputants to reduce tensions and agree on a way forward.
Arbitration: Submission of a dispute to a third party who makes a binding or advisory decision after reviewing the evidence.
Adjudication: A judgement rendered according to objective standards, rules or laws by a person with the authority to rule on the issue (judges, administrative officers or elders).

⁴⁰ Niamer-Fuller, 1999.⁴¹ Pendzich, 1994; Anderson et al.,1996.

It should also be noted that intermarriage as a form of conflict resolution and livelihood (or livestock management) diversification has led to “new” ethnic groups such as the Ariaal, Wardai, Gurre, and Sakuye in Kenya.

“Violent conflict plays a decisive role in creating the conditions leading to famine in Africa today..... but violence undermines the viability of herds in the first place”.

“Livestock raiding has changed from a quasi-cultural but important livelihood enhancing practice to a large-scale, violent predatory practice often organised or supported by criminal elements outside of the pastoral sector”.

Hendrickson, Armoan and Mearns, 1998

1.7. ICRC Past Involvement in the Livestock Sector

1.7.1. History of ICRC Involvement with Livestock in the Horn of Africa⁴²

The ICRC operated livestock programmes in South Sudan between 1988 and December 1991, and in Somalia between 1992 and 1993⁴³. All projects were animal health oriented and implemented directly by ICRC staff. Interventions were initiated based on the following objectives:

1. Reducing the risk of mortality of already (conflict) affected herds by vaccinating them against some of the main killer diseases (Rinderpest, haemorrhagic septicaemia, anthrax, etc.), which can potentially reappear in the absence of basic (government) veterinary services able to carry out vaccination campaigns.
2. Increasing the productivity of the remaining flocks by treating them against the main endo- and ecto-parasites, as well as against specific diseases such as trypanosomosis.
3. Rehabilitating water points destroyed as a result of the conflict to improve the survival of both man and beast.
4. Where livestock export is key to food import (Somalia), operating veterinary programmes to improve animal health but also the certification of healthy export animals (including establishing blood testing services for foot and mouth disease). This opens the market and improves prices.

1.7.1.1 ICRC livestock projects in Somalia

The ICRC operated an emergency veterinary programme funded by the European Commission in Somalia from 1992 to 1993. Interventions included parasite control, cattle vaccination, trypanosomosis treatment, restoration of water points and support to livestock export centres.

⁴² Source: ICRC internal reports. Planning for the Sudan livestock project started as early as 1986.

⁴³ In addition to its Tsetse fly control programme (1996-1998).

The veterinary programme in 1992 was a relief programme countrywide. One million small stock and 120,000 cattle and camels were treated in the first phase. It was noted that free drug distributions to elders benefited the wealthier members of the recipient community more. The second phase (September 1992 to September 1993) was carried out by 23 regional veterinary teams who treated five million animals against trypanosomiasis and endo- and ecto-parasites. They also vaccinated 700,000 cattle against Rinderpest, 160,000 against contagious bovine pleuropneumonia (CBPP), 40,000 against blackleg and anthrax, and 20,000 sheep and goats against pox.

Between 1996 and 1998, the ICRC implemented an emergency veterinary intervention in response to a mystery disease outbreak amongst camels. Over 150,000 camels were treated with antibiotics on a cost recovery or subsidised basis. 2,000 Tsetse fly traps were also set up in four locations along the Juba river.

1.7.1.2 ICRC livestock programme in Sudan

In November 1988, the ICRC began what was to become the current Operation Lifeline Sudan livestock programme with vaccination campaigns to control Rinderpest. The programme ended in 1991 with up to 2.2 million vaccinations completed, and was handed over to the United Nations Children's Fund (UNICEF).

The initial aim of this programme was to vaccinate a total of 4.5 million cattle. The 7.7 million Swiss Francs ⁴⁴ programme was managed by an expatriate veterinarian for three years. In October 1989, the ICRC handed over the veterinary programme to the Danish Red Cross Society, who vaccinated 400,000 cattle in 1990 and 200,000 in 1991. The project operated mainly in Akon, Leer, Yirol and Kongor with some input in Pochalla. Activities included training community animal health workers, writing a field manual and collecting veterinary samples for analysis in Kenya.

It is worth noting the following lessons:

1. In spite of ICRC access restrictions between November 1989 and March 1990, and from September 1990 to July 1991, community animal health workers continued to perform vaccinations on the ground;
2. The project only aimed at vaccination (prevention) and not treatment.

Since the completion of the veterinary project in Sudan, some support has been extended to ox-ploughing in the vicinity of Yirol. No ICRC livestock interventions have been conducted in Sudan between 1991 and 2004. However a livestock intervention feasibility study was conducted in early 2000.

In December 1998, ICRC food-for-work assistance was provided to repair Wau slaughterhouse. Other requests for livestock inputs in Wau included restocking internally displaced persons' herds with poultry or small stock, providing rabies vaccines for dogs, and rehabilitating the Government veterinary clinic.

1.7.2. Past Impact of ICRC Veterinary Programmes

The ICRC veterinary programmes in Africa resulted in the following:

- Increased export prices;
- Doubled or tripled camel milk yields;

⁴⁴ US\$ 11.5 million.

- Reduced mortality rates and increased herd size;
- The ICRC learned that 95% of herders are prepared to pay the full price for veterinary services;
- Maintained pastoralists' survival strategies, while preserving dignity.

1.7.3. Constraints of ICRC Veterinary Programmes

- Programmes were efficient but expensive in conflict areas;
- Programmes were not sustainable - all drugs and vaccines were provided free of charge as an emergency project;
- Cost recovery or private sector veterinary services involve “business transactions”, other partners thus had to be involved⁴⁵. Partners included non-governmental organisations, the United Nations Food and Agriculture Organisation (FAO), pharmaceutical companies, Somali investors in veterinary drug retail, Somali veterinarians, veterinary assistants, nomadic animal health auxiliaries (NAHA), and the livestock owners themselves.
- Quality control and drug resistance were threats;
- Access;
- Cold chain breakdowns;
- High maintenance costs.

1.7.4. Other ICRC Experiences in the Livestock Sector

In May 1993, the ICRC published “*Technical Guidelines for the use of (veterinary) drugs*”.

Restocking was considered in Somalia but not implemented, as the ICRC did not wish to interfere with community solidarity mechanisms.

In Gode, Ethiopia, an Ethiopian ICRC veterinarian has trained 150 pastoralists in basic disease diagnosis, prevention and cure. Free drugs were distributed during the training for demonstration purposes.

The ICRC ran a Tsetse fly and trypanosomiasis control project in southern Somalia, where local elders were trained to make and set up Tsetse traps. The impact of the project is unknown and, although popular, the initiative proved unsustainable (the project stopped shortly after the ICRC suspended its financial contribution).

Small poultry restocking programmes, often accompanied by veterinary care, have been implemented in several African countries and in Afghanistan, while in the Balkans and the Caucasus restocking projects have also included pigs, sheep, goats, and even cows. In Rwanda, the donation of goats to grassroots associations was linked to staple crops or vegetable production projects.

Animal health care interventions have a long tradition in Afghanistan, and culminated in two major projects: the rehabilitation of a vaccine laboratory in Kabul (1998 to 2002), and two rounds of ecto- and endo-parasitic treatment for nearly half a million livestock heads in Bamyan and Mazar-i-Sharif in 2002.

Participatory approaches have proven successful in the support to animal health systems and livestock breeding issues in northern Mali between 1996 and 1999.

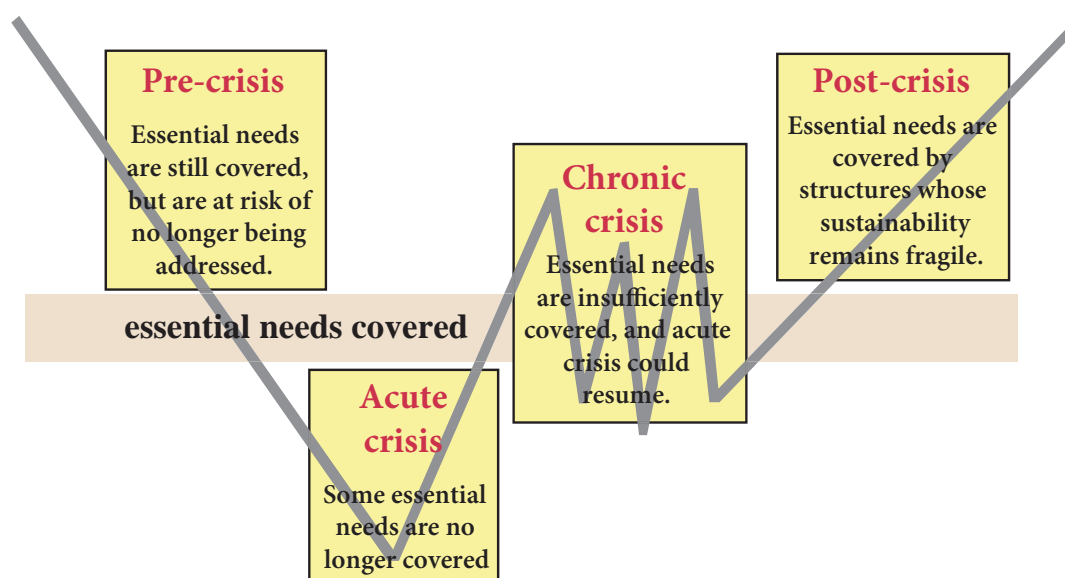
⁴⁵ Readers are referred to the link to modern community-based veterinary practices and vouchers in Chapter 9 - Recommendations.

1.7.5. ICRC Institutional Framework

The ICRC has increasingly attempted to harmonise its approach to observed needs in the Horn of Africa. These attempts are aimed at improving its regional coherence and reducing potential double standards in its response mechanisms.

The ICRC's mandate lies in the alleviation of human suffering caused by the direct and indirect effects of armed conflict. These effects can be felt at different stages over time, and the ICRC has thus defined the evolution of crisis as follows: pre-crisis, acute crisis, chronic crisis and post-crisis; the criterion for the definition of the stage is provided by the degree of needs coverage, as illustrated in Fig. 1.1. below.

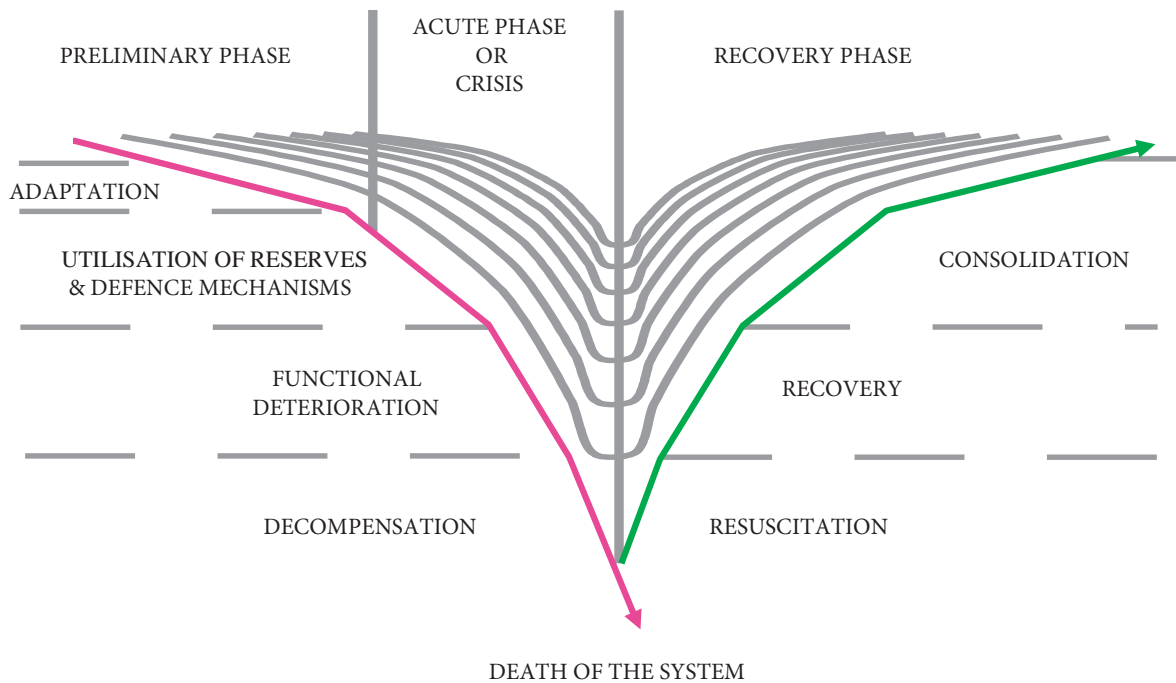
Figure 1.1. Types of Crisis⁴⁶



The effects of armed conflict on man are multi-faceted, and victims of conflict often face a combination of personal tragedies. Internal displacement, for instance, often entails abuse of International Humanitarian Law in the form of the deliberate destruction of civilian infrastructure, the disruption of safe access to water, adequate health care and appropriate food, physical injury or even death, and the separation of families during their flight. In terms of food production, armed conflict is often associated with the disruption or destruction of productive assets, such as crops and seed stocks or livestock. Productive assets are essential to the survival of the household economy; when individuals are removed from their source of income, or when they are forced to dispose of it to secure food for their family, they face short-term destitution through rapid decapitalisation, as illustrated in the crisis process scheme below.

For an individual, household or community to achieve economic security, the sum of its income (e.g. salary, revenue generated by the sale of its production, etc.), personal assets (savings, jewelry, etc.) and productive assets (the inputs required to generate an income, such as seeds and tools or livestock) must be sufficient to cover its essential expenditures. Essential expenditures go beyond the securing of food, and include housing, clothing, schooling fees, health expenses and taxes, for instance. A discussion of the ICRC's intervention modes in terms of economic security and the crisis types illustrated in Figure 1.1. above is provided in Chapter 9 (Recommendations).

⁴⁶Readers are referred to the ICRC Assistance Policy (ICRC Doctrine 49, 2004).

Fig. 1.2. The Crisis Process

The effects of conflict on the economic security of civilians in particular can be direct, when productive assets are looted, destroyed or damaged beyond repair. They can also be indirect, when individuals are prevented from generating an income (for example, by fleeing their farms and regrouping in settlement areas that afford little or no opportunity for economic activity).

In this framework, the ICRC thus pays particular attention to the rural production system inherent in Africa, based on agriculture and livestock rearing.

The ICRC's support to plant production has gained considerable strength over the past decade or so in the form of specific agricultural interventions. There is now an intention to extend this approach to animal production also, specifically in terms of responding to the consequences of conflict on livelihoods.

The livestock issue also fits within the regional framework, as populations under scrutiny migrate extensively throughout the region according to seasonal patterns, and a regional approach to their observed needs therefore makes obvious sense.

In August 2002, the ICRC observed that its understanding of the livestock owning population segment (and the related tension and/or conflict) was inadequate. On the other hand, ICRC response mechanisms were considered appropriate with respect to sedentary populations, thanks to a sounder understanding of this category. Reducing this “knowledge gap” was considered essential in the global effort to improve the ICRC's impact among pastoralists. In view of incomplete and conflicting information on the topic in particular, the ICRC recognised the need for more specific inputs to livestock related emergencies in the region, and commissioned a study. The study began in June 2003 accordingly.

1.8. The Regional Livestock Study

1.8.1. Purpose

The main aims of the study were twofold: to provide a comprehensive picture of the current livestock/pastoralist situation and anticipated developments, and to design and submit a proposed course of action for the ICRC at regional level.

1.8.2. Methodology

The study documents the following:

- The changing role of livestock in agro-pastoralist, farmer and nomadic pastoralist systems;
- Any current livestock related tension or conflict elements, and likely future developments;
- Alternative support mechanisms for these livelihoods (beyond direct livestock interventions).

The work was achieved over a nine-month period through a process of literature review, meetings with key ministries, organisations, institutions and individuals dealing with pastoralism in the Horn of Africa. This process was followed by field visits to assess the practicality of proposed interventions.

The main theme of the study was to document emergencies amongst livestock owning communities caused by conflict, and decide on how best to address them. Time and effort was also devoted to studying emergencies caused by other factors such as drought, flood, pestilence, market access and trade embargoes that may also fuel tension or conflict.

During times of stress or conflict, women and children suffer the most and drop out of the pastoral system first.

CHAPTER 2

Background to Pastoralism, Agro-Pastoralism and Livestock Husbandry Systems

2.1. Description of Pastoralism and Pastoralist Systems

What defines a pastoralist or pastoralist system? Wilson recently defined⁴⁷ pastoralist societies in Africa as deriving more than 50% of their total income, or more than 20% of their total food energy, from livestock or its products. Swift⁴⁸ describes pastoralists as deriving at least 50% of their food and income from their livestock. Baxter describes pastoralists as “*people who derive most of their income or sustenance from keeping livestock in conditions where most of the feed that their livestock eats is natural forage rather than cultivated fodders and pastures*”⁴⁹.

Swift⁵⁰ identifies an agro-pastoral system as deriving more than 50% of the household's gross revenue from farming, and 10-50% from pastoralism; others consider agro-pastoralists as agriculturalists or cultivators who also keep livestock. Grünewald⁵¹ describes two types of agro-pastoralists:

1. Farmers who keep livestock fed on crop residue and field by-products for a significant period of the year, but also make use of natural pastures, and may periodically have to migrate (e.g. Sudan).
2. Nomads who practice random agriculture when rains are good (e.g. Central Somalia)⁵².

Agriculturalists or crop farmers relying on vegetables, cereals or fruit crops for their main source of income may also own livestock; however, this livestock normally remains on the farm all year round and does not migrate. Farmers who obtain a significant income from their livestock in this way are referred to as **mixed farmers**. They differ from agro-pastoralists by the fact that their animal are fed with crop residue, fodder or produce grown on the farm (or brought to the farm) to avoid long migrations. Whilst crops are the main source of income, the crop-livestock relationship is close and critical. Livestock is important to farmers for the manure it produces to improve crop yields, milk from zero-grazed animals contributes to the household's income or food security, oxen or donkeys may be used for ploughing or transporting the harvest, and livestock would not survive without the feed from crop residue and by-products.

In an ever-evolving world with fluctuating commodity prices and labour markets, and developing management practices and technologies, these defining characteristics are likely to change as time passes. We must recognise that, although livestock is presently core to the survival of pastoralist systems, it is not the only option.

Pastoralism has evolved to enable man to inhabit and survive in harsh and inhospitable environments for centuries. Nomadic pastoralism, maligned by many governments, aid agencies and development

⁴⁷ 1985.

⁴⁸ 1988.

⁴⁹ Baxter, 1994.

⁵⁰ 1988.

⁵¹ 1994.

⁵² Some livestock owners are forced to start cultivating as a last resort when they have lost most of their livestock. Others are encouraged by non-governmental organisations or governments to cultivate in order to “diversify”. The success of cultivation depends on many factors (rainfall distribution, rainfall reliability, soil, topography, geology etc.). However, as a general rule of thumb, and based on the experience and views of other authors (Little et al., 1990), relying on rain-fed cultivation in areas with rainfall of less than 400 mm is extremely risky, and may result in only one harvest every second year. In areas where rainfall is bimodal, success rates are even lower, unless combined with flood irrigation or improved water catchment techniques.

consultants for years, is now beginning to be accepted as a logical method of range utilisation. However, the prejudice ingrained in the minds of many policy makers continues to hamper development and social welfare in pastoralist areas.

Pastoralism is commonly linked to arid and semi-arid lands (ASAL). Drylands comprise 65% of Africa, and are inhabited by 400 million people (two-thirds of all Africans)⁵³. Agro-pastoralism is most strongly established in the temperate highland areas⁵⁴. Of all the Greater Horn of Africa countries, Ethiopia has by far the largest area in this category (almost 60,000 square kilometres, or 5% of the country). Agro-pastoralism is also associated with the highlands on either side of the Great Rift Valley. Descriptions of the different land-use zones and their climatic conditions according to Schwartz⁵⁵ are provided in Table 2.2., with further descriptions of the production systems in Table 2.3. below.

Due to the different climatic conditions prevailing in each zone, the management system and types of animals kept have to vary. Table 2.1 below⁵⁶ lists the ideal conditions for keeping cattle, and compares them to the typical conditions found in the ASAL areas.

Field notes that when temperatures reach 40°C cattle stop eating, movement such as walking to pasture and water are hindered, breeding is interrupted, and milk production drops. The heat-induced loss of appetite can also delay the time an animal takes to reach market weight by a year or more. Obviously in areas with temperatures exceeding 40°C, more heat tolerant animals such as goats and camels will fare better than cows.

Table 2.1. Comparison between the arid lands and the ideal environment for cattle⁵⁷

	Arid conditions	Ideal environment for cattle
Mean annual rainfall (mm)	100-300	More than 500
Temperature range (°C)	25-40	13-18
Relative humidity (%)	40-60	60-70
Wind speed (kph)	20-50	5-30
Solar radiation	High	Medium
Annual potential evaporation (mm)	1,500-2,500	500-1,000

⁵³ United Nations Statistics Division - Common Database (UNCD), 1998.

⁵⁴ Field, in preparation.

⁵⁵ 1993.

⁵⁶ Field, in preparation.

⁵⁷ Source: *ibid.*

Table 2.2. Eco-climatic zones in Eastern Africa⁵⁸

Zone	Climate Type	Rainfall (mm/yr)	Months Without Rainfall	Characteristic Natural Vegetation	Potential Production System
I	humid	> 1,500	0	rain forest	Only limited potential for livestock production, mainly forests
II	sub humid	1,000 to 1,500	2	dry forest or evergreen bush	Intensive milk and meat production with pure bred exotic cattle, wool and mutton production with pure bred exotic sheep; goat milk production (Stocking rate 1TLU/0.25 ha)
III	dry sub humid	800 to 1,200	3 - 5	deciduous bush or thin woodlands	Intensive ranching with cross-bred and pure bred exotic cattle, also dairy ranching; wool and mutton production with pure bred exotic sheep; goat milk production (Stocking rate 1 TLU/1.25 ha)
IV	semi-arid	500 to 800	4 - 7	deciduous thin woodlands (<i>Acacia</i>)	Extensive beef ranching with crossbred and indigenous cattle; meat production with crossbred and indigenous sheep and goats; goat milk production (Stocking rate 1 TLU/2 ha)
V	arid	200 to 500	6 - 9	deciduous thorn bush	Extensive ranching with indigenous cattle, sheep and goats; semi-sedentary pastoralism with cattle, sheep, goats and dromedaries (Stocking rate 1 TLU/7.5 ha)
VI	very arid desert climate	< 200	8 - 11	dwarf shrubs or halophytic species	Migratory subsistence pastoralism with cattle, sheep, goats, dromedaries; sale of immature cattle for fattening and sheep and goats for slaughter; sales of hides and skins (Stocking rate 1TLU/20 ha)

⁵⁸Source: Schwartz, 1993.

TLU - Tropical Livestock Unit

250 kg =

- 1 cow
- 6 goats or sheep
- 0.8 camels.

AAME - African Adult Male Equivalent

- Any adult male over 16 years old = 1 AAME
- Adult females over 16 years old = 0.8 AAME
- Children of either sex less than 16 years old = 0.6

Based on the information in the table above, we can compare how much land a family requires in each of the eco-zones to subsist off livestock alone. Sandford and Habtu⁵⁹ estimate that one African adult male equivalent (AAME) requires an absolute minimum of four tropical livestock units (TLU) in order to sustain a livestock based livelihood. Thus an AAME living in a sub-humid eco-zone 2 would require access to a minimum of 1 ha⁶⁰ to maintain his animals all year. An AAME living in an arid eco-zone 5, on the other hand, would require 30 ha⁶¹ to support the same number of animals all year. **If we estimate the average pastoralist family at 5 AAME, then it follows that each family requires a minimum of 150 ha⁶² in order to keep its minimum number of animals alive.**

If a given household wishes to own more animals, and not be consigned to the poor wealth category, it will need to secure access to a bigger area of land. Beyond a certain number of animals, this means that the household will need to be mobile or nomadic in order to move its animals into areas with sufficient pasture.

The reason more land is required to support one animal in arid and semi-arid lands is the lower availability of vegetation in such areas. Table 2.4 on the next page shows the amount of dry matter (vegetation) produced on the natural rangeland in Eritrea for different rainfall levels.

⁵⁹ 2000.

⁶⁰ 4 TLU x 0.25 ha per TLU = 1 ha.

⁶¹ 4 TLU x 7.5 ha per TLU = 30 ha.

⁶² 4 TLU x 7.5 ha per TLU and 5 AAME per family = 150 ha per family

Table 2.3. Pastoral Production Systems in Africa ⁶³

Traditional Systems	
Agro pastoralism Zone III and IV	combining crop production and grazing of domestic stock on individually owned and on communal land in the immediate vicinity of a permanent homestead for subsistence and marketing
Sedentary pastoralism Zone IV	grazing individually owned domestic stock on communal land in the vicinity of permanent homesteads throughout the year
Semi-sedentary pastoralism Zone IV and V	grazing individually owned domestic stock on communal land in the vicinity of a permanent homestead for part of the year and long distance movement of the herds during the wet season or growing period
Migratory pastoralism (Nomadism) Zone V and VI	grazing individually owned domestic stock on communal land and moving herds and homesteads as seasonal forage supply demands

Modern Systems	
Commercial ranching	grazing domestic stock on individually owned land for marketing
Group ranching	grazing domestic stock on group owned land for subsistence and marketing
Contract grazing	grazing individually owned domestic stock on contracted land

Table 2.4. Production Figures for Natural Rangelands in Eritrea ⁶⁴

Rainfall (mm)	Total DM production (kg/ha)	Carrying Capacity (ha/TLU)
100	NA	over 20
200	450	17
300	675	10
400	900	7
500	1,125	6
600	1,130	4

The above has explained why livestock production systems in the Greater Horn of Africa (GHA) can be sedentary, semi-sedentary, agro-pastoral or pastoral. Agro-pastoral and pastoral livelihoods do require varying amounts of mobility and movement (nomadism), and it is often this movement that leads to tension and conflict.

⁶³ Schwartz, 1993.

⁶⁴ Food and Agriculture Organisation, 1999.

Most livestock keepers in the GHA are agro-pastoralists or pastoralists, and in the current ICRC concern areas (see Chapter 3), all livestock owners are agro-pastoralists or pastoralists. This report therefore concentrates on the agro-pastoral and pastoral systems only.

Within these “traditional” livestock production systems, Field⁶⁵ has recently described three energy extraction pathways used by pastoralists:

1. The reliable pathway represented by dwarf shrub-camel-milk-humans;
2. The opportunistic pathway involving grass-cattle-milk-humans;
3. Contingency conversion of small stock into meat and convertible currency for the purchase of sugar and grain.

These different extraction systems will be detailed in Chapter 3, which discusses the changing role of livestock. This alternative thinking on pastoral systems may explain why pastoralists behave as they do.

The arid and semi-arid lands of Kenya constitute 80% of the country's land mass and support about 25% of the nation's population. In spite of the limitations listed above and in Chapter 4 (Problem Analysis), the Kenyan Government estimates that as much as 30% of the country's future economic growth will come from the arid regions⁶⁶. Breaking down the barriers and prejudice against pastoralism can boost production. In Mongolia for example, far from being “the poor partner”, the pastoral sector provides over half the GDP and 40% of total exports, and its literacy rate exceeds 90%⁶⁷.

Traditionally, pastoralism provided a sustainable livelihood for a large number of people and reduced displacement and rural exodus. Currently, however, pastoralism is perceived by policy makers and governments to be primitive. It is under threat from unsympathetic national social and land use policies, resulting in restrictions on public movement leading to environmental damage, destitution and dependency. Many authors and development agencies firmly believe that pastoralism, in its various forms, is the most logical form of land use in arid and semi-arid land (ASAL) areas; they are therefore committed to strengthening appropriate pastoralist systems in the context of the modern world. As will be seen later in this chapter, planning to help pastoralists overcome constant shocks is core to any intervention.

Basing management of the pastoralist system on livestock numbers, animal and human food requirements, the edible vegetation produced in response to different amounts of rainfall, and the size of human population does not work in Africa. This system works for Western Europe, North America and the Mediterranean where:

- Rainfall is high, regular, reliable and well distributed;
- Farms are fenced;
- Water points are well distributed;
- Grasses are green;
- Market prices are stable, and animals of high value;
- Veterinary services are effective;
- Chances of livestock theft or predation are low;

⁶⁵ In preparation.

⁶⁶ Duncan et al., 1994; cited in Bush, 1997.

⁶⁷ Potkanski, 1994.

- Farmers' children are educated, and find jobs in the towns and cities;
- Farming is profitable enough to save into pension schemes for retirement.

In Africa, none of the above conditions exist. In the lowlands and ASAL areas of Africa the following is typical:

- Low, poorly distributed and very unreliable rainfall (i.e. in a *normal* year a **little** rain **may** possibly fall in **parts** of a certain area for a **short** duration);
- In areas lying within ten kilometres of permanent water points - or areas having experienced good rains the previous year - most of the grass has been eaten, and only plants and seeds of the plants that cannot be eaten remain;
- Seeds from unpalatable plants germinate year after year, and further reduce the available amount of edible vegetation;
- Most areas lie more than 40 kilometres from reliable water sources - too far for cattle, sheep and goats to reach comfortably;
- Market prices vary on a monthly basis, contingent upon the local price of cereals or imported (free or subsidised) famine relief grain;
- Export markets are closed due to disease restrictions and trade tariffs or embargoes;
- Veterinary services are limited, and diseases are rampant;
- Animals must be protected against predators and theft, forcing livestock owners to cut down good forage trees to build thorn fences for night pens;
- Alternative job opportunities are scarce;
- Pension funds are non-existent, and old and young depend on the milk, meat and sale value of their animals.

2.2. Current Thinking on Pastoralism

“Pastoralists at a Crossroads”, *“Pastoralism in Transition”*, *“Living with Uncertainty”*, *“New Directions”* are all titles of recent papers on pastoralism. On the other hand, old fashioned views that pastoralists were irrational, liked to migrate, did not sell their cattle as they valued them above all else, were violent and primitive (among others) are fading. Integrating all the modern needs of pastoralists based on subsistence livestock production alone is not possible.

Between the 1950s and the 1980s most policy makers and programme implementers tried to align pastoral livestock systems in the Horn of Africa with American and Mediterranean ranching systems, based on feed requirements, primary production (forage growth), carrying capacities, stocking rates and sustainable forage off takes⁶⁸. Most western scientists and programme managers could not understand how the pastoral system had survived so long. Whilst drought, conflict, flood, pestilence and other shocks regularly struck pastoral systems, the key component - livestock - always managed to recover over time.

Warnings about overgrazing and degradation have been issued for many years. Destocking programmes actually began in northern Kenya as early as the 1950s, and concern persists as to the sustainability and long-term potential of livestock in these ASAL areas. Kherkof states that *“in many arid and semi-arid lands severe destocking is required and that tree planting and erosion control alone cannot be implemented enough on a sufficiently large scale and rapidly enough to be effective”*⁶⁹.

⁶⁸ Refer to Table 2.4 above for the example of carrying capacities in Eritrea.

⁶⁹ Kherkof, 1990.

There is now ample evidence of the decline of pure pastoralism or, in other words, that “there are fewer families who are now totally dependent on livestock for providing all their daily needs”. This could indeed be termed a decline, but it is also just an aspect of the change undergone by pastoralism. Traditional pastoralism is indeed dying, but pastoralism is probably still the best method of utilising these remote, arid rangelands from which very little else can be used. Thus pastoralism is dynamic: it will change, but continue in a different form.

The reason for livestock systems surviving shocks better (or recovering faster) than any of the scientists and managers could understand is that pastoralists (livestock owners) are good livestock keepers. Their mobility allows them to exploit little opportunities in an ecosystem that might never feature in a range management training manual. For instance, mobility enables animals to:

- Migrate to areas where minimal rainfall has greened the perennial grass or germinated the annual grass, herbs and dwarf shrubs;
- Move to riverbanks to scavenge the reed beds;
- Climb mountains or into gorges accommodating dry grass, which most animals will not have reached recently;
- Move to dry riverbeds where Acacia pods are ripe and dropping from the trees;
- Move out of areas where diseases are known to occur at certain times of the year;
- Travel long distances to special salt springs or pans and consume the salt, and thus facilitate the expulsion of internal parasites;
- Benefit from mineral and vitamin cures.

The following quote from the draft Kenya Livestock Policy document⁷⁰ summarises much of the current thinking on pastoralism as a livelihood and land use system: “*Traditional nomadic and transhumant pastoral systems, based upon communal grazing in the ASALs are well adapted to the annual and seasonal variations in rainfall and vegetation. Mobility is an essential strategy if the*



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pastoralists are to access water and grazing and avoid a build up of worms and attacks by tsetse flies, biting midges and other pests. The migration, however, offers logistical problems to the provision of veterinary services when animals are in inaccessible and often highly insecure areas”.

Many livestock and their owners inhabit extremely inhospitable “non-equilibrium” environments.

⁷⁰ 2002



Pace, Somalia

In non-equilibrium environments, shocks - such as this mass mortality due to a heavy downpour at the end of the dry season - are expected and increasingly frequent.

2.3. Threshold Values and Pastoralist Survival

The concept of threshold values can be confusing because authors use different reference units. Some authors use livestock numbers (not differentiating between goats, cattle, camels, chickens, etc.) per person, others number of tropical livestock units (TLU) per household, others African adult male equivalent (AAME).

A threshold value⁷¹ is the number of animals required to support a person or a family if that person or family was to rely totally on animals for all his or their needs. Depending entirely on an animal for all one's needs means that the animal(s) either produce enough milk, blood and meat to keep a person well nourished for a whole year, or that the animal(s) can be sold or generate enough income for the person to cover his/her essential needs for the whole year. Essential needs include such diverse elements as food (balanced in quantity and quality), clothing, housing, health care, education, taxes (official or informal), productive asset renewal, etc. (see Chapter 1 above).

Threshold values in use include:

1. Sandford and Habtu⁷² conclude that any household with less than three tropical livestock units (TLU) per African adult male equivalent (AAME) is “famine vulnerable”, and will not survive even in the short-term. Households owning more than 3 but less than 4 TLU/AAME are “livelihood vulnerable”, and may be able to survive in the short-term; to survive the medium-term, however, they will have to sell some of their herd, and will not be able to survive “shocks” in the long-term. They provide four TLU/AAME as the “livelihood norm”.

⁷¹ Threshold values are useful to calculate how many animals a family would need to restock its herd, to determine if it should receive veterinary vouchers, or whether it should be required to contribute towards costs (cost recovery, payment for services). They are also useful in identifying the most shock-vulnerable pastoral areas and families, and in defining intervention areas, modalities and beneficiary numbers.

⁷² 2000.

2. Others, quoted in Niamer-Fuller⁷³, state that 50 livestock in arid areas (or 30 livestock units in semi-arid areas, because of the latter's higher productivity) is the threshold below which a purely pastoral family cannot survive across drought cycles.
3. The pastoral viability threshold in the western Sahel is estimated to be 3 TLU per person⁷⁴, where households owning a higher proportion of small stock are better off in terms of financial income.
4. A 2002 ICRC Assessment in Gash Barka, Eritrea, recorded that the numbers of livestock required for economic viability within an agro-pastoral livelihood are 20-25 sheep or goats (with more females than males), 1-2 cows and a beast of burden - a total of 5-7 TLU per household.

Examples of actual threshold values found in the field include the following:

- Extrapolating figures for Somalia⁷⁵ shows that the nomadic pastoral population owns 4-6 TLU per person (24-36 TLU per household). This shows them to be relatively viable as a pastoralist unit, even if shocks occur.
- In their 2000 study in Ethiopia, Sandford and Habtu estimated the livestock holdings per pastoralist were 3.98 TLU in Afar, 7.66 in Borena, and 3.39 in Somali Region⁷⁶. This shows that the Afar and Somali areas are vulnerable to shocks, and require external aid if families are to continue within pastoralism, whilst Borena is relatively rich and livelihood secure.
- Studies in Afar, Ethiopia⁷⁷, show that from 1998 to 1999 the *per capita* TLU holding decreased from 4.1 to 2.25.

More figures on actual livestock holdings and threshold values will be found in Chapter 3.

Discussions held during the course of this study showed that in northern Kenya, Turkana and Samburu pastoralists estimated a flock of 70 small stock to be the minimum size to support a family (i.e. 2.9 TLU per AAME)⁷⁸. In Darfur, Sudan, Al-Massar⁷⁸ indicate that 40-50 camels are necessary to maintain an average household of 7.7 people over the long term (12 TLU per AAME)⁸⁰. The difference between the two areas is perhaps a consequence of the average rainfall in Darfur ranging from 0-700 mm per annum, whilst the rainfall in Samburu and Turkana Districts is higher, and goats are more productive than in Darfur; it is also possible that some crop growing and alternative sources of income exist.

Wisner⁸¹ estimates that a nomadic Somali family (size unknown) needs 28 camels for subsistence.

The Pastoralist and Environment Network in the Horn of Africa (PENHA)⁸² estimates that in Djibouti, around 50 goats are needed to maintain an average family of 6 members. The daily protein

⁷³ Various authors in Niamer-Fuller, 1999.

⁷⁴ NRLP, 1984 in Thebould et al. 1995.

⁷⁵ European Commission, 1999.

⁷⁶ Sandford and Habtu (2000) use slightly different figures for TLUs as they average the weight of animals across age and sex categories. Thus 1 cow = 0.7 TLU; 1 sheep or goat = 0.1 TLU; 1 camel = 1.0 TLU.

⁷⁷ Taffesse, 2001.

⁷⁸ This indicates that these families have underestimated and are either unsustainable in the long term, or rely on alternative (non-livestock) sources of food or income.

⁷⁹ 2003.

⁸⁰ Highly able to survive most shocks in the livestock system.

⁸¹ 1992.

⁸² 2003.

intake requirement is estimated at 320 grammes (11 oz), and the required daily energy intake 13,000 calories (for the same size family unit). While these targets may be achieved (or nearly) from goats during the rainy season, they cannot during the dry season. It is likely that the pastoral community in Djibouti lives on far less than the recommended levels, or that they are receiving aid from elsewhere.

Available figures show that:

- If human survival relies on livestock products alone, then in many areas it would be impossible for the pastoral livestock system to continue indefinitely.
- The differences in threshold values suggest that most pastoral households have had to diversify significantly in order to survive, or that many are on the brink of extinction.

Herd composition (goats, sheep, cows or camels), shocks, losses and recovery rates

Using computer models based on Dahl and Hjort's herd growth theory, Sandford and Habtu⁸³ predicted that a household having lost 50%, or owning only 50%, of the TLU required to maintain their independence from food aid (i.e. 4 TLU/AAME), would require the following recovery times after the shock to achieve self-sufficiency:

- 3 years if they owned only goats;
- 4 years if they owned only sheep;
- 10 years if they owned only cows;
- 12 years if they owned only camels.

These figures are based on natural herd growth, and do not include animals increases through purchase or raiding. Obviously such long recovery times leave pastoralists very vulnerable to other shocks that usually occur every 4 to 7 years.

However, data from Ethiopia shows that some animal species are more susceptible to shocks than others. Using the mortality rates registered in shock years in Ethiopia, and multiplying the mortality rates by the number of years a herd requires to recover (from Dahl and Hjort above) the following recovery index is found:

	Cattle	Sheep	Goats	Equines	Camels
Recovery index	465	86	62	NK	118

The higher the recovery index, the riskier the dependency on that species. The index showed that in Ethiopia keeping cattle was the most risky.

2.4. Equilibrium and Disequilibrium (Non-Equilibrium) Systems

A new terminology has evolved to help understand and manage arid and semi-arid lands (ASAL) livestock systems, especially in response to drought. However, the understanding and principles are the same whether the emergency (or shock) is associated with drought, conflict or any other catastrophe. There is a need to distinguish between *equilibrium* environments, where range resources are affected by livestock densities, and *disequilibrium* environments, where resource levels are overwhelmingly influenced by rainfall variability and are little affected by the impact on grazing⁸⁴.

⁸³ 2000.

⁸⁴ See review by Behnke and Scoones, 1992 and a summary by Sandford and Habtu, 2000 in Annex 2.1.

To simplify:

Equilibrium environments are those found in Europe, America and the northern Mediterranean basin - where range resources are affected by livestock densities or the number of animals.

Disequilibrium environments are those found in Africa - where the number of animals is less of an influence than rainfall, drought or warfare, and the ability of the herds to move to exploit opportunities.

Managing *equilibrium* environments is much easier than managing *dis-equilibrium* environments. In *equilibrium* environments the management tool is simply increasing or reducing animals numbers. Traditional equilibrium systems actually under-graze the pastures and effectively reduce productivity. In *disequilibrium* environments it is more a case of maintaining production but controlling human population growth, and diversification and emigration.

Most rangelands in the Greater Horn of Africa are in *disequilibrium*.

The Tracking Strategy:

Matching animal numbers and feed supply.

There is a need for management systems in both environments, but more particularly in disequilibrium environments it is necessary to offer flexible responses to changes in the resource base. This is called the tracking strategy (matching animal numbers and feed supply) and/or opportunistic management, and is associated with drought contingent programming with different responses and interventions at different periods of the drought cycle. Development interventions to increase productivity should focus on the soft periods of the cycle (when conditions are good), whilst during the harsh periods pastoralists are “helped to cope”. This results in a need for a proper balance in project design between risk minimisation and increasing productivity.

No pastoral development or emergency response blueprints exist. Key issues and management systems differ between areas, and between groups within the same area, therefore project designs must differ. To appreciate this, stakeholders⁸⁵ and planners need a better understanding of pastoralist systems; this can only be achieved by research and living the pastoralist experience.

Therefore, any regional policy for livestock interventions must incorporate the three following principles:

1. Interventions must integrate the **tracking strategy**;
2. Interventions will differ according to the different stages of the cycle or crisis;
3. The different status of the livestock system both in time (season) and space (country/area).

Without a full understanding of these principles, livestock interventions may appear to be contradictory, random and illogical. It is quite possible, for example, that destocking and restocking are required at the same time, but in different parts of the same country.

⁸⁵ Including donors, non-governmental organisations and governments.

“Pastoralism is not only an occupation but also a vocation”.

Baxter, 1994.

2.5. Constraints and Opportunities

At present, livestock production continues to be the backbone of the pastoralist system, and is still a key component in agro-pastoral systems, second only to crop production⁸⁶. It thus needs to be supported and strengthened in order to cope with the vagaries of the environment.

The following suggestions are included to provide an understanding of the major issues in dealing with, and responding to, difficulties in the disequilibrium situation prevailing in the pastoral and agro-pastoral areas of the Horn of Africa. Including these issues - or at the very least understanding them - is essential to ensure that emergency interventions do not undermine tracking strategy goals.

Issues requiring further identification or research are included in the relevant sections below.

Marketing

Livestock marketing remains a bottleneck to improvement. A “tracking” livestock marketing strategy is required, including market information, sales, transport subsidies, emergency purchase and destocking, and possibly the banking of livestock capital.

Livestock banking is a philosophy that is yet to succeed. In theory, governments, donors or agencies purchase livestock during stress (or shock) periods, keep the animals alive through supplementary feeding, and sell them back to their owners during recovery periods. There are similarities between livestock banking and “animal holidays” or “asylums”, but the practicalities and economics of such a system and a cost comparison with other possible interventions are yet to be determined. Questions remaining to be answered include the following: What form can pastoralist banking take? How can “bank account interest rates” compete with “herd growth interest rates”? How can the system be made secure in conflict zones, yet still be accessible to illiterate and mobile livestock owners?

Diversification

To support and supplement the above, it is necessary to diversify income sources and include short-term steps such as employment generation. Long-term steps to balance rising populations and shrinking resources must also be taken.

There is an urgent need either to remove people from pastoralism through diversification and alternative livelihoods, or to reduce the number of people entering pastoralism through family planning and education.

There is need to further investigate available alternative livelihoods or production systems in the pastoral and agro-pastoral environments of the Horn, and the potential for value-added products.

⁸⁶ In fact the crop and livestock relationship is interdependent and critical. Crops require animal power for land preparation (ploughing) and fertiliser (manure); on the other hand, livestock would not survive if unable to feed on crop residues and by-products.

Capacity building

Institutional and individual capacity building at primary, national and regional levels - mutually complementary and interdependent - is essential for sustainable pastoral development.

Tracking strategy

Pastoralist policies should not attempt to prevent crashes in livestock numbers, but find ways to plan for, and make use of, these inevitable crashes. To do so, stakeholders (including the ICRC) must identify and differentiate suitable emergency and development activities or interventions (responses) between equilibrium and disequilibrium environments in each target area and country.

In the context specific to the ICRC, the tracking strategy must span the entire “Crisis Cycle⁸⁷” and the different Modes of Intervention⁸⁸.

Tracking strategies require careful intervention and withdrawal, especially in terms of conflict and drought contingency programming. However, necessary indicators and likely timescales remain unclear. A matrix of intervention, impact and exit indicators, and exit strategies is required for each concern area.

Settlement and urbanisation

The role of urban growth in pastoralist communities must be considered: is it an opportunity or a threat? Until recently sedentarisation has been seen as a threat leading to overgrazing and destruction. In some instances, it may be beneficial by facilitating the access to services, labour opportunities and markets for animals and animal products. With the shift to urban settlement, the potential new role of pastoral women in decision-making and policy should be exploited.

Settlement, and its impact, must be considered in two situations:

1. Concentrated settlement (i.e. urbanisation);
2. Permanent but rural settlement, that is low-density and well-spaced (distributed).

These two types of settlement imply different impacts.

Encouraging diversification into towns may require more infrastructure such as improved water supplies, among others. The links between livestock and water go beyond just animals, and water development programmes must incorporate the review of their effects (positive or negative) on urbanisation.

As mentioned above, the potential gains from urban growth for pastoralists need to be investigated, as do its threats and costs. A “SWOT” (strengths-weaknesses-opportunities-threats) analysis of sedentarisation is required. Its results should be used to minimise the negative impacts of internally displaced persons' camps and settlement, and to maximise the opportunities of sedentarisation for livestock owners.

Threshold values

It is known that if flocks fall below a critical mass, this results in rapid decapitalisation that is very difficult to reverse. However, can the cost of conserving or protecting this nucleus be compared with the costs of supporting (or finding) a sustainable alternative livelihood?

⁸⁷ See Chapter 1, Fig. 1.1.

⁸⁸ As defined in the ICRC's Assistance Policy (ICRC Doctrine 2004/49): substitution (relief), support (e.g. rehabilitation and reconstruction), persuasion (e.g. humanitarian dialogue) of relevant authorities, and mobilisation of relevant stakeholders.

Cost recovery

Non-humanitarian oriented organisations find it difficult to justify the high cost of providing technical services in low population density regions. Therefore, pastoralists need to contribute much more to this cost, and the privatisation of such services must be encouraged. Cost recovery in humanitarian emergencies raises many moral and philosophical questions. This study does not intend to provide strict instructions on the topic, but instead discusses the long-term benefits of cost recovery and beneficiary contribution (as opposed to free services). Box 2.1. below highlights some recommendations of cost recovery (or beneficiary contribution) for agricultural/livestock support programmes.

Box 2.1. Definition of beneficiary contribution

- Wherever feasible and realistic, beneficiaries of agricultural/livestock support interventions should be required to contribute to their costs;
- This contribution could be re-injected as cash into the community (e.g. revolving fund systems, start up capital for individuals, or credit);
- The contribution can also be in kind (rather than in cash): e.g. recipients committing to specific public utility work (ICRC Angola);
- The recipients should draft the modalities of such contributions (form, amount, deadlines, persons in charge, control mechanisms, etc.);
- The effectiveness of the actual refund or contribution must be closely monitored. Cost recovery projects that don't actually recover cost are extremely damaging in the long-term as they encourage a “free-handout” mentality and an idea that all future cost recovery and credit programmes will also be free, thus encouraging non-payment for services.

Education

The recognition and adoption of appropriate education will contribute significantly to addressing the above.

Dialogue and dissemination

The slow adoption of lessons learned by policy makers often stems from ineffective dissemination. New and better dissemination methods need to be devised, including farmer / herder participatory research (FPR).

Pastoralist participatory research possibilities and priorities include the following: “on-herd” trials, studies on long-term economic security of agro-pastoralism vs. pastoralism, and energy input/output from women's communal plots compared to individual plots.

Participation and community ownership

The overall goal is to obtain long-term sustainability of pastoral and agro-pastoral livelihoods. This requires participation at all stages: identifying, planning, organising, (co-)financing, implementing, monitoring and evaluating. If this is initiated successfully, then organisation, economic and social acceptance follow automatically. In any project, exit strategies (and timing indicators) must be identified from the outset.

Concluding remarks

The pastoralist system must be managed as a *disequilibrium* environment. However, the higher frequency of recurrent droughts is undermining the asset base of pastoralists, making them more susceptible to other shocks (e.g. trade bans, changing markets, loss of access, disease, etc.).

This view does contribute to the current image of pastoralists as being on the inevitable decline unless a number of parameters are met. These include the control of the overall human and livestock population, pressure on the environment, enabling livestock owners to reduce their families' dependency on livestock, finding alternative income sources and livelihoods, and improving the local and overall environment's productivity for pastoralists in terms of primary resources and marketable products⁸⁹. A final question relates to whether the disequilibrium theory takes increasing poverty, global warming and environmental destruction sufficiently into account.

2.6. Definitions of Requirements for the Pastoral and Agro-Pastoral Livestock Systems in the Horn of Africa

The different pastoral production systems have been described above. Some of their key characteristics include the following.

Dynamism - disequilibrium systems - adjusting and adapting to varying seasons, pastures and other conditions. In a *dynamic* system, changes have to take place; some changes are positive and others are detrimental. For example, the impact of changing from subsistence to commercial pastoralism in Somalia and (likely) Sudan will ensure the continuation and success of the livestock system. However, the change from filial relationships and sharing to a more individualistic interest will increase competition, fray traditional coping mechanisms, reduce access and affect the production system.

Communality of resources - sharing pasture, water or mineral rich soils with other clan or tribe members.

Filial ties - strong relationships between family and clan members, often reinforced by gifting or social exchanges.

Mobility - moving animals from areas of depleted pasture to areas with better pasture. Other reasons for mobility include avoiding conflict, pests or disease, or fulfilling social and religious needs.

The moral economy - gifts, loans and entrustments provide the basis to rebuild herds following a shock. The moral economy includes respect for others resources.

Opportunism - taking immediate advantage of opportunities to avoid taxes by migrating, moving into new pastures before other tribes or clans, selling poor quality stock first, etc.

Opportunistic stocking strategy - maintaining excess animals in good years to ensure survival in the crashes of bad years.

More discussion on these issues, and a complete list of constraints to livestock keeping are provided in Chapter 4, the Problem Analysis.

⁸⁹ For instance, linking emergency interventions, cash-for-work, etc. to environmental issues such as erosion control, tree planting, and fodder production, among others.

“Most organisations engaged in emergency interventions are still providing food relief to tens of thousands of people two years later.”

Oxfam in Hendrickson, 1992.

“Recovery times (based on herd growth rates and mean shock year mortality rates) for cattle, smallstock and camel herds are ten, two and four years respectively. Shock year frequency is increasing with shocks expected every four to five years.”

ICRC Study findings.

Case study: Causes of the emergency in Ethiopia in 2000

(Sandford & Habtu, 2000)

Categories of cause identified by the authors include the following, among others:

- **Economic:** Poor asset base.
- **Natural:** Drought.
- **Social:** High population growth rate.

CHAPTER 3

Current Situation and Future Trends in Pastoralism and Agro-Pastoralism in the Horn of Africa

3.1. Current Situation

Chapter 1 has provided an overview of pastoralism and agro-pastoralism and the associated livestock issues in the Greater Horn of Africa. This chapter on the other hand documents the current situation in each country in more detail by summarising the individual Country Profiles. It provides an outline of the uses of livestock across the region, the changes in the roles of different species, and it tracks the current trends and changes by comparing livestock holdings across the countries.

3.2. Main Uses of the Different Livestock Species

Livestock can be used for subsistence or commercial purposes (see Table 3.1 below); most livestock keepers in the Greater Horn of Africa (GHA) are subsistence herders. Evidence suggests that livelihoods using animals for more commercial purposes are safer than those depending on livestock purely for subsistence, although even commercial livestock producers are at risk from trade bans and embargoes. Commercialisation can be considered a diversification strategy within the livestock system.

Somalia, in spite of its lack of government at the time of writing, is perhaps the only GHA country that has successfully transformed its national herding strategy more towards commercial livestock keeping than traditional subsistence. Djibouti may, as a result of external marketing initiatives, also shift towards more commercial livestock keeping.

Table 3.1. Subsistence or commercial uses of livestock

Traditional subsistence uses of livestock	Commercial uses of livestock
Milk consumption	Sale
Meat consumption	Hire for transport
Using skins for shelter and clothing	Sale of milk
Blood as a food	Sale of meat
Marriage and social obligations /traditions	Sale of skins
Paying fines	Hire for ploughing
Gifts and bonds	
Transport of water, goods or family	
Ploughing and cart pulling	
Riding	
Grinding and threshing	
Producing manure for fields	
Producing manure as fuel	
Capital investment and savings	

Different livestock species are also used for different purposes between the different ethnic groups and the different production systems. With obvious variations between different locations, it can **generally** be said that:

- Camels are mainly used for milk production and transport;
- Cattle are mainly used for milk, trade, meat and transport;

- Sheep and goats are mainly used for meat, milk and trade;
- Horses and donkeys are used for transport, although some sections of the Turkana tribe in Kenya both milk and eat their donkeys.

Chickens and poultry are important to some ethnic groups, but many pastoralist families such as the Rendille, Gabbra and Samburu do not traditionally eat eggs or poultry.

Livestock sale rates vary considerably depending on prices, needs, and available markets. Annual off take (sales and consumption) amongst Kenyan Rendille and Gabbra families was 7 to 15 sheep and goats per house⁹⁰ in the 1980s. In Afar households in Ethiopia, on the other hand, it is 35 sheep and goats⁹¹.

Social obligations play a major role in livestock husbandry. For example, among nomadic Dulbahante Somalis in Somaliland 45 years ago the average bride price (*yarad*) was 23 camels (ranging from 3-50) with the occasional addition of cattle, small stock, horses, rifles and money⁹². High bride prices are often stated as a cause for livestock raiding and conflict. Field also notes the increase of camels slaughtered in butcheries, which may reduce the amount of sharing of meat - an important social binding.

The Turkana tribe of Kenya have been known to remove the tails from live sheep in times of extreme need (e.g. when escaping with stolen animals), and to consume the raw fat as an instant source of energy.



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Breeding:

In the Greater Horn of Africa, most livestock are kept for breeding. Goats provide a convenient source of cash, meat and milk.

⁹⁰ O'Leary, 1983.

⁹¹ ICRC 2003.

⁹² Lewis, 1994 in Field, in preparation.



ICRC/Piers Simpkin

Marketing:
Livestock marketing is key to the future of livestock owners in the Greater Horn of Africa. Sheep are important in the export trade.



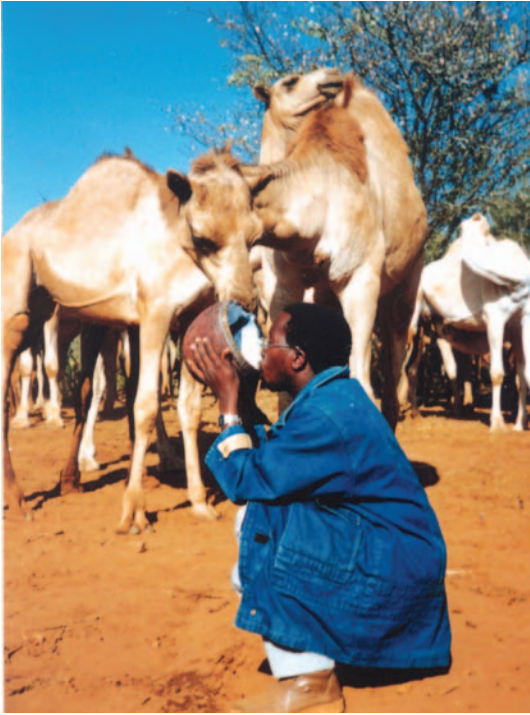
ICRC/Piers Simpkin

Marketing and trade:
The improved marketing of all species is vital for the future of livestock owners in the Greater Horn of Africa.



ICRC/Piers Simpkin

Riding:
The riding of animals is more common in the northern areas of the Greater Horn of Africa than in the south.



ICRC/Piers Simpkin

Milk:

Although milk is part of the staple diet, livestock owners are increasingly forced to sell it to purchase cheaper sources of energy (e.g. cereals).



ICRC/Piers Simpkin

Meat:

Meat is an important source of protein, and also a valuable trade commodity.



ICRC/Piers Simpkin

Chickens:

The importance of chickens and poultry is increasing among poorer livestock owners and displaced persons.



ICRC/Piers Simpkin

Transport:

In some areas, transporting goods by animals is cheaper than by mechanical means.



*Manure:
Manure is an important source of both fuel and fertiliser, especially in Eritrea and Ethiopia.*

ICRC/Piers Simpkin



*Cultural practices and subsistence:
Animals continue to play a vital socio-cultural role for many livestock owners. The skins and fat are widely used to produce clothes and lotions, and the animals themselves are used to pay fines or to marry.*

ICRC/Piers Simpkin



*Ploughing:
Animal traction can increase crop yields through early land preparation.*

ICRC



ICRC/Piers Simpkin

Tourism: Some livestock owners are diversifying their income by using animals for tourism.

3.3. The Changing Role of Livestock

To illustrate the importance of livestock for pastoralists, research⁹³ shows that milk contributes 22-80% of daily energy requirements for Somalis in Somalia, 55% for Borans in Ethiopia, 62% for Turkana, 66% for Ariaal and 75% for Rendille pastoralists in Kenya. Bonfiglioli⁹⁴ estimated that milk alone provided 88-100% of protein needs for many of the 16.5 million pastoralists in the Horn of Africa.

Milk and meat may still contribute significantly to the energy and protein intake of some pastoralists at certain times of the year, but most pastoralists have definitely operated a change in diet. A shift from milk and meat consumption towards cheap energy sources (especially cereals and, to a lesser extent, sugar, pasta and rice) has been noted. Pastoralists are realising it is cheaper to sell animals and buy cereals than to rely on the animal-based protein and energy sources of meat and milk. There are several reasons for this:

- Milk and meat are relatively expensive sources of energy and protein;
- Access to markets to buy cereals, sugar and other foods is easier;
- Free supplies of cereal are often available (famine relief);
- A change in lifestyle.

Commercialisation is increasingly required; it is likely to provoke more changes in the roles of different livestock species, and changes in the livestock species and herd composition.

⁹³ Various authors quoted in Catley, 1999.

⁹⁴ 1992.

Somali livestock owners have changed from keeping the traditional drought resistant camel to the riskier rearing of more commercially viable (lucrative), drought susceptible cattle and sheep. The reason for this is the greater market demand for sheep and cattle than for camels.

Urbanisation, globalisation and changes in tradition in some societies have all led to cash replacing livestock for marriage. Similarly, the use of camels for transport has been replaced by pick-up trucks amongst the Rashaida in Eritrea.

Research in Ethiopia (Table 3.2 below) has defined the proportion of energy provided to a household from different livestock species, and the number of animals needed to maintain one person for one year. Results show that securing the annual energy needs (from milk) for one person under normal rainfed conditions requires 33 goats, 49 sheep, 3 cows, or 1 camel.

Table 3.2. Milk Yield vs. Number of Animals Required to Support One Person ⁹⁵

	Adal Goats	Adal Sheep	Barka Cows	Adal Camels	
Number of animals tested	9	14	14	1	7
Average body weight (kg)	23.5	27.3	350	360	
Average 90 day milk yield (kg) (rainy season)	92.3	45.6			
Average 300 day milk yield (kg) (irrigated pasture)			1,410		
Average 365 day milk yield (kg) (irrigated pasture)				3,132	2,442
Average daily yield (kg)	1.03	0.51	4.7	8.7	6.69
Av. daily yield as % of body weight	4.38	1.48	1.34	2.42	1.86
Amount of milk for one man/day/energy	4.2	3.1	2.7	2.6	2.6
Amount of milk for one man/day/protein	1.64	1.23	1.48	1.2	1.2
Number of animals for one man/day/energy	4.1	6.1	0.57	0.3	0.39
Number of animals needed for all year supply of energy under rainfed conditions	32.8	48.8	2.28	0.6	0.78
Number of animals needed for all year supply of energy under irrigated pasture.	16.4	24.4	1.14	0.3	0.39

3.4. Livestock Holdings and Herd Sizes

Annex 3.1. shows the different herd sizes for the various wealth categories of different pastoralist and agro-pastoralist groups across the Greater Horn of Africa. Livestock wealth varies considerably between ethnic groups. An analysis of these tables shows the threshold values for each household. This can be used alongside a household economy study to determine most appropriate interventions.

⁹⁵ Source: Knoess, 1976.

Although no time series of household livestock holdings has been done (or only sporadically in specific countries), one could track the trends and changes in livestock holding for the different wealth categories, and use this to design a tracking strategy.

Lautze *et al.*⁹⁶ report that herd sizes are declining in Ethiopia. The average herd size for Borana pastoralists has declined from 128 cattle per household in 1981 to 91 in 1997. However, the situation has been worse for the Boran when average herd sizes fell as low as 72 in 1993. Although these figures are now outdated, this information indicates to what level recovery is possible.

A quick analysis of the data in Annex 3.1. and presented in Table 3.3 below shows that, in terms of livestock numbers, middle wealth rank Somali pastoralists tend to be richer than pastoralists in other parts of the Horn. However, this information alone is insufficient for planning needs. Household size figures allowing TLU/AAME calculation, data on income from other sources, and proportions (or the percentage) of wealthy, medium and poor households are also required to prioritise emergency intervention areas and specific interventions further.

Table 3.3. TLUs per household for middle wealth ranking pastoralists and agro-pastoralists in the Greater Horn of Africa.

Country	Year	Area / Tribe / FEZ	Livelihood	TLU / HH	Farm size (feddans)
Eritrea	2000	Gash Barka	Agropastoral	9	NK
	2000	Debub	Agropastoral	5	NK
Ethiopia	2001	Somali	Pastoral	121	
Kenya	1986	NK	Pastoral	37	2002
	1996	Turkana	Pastoral	297*	
		Turkana- Kaaleng	Pastoral	23	
	1996	Turkana	Agropastoral	68*	NK
Somalia	2001	Addun	Pastoral	29	
	2003	Gaalgadud	Pastoral	43	
	2003	Hawd	Pastoral	27	
	2003	Sool and Sanaag	Pastoral	68	
Sudan	2003	Abyie Dinka	Agropastoral	5	1.5

*Figures probably exaggerated

⁹⁶ 2003.

In Eritrea, “households in high rainfall zones that rely on agriculture are more food insecure than those in lowlands that depend primarily on livestock”.

CARE, World Food Programme & Eritrean Refugee and Relief Commission, 2003

3.5. Current and Future (Five-Year) Trends

Predicting trends by using livestock numbers is unreliable as most livestock population figures are only estimates based on old census figures. However the trend⁹⁷ shows cattle numbers increasing in all countries except Ethiopia and Kenya, both experiencing dry conditions. Small stock populations have shown large fluctuations in numbers due to climate, with large increases in good years but crashing in drought years. Sheep are increasing in number except in Kenya, where both sheep and goats have decreased. Somalia also shows a decrease in goat numbers.

Camel numbers and distribution are increasing as a result of their drought tolerance. Camels are now found throughout Kenya and into northern Tanzania, but slow breeding rates and a lack of market limit their true commercialisation. Donkeys and mules are reportedly increasing except in Somalia⁹⁸.

An increasing trend in animal sales is expected across the Greater Horn of Africa - partly because trade bans are being lifted, but mostly because livestock owners are growing poorer, and must sell stock to buy cheaper sources of energy (e.g. maize, rice and millet).

It is likely that more income generation will come from livestock; women selling milk may increase. Existing trends show that most sedentarised women sell livestock and about a third sell milk⁹⁹. Milk marketing has really grown over the last twenty years as a higher proportion of the population is urbanised. Milk sales help both rich and poor, but while the rich sell excess milk, the poor are forced to sell all their milk to buy cheaper cereals, and sometimes children may suffer as their milk sources are sold rather than drunk.

Provided no new livestock bans are introduced, livestock exports are expected to rise in Somalia and Region 5 of Ethiopia. Ethiopian Afar livestock sales should increase through Djibouti, but may be affected by future border closures¹⁰⁰. Much African Development Bank funding is being devoted to livestock marketing in Kenya, but sales are not expected to change significantly in the immediate future.

Drought **will occur** in most Greater Horn of Africa countries within the next five years. Local tension over resources is also likely to escalate, but peace in Sudan¹⁰¹ should benefit livestock owners tremendously by opening markets and providing services backed by donors (United States Agency for International Development). Large donations (African Development Bank and World Bank) are also to be spent in Kenya and Ethiopia, and this should ultimately benefit the livestock owners themselves.

⁹⁷ Field, in preparation

⁹⁸ Food and Agriculture Organisation, 2002.

⁹⁹ Field, in preparation.

¹⁰⁰ The Ethiopian Government particularly has tried to control cross-border smuggling between Ethiopia, Djibouti and Somalia. Most livestock leaves on the hoof, avoiding border check-points so as not to be taxed.

¹⁰¹ Naivasha Peace Process (Government of Sudan - Sudanese People's Liberation Movement/Army).

3.6. Current Actors in the Livestock Sector

Table 3.4. below provides a list of agencies currently involved in research, emergency relief and recovery in the livestock sector in the conflict areas of the Greater Horn of Africa.

Table 3.4. Other national and international actors involved in research, emergency relief and recovery in the livestock sector in conflict areas in the Greater Horn of Africa

Organisation type	Country					
	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
International organisation	AU-IBAR UNDP UNHCR UNICEF WFP	AU-IBAR FAO UNCT UNDP UNHCR UNICEF UNMEE WFP WHO	AU-IBAR-CAPE AU-IBAR-PACE FAO ICRAF ILRI World Bank WFP	AU-IBAR FAO ICIPE IFAD IGAD ILRI NRI UN World Bank	AU-IBAR-CAPE AU-IBAR-PACE FAO LICUS initiative UNCT UNDOS UNDP UNFPA UNICEF UNOCHA World Bank WFP WHO	AU-IBAR FAO IFAD UNDP UNICEF-OLS WFP WHO
Government organisation	Directorate of Livestock & Fisheries in the Ministry of Agriculture, Livestock & Fisheries. The Ministry of Interior & Decentralisation	ERREC, The Animal Resources Department (ARD) in the Ministry of Agriculture, International Cooperation, Macro-Policy and Economic Coordination (ICMPEC)	Pastoral Extension Team, Ministry of Agriculture DPPB/C	ALRMP KARI KETRI Kerio Valley Development Authority (KVDA) Various ministries		Southern FRRA RASS SPLF SRRA SSIM Secretariat of Agriculture Veterinary Department Livestock Council USAID Southern Sudan Agriculture Revitalization Program (SSARP) Northern Government of Sudan ministries Ministry of Animal Resources and Fisheries HAC

Table 3.4. continued.

Organisation type	Country					
	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
Donors	ADB CIDA EU French Cooperation French Dev. Bank GTZ Islamic Dev. Bank World Bank	ADB EC USAID World Bank Governments of Denmark, France and Italy	CIDA Comic Relief DFID EC ESRDF NLCB PCDP USAID World Bank Government of the Netherlands	Aga Khan Foundation ASAL/Dutch government CDTF CIDA Comic Relief DANIDA DFID EC JICA National Lottery/ Charities Board Rockefeller SIDA UNICEF USAID	EC UNDP USAID World Bank	Comic Relief NLCB USAID/GHAI
Implementing donor			GTZ	Church organisations GTZ SNV		WFP
Early Warning systems	FEWSNET Ministry of Agriculture	CAA ERREC FAO- NFIS	SC-UK	ALRMP DMC FEWSNET	FEWS- NET FSAU	EWS FEWSNET PACE Rift Valley Fever SC-UK WFP (TSU/VAM)
Networks	PENHA	PENHA	The Christian Relief and Development Association (CRDA) PENHA PINEP	CAHNET PINEP Security Research and Information Centre (SRIC) 8 Livestock User Associations in Turkana.	Somali Livestock Prof. Assoc. PENHA	Pastoral Watch by Al Massar PENHA
Databases		Information Coordination Centre (ICC)			UNDOS	DAT FAO Dynamic Atlas SSARP -New Sudan Centre for Statistics and Evaluation UNOCHA Starbase

Table 3.4. continued.

Organisation type	Country					
	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
International NGO	IDRB	ACORD Africare CARE Concern CRS GNV IMC Intersos Jen Manitese Mercy Corps Movimundo NCA NUEW Oxfam VSO War Child	ACORD Action Aid ACF AMREF CARE CISP CONCERN Cordaid French Technical Assistance MSF NOVIB Oxfam PANOS PENHA SC-UK SC-USA SOS-Sahel Water Aid World Vision Gambella Regional State ACF ACORD Africare Carter Centre ERCS Ethiopian Catholic Church Nazarene Church Somali Region PCDP SC-UK SC-US Afar Region ACF CARE FARM-Africa IRC Oxfam VOCA World Vision	Action Aid AMREF Cordaid CRSP ICRC ITDG IUCN Oxfam SC SOS-Sahel Turkana District AMREF The Catholic Church – Diocese of Lodwar CJPC ELCK ITDG-EA KRCS LWF Oxfam-GB SNV VSF-B WVI Pokot District AA ACK AIC ELCK FGCK KRCS NCKK SNV WV	ADRA CARE Caritas CH CEFA CINS CISP Concern Worldwide COOPI COSV DBG GAA Intersos MSF-B SC-UK SRCR Terra Nuova Trochair UNA VETAID VSF-CH WV	AAD AMREF Cordaid GAA MSF-NL NOVIB Oxfam SOS-Sahel VETAID VSF-B, CH, NL Northern livestock NGOs ACCOMPLISH CARE COOPI FAR GAA GOAL IFAD ITDG Oxfam GB UNIRDO SC-UK, US Vet-Serve VSF-B Southern livestock NGOs ACORD ADRA CEAS Diocese of Torit NPA Oxfam-GB Tearfund Trust Vetnetwork Services VSF-B, CH, G World Relief

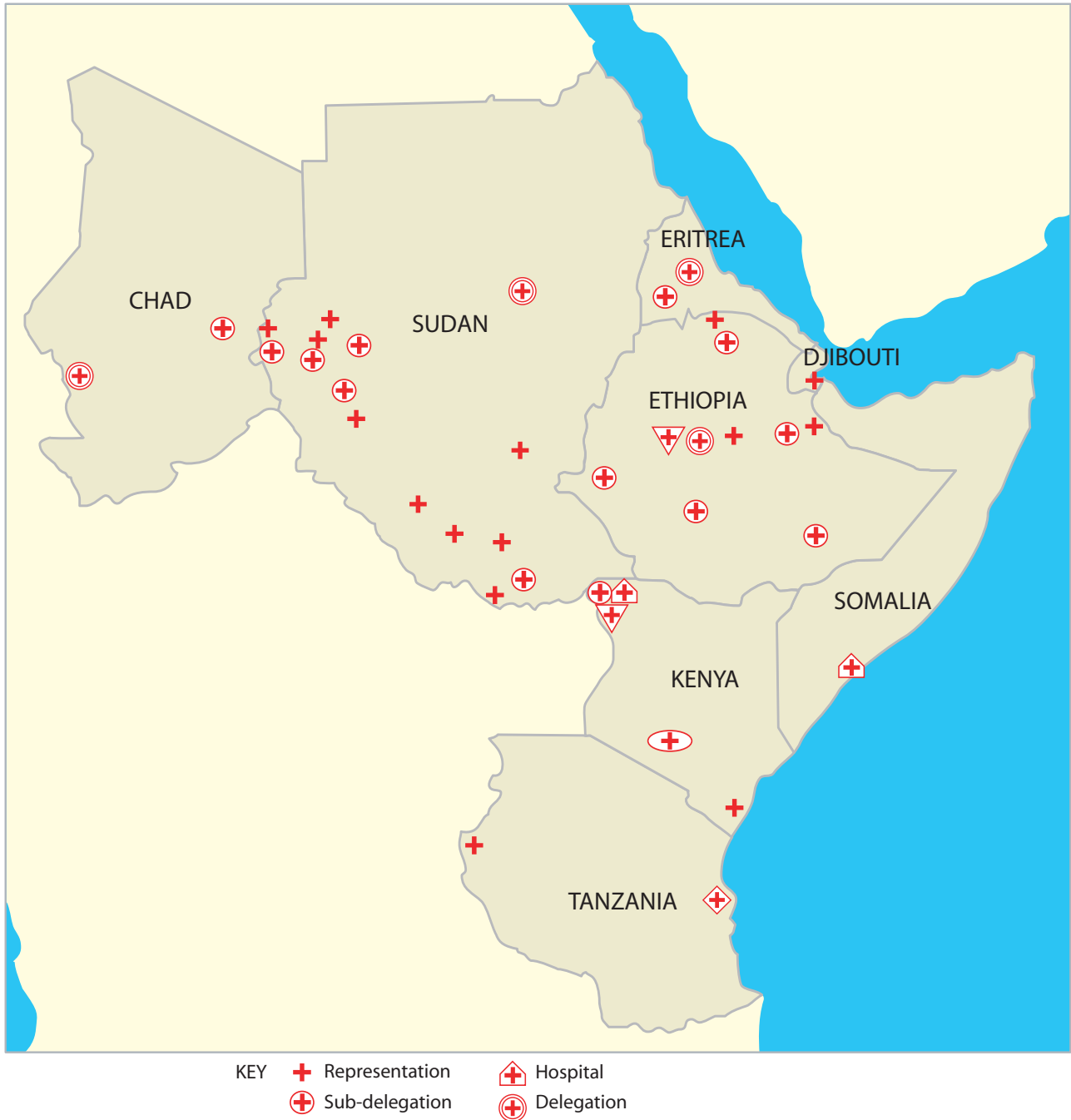
Table 3.4. continued.

Organisation type	Country					
	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
Local NGO	IDRB	ErCS Eritree ESCA Haben Toker project Vision Eritrea	Action for Development Afar Development Association Hope for the Horn Ogaden Welfare and Development Association Pastoral Concern Association Water Action Gambella Hope Enterprises Pinykew Development Association (PDA) Somali region Ogaden Welfare and Development Association (OWDA) Afar region Afar Pastoralist Development Association (APDA)	ALDRED CIFA EPAG KCA KPF NOPPO PACODEO PISP Ramati SAIDIA SWOM Turkana Tonyoutu Consultancy Turkana Development Focus (TUDEF) Turkana Development Organisation Forum (TUDOF) Turkana Opinon Leaders Movement (TOLM) Turkana Pastoralists Development Organisation (TUPADO) Pokot PADO PECOLIDO	ACA AFREC EPAG	Northern Al Massar El Bir Nicodo Southern NSCC TDA
Other	Red Sea Livestock Trade Commission (RSLTC)	Asmara Dairy Farmers Cooperative Association (ADFA) Church Organisations Erifeed PENHA Red Sea Trading Corporation Suchia Feed Company	Church Organisations IGAD	EA Rangeland Society IIED PDN PINEP PENHA Sussex IDS VERU Various mission societies	Red Sea Livestock Trade Commission (RSLTC) Somali Aid Coord. Board (SACB)	Animal Development Bank and Animal Resources Livestock Company Church Organisations: Catholic Diocese, Sudan Inland Mission, etc. Livestock and Meat Marketing Corporation (LMMC)

3.7. Country Summaries

Map 3.1. below shows the ICRC's representations in the Horn of Africa in 2004. A summary of each concern area is provided, but readers are referred to the individual Country Profiles and ICRC Annual Reports for more details of each area.

Map 3.1. ICRC representations in the Horn of Africa - 2004



Most livestock concern areas were located in border regions at the time of writing: Darfur (Sudan-Chad), South Sudan - northern Kenya, northeastern Kenya - southern Somalia, Ethiopia - Eritrea, Somalia - Ethiopia, among others.

3.7.1. Djibouti¹⁰²

3.7.1.1. Background

Djibouti is a small arid country. 75% of its population are urban, the remainder are nomadic herders. The service industry accounted for 81% of the GDP in 2001. Livestock is important to the rural population, but is not a major income earner nationally.

Table 3.5. Djibouti: Country Summary¹⁰³

	Djibouti
Area (sq km)	23,200
Human population ¹⁰⁴	721,000
Human density (sq km)	24
Total GDP (US\$ millions) ¹⁰⁵	663
Life expectancy	46
HDI world rank (/175)	153
Camels (millions)	0.067
Cattle (millions)	0.27
Sheep (millions)	0.475
Goats (millions)	0.512
Donkeys (millions)	0.01
Chickens (millions)	NR

NR: not reported

3.7.1.2. ICRC intervention areas in Djibouti

A Country Profile has been written for Djibouti but, at the time of writing, it is not considered to be a major ICRC priority for livestock unless it experiences a major spillover of unrest from Ethiopia. Other main concerns include drought and trade bans. The expulsion of illegal immigrants has not been a major cause of concern in terms of livestock.

3.7.1.3. Current livestock situation and problem analysis

At the time of writing, the situation was stable apart from drought, with improved opportunities for export.

Constraints to livestock sector and management in Djibouti

Existing problems

- Feed shortages;
- Overgrazing;
- Subsistence mentality, the absence of a commercialised export system;
- Animals are of low genetic potential;
- A lack of trained manpower;
- No credit facilities for livestock owners.

¹⁰² The summaries are highly abbreviated. Readers are referred to the Country Profiles for details.

¹⁰³ Sources: Food and Agriculture Organisation, 2003; United Nations Development Programme, 2002.

¹⁰⁴ United Nations 2004.

¹⁰⁵ World Bank, 2004.

Emerging problems

- Increasing population density;
- Overgrazing and droughts contribute to greater vulnerability;
- Lack of water options.

Cross-border issues

- Control of unregulated cross-border movement with Ethiopia¹⁰⁶;
- The livestock export ban.

3.7.1.4. Key actors

Please refer to Table 3.4.

3.7.1.5. Policies

Generally, the Government accepts transhumance and nomadism as the only way to use the arid rangelands, and the decentralisation policy is supportive to livestock keeping. The present “free veterinary services” policy appears to be unsustainable and ineffective.

3.7.1.6. Early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.1.7. Past experiences and impact

There have been very few emergency or development interventions:

- Free vaccination services;
- A village pharmacy project;
- Establishment of farmers' associations;
- Buying wheat bran to feed cattle.

Constraints and lessons learned

- Lack of information on herd sizes, resource access and migration routes; alternative sources of fodder.
- Absence of private sector animal health; a livestock owner mentality that is unwilling to pay for services;
- Due to the lack of private sector animal health services, any planned intervention would need to be implemented directly by the Government or an agency;
- Water development activities should avoid causing settlement, excessive livestock densities and overgrazing.

Recommended interventions are provided in the individual Country Profile.

¹⁰⁶ The Ethiopian Government particularly has tried to control cross-border smuggling between Ethiopia, Djibouti and Somalia. Most livestock leaves on the hoof, avoiding border check-points so as not to be taxed.

3.7.2. Eritrea

3.7.2.1. Background

Eritrea has suffered from 30 years of war, accommodates up to 500,000 internally-displaced persons, refugees or expellees, and 65% of its population falls below the poverty line. Poor, erratic rainfall and drought exacerbate the problem. A total of 2.3 million people are affected by the combined effects of war and drought and were in need of emergency assistance at the time of writing ¹⁰⁷.

3.7.2.2. ICRC intervention areas in Eritrea

The major problem in Eritrea is the displacement of the population as a result of the conflict with Ethiopia. The joint CARE, World Food Programme and Eritrean Refugee and Relief Commission report indicates that highland agricultural households were the most vulnerable to shocks; at the time of writing, the ICRC's main area of interest however is in and near the Temporary Security Zone (TSZ) in Debub and Gash Barka, in response to the needs of those most affected by the conflict.

Table 3.6. Eritrea: Approximate Summary ¹⁰⁸

	Debub	Gash Barka	Eritrea
Area (sq km)	10,000	34,000	124,000
Sub-zones	12	14	
Kebabies/localities	912	NA	
Villages	209	841	
Altitude (m)	1,400-2,020	450-2,000	0-3,000
Rainfall (mm)	400-600	200-300	200-1,200
Description	Rocky and mountainous	Arid, rocky plains	Mostly semi-arid
Human population (millions)	0.6	0.5	4.4 ¹⁰⁹
Human density (sq km)			36
Ethnicity	Tigrinya: 81% Saho: 14% Tigre: <5%	Mixed : Kunama, Nara, Tigre, Saho, Beja, ...	More than 10 ethnic groups
Total GDP (US\$ millions) ¹¹⁰			925
Life expectancy			53
HDI world rank (/175)			155
Camels	19,000	113, 000	0.32 million
Cattle	490,000	917,000	2,200,000
Sheep	614,000	675,000	1,560,000
Goats	706,000	1.7 million	4.7 million
Equines	174,000	176,000	
Poultry	513,000	424,000	1.37 million
Veterinarians	2 (1)	3(2)	
Veterinary Assistants	5	7(5)	
Animal Health Technicians	0	11 (5)	
Paravets	20 (0)	20 (2)	

Figures in brackets () are those still classified as active.

NA = Not Available

¹⁰⁷ United Nations Consolidated Appeals Process 2003.

¹⁰⁸ Sources: Food and Agriculture Organisation/World Food Programme Assessment, 2002; Kayouli *et al.*, 2002; Eritrean Ministry of Agriculture, 2003.

¹⁰⁹ United Nations 2004.

¹¹⁰ World Bank, 2004.

3.7.2.3. Current livestock situation in concern areas and problem analysis

Constraints to livestock sector and management in Eritrea

Existing problems

- Feed shortages and poor nutrition due to lack of access;
- A change in pasture species with an increase in less palatable plants;
- Disease;
- Animals are of low genetic potential;
- Poor marketing;
- A lack of trained manpower and weak extension services;
- Traditional management practices and limited smallholders' practical skills;
- Limited Government support for modern emergency livestock interventions;
- Predation.

Emerging problems

- Increasing demands on livestock;
- Growing human population and “individualism”;
- Livestock raiding;
- Access and migration;
- Lack of information

Cross-border issues

- Border closures affect trade and migration;
- The spread of contagious bovine pleuropneumonia (CBPP) from Ethiopia;
- The absence of exports to the Middle East;
- Livestock raiding;
- Stock migrating to Sudan to graze face high charges or taxes to do so.

ICRC concern areas: Dehub and Gash Barka

Livestock is the key source of income for families in both Dehub and Gash Barka, in spite of Dehub's food economy being primarily agricultural. An ICRC Assessment conducted in 2002 accurately summarises the livestock situation as follows: *“Gash Barka appears to be more camel, cattle and goat country while households in the Senafe areas keep mainly cattle and sheep. Other species such as the horse and the mule are mainly found in the Eastern lowlands of Senafe. Donkeys are found in all the areas. Livestock mainly graze in the communal grazing around the villages, and along the riverine areas in the Gash. Before the war, the hills on the Ethiopian side across the river represented important dry season grazing areas. It is now normal for livestock to migrate to Antore, Mugwai and also northwards to Zoba Maekel area. The individual owner normally does the management of livestock; however there are several families who now combine their herds and the shepherding is done on a rotational basis. The shepherding of the smallstock is mainly done by the younger members of the households”.*

The key target groups¹¹¹ regarding livestock interventions are the following:

- Saho and Tigrinya host communities in Dehub;
- Kunama and Nara host communities in Gash Barka;
- Returnees and resettled expellees if they are in their final settlement (i.e. permanent, and not temporary).

¹¹¹ Livestock (with the possible exception of poultry) ownership amongst internally displaced persons should not be promoted until they return to their areas of origin, and then only if the destination is suitable for livestock rearing - to be determined on a case-by-case basis.

Large numbers of people displaced from the Temporary Security Zone (TSZ), combined with expellees from Ethiopia, have settled in the agricultural and grazing areas of Gash Barka and Debub. Most of the displaced have either lost their livestock or left them with a few family members to graze in the TSZ, thus increasing demands on the main natural resources (water, fodder, wood); this is leading to tension and occasional violence. With the current delay regarding border demarcation, it is unlikely that the majority of IDPs will return to their home areas for at least one year, and encouraging them to keep more livestock whilst they are still displaced will aggravate local friction. Thus it is recommended that livestock interventions be targeted at host communities and selected expellee settlements.

3.7.2.4. Key actors

Please refer to Table 3.4.

3.7.2.5. Policies

No specific livestock policies exist, but many guidelines and plans do. The main “policy” issues that agencies need to be aware of include the following:

- The Government mobilises the military and communities on voluntary basis to implement the same activities that non-governmental organisations pay compensation for (cash-for-work);
- The Ministry of Agriculture is opposed to destocking;
- There is no private sector involvement in drug supply as it remains illegal at the time of writing.

3.7.2.6. Early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.2.7. Past experiences and impact

- Livestock vaccination;
- Restocking the herds of families supporting orphans;
- Restocking with Egyptian chickens;
- Rehabilitation of veterinary services;
- Fodder supplementation, concentrate feeding and “destocking/cost sharing”.

Constraints and lessons learned

- The lack of information on herd sizes, resource access and migration routes;
- The critical long dry season (May-June) which puts stress on stock and pressure on resources. Agencies must be prepared to intervene during this period;
- Cash-for-work may undermine the community spirit, and weaken self-help and community coping and recovery mechanisms; ways must be found to avoid this;
- Water point development must avoid causing settlement, excessive livestock densities and overgrazing;
- The massive population growth in camps for internally-displaced persons is another challenge;
- Herds belonging to internally-displaced persons should not be replenished (restocked) until they return to their home areas or settle permanently; restocking should only be considered if the host community in the settlement area anticipates no problems of competition from yet more livestock;
- One possibility worth considering is restocking herds belonging to host communities with breeding sheep and goats or donkeys and camels for ploughing, but only if the environment is not already overgrazed, and if new resources are available.

Recommended interventions are provided in the individual Country Profile.

3.7.3. Ethiopia

3.7.3.1. Background

Ethiopia is the biggest livestock producer in Africa and the 25th worldwide. Livestock accounts for 20% of the total GDP, and the sector employs approximately 31% of the agricultural labour force¹¹². The main problems in Ethiopia are violence and drought, associated with displacement or impoverishment. This situation is aggravated by the long years of conflict draining Government resources and weakening the economy as a whole.

3.7.3.2. ICRC intervention areas in Ethiopia

The ICRC's key intervention areas in Ethiopia are Gambella, Somali Region and Afar Region. Details of each intervention area and the major cause of concern are summarised in the table below.

The situation in Gambella remains volatile. Livestock issues in Gambella are not as vital as in Afar and Gode due to the high opportunity and emphasis on agro-pastoralism in Gambella.

Concerns in Gode are related to drought and flood mainly, and change according to season. Chronic violence (lack of government support and interest), a trade ban and drought all seriously affect a large, livestock-dependent population, and justify ICRC interest.

The situation in Afar is one of growing, chronic conflict whose effects are escalating due to years of Issa expansionism (reducing the Afar's grazing areas and access to grazing). The area is drought-prone and experiences an increasing number of emergencies. It remains a key priority area for the ICRC and livestock issues.

Most emergencies in Ethiopia are caused by drought, and local tensions impede the delivery of emergency assistance at local level.

3.7.3.3. Current livestock situation in concern areas and problem analysis

Gambella	Tension and displacement; Tsetse fly.
Afar	A series of poor rain seasons; Deteriorating terms of trade between livestock and cereals due to trade bans and border restrictions; Community tension and reduced grazing areas; A general lack of animal health service provision.
Somali Region	A general failure of the rains in 2003; Tension and displacement.

¹¹² United Nations Integrated Regional Information Networks (IRIN), 2003.

Table 3.7. Ethiopia: Approximate Summary

	Gambella	Somali	Afar	Ethiopia
Area (sq km)	25,274	250,000	92,000	1,221,900
Sub-zones	9	9	6	
Altitude (m)	500 – 1,000	900 – 1,600	-116 – 1,600	-125 – 4,620
Rainfall (mm)	720-1,350	250-500	225-561	
Temperature (°C)	21-36	25-38	36-45	
Description	Humid forest and grassland.	Arid and semi-arid – undulating plain.	Arid and semi-arid plains.	High mountain to arid desert.
Human population ¹¹³	812,000	3.8 million	1.1 million	74.2 million ¹¹⁴ (5.1 million ¹¹⁵)
Pastoralists ¹¹⁶ (% of total pastoral population in Ethiopia)	37,000 (1%)	1,814,000 (53%)	992,000 (29%)	3,424,000
Human density (/sq km)				58
Ethnicity	Anuac: 27% Nuer: 40% Highlanders: 24% Mezhengir/Majanger: 6% Opo and Komo ¹¹⁷	Ogaden and Rarebare	Afar and Issa	
Total GDP (US\$ millions) ¹¹⁸				8,077
Life expectancy				46
HDI world rank (/175)				169
Camels	0	1.1 million	900,000	2.5 million [#]
Cattle	100,000	5.2 million	3.6 million	35 million (10.9 million) [#]
Sheep	50,000	6.6 million	2 million	24 million (10 million) [#]
Goats	40,000	3.3 million	3 million	18 million (8 million) [#]
Equines	NK	360,000	200,000	3.4 million (1 million) [#]
Chickens				38 million
Paravets/CAHWs*		40		

NK: not known #: animals owned by pastoralists¹¹⁹ *: still classified as “active”.

¹¹³ Food and Agriculture Organisation database 2005 human population estimates (with population estimates for pastoral areas in brackets).

¹¹⁴ United Nations, 2004.

¹¹⁵ Sandford and Habtu, 2000. The proportion of people inhabiting pastoral areas is probably best expressed in percentage, due to rapid demographic growth in Ethiopia: they account for roughly 7% of the overall population.

¹¹⁶ Source: Sandford and Habtu, 2000. Figures based on 1994 population census.

¹¹⁷ 1994 census data.

¹¹⁸ World Bank, 2004.

¹¹⁹ Source: Sandford and Habtu, 2000.

Constraints to the livestock sector and management in Ethiopia

Existing problems

- Feed shortages;
- A change in pasture species with an increase in less palatable plants;
- Disease;
- Animals are of low genetic potential;
- Poor marketing and weak livestock export market system;
- A lack of trained manpower;
- Ethiopia does not have a Ministry of Livestock;
- Lack of coordination at the central Government level;
- The Ministry of Agriculture is not active enough in determining emergency interventions within the Disaster Preparedness and Prevention Commission (DPPC);
- Loss of grazing areas;
- Private sector veterinary services are hampered, among others, by the absence of an enabling environment;
- Fake and poor quality drugs from Somalia on the Gode market;
- Low livestock sales due to the scarcity of commodities for purchase;
- Some areas identified for resettlement are prone to Tsetse fly infestation (e.g. Gambella);
- The livestock sector is “traditional”;
- Poor water distribution;
- Access and land tenure problems with irrigation farms, national parks and expanding agriculture and increased cultivation of former livestock grazing lands;
- Violence;
- Cross-border movement restrictions;
- Livestock trade ban;
- Overgrazing and soil erosion;
- Limited government support for modern emergency livestock interventions.

Emerging problems

- Increasing demands on and expectations from livestock;
- Growing human population and “individualism”;
- Livestock raiding;
- Access and migration;
- Lack of information.

Cross-border issues

- The livestock export ban;
- Djibouti livestock export quarantine yards.

3.7.3.4. Key actors

Please refer to Table 3.4.

3.7.3.5. Policies

Ethiopia is more advanced than many of its neighbours in terms of early warning systems and policies on responding to livestock disasters. The Disaster Preparedness and Prevention Commission (DPPC) has issued a “livestock preservation” directive, and the Ethiopian Government was drawing up a livestock “master plan” funded by the African Development Bank (ADB) at the time of writing.

3.7.3.6. Inventory of early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.3.7. Past experiences and impact

Many emergency interventions have been attempted in Ethiopia:

- Famine relief, food-for-work, cash-for-work;
- Emergency veterinary interventions;
- Ox ploughing;
- Destocking;
- Fodder supplements;
- Restocking;
- Fodder production;
- Water interventions.

Constraints and lessons learned from the 2003 Afar emergency interventions¹²⁰

- In spite of maximum efforts on the part of the Government and non-governmental organisations to mitigate the effects of the drought, a lack of coordination was observed. As a result, activity duplication occurred in some places;
- Most non-governmental organisations were operating in the same area, whilst other areas were excluded and relied on an overburdened Government to carry out some of the emergency activities;
- Budget shortages;
- Lack of means of transportation;
- Lack of infrastructure (roads, communication);
- Frequently changing Government policy on livestock emergencies;
- Delay in approval of projects by donors, the Government and the Food and Agriculture Organisation (FAO);
- Adaptability of pellets proved to be a problem during the initial stage;
- Poor reporting by the Regions.

Recommended interventions are provided in the individual Country Profile.

¹²⁰ Food and Agriculture Organisation, 2003. Additional analysis can be found in Lautze *et al.* “Risk and Vulnerability in Ethiopia: Learning from the Past, Responding to the Present, Preparing for the Future - A Report for the U.S. Agency for International Development”, June 2003.

3.7.4. Kenya

3.7.4.1. Background

The livestock sector accounts for 10-25% of the GDP, 90% of employment and more than 95% of family income.

3.7.4.2. ICRC intervention areas in Kenya

The ICRC's main intervention areas at the time of writing are Lamu District, and the pastoralist arid and semi-arid lands districts, with particular focus on north and south Turkana and Pokot Districts.

In the key concern area of Turkana District, internal livestock raiding between the Turkana and Pokot is taking on political and commercial undertones. Cross-border livestock raiding between the Turkana and the Ethiopian Merille, Sudanese Taposo and Nyangatom, and the Ugandan Karamajong cluster increasingly deprives the Turkana of their key livelihood. Table 3.8. below summarises available information on the area.

Table 3.8. Kenya: Approximate Summary¹²¹

	Turkana District	Pokot District	Kenya
Area (sq km)	77,000	9,100	582,646
Divisions	17	9	
Altitude(m)	500	900-3,000	0-5,000
Rainfall (mm)	121-540	300-1,200	300-1,500
Temperature (°C)	23-35	15-30	12-35
Description	Mainly arid and semi-arid plains with plateaux and isolated hills.	Mostly highlands with plateaux.	Arid lowland climbing to fertile highlands.
Human population	542,000	349,469	32.8 million ¹²²
Human density (/sq km)			58
Ethnicity	Mainly Turkana with a mixture of peoples in towns.	Mainly Pokot with mixture in towns.	Mixed, more than 40 ethnic groups.
Total GDP (US\$ millions) ¹²³			15,600
Life expectancy			46
HDI world rank (/175)			146
Camels	120,000 ¹²⁴	1,000 ¹²⁵	800,000
Cattle	200,000	600,000	13.5 million
Sheep	700,000	190,000	8 million
Goats	1.3 million	120,000	9 million
Donkeys	32,000	NK	
Poultry	12,000	NK	32 million
Veterinarians	3	NK	NK
Paravets	NK	NK	1,500

NK: not known.

¹²¹ Food and Agriculture Organisation Database, 2005.

¹²² United Nations, 2004.

¹²³ World Bank, 2004.

¹²⁴ *Vétérinaires Sans Frontières*-Belgium figures, 2002.

¹²⁵ Muriuki figures, 2000.

Conflict and drought have aggravated poverty among the Turkana (in the north and south of the District). In terms of needs, the Turkana probably face as much difficulty as any other group already targeted by the ICRC in the Greater Horn of Africa. Working in Turkana District¹²⁶ will improve the ICRC's understanding of its operational environment and sporadic resource-based violence, and will eventually also prove beneficial for the security of ICRC field staff.

3.7.4.3. Current livestock situation and problem analysis

It is increasingly difficult for livestock owners to depend on (or survive off) livestock alone due to:

- Human population growth and diminishing natural resources;
- Increasing poverty levels;
- Limited opportunities for production growth or diversification;
- Traditional management systems;
- Recurring drought: 1992-93, 1996-97 and 1999-2001;
- Increased settlement and reduced access to pasture;
- Remoteness and poor access to markets.

Constraints to livestock sector and management in Kenya

Existing problems

- Livestock numbers per person are decreasing;
- Insecurity;
- Tsetse fly (trypanosomiasis);
- Lack of Government and non-governmental organisation services;
- Livestock marketing is poorly established, and livestock prices depressed;
- Lack of education and radio communication networks;
- Overgrazing and feed shortages;
- Animals are of low genetic potential.

Emerging problems

- Increasing population density;
- Overgrazing, increasing drought frequency and greater vulnerability.

Cross-border issues

- Security, trade and disease;
- Political and economic migration;
- Water and river-basin management.

3.7.4.4. Key actors

Please refer to Table 3.4.

3.7.4.5. Policies

Livestock policies are increasingly “pastoralist friendly”, but remain inadequate in terms of the economic sustainability of extensive livestock ranching for remote pastoralist regions.

¹²⁶ Due to the ICRC's long-standing presence in Lokichoggio and, more recently, in Turkwel.

3.7.4.6. Early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.4.7. Past experiences and impact

Most emergency livestock interventions have been tried in Kenya and in Turkana District; their impact is less well documented, however.

In Pokot:

- Restocking;
- Deworming and vaccination against black-quarter;
- Food-for-work (road access projects);
- Seed distributions.

In Turkana:

- Support to community animal health services;
- Restocking;
- Boat and fishing equipment distribution;
- Destocking;
- Supplementary livestock feeds;
- Emergency veterinary programmes;
- Cross-border negotiation for grazing;
- Transport subsidies;
- Food-for-work and cash-for-work;
- Construction of water pans;
- Water trucking.

Constraints and lessons learned

Constraints

- Cash-for-work can undermine self-help, and community coping or recovery mechanisms;
- Water point development can cause settlement and overgrazing;
- The massive (human) population growth is another challenge, as livestock alone cannot support the growing human population.

Lessons learned

- Transport subsidies are easily abused;
- Targeted communities must be involved in disaster management responses, including planning;
- Restocking should be based on traditional methods.

Recommended interventions are provided in the individual Country Profile.

3.7.5. Somalia

3.7.5.1. Background

In 1989 nomadic pastoralism accounted for 44% of the GDP, and more than half the population was involved in livestock raising (an estimated 2.6 million pastoralists and 2.2 million agro-pastoralists). Presently, livestock accounts for an estimated 60% of the income or subsistence of the Somali people. Nowhere in Africa is nomadism of greater significance than in Somalia. In spite of the ongoing civil war since 1991, Somalia is still one of the major livestock exporting countries in the world.

3.7.5.2. ICRC intervention areas in Somalia

The civil war in Somalia has not spared any part of the country, and conflict can occur anywhere at any time. The livestock system has suffered not only from the conflict but also from drought and trade bans.

The ICRC's specific intervention areas at the time of writing are the central rangelands, Hiraan, Galgadud, and the agricultural and agro-pastoralist zones located along the Shabelle and Juba rivers.

Little information on livestock numbers is available, but Table 3.10. below summarises the key issues in different areas.

No one part of Somalia can be identified as a key problem area, although Mudug and Gaalgadud are the key pastoral food economy zones, and are most commonly affected by conflict and drought. The impact of the trade ban has been significant in terms of depreciation in the value of livestock and a lack of market leading to overgrazing, but the establishment of alternative market routes has stabilised this situation somewhat. The high dependency on livestock and widespread conflict justify ICRC interest.

3.7.5.3. Current livestock situation in concern areas and problem analysis

Constraints to the livestock sector and management in Somalia

- A fragile and hostile environment - much of the country is arid or hyper-arid, experiencing local droughts every three to five years, and major droughts every 20-25 years. Some areas also experience regular seasonal flooding;
- Insecurity and civil war lead to looting, and the destruction of trade and property;
- The privatisation of pasture land;
- Reduced access to strategic water and fodder reserves;
- A poor rural road network;
- Settlement and over-exploitation of local resources;
- An excessive dependency on a single market and the export of live animals without product diversification;
- The lack of a disease surveillance system. This affects cross-border exports and grazing access patterns;
- The lack of emergency preparedness;
- The lack of a public animal health care service, and the high costs of private veterinarians in remote regions;
- A poor integration of livestock in crop-farming systems;
- Environmental degradation from overgrazing and charcoal burning;

- Economic and political mismanagement - before the war the Government was highly centralised and urbanised, and neglected the rural areas;
- An insufficient rural service provision due to the lack of Government or private infrastructure;
- A lack of credibility in quality certification;
- A lack of exposure to alternative (more modern) livestock systems;
- A lack of knowledge in modern management;
- The breakdown of traditional values and resource sharing or management;
- Increasing restrictions to mobility and pasture access.

Table 3.9. Somalia: Approximate Summary ¹²⁷

	Central rangelands	Southern rangelands	Shabelle	Juba Valley	Somalia
Area (sq km)	139,172	221,005			738,000
Sub-zones	Mudug, Galgadud	Bay, Bakool	Hiraan, Middle Shabelle, Lower Shabelle	Gedo, Middle and Lower Juba	
Altitude (m)	300-400	0-800	0-400	0-400	0-800
Rainfall (mm)	100-300	350-625	200-600	200-800	
Temperature (°C)	>25	>25	>25	>25	
Description / FEZs	arid, pastoral	agro-pastoral	agro-pastoral and riverine farming	pastoral, agro-pastoral and riverine farming	
Human population ¹²⁸	630,000	1,115,000	1,537,000	975,000	10.7 million ¹²⁹
Human density (/sq km)					15
Ethnicity	Mainly Marehan and Hawiye pastoralists	Mainly Rahanwein, Hawiye and Dgil pastoralists and agro-pastoralists	Bantu farmers, and Darod and Hawiye pastoralists	Bantu farmers, and Darod and Rahanwein pastoralists	
Total GDP (US\$ millions) ¹³⁰					NA
Life expectancy					47
HDI world rank (/175)					NK ¹³¹
Camels	1 million	1.2 million	NR	1.4 million	6.2 million
Cattle	500,000	1.3 million	NR	2 million	5.3 million
Sheep	1 million	700,000	NR	800,000	13.1 million
Goats	3.7 million	1.8 million	NR	2 million	12.5 million
Donkeys	NK	NK	NR	NK	21,000
Equines	NK	NK	NR	NK	20,000

NK: not known.

NA: not available.

NR: not reported.

¹²⁷ Source: Food Security Analysis Unit (FSAU), September 1999.¹²⁸ UNDOS predicted populations.¹²⁹ United Nations, 2004.¹³⁰ World Bank, 2004.¹³¹ 159 reported and 172 in 1996.

Table 3.10. Somalia: Summary of Livestock Issues

Region	Description	Comments	Problems
Northwest	Sheep, goats and camels with cattle near water points.	Somaliland – many active NGOs. Major trade opportunities. Can access Ethiopian grazing but also subject to immigration of Issa from Ethiopia.	Lack of veterinary services (previous ICRC services now defunct). Poor terms of trade.
North-east and Central	Sheep, goats and camels with cattle near water points.	Liability to drought and conflict over resources. Good export facilities. Ethiopian grazing accessible.	Lack of veterinary services. Poor terms of trade and loss of export (conflict or ban) Overgrazing and soil-erosion.
Hiraan	Sheep, goats and camels with many cattle in river valley.	Large population migrated out of towns and rely on the livestock.	Lack of veterinary services. Poor terms of trade. Destruction of boreholes ¹³² .
Middle Shabelle	Cattle (agro-pastoral)	Plenty of grazing.	Lack of veterinary services.
Lower Shabelle	Cattle (agro-pastoral)	Plenty of grazing Local tension has forced livestock into the hinterland, far from the water provided by the Shabelle River.	Lack of veterinary services. Payment for water ¹³³ and grazing rights.
Bay and Bakool	Cattle, camels and goats (agro-pastoral).	Livestock population much decreased by looting. Migrate in wet season and return in dry to feed on crop residues.	Lack of veterinary services.
Juba	Main cattle zone, but also camels and goats.	Potential use of Juba river for fodder production.	Loss of export. Lack of veterinary services. Grazing lands are located far from the water provided by the Juba River.

Emerging problems

- Trade bans.

Cross-border issues

- Trade;
- Water and river-basin utilisation and management;
- Disease control;
- Pasture and migration.

¹³² Although this feature is not limited to Hiraan.

¹³³ Payment for water is not limited to Lower Shabelle, but payment for grazing land is particularly widespread in this specific area.

3.7.5.4. Key actors

Please refer to Table 3.4.

3.7.5.5. Policies

In the absence of any form of central government since 1991, no current official livestock policies or strategies exist for Somalia, except for international organisations (*Organisation internationale des Epizooties* - OIE) and donor or United Nations policies. Most policies are livestock or pastoralist friendly, and encompass privatisation and decentralised community animal health services. At the time of writing, the Somaliland Government was considering the introduction of a new policy based on the old Somalia legislation but one that recognises the legitimacy of community animal health workers¹³⁴.

3.7.5.6. Early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.5.7. Past experiences and impact

- Relief food;
- Animal treatment and vaccination;
- Translocation;
- Boreholes and shallow wells for livestock use;
- Establishing grazing zones/blocks;
- Tsetse fly control programmes;
- Water and hay trucking.

Constraints and lessons learned

- Access;
- Security;
- The private sector can be effective.

Recommended interventions are provided in the individual Country Profile.

¹³⁴ In late 2004, this policy was still awaiting ratification by the Somaliland parliament

3.7.6. Sudan

3.7.6.1. Background

Sudan is the typical example of a country having experienced a long-term, chronic war, with an interlude of only 11 years of peace (1972-1983) since independence in 1956. More than two million people have died as a result of the conflict, 400,000 are refugees, and up to four million are internally displaced (IDPs). But Sudan still accommodates the largest cattle and sheep population in Africa, and 90% of the population are involved in agricultural or livestock based livelihoods. The Federal Ministry of Animal Resources and Fisheries estimate¹³⁵ that 90% of the nation's 37 million cattle, 46 million sheep, 38 million goats and 3 million camels are concentrated in the north, where they account for 22.4% of the GNP¹³⁶.

Twenty years of civil war have seriously affected the lives of the Sudanese. Whilst past fighting has concentrated on the south, other parts of Sudan are at risk of war, or even experiencing open conflict (e.g. Darfur). Much will depend on the the evolution of the 2004 Naivasha Peace Process between the Government of Sudan and the Sudanese People's Liberation Movement / Army (SPLM/A). The south is a major livestock producing area, but also has huge potential for agriculture should sustainable peace be achieved. In addition to the usual natural hazards also faced in Sudan (floods, drought, disease), landmines constitute a major danger for livestock and their owners; in particular, their presence hinders agricultural production and movements in search of markets or grazing.

The desert areas in the north are more dependent on livestock and more prone to drought. The risk of increased violence in Beja and Kassala areas could highlight the importance of livestock issues.

3.7.6.2. ICRC intervention areas in Sudan

The main ICRC intervention areas at the time of writing are Darfur and conflictual areas of South Sudan. Other informants suggest that livestock related conflict flashpoints are likely to be Terekeka, Nuba Mountains, Abyie and West Kordofan particularly Bentiu and Rubkona.

The crisis in Darfur also relates to livestock (tension between nomads and cultivators). Should tension rise in Kassala and Beja, the livestock core to the local food economy will be affected. With peace developing in the south, it is possible that livestock issues will be covered more systematically. In view of the links between livestock and tension and/or conflict in the different areas above, there is scope for ICRC interest and intervention¹³⁷.

¹³⁵ 2003.

¹³⁶ In Sudan, it is difficult to know whether reports refer only to populations in the north, or the south or both. Ministry of Agriculture and Animal Resources and Fisheries figures are for 2003, and vary from the 2002 Food and Agriculture Organisation estimates. Figures for GDP, among others, do not adequately reflect the massive difference between north and south.

¹³⁷ The training of community animal health workers and other provisions intended to support the livestock sector, particularly in Darfur, have been included in 2005 ICRC action plans accordingly.

Table 3.11. Sudan: Approximate Summary ¹³⁸

	Darfur	Kassala	Southern Blue Nile	Abyie	Sudan
Area (sq km)	549,000	42,330		4,455	2,505,813
Localities			10	3	
Altitude (m)	<3,024				
Rainfall (mm)	0-750	100-600	1,000	650-1,000	
Description	Dry and arid	Dry and arid	Rich savannah and agriculture	Fertile agropastoral	
Human population	6.2 million	1.6 million	675,000	300,000	35 million ¹³⁹
Human density (/sq km)					14
Ethnicity	Multiple Arab and non-Arab tribes.	Hadandawa, Bani Amer, Amarar, Bisharein, Rashida, Halanga and Fellata.	12 tribes of the Funj group.	Dinka (6 sub-groups) and Arab Misseriya (5 sub-groups)	
Total GDP (US\$ millions)¹⁴⁰					19,559
Life expectancy					55
HDI world rank (/175)					138
Camels	400,000*	400,000	NK	NA	3.2 million
Cattle	4.6 million*	400,000	NK	2.3 million	38.3 million
Sheep	3 million*	800,000	NK	1.5 million	47 million
Goats	2.7 million*	1.1 million	NK	NA	39 million
Donkeys					0.75 million
Chickens					37.5 million

*: rounded up 1980 livestock prediction figures from Al-Massar (2003).

NK: not known.

NA: not available.

3.7.6.3. Current livestock situation in concern areas and problem analysis

Constraints to livestock sector and management in Sudan

The constraints to the livestock sector in Sudan are multiple, and are largely associated with the conflicts. Other factors include:

- Rinderpest ¹⁴¹;
- Animal health;
- The lack of services and infrastructure;
- Poor access to markets;
- The lack of cash, and the currency cannot be exchanged;
- Flood and drought.

¹³⁸ Sources: Food and Agriculture Organisation Database, 2005; Al-Massar, 2003; United Nations Starbase, 2003.

¹³⁹ United Nations, 2004.

¹⁴⁰ World Bank, 2004.

¹⁴¹ Rinderpest is however considered to be practically eradicated in Sudan; this is due to the high priority this country continues to receive in terms of donor attention and eradication efforts.

Emerging problems

- Land tenure;
- Strong traditional and cultural values¹⁴²;
- The lack of education and exposure to modern farming;

Cross-border issues

International or cross-border issues in Sudan, as in other Greater Horn of Africa countries, are a major factor in livestock management. They include the following:

- Nationality and sovereignty;
- Economic and political migration;
- Trade;
- Livestock nutrition and health;
- Water and river-basin management.

3.7.6.4. Key actors

Please refer to Table 3.4.

3.7.6.5. Policies

Official livestock policies exist throughout the country, have been in existence for decades, and encourage private veterinary practice and full payment for vaccination and treatment. In previously rebel held areas the Operation Lifeline Sudan (OLS) Standards and Guidelines act as a loose policy for livestock issues. The Sudan Relief and Rehabilitation Association (SRRA) is drawing up a new livestock policy (not yet completed). Generally the policies can be said to promote and enable the livestock sector.

3.7.6.6. Early warning systems (EWS), networks and databases

Please refer to Table 3.4.

3.7.6.7. Past experiences and impact

Few emergency interventions have been carried out in the north. No destocking or emergency fodder production interventions have been attempted. Most interventions have been rehabilitation activities such as:

- Restocking;
- Promoting animal draught;
- Range projects in South Darfur (failed);
- Water point establishment.

¹⁴² In southern Sudan the Dinka and Nuer raise cattle primarily for prestige. Milk production is important but many bulls are kept (rather than sold) as they are the “song-bulls” and a symbol of masculinity and pride for the young men. The conflict in the South has restricted agriculture to small-scale local farming or agro-pastoralism. The Naivasha Peace Agreement (Government of Sudan - Sudanese People's Liberation Movement/Army), combined with the area's huge agricultural potential, increases the probability of massive commercial agricultural farming (both multi-national and government and private sector) competing for land. This may lead to tension over resources as most cattle keepers haven't been exposed to “modern” farming and its potential benefits. In the absence of land tenure, the question of rents, leases, etc. will probably benefit only a few rich.

In the south, most interventions have focused on emergency vaccination campaigns to control disease outbreaks. Other attempts include the following:

- Restocking Dinka pastoralists in Bor (Save the Children-UK);
- Improving the market infrastructure at border points in Equatoria (Food and Agriculture Organisation);
- Support to poultry projects (*Vétérinaires sans Frontières-Switzerland*).

Constraints and lessons learned

Many interventions have failed due to a lack of community involvement in planning and implementation - this strongly justifies the ICRC's current efforts at improving its participatory approach in production projects¹⁴³.

Recommended interventions are provided in the individual Country Profile.

3.8. Regional Issues

Relevant regional issues, such as trade bans and drought, have been mentioned in the above country summaries. Other less obvious problems face livestock owners in the region, such as urbanisation, overgrazing, and human population (demographic) growth, *inter alia*¹⁴⁴; these are slowly undermining the livestock system, and do need to be tackled. Whilst the ICRC priority is to tackle shocks, the longer-term future of pastoralism in its present form has to be addressed.

3.9. ICRC Cross-Border Issues

As livestock issues transcend international borders, the ICRC recognises the need to improve its cross-border analysis and response mechanisms accordingly.

For example, livestock raiding by the Pokot in Uganda, the Merille from Ethiopia and the Taposa from southern Sudan is the most restricting factor for Turkana people in northern Kenya. Access to water and grazing is restricted due to fear of raids, and whole sections of the society have been made destitute as all of their animals (the key means of survival in the district) are stolen. On the other hand, the Turkana victims of raids are increasingly initiating such raids. To respond to such issues, and to remain neutral and impartial, the ICRC needs to strengthen its access to all four ethnic groups in order to identify appropriate responses and interventions. Any ICRC livestock intervention in Kenya will be of little consequence and impact unless reciprocated across the border in southern Sudan and Ethiopia.

The situation is complicated by the lack of National Red Cross / Red Crescent Society ability to act as a partner in these remote and sparsely populated regions. One solution would be to adopt a “cluster approach” (such as used by the African Union's Inter African Bureau for Animal Resources, AU-IBAR), and to operate through local intermediaries. Local counterparts would need to meet certain ICRC quality criteria.

Likewise, developments in the conflict in Darfur / Sudan have had serious repercussions on Eastern Chad, if only due to massive cross-border human and livestock population movements; accordingly, the ICRC has decided to address the conflict in Darfur in a cross-border manner (bringing Chad into the same regional management set-up as Sudan, effective 2005).

¹⁴³ E.g. community intervention projects (CIPs) in Somalia.

¹⁴⁴ See Chapter 4 (Problem Analysis) for details.

CHAPTER 4

Problem Analysis

Food aid has reduced the death rate of people who could no longer survive on livestock; without the provision of food aid, many more people would probably move out of the pastoralist livelihood to seek alternative forms of income. But the provision of food aid thus maintains an artificially high number of people in the pastoralist livelihood, perhaps higher than the latter can ultimately sustain.

4.1. Past and Present Problems

This section provides an overview of past and present problems faced by livestock farmers in the pastoral and agro-pastoral areas of the Horn of Africa, as found in the literature. Individual Country Profiles add further information and detail as to livestock management problems (and their effect) specific to each country.

A multitude of **macro-problems** influence the viability of pastoralist and agro-pastoralist systems, the two systems that are the most common forms of livestock management in the Horn of Africa. Key issues include the following, among others:

1. Deteriorating resources: increasing pressure (including population growth) and agricultural encroachment, leading to an overall increase in frequency and intensity of shocks;
2. Institutional and cultural breakdown, loss of the “moral economy”;
3. Unfavourable policies, especially regarding land tenure;
4. Ignorance and prejudice against pastoralism amongst stakeholders themselves, and amongst some donors and governments;
5. The lack of services, including marketing;
6. The lack of “know-how” and initiative on primary production improvement in dry areas;
7. The lack of political influence;
8. Insecurity and/or conflict;
9. The lack of alternative livelihoods and opportunities for diversification;
10. Insufficient recovery time (see Box 4.1 below) following shocks.

In addition to the above problems, the situation is further complicated by:

1. A frequent lack of government capacity to respond and coordinate emergencies in pastoral areas;
2. The lack of understanding on the part of donor and government policy makers as to appropriate emergency responses in pastoral areas (absence of tracking strategies);
3. The lack of information on pastoralist populations and livelihoods;
4. The fact that many external interventions aim at “addressing the symptoms” rather than “solving the problem”;
5. Finally, externally driven projects or programmes are not “client driven”, and often do not continue long enough to solve the underlying problem.

Box 4.1. Recovery times and shock frequency in livestock systems in Ethiopia

(Sandford and Habtu, 2000).

If post-shock herd size is 50%, the minimum time required for livestock owners to regain independence is:

- ten years for cattle owners;
- three years for goat owners;
- twelve years for camel owners.

But using average shock mortality rates of 50%, 30%, 24% and 17% for cattle, sheep, goat and camel herds respectively, Dahl and Hjort's 1976 computer model shows that it takes owners 10, 2, 1.5 and 4 years to regain independence.

In practical terms, this points to the need to:

- Reduce mortality rates;
- Reduce recovery time;
- Encourage mixed herd keeping;
- Reduce dependency on livestock.

All of the above further reinforces the difficulties that pastoralists have been facing since their origin - their struggle for existence in generally very harsh climatic conditions. Many pastoralists in the Greater Horn of Africa inhabit some of the most inhospitable terrain in the world; as a result, they have received very little attention first from colonial and later from national governments, and consequently have been marginalised. This marginalisation has translated into insufficient education and other service provision, and poor national representation and resource allocation.

Marginalisation has also resulted in a lack of knowledge in the resolution of pastoralist problems. Many policies are based on “old thinking” learned from European, American and Mediterranean livestock systems, all of which have recently proven to be irrelevant to the African system. Knowledge gaps persist in issues such as land tenure, resource allocation and access in very marginal areas. This gap has also contributed to livestock owners facing conflict among themselves and with their governments. Ignorance has led to years of neglect and inappropriate interventions that have increased poverty rather than alleviate it.

Sandford and Habtu¹⁴⁵ suggest that the introduction of Regional Governments in Ethiopia has weakened pastoralist representation at national level, by removing the former information flows between policy makers and pastoral experts.

Based on many years of pastoral experience, Field states that: *“There are many causes of poverty¹⁴⁶, but among pastoralists the driving force is lack of rainfall and pasture and the key issue is that there are too many people chasing too few resources”¹⁴⁷.*

¹⁴⁵ 2001.

¹⁴⁶ Hancock, 1989.

¹⁴⁷ Field, in preparation.

Many of these macro-problems can only be tackled through a combination of development **and** emergency interventions, where governments ensure coordination. The essential role of **tracking strategies** in pastoralist interventions is recognised. Nevertheless, no organisation or government conducts interventions that integrate the required flexible tracking approach.

One consequence of the above constraints is that many pastoralist societies have remained in a very traditional, social and subsistence-oriented, rather than commercial, mindset. This has resulted in a low-productivity cycle, due to the lack of livestock marketing promotion. The livestock marketing issue is key to the future of livestock keeping as a livelihood, and is therefore worth considering in more detail, as follows.

4.1.1. Marketing Problems

Marketing problems can be **chronic**, such as:

- The reluctance¹⁴⁸ of livestock owners to sell their animals;
- Inadequate access to markets due to poor infrastructure, distance, lack of transport and/or insecurity;
- Illiterate or innumerate producers are cheated by traders and traders' agents, thus producers only sell when they absolutely must;
- Restrictive trade tariffs, trade barriers and untenable health regulations leading to a stagnant marketplace;
- Old policies requiring three-week quarantine periods during which animals must be tested, fed and watered, reducing the profitability of trade.

Marketing problems can be more **acute** - either occurring in times of emergency, or resulting in a “livestock emergency”¹⁴⁹. For example:

- Panic selling due to drought: releasing huge numbers of (often poor quality) animals into the market, in turn causing a collapse in prices;
- Traders stop buying animals because of their poor body condition, insecurity, trade bans or lack of water and feed on trekking routes;
- Changes in government policies and local livestock movement restrictions;
- A collapse in consumer purchasing power, causing a drop in meat and animal purchase;
- Poor animal condition (rendering them unsaleable) due to prolonged drought, warfare or disease.

In all these situations, the producer loses out, and external factors are blamed. However many aid interventions - such as food supplementation, water provision, free health services and free education - further contribute to a lack of marketing and livestock off take because they address many of the livestock owners' needs, thus reducing the need to sell. When livestock owners actually need to sell (normally in the early stages of a shock), markets are fragile, prices are low and probably dropping further as more livestock become available. It is the process that causes the emergency. Although it is at this time (while the crisis is developing) that emergency livestock interventions should be introduced, there is also justification for encouraging livestock marketing in “normal” times in order to avoid creating the crisis.

¹⁴⁸ Or the lack of need to sell animals: the provision of free services such as health and education often removes the pressure to secure additional income.

¹⁴⁹ Sandford and Habtu, 2000.

One possible exception to the marketing problem is Somalia, where the livestock system thrives in the total absence of a recognised government¹⁵⁰ providing veterinary or marketing services. The Somali example demonstrates that if livestock marketing is successful, then pastoralism can be sustainable. This being said, the Somali market did suffer from the livestock export ban.



ICRC

Markets: trade bans, poor communications and the lack of market facilities are just a few of the problems facing livestock owners.

4.1.2. The Effect of Trade Bans on the Food Economy

The 1983 Saudi Arabian trade ban on cattle exports from Somalia due to Rinderpest is still in force, resulting in most cattle being exported through Kenya. Thus the annual turnover in Somali cattle sales at Garissa market in Kenya reaches as much as US\$ 15 million¹⁵¹. Occasional reports indicate that mild Rinderpest still exists in this ecosystem; should a major outbreak occur, it is likely to be detrimental to the trade.

The more recent livestock bans have had greater impact. The bans, intended to stop the expansion of Rift Valley Fever, targeted all live animals. They were imposed by Saudi Arabia, Yemen, Oman, Qatar and the United Arab Emirates between February 1998 and May 1999, and again from 19th September 2000 to date. The United Arab Emirates lifted the ban on 20th May 2001, as did some other states, but bans on the main market (Saudi) were maintained. In September 2003 the Saudi ban was partially lifted from Ethiopia, but not from Somalia.

Following the livestock bans, export earnings from livestock in Somalia were estimated to have dropped from US\$ 200 million to 84 million, and remittances from abroad had to rise to US\$ 500 million to compensate for this loss.

Livestock prices themselves were also affected: prior to the ban, a 25 kg sheep fetched US\$ 12-15, whilst at the time of writing sheep prices are US\$ 7-10, a 30% drop in value. Livestock owners suffered a serious blow as they could hardly sell their animals and, if they could, prices and terms of trade were extremely unfavourable.

The traders rapidly found ways to overcome the bans. The number of livestock exported through

¹⁵⁰ At the time of writing.

¹⁵¹ Little, 2000.

Bossasso is currently equivalent to pre-ban levels. This was achieved by shipping animals to other Middle Eastern countries, particularly Yemen and Dubai, before re-exporting them to Saudi Arabia. Some “quarantine” holding grounds were established in Dubai, although it is unlikely that they fulfilled all the necessary veterinary requirements for disease control. Drought in Australia has also contributed to the rise in Somali exports, and the growing outrage surrounding live export animal welfare in Australia¹⁵² may well benefit Somalia's trade in the long term.

Most bans have been lifted on neighbouring countries (Ethiopia in September 2003). The ban has however not been lifted from Somalia, due to its lack of government to ensure compliance with health and export certification procedures.

The value of exported livestock itself is important, not to mention derived benefits in the form of taxes. Somaliland yearly exports exceeded US\$ 100 million prior to 1998, and generated 10 million in government taxes. Measured in *terms of trade*, livestock owners selling their animals to purchase cereals faced a significant drop (up to 38% for those living along the Ethiopian border) in their purchasing power¹⁵³. Surprisingly enough, access disruptions caused by the 1997 floods caused greater purchasing power drops (53-79%) than the livestock ban.

The trade ban also caused a loss of jobs in the export and port sector¹⁵⁴. The 80% decrease in the number of ships docking in Somaliland raised the costs of imported goods, including cereals. Port charges increased, but generated less income (losses were US\$ 1.5 million *per annum*) or employment opportunities as ports were forced to reduce their labour force by 30%. Local markets lost US\$ 22 million in local sales taxes.

The number of livestock exporters and shippers in Somaliland dropped drastically from an estimated 50-70 before the ban to less than 10. The resulting monopoly may well affect future livestock prices.

The direct cost to livestock producers was a drop of 2.3 million animals (valued at US\$ 135-154 million) exported each year. Livestock prices dropped by 55% to US\$ 10 per head, and wheat and sugar prices rose by 80%. This was accompanied by a 78% depreciation in the value of the Somaliland Shilling.

Livestock trade bans therefore constitute a serious threat to pastoralism in the Greater Horn of Africa. Other GHA countries were affected by the ban, but the magnitude of its effects were slighter than in Somalia.

The ban has resulted in the *Organisation internationale des Epizooties* (OIE), the Food and Agriculture Organisation (FAO) and the African Union's Inter African Bureau for Animal Resources (AU-IBAR) placing considerably more emphasis on establishing acceptable marketing and quarantine systems for the GHA. Other effects and coping mechanisms to respond to the livestock ban are presented in Box 4.2 overleaf.

¹⁵² For example, against the export of a shipload of sheep that was rejected by Saudi Arabia and had to be donated to Eritrea.

¹⁵³ Little, 2000.

¹⁵⁴ Holleman, 2002

Box 4.2. Solutions to the livestock ban

The European Commission has identified the following methods of reducing the impact of current and future bans:

- Diversifying markets away from over-dependency on Saudi Arabia to markets in Jordan, Egypt and Iran;
- Diversifying products into chilled meat, canned products and high-grade leather;
- Improving the livestock sector to meet international standards (*Organisation internationale des Epizooties*).

The ban itself has prompted the following developments:

- Three private abattoirs were opened in Somalia (Burao, Galkaacyo and Mogadishu). Burao abattoir's slaughtering capacity is 840 animals per day, and it purchases 3,000 animals per week.
- An increase in the number of people involved in milk marketing.

Other household coping strategies include:

- Increasing animal sales;
- Increasing alternative sources of income - charcoal, milk sale, etc;
- Buying less expensive foods;
- Reducing outgoings (e.g. veterinary drugs);
- Sending children to richer relatives;
- Seeking employment;
- Increased borrowing and reliance on credit;
- Increased requests for remittances.

Tackling the macro-problems is a major undertaking, and one that agencies involved in livestock issues must not shy from. Addressing the micro-problems is also required, but tackling the latter without acting on the macro-problems is tantamount to administering first aid without the cure.

The micro-problems facing livestock owners in the Greater Horn of Africa are well documented, and are summarised in Box 4.3 below. More details on tackling the micro-problems are provided in other chapters and the Coping Strategies Table overleaf.

Box 4.3. Micro-problems facing livestock owners in the Greater Horn of Africa

- Insufficient grazing for animals;
- Low fertility rates, low milk output and poor genetic stock;
- Animal and human disease;
- Poor water distribution;
- Low animal value;
- Lack of price and market information;
- Long distances to secure basic needs;
- Few services;
- No veterinary drug supplies or qualified/effective veterinary workers;
- Poor terms of trade;
- Remoteness;
- Little food storage opportunity;
- Lack of livestock product processing equipment or techniques;
- High animal mortality;
- Low life expectancy;
- Diminishing resources seasonally and annually

4.1.3. Traditional coping mechanisms and survival strategies

Each country, tribe, clan or community has its own traditional coping mechanisms and survival strategies to overcome local problems. At **regional** level, the most widely adopted pastoralist coping mechanisms developed over time include the following:

1. Communality of resources - reciprocity with communities in distant grazing areas;
2. Migration with herds;
3. Traditional kinships and loaning systems;
4. Opportunism (maximising resources and livestock numbers);
5. Herd diversification (requiring diverse feed resources) with mixed species herds;
6. Investing in water supplies;
7. Creating fodder reserves;
8. Diversifying into cultivation and agro-pastoralism;
9. Sending family members to work outside the local pastoral system.

At **local** level, livestock owners resort to many traditional coping mechanisms in times of conflict or shock. Some are provided in Table 4.1 overleaf, but readers are referred to the Country Profiles and specific Household Economy Assessments (HEA)¹⁵⁵ that usually include all the coping mechanisms for each area.

It is important to identify the “right time to intervene”. Some reactions, defined as “coping mechanisms”, are short-term and harmless. Other reactions, however, amount to “survival strategies” generating long-term negative effects either in the form of destruction of the environment and livelihood system, or in terms of asset depletion impeding the livestock owner's recovery.

¹⁵⁵ Save the Children-UK and the World Food Programme/TSU or VAM are normally the key agencies regarding HEA information.

Intervention should definitely occur before coping mechanisms are replaced by survival strategies, but it is difficult to determine the exact stage of “coping” at which intervention is required.

Table 4.1 Livestock owners' short-term coping mechanisms and survival strategies

Traditional coping mechanisms	Survival Strategy
Migration.	Selling or slaughtering breeding stock.
Consumption of wild foods and fruits.	Selling pack animals.
Increased livestock sales.	Migration to towns.
Reduced food intake, fasting.	Making charcoal.
Splitting the family.	Brewing.
Change in diet.	Prostitution.
Slaughter of new-born animals.	Petty crime.
Increased sale of firewood.	Consumption of seed grains.
Increased milking frequency.	Digging up roots of plants to feed to animals.
Increased off-farm employment (gold mining, bush products sale).	Sale of productive assets, e.g. land (if appropriate).
Participation in CFW/FFW.	Starvation and death of weaker family members.
Credit, borrowing and entering into debt.	
Increased dependence on remittances.	
Begging.	
Consumption of livestock skins.	
Increased consumption of animal fats and blood.	
Sale of personal assets (e.g. jewellery).	
Increased slaughter of male animals.	
Keeping as many animals as possible.	
Moving livestock pens further from the water points and closer to the pasture.	
Lopping branches off trees.	
Buying crop residues and supplementary feed.	
Reducing non-essential expenditure.	
Increased hunting and fishing.	
Increased mobility.	
Releasing animals to graze earlier in the day and returning later at night.	
Selling water and water rights.	
Searching for honey.	
Combining herds for safety or to reduce labour costs.	

As shown in Chapter 2, pastoralists generally keep extra animals above their immediate needs, to secure sufficient animal reserves to dispose of rapidly in case of shock, in exchange for food or cash. It is therefore important for agencies to try and improve the “liquidation” channels and ensure that these excess animals can be easily and quickly disposed of before they lose value or even become worthless.

The changing role of livestock is discussed in the previous chapter and in each Country Profile. Reports suggest that, in Somalia for instance, people are changing from keeping drought resistant camels to the more “fragile” cow, due to increasing opportunities for cattle sale to the Middle East and resulting increases in cattle prices, whilst the market for camels has remained stagnant.

4.2. Future and Emerging Problems

4.2.1. Globalisation and Increased Expectations from Livestock

The income of pastoral societies is largely generated by the sale of livestock and livestock products. As the effects of globalisation spread in the Greater Horn of Africa (GHA), peoples' needs will also grow. As a result the demand for, and turnover of, cash and commodities will rise. Since livestock is the key source of cash, owners will attempt to maximise their livestock capital. A greater off take of animal energy (in the form of milk for sale and traction power for transport or ploughing) is also probable. This will increase stress on the animals and pressure on the land as people attempt to maximise livestock numbers.

4.2.2. Globalisation and Quality Standards

Challenges awaiting the GHA livestock industry (particularly in Sudan and Somalia) include globalisation and meeting strict welfare, hygiene and disease control regulations set by livestock importers such as Europe and the Middle East. It will be necessary to protect largely illiterate livestock owners from dangers such as exploitation and the dumping of sub-standard (or fake) veterinary drugs and feed. In parallel, it will be necessary to encourage them to satisfy the improved breeding and health management expectations of importers.

4.2.3. Globalisation and Differing Interests

Shifting interests observed in industry, conservation, world economics and social responsibility threaten the traditional methodology and planning of the GHA's livestock system. The “green” (environmental) revolution witnessed in Europe in the 1970s and 1980s still influences the trade policies and import requirements of western countries. The organic farming philosophies of the 1990s may also influence the future of livestock rearing in Africa, especially if existing market barriers can be overcome.

Most pastoralist production systems are comparatively “wildlife tolerant” compared to agricultural or urbanised systems. Nevertheless, the livestock system is under threat from wildlife conservation, cultural preservation and even “intellectual copyright” or “traditional ownership” issues.

The widespread discovery of oil reserves will also affect livestock production. In some countries such as Nigeria, traditional systems were totally deserted and destroyed in the wake of the oil bonanza. On the other hand, the oil industry may become the livestock system's saviour in some countries, by providing alternative income opportunities, new markets and an improved cash flow economy.

4.2.4. Demographic Pressure

Conflict and the resulting population displacement and impoverishment have caused some degree of breakdown in traditional coping mechanisms and traditional values, customs and controls. People will tend to exploit local resources to their own benefit rather than the benefit of the wider community or clan.

Human population (or demographic) growth will aggravate pressure on an already resource-poor agricultural and grazing land. Livestock production can only be raised to a certain level, and will quickly reach the point where it cannot support the growing human population. Improvements in agricultural production will be required, as will be major diversification into other livelihoods.

4.2.5. Conflict and Water

Water is life.....and often the cause of death

Increased borehole digging programmes have been set up in many of the Greater Horn of Africa countries accommodating very deep water tables. However, the geological soil composition impedes the work, and recurrent earth tremors in places such as Djibouti often damage the boreholes. Maintaining the boreholes in working order is problematic, and authorities are often forced to use tankers as an alternative. In addition, the concentration of cattle around boreholes is detrimental to the ecological environment because of overgrazing. In the long run it may therefore be preferable to rehabilitate more traditional wells across the range, rather than installing a few selected boreholes.

Ultimately, the success of any new water projects depends on their combination with strategic destocking programmes, fodder production and range improvement schemes.

Traditionally, much pastoral conflict was associated with water and grazing. Carelessly planned water development can actually fuel conflict, rather than alleviate tension. If water development plans are participatory, involving all stakeholders, some of the risks and threats can be overcome.

Developments in the peace process in Sudan¹⁵⁶ raise concerns over the Nile River Basin management. Access to the Nile waters are of critical importance to Sudan's neighbours, such as Egypt, Ethiopia, and Tanzania - 160 million people utilise them. The original treatise on the Nile water utilisation were drawn up by Britain and Egypt more than 90 years ago, and many countries now question the legitimacy of these agreements. However Egypt is totally dependant on the Nile and its floodwaters for its entire economy. Similar concerns exist on the utilisation of the Shabelle River that flows from Ethiopia into Somalia.

4.2.6. Livestock Raiding

Allegations of livestock raiding and theft are a new problem in Eritrea, and the phenomenon can be either international or local. Local livestock theft has become a problem, especially around the camps for internally-displaced persons. Tensions and the potential for local violence are likely to increase as limited resources are exploited by growing numbers (due to immigration or displacement) of humans and livestock.

¹⁵⁶ Naivasha Peace Agreement (Government of Sudan - Sudanese People's Liberation Movement/Army).

In Kenya, allegations of livestock raiding for commercial or political reasons (rather than for subsistence) are becoming more frequent.

In countries with poor governance, such trends are likely to increase, and will entail an escalation of violence and death as the economic consequences increase.

4.2.7. Land Tenure, Access and Migration

Access problems have been mentioned (due to the expansion of agricultural or cultivated areas), and are likely to worsen in future. Migration is essential for livestock survival, both in pastoral and agro-pastoral systems. The closure of migration routes due to expanding agriculture, urbanisation, or legal and political developments will cause massive livestock mortality rates, and deal a fatal blow to both the pastoral and agro-pastoral livelihoods. More agriculturalists have started farming riverbanks since the 1990s, a trend that has already caused clashes between locals, resettled people and investors.

Access and migration are linked to land tenure. Private land ownership is rare in pastoralist systems; most resources are communally owned, although some individual investment has led to the privatisation of wells and water points in parts of northern Kenya and Somalia. Even where water points are private, other stock-owners generally maintain their access to the water, but at a cost.

In Puntland, Somalia, especially wealthy livestock traders or exporters are reported to be closing off large expanses of rangeland for private use. The effects of this development are yet to be seen, but they are likely to generate tension in future.

Many governments consider migration or “nomadism and transhumance” as a primitive management system; they will need to be sensitised to the essential role and need for livestock movement under the climatic and environmental conditions common to the GHA countries.

The literature often quotes unregulated animal movement as a major constraint to the livestock system. In fact, uninformed attempts to control or regularise movement in order to reduce disease risks may be a bigger threat to the livestock system than the current problems that are associated with movement.

Land tenure will be a serious issue in future livestock husbandry systems. The conflict in Darfur, Sudan, appears to be largely related to expanding agriculture and the blocking of migration routes. In the drier regions livestock must be kept mobile to optimise the use of sparse rangeland.

4.2.8. Lack of Information

The lack of information on modern management and more specific issues such as livestock prices is a constraint to livestock owners and governments alike. The general lack of information on livestock numbers, management aims and techniques, and migration routes is a constraint to governmental, United Nations, non-governmental and ICRC planners and policy makers. The real numbers of livestock in many Greater Horn of Africa countries are unknown. Numbers are based on very old census figures that integrate estimated changes each year. A census based on participatory rural appraisal techniques would be beneficial. In 2003, an aerial livestock survey was carried out in Region 5 of Ethiopia by Ecosystems, and results from this survey should be compared to existing figures to determine actual national figures.

Providing technical advice and support to a large illiterate population with huge agricultural (and livestock) potential in environments such as southern Sudan is a major challenge, due to the loss or lack of educated livestock professionals as a result of the war.

4.2.9. Education

The strong traditional and cultural values placed on livestock by the Maasai, Boran, Dinka and Nuer cattle owners will hamper the commercialisation of livestock rearing or the use of animal power for transport or ploughing. Lack of education combined with exposure to modern farming systems will impede change; it may even entail conflict as young, modern “returnees” attempt to implement new ideas.

4.2.10. Pressure on Resources

As mentioned earlier, increasing competition over resources (whether between species, families or tribes within the livestock system), and from other interests (e.g. political expansionism, urbanisation, wildlife parks, agriculture) is likely to fuel tension.

Increasing human populations and increasing human needs will affect the long-term sustainability of the natural resource base.

4.2.11. Global Warming

Controversy exists as to the effects of global warming on the production system. Predictions point to more extremes in weather conditions with heavier rainfall periods, interspersed with drier, hotter conditions. Increased rainfall should promote the growth of pasture species and increase the livestock system's productivity, but may be more destructive with respect to infrastructure and soil erosion. Some reports indicate the increasing frequency and severity of droughts. On balance, the prognosis is negative for livestock owners in the Greater Horn of Africa.

4.2.12. Settlement

Migration towards urban centres and increased settlement may have positive or negative effects (see Chapter 2). If the negative effects outweigh the positive, then tension or conflict may be expected in the long-term.

4.3. Cross-Border Issues

Cross border issues affect countries without stable governments just as much as those ruled by well established and stable governments. In most countries, the government often controls or restricts cross-border movements of its nationals and their livestock. Whilst no Somali national government controls the movement of its people, neighbouring governments (particularly Ethiopia and Kenya) do try to restrict the movement of livestock and people to some extent. The major cross-border issues for GHA countries include the following:

- Nationality and sovereignty;
- Security;
- Economic and political migration;
- Trade;
- Livestock nutrition and health;
- Water and river-basin management.

4.3.1. Nationality and Sovereignty

Issues of nationality and sovereignty existed even before the early colonial history of some countries. Different emirs, pashas, sheikhs and other traditional elders fought for power and land long before European colonisation. For instance in Somalia, nationality and sovereignty issues were complicated by the colonial (French, Italian and British) and post-colonial border demarcation, but significant Somali populations live across Somalia's borders in Kenya and Ethiopia, whilst Somaliland is seeking independence. Cross-border movements are thus often mistrusted, even if their major purpose is usually quite innocent and mundane such as the search for water and pasture. Due to the homogeneity of the people inhabiting these areas, free cross-border movement is in fact common. At times, it can however be restricted or involve a cost. Abolition of these border controls would certainly benefit the livestock system for Somalia, but even more for Kenya and Ethiopia, by facilitating access to markets and pasture.

In terms of sovereignty, the administration of the Elemi Triangle (located in northern Kenya) is a potential point of dispute between Sudan and Kenya. On old maps, the Triangle belonged to Sudan, but on more recent maps it is part of Kenya. Kenya has been administering the area for decades, but reports of oil reserves in the Triangle and the Peace Process in Sudan could lend the issue a new international dimension.

4.3.2. Livestock Raiding

Livestock rustling is not new to most pastoralist areas. However rustling does appear to be a new issue in Eritrea along the Temporary Security Zone with Ethiopia, where civilians are alleged to be stealing cattle and taking them back to Ethiopia. Before the war this was not so much of a problem as relations between the neighbouring groups were good.

Interviews with Turkana elders in northern Kenya revealed another problem regarding cross-border raiding. Whilst the Kenyan Turkana and Sudanese Taposra raid each other regularly, at the time of writing the Turkana complained that they were restricted from following the raiders into Sudanese territory to recover their stock¹⁵⁷.

4.3.3. Economic and Political Migration

Many cross-border issues revolve around refugees and people who have been displaced due to war or drought, or for political or economic reasons. The presence of large refugee camps (such as Dadaab and Kakuma, in Kenya) in neighbouring host countries can generate local tension; this tension can take on an international dimension simply because of their location, sometimes resulting in increased friction and prejudice at national or international levels.

Most United Nations and non-governmental organisations have also installed their bases for Somalia and South Sudan in Kenya due to the insecurity and lack of infrastructure prevailing in the operational countries. This obviously benefits Kenya rather than Somalia or Sudan (i.e. fringe benefits).

Many young Turkana, Rendille, Samburu and Boran men migrate to the cities; this migration can be termed as “economic” and, although it doesn't necessarily involve crossing international borders, it

¹⁵⁷ The current Peace Process between the Government of Sudan and the Sudanese People's Liberation Movement/Army (SPLM/A) may, however, lead to changes in this situation

results in the loss of a strong labour force (e.g. in obtaining water from deep wells, protection of the herd against raiders).

4.3.4. Trade

Trade flows are another cross-border issue due to differences between official policies, taxes and laws, all of which encourage the entrepreneurial spirit of both small and large traders. Trade is often related to basic necessities such as sugar, maize and tea, or to luxuries such as *khat*¹⁵⁸ (*Catha edulis*) and electronic goods; the weakness or absence of border controls and associated taxes makes an otherwise uneconomic trade more profitable. The major concerns are the loss of taxes through smuggling, its associated lawlessness, and the trade in small arms.

The Somaliland-Djibouti border was closed in March 2001 with a view to controlling trade. The closure however not only affected trade, but also caused a significant loss in income and government revenue. Pastoralist groups in Guban-Golis also lost access to social ties and kinship-related coping mechanisms across the border. Finally, local Somali traders could no longer obtain letters of credit from the recognised Djibouti banks in order to pursue their international businesses.

Similarly, attempts by the Ethiopian authorities to close their border with Somalia in 2003 disrupted trade flows both into and out of Somalia. Much of the Ogaden region in Ethiopia relied on trade from Mogadishu for veterinary and human medicines, whilst many Ethiopian animals travel to the livestock markets in Somalia. This situation has resulted in commodity shortages and price fluctuations.

Field¹⁵⁹ demonstrates how official export bans and border closures simply lead to unofficial exports. He provides the example of Ethiopia where, prior to the export ban, yearly illegal exports reached 55,000-325,000 cattle, 300,000-1,200,000 small stock and 16,000-100,000 camels. These unofficial transactions are estimated to have caused a loss of revenue to the Ethiopian Government of US\$ 44-136 million *per annum*. Evidence from Somaliland supports these observations insofar as an estimated 50-60% of the 1.4 million small stock exported from Berbera port originated from eastern Ethiopia. Other borders, especially those with Somalia and Kenya, were commonly transgressed and it was estimated that in 2000, 26% of livestock produced in Kenya originated in Ethiopia.

The impact of international livestock export trade bans has been discussed earlier (section 4.1.2 above).

4.3.5. Livestock Nutrition and Health

Animal health issues are of particular relevance to Somalia, Sudan and Kenya as they are considered to be the last remaining *foci* of Rinderpest in the world. Following massive investments into the global eradication of Rinderpest, reports from as recently as March 2004 indicate the possible presence of mild Rinderpest along the Kenya-Somalia border.

Should the infection spread southwards to central Kenya through trade cattle, consequences for the cattle industry in Kenya could be serious, and this would deal a major blow to the eradication programme. Cross-border disease control is the major thrust of the Pan African Control of Epizootics

¹⁵⁸ *Mirra* in Somalia.

¹⁵⁹ In preparation.

(PACE) Somalia project and the Food and Agriculture Organisation (FAO).

The FAO's Examination and Certification of Livestock for Export (EXCELEX) Project is developing new ideas on cross-border disease control and livestock marketing especially for the GHA context. The *Organisation internationale des Epizooties* (OIE, the world body responsible for the control of epizootic diseases) is also discussing new guidelines or procedures to facilitate livestock marketing in the Horn of Africa in compliance with international standards, and access to western markets for livestock from the region.

Natural herd migration in search of water and pasture is extremely common along Somalia's borders. One of the most frequent and massive is the influx of Issa herdsmen from Ethiopia's Region 5 into the Awdal region of Somaliland. Frequent and recurrent droughts in Shinille, Ethiopia, force the Issa to migrate with large herds of cattle and camels and flocks of small stock into the interior and coastal plains for a couple of months whilst they await the *Belg* rains in Ethiopia.

4.3.6. Water and River-Basin Management

A future concern, that appears to be insufficiently taken into consideration at present, is the potential for international conflict over water use in the region. The Shabelle and Juba rivers both originate in Ethiopia, but are essential to much of Somalia's agricultural and livestock future. Hydroelectric dams and irrigation schemes in Ethiopia could thus have major consequences on Somalia's economic future. This suggests the need for both internal and cross-border planning based on participatory land use planning (PLUP) for future water management in both countries.

After 20 years, a World Bank funded project to dam the Shabelle River has led to the irrigation of 300 ha in 2003, but aims at irrigating over 25,000 ha in the coming years.

CHAPTER 5

Evolution of Livestock Interventions Impact, Lessons Learned & Basic Principles of Livestock Intervention Policy in the Horn of Africa

5.1. Overview - The Changing Approaches to Livestock Interventions.

Niamer Fuller¹⁶⁰ maps the evolution of pastoral development from the traditional, colonial Kenyan and Zimbabwean “ranching” models of the 1940s to current land-use planning approaches with the introduction of decentralisation and participatory approaches in the 1990s, through the integrated rural development approach of the 1970s and natural resource management projects of the 1980s.

The **original ranching models** were conservative, based on fixed (fenced) boundaries, settlement - establishing water points and static veterinary centres -, and destocking in which animal stocking rates were based on carrying capacity calculated for the worst years. In recent years, it has been argued that this conservatism had a high opportunity cost (fodder wastage), and that consistent understocking actually led to pasture degradation.

The **integrated rural development** (IRD) projects followed the classic ranch management approach to pastoralism based on improving livestock production, but included human health, education and infrastructural programmes. Many of the added benefits fell into disrepair once the projects ended.

Natural resource management (NRM) projects focused on the rangeland rather than livestock. Management guidelines were designed based on carrying capacities, remote sensing and early warning systems. Although local people became involved through “pastoralist associations” (PAs) and the responsibility for plan and grazing area management, little true community ownership resulted.

The more recent **land-use planning** approach derives from the NRM philosophy. It is, however, more localised and village-based involving more community participation, and is based on the common property theory. This approach has only been partially successful, as truly mobile pastoralists often lie outside the village focus. In addition, local leaders and traditional decision making bodies are often replaced by, or overlooked in favour of, government or quasi-government authorities. Moreover, poverty and the need for rapid social, financial or infrastructural returns often override the goal of maintaining or improving the management of sustainable resource based production.

None of the above systems has really addressed the core issue of mobility. Even the current emphasis on local pastoral associations and indigenous non-governmental organisations taking the lead in pastoral development is often directed by educated, town-based pastoralists. These are far removed from the essential day-to-day issues experienced by their kin on the pastoral rangelands. This again results from the absence, within the rangelands, of the resources and infrastructure required for educated and vocal rural representatives to address decision makers and financial controllers, themselves based in the capital cities.

Niamer Fuller and Turner conclude that pastoralism only exists thanks to pastoralists accommodating a decline in living standards and the decapitalisation of pastoral wealth. This has been achieved through the adoption of alternative income sources via cropping, urban migration and wage labour. Some of these alternatives, especially rainfed agriculture in arid and semi-arid areas, are

¹⁶⁰ 1999.

perhaps riskier than livestock rearing itself. These authors recognise the importance of pastoralist **ownership and involvement** in determining their own future.

Current thinking emphasises mobility, communality of resources or freedom of access, and maximising the opportunistic use of wide-spaced resources in disequilibrium environments common to arid areas. One problem is that it does not compare **sustainable** use, increased human needs and the breakdown in the “moral capital” of the community. It does argue that pastoral groups still recognise the importance of identity, mutual trust, and social obligations, among others; however, the increased argument for service privatisation tends to prove that individualism, especially amongst the younger educated pastoralists, is stronger than community benefit.

In summation, the mobility theory for optimum utilisation of disequilibrium arid lands is still just that: a theory. Governments, non-governmental organisations and pastoralist associations themselves have yet to develop modern tracking strategies¹⁶¹, incorporating the necessary intervention timeframe, to support the theory. At present it will be difficult to implement, as it requires major changes in government laws and the younger pastoralists' new, educated thinking opposed to communal ownership. The belief in communal ownership is still held by the older, traditional generations and social scientists, but is rapidly disappearing with modern education.

5.2. Changes in the Livestock Emergency Intervention Approach

Based on experience in Kenya, three overall changes can be distinguished in the intervention approach, as described below.

5.2.1. Decentralisation of Initiative

A shift has been observed from the government and donor led interventions of the 1970s (and earlier) to a more government/non-governmental organisation led approach in the 1980s. This has involved decentralisation away from central governments to district level governments (District Rural Focus). In the late 1980s, non-governmental organisations promoted greater emphasis on “community based” initiatives, and beneficiary involvement in implementation. Governments who adopted the *principles*, but were slow or poor in implementing the *practice*, of community involvement slowly accepted this approach. It gained momentum in the 1980s through the 1990s with the development



Recent trends encourage community involvement in planning interventions.

ICRC/Piers Simpkin

¹⁶¹ See Section 9.3.

of the participatory rural assessment (PRA), rapid rural appraisal (RRA) and participatory monitoring and evaluation (PME) theories among others, until even government staff were skilled in its implementation.

The next step in this direction (slowly advocated but yet to be fully achieved) is “community ownership” of emergency and development interventions. This requires involving community members in the actual planning and project design, not just in the implementation and monitoring phases. Modules in community based planning, monitoring and evaluation are in the process of being designed.

The Food and Agriculture Organisation¹⁶² recently identified the following trends in African Veterinary Department service delivery policy:

- Veterinary departments now concentrate their efforts on animal health programmes that require public management;
- Selected former state-provided activities are now relinquished to the private sector (privatisation);
- Greater focus on production limiting diseases;
- A “user pays” philosophy is being adopted;
- Competition on the international market requires effective veterinary services.

The current thinking is that livestock interventions in particular should be “client driven”, that is, livestock owners should determine the necessary services¹⁶³.

5.2.2. From Saving Lives to Protecting Livelihoods

A change from saving lives (e.g. food-for-work, supplementary feeding) to protecting livelihoods has been observed. This shift is illustrated by interventions such as emergency animal health inputs, support to livestock marketing, transport subsidies, “famine relief for livestock”, livelihood diversification, income-generating activities, and micro-enterprise management.

This change in approach is critical in the Greater Horn of Africa livestock production system. A background to pastoralism and its problems is presented in Chapters 2 and 4 above, and it is clear that pastoralism as a livelihood is in crisis in many countries. Even in normal years the current livestock economy struggles to support the existing number of people depending on it. During and after shocks, livestock alone cannot support the population. External aid (famine relief, supplementary feeding, etc.) maintains people in the pastoralist livelihood, while some (i.e. the more vulnerable segments) would normally have died or resorted to another livelihood. It is thus essential for agencies not **only** to respond to livestock crises with livestock interventions. In many cases, agencies should intervene with **alternative livelihood responses and livestock interventions** to address livestock crises. By doing so, agencies will be supporting the livestock or pastoralist livelihood more sustainably and realistically.

The critical issue is timing - determining when to choose emergency livestock livelihood interventions, and when to prefer emergency alternative interventions. Readers are referred to Chapter 9 for a full discussion of the tracking strategy.

¹⁶² 2003.

¹⁶³ Leyland, personal communication.

5.2.3. Planning and Targeting

Finally a shift from straight emergency relief provision to a more professional method has also been observed. This more professional approach resorts to early warning systems, disaster cycle management, and now poverty monitoring and targeted distributions based upon the Household Economy Approach (HEA)¹⁶⁴.

The HEA involves a full investigation of the household's food security, and enables decision makers to identify assistance beneficiaries and modalities. Although these tools are now available, it is still necessary to sensitise communities under scrutiny as to why targeting is necessary. Traditionally, and even today, food aid distributed in Ethiopia and Eritrea is often divided between all the members of the community, rather than targeting the poorest of the poor (or most needy). Whilst better targeting may reduce the amounts and costs of aid, it could also lead to a breakdown of the traditional community coping strategies of sharing and mutual support.

5.3. Impact and Lessons Learned

A discussion of key interventions and their impact is provided below.

5.3.1. Famine Relief Distribution and Supplementary Feeding Centres

These initiatives began as early as the 1950s in many of the Horn countries, but as late as 1973 in the pastoral areas of Ethiopia¹⁶⁵. Historical records suggest that missionaries and colonial governments also operated feeding centres or relief supply distributions as early as the 1920s. Developments have been rapid in relief distribution and supplementary feeding. They have evolved from being purely humanitarian in nature to an advanced science based on nutritional requirements and workloads. They now involve medically rigorous therapeutic feeding systems; they include different rations changing on a daily basis to ensure proper body absorption, and maximise survival and recovery



ICRC/Library

Famine relief and cash for work programmes help pastoralists through difficult times.

chances. This study does not intend to judge the pros and cons of food aid, but does highlight some of the impact it has on livestock systems (see also Food for Work, Cash for Work, and Employment Generation Schemes below).

Large-scale relief distributions became commonplace in response to the droughts of the 1970s and 1984, facilitated by the increasing production of excess “food mountains and milk lakes” in the United States and Europe. Their impact on the livestock system is mixed. Certainly, many human lives have been saved. In some areas where too much food was delivered, livestock also benefited, as it was able to eat the excess grains.

¹⁶⁴ See John Seaman *et al.*/Save the Children: "*The Household Economy Approach - A Resource Manual for Practitioners*", Save the Children Development Manual no. 6, 2000.

¹⁶⁵ Lautze *et al.*, 2003.

Some authors¹⁶⁶ claim that food relief aid is actually damaging to the pastoral livelihood for several reasons, as follows:

1. It artificially keeps more people alive, beyond the production capacity of the herds that they depend on;
2. Non-viable households remain in the pastoral livelihood whilst they would normally be forced to find an alternative livelihood;
3. It removes the need to sell livestock;
4. It subverts the need to destock, which is Nature's way of restoring the ecosystem balance;
5. Centralised relief distribution encourages pastoralists to settle around centres, aggravating the environmental damage around water points;
6. The cooking of dry food (cereal) relief requires considerably more fuel-wood than traditional foods, leading to increased charcoal production and destruction of the secondary vegetation.

5.3.2. Employment Generation Schemes (EGS)

Food-for-work (FFW) and cash-for-work (CFW), more recently referred to as employment generation schemes (EGS), largely began in the 1960s in the Horn of Africa, and expanded rapidly in the 1980s and 1990s¹⁶⁷. Projects are deliberately labour-intensive and, initially, focused on the community's interest. More recently, however, some agencies have included activities benefiting individuals.

In the short-term, these activities stabilise access to food, income and expenditure for the poor, allowing them to avoid mass migration, severe malnutrition, or the sale or consumption of their remaining productive assets.

The duration of most initiatives is planned to be limited. Some individuals, organisations or countries however wish to develop them into longer-term or permanent employment schemes which would be guaranteed and demand-driven - in other words, a constant public works programme that poor people join and leave at will. The benefits would not only be a short-term improvement in income and food security, but also a longer-term poverty reduction and “risk insurance” scheme resulting in increased assets and improved infrastructure.

Most FFW or CFW activities tend to be projects in rural road development, irrigation or resource conservation and afforestation. They mainly target poor, unskilled labourers.

Constraints to FFW and CFW:

- High project overhead costs;
- Creation of a dependency syndrome;
- Fixing wage rates;
- Modified seasonal labour availability: schemes may need to allow for varying daily rates based on season and other local labour opportunities, or commitments to participants' own fields/herds;
- Often planned at national level and thus neglect local priorities or issues;
- Progress or impact in arid and semi-arid areas can be low as herdsman and pastoralists are not manual labourers traditionally;
- The risk that new infrastructures resulting from EGS may attract tension;

¹⁶⁶ Cited in Sandford and Habtu, 2000.

¹⁶⁷ Teklu, 1995.

- The risk of exploitation by fighters or unscrupulous leaders;
- Once assets are created, beneficiaries need to know/learn how to protect or maintain them (e.g. income generating activity training, etc.);
- Pastoralists are scattered. Establishing work groups may require accommodation facilities (e.g. cooking, eating, drinking, sleeping, etc.) if activities are remote from pastoralist concentrations;
- Dry seasons and droughts are the busiest times for pastoralists tending to their stock. Women may also be over-burdened (e.g. fetching water, etc.). Pastoralists may not have the time to engage in FFW or CFW.

Public works programmes may have to be supplemented by feeding centres for the disabled or those too weak or unable to participate in employment generation schemes.

It is recommended that future employment generation schemes (EGS) be aimed at improving the primary production system to support and strengthen the livestock system. EGS activities could include re-afforestation, erosion control, water micro-catchments and water harvesting, irrigation, fodder production, market place construction, improving market access routes, and *Prosopis* control.

Box 5.1. Cash-for-work Turkana case study

In 2003, Oxfam carried out a cash-for-work project for 2,639 households in 17 different centres. Each household received 6,000 Kenyan Shillings (approx. US\$ 80). Cash-for-work activities were chosen by each community and included:

- The construction of seven water pans;
- Fish net making in five centres;
- Farmland preparation in three centres;
- One rock dam;
- One bush clearing exercise.

Work norms included:

- Water pan construction and farmland preparation: KShs 150 per cubic metre (US\$ 2);
- Fish nets: KShs 1,500 per net (usually made by four people);
- Bush clearing: KShs 150 for ten square metres cleared.

Water pans were 60 x 50 x 2 metres for 150 workers, and 67 x 60 x 2 metres for 200 workers. Both required each person to shift 40 cubic metres of earth to earn KShs 6,000.

Targeting:

Beneficiaries were selected by communities at open meetings; randomly selected individuals nominated beneficiaries. Only the female head of household was registered as the beneficiary.

Cash-for-work and employment generation schemes provide short-term relief, but must be a long-term plan to achieve their real objectives of building assets and risk insurance. They are suitable in emergencies, but if they are to constitute a long-term asset building scheme they are probably better suited to governments. However, some short-term (1-2 month) employment generation schemes (e.g. cactus fodder banks, desilting pans, *Prosopis* control) can yield long-term benefits, and should be considered accordingly.

5.3.3. Safety Nets

The provision of safety nets largely encompasses external relief operations following a disaster. It includes famine relief, the delivery of essential household items, and cash or food for work. The expression originated to justify unsustainable (from a donor or agency point of view) interventions of a relief nature within the “livelihood” framework. In a traditional pastoralist system, safety nets would include begging from relatives, borrowing livestock, or carrying out labour for wealthier livestock owners. These traditional safety nets, formerly provided by traditional internal sources, are now supplied by donors and aid agencies. The danger of this shift is dependency on external aid, even in “normal” times: within the traditional system the amount of available aid was limited, whereas the seemingly “unlimited” volumes of available foreign aid exceed the local resource base's capacity.

In the framework of immediate humanitarian assistance, the provision of “safety nets” is justified; however, external safety nets tend to be deleterious to the long-term future of pastoralist livelihoods, as they undermine the system.

5.3.4. Livestock Drought Marketing

Large-scale livestock drought marketing began in colonial times, when policy demanded of national agencies that they purchase tens of thousands of livestock, and send them to abattoirs for slaughtering, and canning or drying¹⁶⁸. These interventions were usually very unpopular among pastoralist communities, and led to tension on several occasions as government officers issued quotas, and paid little or no attention to traditional and customary needs *vis-à-vis* livestock.

In the late 1990s the approach shifted from compulsory purchase to the provision of market transport subsidies (see section 5.3.12 below).

Generally livestock marketing requires improvement as a whole, not limiting support to emergency interventions. Current, inefficient, livestock marketing systems involve producer exploitation. To address the problem, governments and livestock traders need free access to international markets, must improve disease control mechanisms, and direct livestock owners towards a more commercial (rather than subsistence) livestock production system.

Livestock drought marketing is an option, but only in its more modern forms of market transport subsidies¹⁶⁹ or destocking/emergency slaughter (see below).

Dialogue with governments and donors is required to improve livestock marketing generally. Agencies should participate in discussion networks where they exist, or attempt to establish them where they are lacking.

¹⁶⁸ E.g. Archers Post abattoir and Livestock Marketing Division (LMD) in Kenya in the 1960s.

¹⁶⁹ Experiences in providing transport subsidies have faced serious abuse recently, and a proper “accountability” system is thus required for any market subsidy support.

5.3.5. Destocking (Emergency Slaughter)

Destocking has become one of the commonest emergency interventions in pastoralist areas. This type of intervention aims at purchasing animals (or exchanging them for food), and slaughtering them immediately. Field¹⁷⁰ discusses the application of this approach to livestock exchange in northern Kenya. Exchange terms were the following: one kilogramme of cereal for one kilogramme liveweight for animals in **good or fair condition**, 0.5 kilogramme of cereal per kilogramme liveweight for **weak** animals, and as little as 0.25 kilogramme of cereal per kilogramme liveweight for **seriously weak** animals. This approach has also been referred to as food-for-stock, as opposed to food-for-work.

Purchased or exchanged animals are slaughtered, and the resulting meat distributed to local beneficiaries - the poorest of the poor, internally-displaced persons or institutions such as schools and hospitals.

Large-scale destocking began in Kenya and Ethiopia during the 1984 drought. Oxfam was one of the main agencies initiating the programme. Originally the weakest animals were slaughtered, but the current trend is to purchase animals in fair or good condition, enabling local use of the meat. Cattle, sheep and goats are usually the main targeted species.

Most animals were originally exchanged for relief food, especially oil or cereals. More recently, agencies have purchased animals in order to inject cash into the local economy, and thus enable sellers to cover their essential - not necessarily food related - needs.



ICRC/Mathias Frese

Destocking is a component of emergency market support interventions.

cash and animal feed (or fodder). The cash enables owners to buy food for their family and the animal feed/fodder provides for the remaining herd (see Supplementary Feeding). This approach proved successful in northern Kenya. Where pastoralists are unaccustomed to providing their stock with feed, sensitisation and extension work may be required. At the time of writing, Mercy Corps was launching a one-year livestock project in Eritrea, aiming at providing 25% of food supplement (fodder) relief

In northern Kenya, non-governmental organisations contracted local women's groups to purchase animals for slaughter, and to implement the programme at village level. Some women's groups were able to derive a small profit from these activities, resulting in a broader community benefit of the destocking. *Vétérinaires sans Frontières*-Belgium contracted women's groups in Turkana District to purchase animals, but also to actually produce dried meat. Target groups were paid on the amount of dried meat thus produced, rather than on the number of purchased goats.

The most recent approach is to purchase or exchange animals for a combination of

¹⁷⁰ 2001.

for sheep and goats. The project targets up to 5,000 households who will contribute 5% of their flock to Mercy Corps. The contributed animals will be fattened or bred at a demonstration farm for subsequent slaughter, resale or restocking.

The value of the skins from destocking was originally used by non-governmental organisations to reimburse transport costs. More recently, hides and skins have been used as kick-start capital for local women's groups.

5.3.5.1. Advantages

- Destocking maintains some degree of pride and dignity among recipients, as they are not just receiving free handouts;
- The resulting cash can contribute to covering their essential needs;
- Livestock numbers are reduced slightly, thus releasing grazing for remaining breeding animals, marginally reducing overgrazing;
- Local protein sources are utilised and not wasted;
- It supports family cohesiveness at a time when most households disperse in search of income or livelihood sources;
- It creates employment amongst the very poor, for slaughtering, meat preparation, guarding, etc.;
- Reduced overgrazing marginally increases milk yields and animal body condition (capital value);
- A reduction in the number of weak animals (those most susceptible to disease transmission), leading to a consequent improvement in the overall herd value.

5.3.5.2. Disadvantages

- Destocking further reduces the pastoralist asset base;
- It may undermine future livestock marketing initiatives if pastoralists come to expect regular destocking during difficult periods.

5.3.5.3. Lessons learned

- Fresh meat distribution is cheaper and easier than dried meat distribution;
- Fresh meat satiates hunger more than dry meat;
- Dried meat is best resorted to late in emergencies, when huge numbers of animals must be killed in a very short period;
- Local non-governmental organisations can implement destocking at less expense and more effectively than international non-governmental organisations;
- Village destocking committees or women's groups can be responsible for the actual implementation. Non-governmental organisations involved need only ensure verification;
- Destocking should begin early in the alert/alarm stage, but can continue throughout the crisis to emergency;
- Animal type and condition, prices, number of purchased animals, slaughter frequency or schedule, seller and beneficiary criteria all must be agreed upon with the community ahead of actual implementation;
- The beneficiaries of the meat can be identified whilst the animals are still alive. Selected beneficiaries are then responsible for the slaughter and sharing of the meat. Lautze et al.¹⁷¹ suggest that the meat of one sheep or goat can be shared between four households; one cow or camel can be divided among 30-40 households;

¹⁷¹ 2003.

- A set price policy should be established to avoid negotiation over individual animals. Prices must be agreed upon with the community before implementation. Prices slightly below the market rate are preferable, as they limit abuse, and allow local traders to resume their traditional system after the shock;
- Destocking can be run alongside veterinary or feed supplement programmes. The money resulting from livestock sale can be used to purchase veterinary drugs or fodder for the remaining stock;
- Local veterinarians or livestock professionals should be involved in meat inspection.

The ICRC already implements this type of action¹⁷². Destocking can be initiated in emergencies, its duration and target group are set, it requires minimal equipment, and can be implemented by beneficiary communities themselves.

Destocking levels should be agreed upon with the community before actual implementation. At a certain stage, should the shock persist, remaining breeding animals should be supported through fodder supplementation to maintain the minimum core of animals from which to rebuild the herd.

5.3.6. Purchase for Slaughter

Purchase for slaughter is similar to destocking, but targets animals in good condition rather than weak animals. FARM-Africa began purchase for slaughter in Kenya in 1997-98. The agency donated ten male camels to schools for feeding to the pupils. The initiative proved successful, and other non-governmental organisations have since been purchasing up to one hundred local camels for slaughter and consumption by local residents.

Camels are preferred for “purchase for slaughter” programmes. This is due to the fact that, in typical drought or shock situations, cattle lose condition first, followed by sheep and goats. Young, old and female animals also tend to lose condition faster than adult male animals. Camels generally manage to maintain a good body condition but, in some areas, and if launched early enough, male smallstock and oxen could be purchased.

The use of local protein sources is probably cheaper than imported beans and pulses, and the cash generated by animal purchase stimulates the local economy.

Purchase for slaughter can be initiated quickly in emergencies, its duration and target group are set, it requires minimal equipment, and can be implemented by the beneficiary communities themselves.

5.3.7. Restocking

The aim of restocking is to re-establish pastoralists in livestock rearing following stock loss due to drought, raids, epidemics or floods. Oxfam and Christian Aid first began restocking through the Livestock Marketing Board with the Afar during the 1973 Ethiopian famine.

In Kenya, Oxfam restocked 1,000 (many female-headed) households in Wajir in the late 1970s, and in Turkana and Samburu Districts following the 1984 drought.

In Eritrea, the Government and non-governmental organisations have attempted restocking during the late 1990s. The Government pays the community to restock. Eritrea has a better **trust** and

¹⁷² See 2004 ICRC Destocking operations in Ethiopia (Gode)

redistribution basis than many of its neighbours, and restocking can thus be implemented via local administrators. No cases of corruption or favouritism have been reported so far. Up to 10,000 Eritrean Nakfa¹⁷³ were paid to families supporting orphans to purchase as many livestock as they could.

Restocking is one of the few animal interventions that have received considerable attention and analysis, especially from anthropologists and social scientists. Traditional restocking practices are observed among the Somali, Boran, Rendille and Samburu.

Approaches have changed from providing one or two animals to a large number of families to donating a larger flock or herd to fewer families. Most agencies provide sheep and goats due to their higher reproduction rate. In agro-pastoral areas, cattle (in some cases including exotic European types) have been donated. The approach is expensive.

In the Oxfam Kenya interventions, Samburu and Turkana households received 20-70 small stock and a pack animal (donkey or camel) each. Most authors agree that, in truly pastoral systems, a minimum of 50 breeding female small stock is required, others estimate the minimum for survival to be 150 breeding animals.

The optimal number of donated animals varies according to livelihood, area, and need. In theory¹⁷⁴, **four TLUs/AAME are considered the absolute minimum number of livestock necessary to keep a family in the pastoralist livelihood.** This equates to about 24 sheep and goats, or 4 cows, per adult equivalent (120-144 small stock per family).

When issuing the livestock it is often also necessary to provide food for 9-12 months in order to pre-empt beneficiaries slaughtering and eating their new herd. The larger the number of animals issued, the more opportunity for the beneficiary to sell some animals for food, or donate them to recreate the “relationships and partnerships” fabric essential to the pastoral system (e.g. watering rites).

Initially restocking animals were donated, as a free gift. Later they were “loaned”, repayment being in the form of offspring returned to the non-governmental organisation or village restocking committee. These offspring were later given to other needy families. Both systems have advantages and disadvantages, but some general lessons were learned.

5.3.7.1. Advantages

- Restocking is a traditional practice;
- Livestock owners are supported in returning to a familiar livelihood;
- In some areas livestock keeping may be the only available livelihood;
- It maintains dignity and respect.

5.3.7.2. Disadvantages

- Restocking can undermine traditional practices and create dependency;
- Some areas may already be overstocked (or overgrazed), and providing yet more animals may be detrimental to the environment;
- It can provoke tension or conflict.

¹⁷³ US\$ 738.

¹⁷⁴ Sandford and Habtu, 2000.

5.3.7.3. Lessons learned

Lessons learned from restocking vary according to the ultimate aim both of the implementing organisation and of the beneficiary household/community.

- Beneficiaries should not be “dropouts”; they should at least own some livestock;
- Restocking the herds of many families with only one or two animals is insufficient for a mobile pastoral livelihood, and can lead to overgrazing around settlements and increased risk of parasite infections;
- Restocking with cattle or small stock should be linked to livestock marketing or upgrading. If beneficiaries only maintain their flocks as they did prior to restocking, they are likely to be destitute again within four to seven years. Beneficiaries should be encouraged to diversify and exchange drought prone small stock and cattle for drought tolerant camels;
- Improved milk goats can be used to restock agro-pastoralist herds successfully, providing the necessary management and nutrition training is also provided;
- Externally funded restocking projects should integrate or follow traditional restocking methods where possible, including recipient selection;
- Beneficiary selection, animal number, source and type, and prices must be agreed upon with (or decided by) the local community;
- Animals must be purchased locally;
- All animals must be treated and vaccinated before their distribution;
- Beneficiaries must be referred to a local community animal health worker, or restocking programmes must be linked to a community animal health worker training programme.
- If local communities are contributing animals to the programme, contributed and purchased animals should be mixed and distributed randomly to pre-selected beneficiaries. This ensures that contributors don't receive their own animals by prior arrangement.
- If beneficiaries are to “pass on the gift” to others, the second beneficiary tier should be selected at the same time as the first, and second tier beneficiaries need to know who will supply their livestock. This enables the second tier to “monitor” the first.

Restocking is a livelihood support intervention (rather than relief): it aims at protecting the productive capacity of its beneficiaries. Agencies need to consider a number of specific concerns, as follows:

- If the environment cannot support more animals, alternative livelihoods are more appropriate;
- Imported poultry restocking demands long-term (government or private sector) veterinary support;
- Restocking in conflict areas can attract further friction, depending on the level and causes of community tension;
- Restocking all parties to the conflict can however facilitate communication between warring factions, provided there is scope for this dialogue.

5.3.8. Human Health Interventions

Although not strictly related to livestock emergency intervention, human health is nevertheless discussed here, especially with reference to therapeutic feeding centres, that are commonly found in livestock areas during catastrophes. As is the case for the animal sector, human health service provision is moving towards “community care” through the training of community health workers (CHW) and traditional birth attendants (TBA) or midwives. These “para-professionals” are supported through a network of clinics or rural hospitals, in turn supported by non-governmental organisations or ministries of health.



ICRC/Piers Simpkin

Training community animal health workers has proven to be an effective way of delivering animal health services, especially in conflict zones.

Later chapters will discuss the possibility of linking animal and human health services.

The ICRC runs primary health care programmes in different Greater Horn of Africa countries; links to community based health workers exist in some countries but are weak in others. Links between human health and possible livestock health interventions are recommended.

5.3.9. Animal Health Interventions

Animal health interventions can be classified either as emergency or development. The evolution of animal health interventions, in both emergency and normal times, is also shifting from the original government and non-governmental organisation led vaccination campaigns towards community based initiatives linked to the private sector. The speed with which these shifts are taking place varies from country to country. In areas under the jurisdiction of stable governments, livestock vaccination is still largely carried out by government veterinarians (e.g. Eritrea). They

are, however, increasingly involving community based animal health workers¹⁷⁵ in vaccinations under the supervision of the government veterinarians (Kenya, Ethiopia, Djibouti); in the absence of governmental services, vaccinations are carried out by community animal health workers supported by non-governmental organisations (e.g. South Sudan, Somalia).

The importance of community based animal health care services (CAHS) is increasingly recognised, particularly in the remote and conflict prone areas of the Greater Horn of Africa. Livestock owners can be trained in a very short period (1-2 days) to participate in vaccinating their animals during “emergency campaigns”. It is nevertheless recommended that agencies provide longer training¹⁷⁶ to improve service quality and sustainability in the long term. “Development” and “emergency” animal health interventions are thus interlinked and can be listed as:

¹⁷⁵ Many different names or terminologies exist for community based animal health workers (CAHW). The terms paravets, barefoot vets, animal first-aiders or vaccinators are widely used to cover this category of personnel. Current efforts aim at standardising the training level for this type of personnel. In the past, some have only received very basic training over 1-2 days; currently most trainings last between two weeks and three months, followed by regular annual refresher training. ICRC staff are referred to specific training guidelines issued by its country of assignment.

¹⁷⁶ Readers are referred to individual country guidelines

Development	↔	Emergency
Training CAHWs	Credit to veterinarians and CAHWs	Supporting CAHWs
Linking CAHWs to private sector	Kick-start veterinary kits for CAHWs	Supporting CAHWs to treat animals
Building sustainable CAHS		Supporting CAHWs to vaccinate animals
MEM training to CAHWs and veterinarians		Supporting Government veterinarians to vaccinate
		Adopting a veterinary voucher system

The policies and opinions of different countries, organisations and livestock practitioners differ regarding the legality of (and need for) community animal health workers. All stakeholders recognise the need for quality services. Agencies are encouraged to ensure that a qualified veterinarian (governmental, project-connected or private sector) is involved in CAHW training. After their training, the CAHWs should maintain a direct link to a qualified veterinarian for referral, refresher training and monitoring.

The impact of veterinary interventions in stress situations is much debated. Aklilu and Wekesa¹⁷⁷ estimate that 20% of livestock were saved by veterinary interventions in the 1999-2001 drought in Kenya, and the value of saved livestock totalled US\$ 422,000. Veterinarians claim that the efficacy of anthelmintic drugs is reduced if animals are hungry and, theoretically, they should be fed fodder supplements for the 4-10 days preceding treatment - an impossibility in many emergency situations. They also argue that the desired antibody production in response to vaccination is not achieved, and that vaccinating in times of stress is ineffective. Others argue that vaccination is important as animals are weaker in times of stress, are forced to travel greater distances, meet larger numbers of other animals at water points, and thus face greater risks of infection.

Most emergency animal health interventions focus on internal and external parasite control. Anthelmintic drenches and acaracides to control ticks and mange in all livestock species are most commonly used, as they are cheap and easy to administer. Some treatments have included injectable antibiotics for all species and trypanocidal injections particularly for cattle and camels.

Most emergency vaccinations aim to prevent haemorrhagic septicaemia (HS) or pasteurella, a stress-induced cattle and camel disease. Some agencies have vaccinated against anthrax because it is more common in droughts or when pasture is exhausted: animals pull up the roots of plants and come into contact with the anthrax spores found in the dust or soil. Other vaccinations include contagious bovine pleuropneumonia (CBPP) and contagious caprine pleuropneumonia (CCPP), both highly contagious diseases causing high mortality in weak animals.

5.3.9.1. Lessons learned

- The free provision of drugs or drug subsidies should be avoided. It is preferable to introduce a veterinary voucher system instead;

¹⁷⁷ 2001.

- Approaches should be harmonised;
- The private sector or existing community animal health workers should be contracted to implement emergency vaccination programmes;
- Combining destocking programmes and emergency veterinary programmes enables livestock owners to pay for services.

This type of intervention is highly appropriate in areas benefiting from active and effective government or community animal health systems. In areas where no such services exist, agencies could nevertheless quickly launch emergency health interventions by providing training, drugs and equipment. Interventions should however be planned and designed to fit into existing structures and, in the longer term, link community animal health workers to the private sector.

5.3.10. Pastoralist Associations

The promotion of pastoralist associations began with Oxfam in Wajir District, Kenya, in 1993. Associations already exist in the Somali tradition, particularly related to clan and sub-clan allegiance. There are now more than 40 such associations in the District¹⁷⁸. Associations not only act as a service provider, but also provide a forum for representation towards the Government.

Pastoralist associations can take on a greater dimension, as is the case for the Wajir Peace and Development Committee. This Committee reflects a broad spectrum of the community and government in handling conflict and security. Pastoralist associations also provide an interesting channel for dissemination and dialogue. The role played by pastoralist associations in emergencies is likely to gain importance (see sections 5.16 and 5.17 below), thanks to their interest in developing community-owned emergency response plans (ERPs) and community-based early warning systems (EWS).

The “forming, storming, norming, and performing” process, combined with the necessary pastoralist association capacity building, is lengthy. Agencies are encouraged to work with and through existing pastoralist associations.

5.3.11. Privatisation

Linking community animal health workers to the private sector is the key to achieving sustainable animal health service delivery in most Greater Horn of Africa countries. Past government and non-governmental organisation interventions included training in micro-enterprise, capacity building, business planning and the provision of loans to private veterinarians¹⁷⁹.

While some success has been observed in high potential areas of Kenya, the approach failed in lowland areas. In Sudan the approach has proven successful, especially in the northern sector. In Somalia, the absence of government services has led to veterinary drugs being delivered by the private sector, although quality control aspects are absent. The European Commission's Panafrican Programme for the Control of Epizootics (PACE) and the Somali Livestock Professionals Association were supporting privatisation at the time of writing; private sector veterinary drug supply is emerging in Ethiopia, but not yet established in Eritrea.

¹⁷⁸ Birch and Halima, 2002.

¹⁷⁹ E.g. the Kenya Veterinarian and Vet-Assistant Privatisation Scheme (KEVEVAPS).

Most past interventions have aimed at building the capacity of private veterinarians to operate in pastoral regions. The future trend places greater emphasis on governments and non-governmental organisations contracting private veterinarians for emergency veterinary interventions such as vaccination campaigns and disease surveillance.

There is potential for supporting private sector drug supply in all Greater Horn of Africa countries, even in lowland and conflict areas. This nonetheless requires the application of the following principles:

1. Veterinarians must link into community animal health worker networks;
2. Qualified livestock personnel must supervise community animal health worker activities;
3. Government policies must be harmonised and enable private sector development;
4. Governments, donors and non-governmental organisations must not supply free or subsidised drugs (they should rather adopt the veterinary voucher approach);
5. Livestock marketing and trade opportunities must be improved.

Their specific mandate may prevent agencies from supporting private sector business initiatives in the veterinary health field. There is much scope for dialogue with host governments, harmonising veterinary drug delivery approaches, developing veterinary voucher systems to avoid subsidies and the need for free drugs. In Somalia, there is also scope for the ICRC specifically to link animal health service delivery to its existing community intervention projects (CIP). The veterinary voucher scheme would be recommended.

5.3.12. Market Transport Subsidies

The provision of market transport subsidies is relatively new. In Mandera, northeastern Kenya (on the border with Somalia), transport subsidies were offered in 2001 to private traders to enable the continued commercial marketing of animals from drought affected areas. The subsidy covered 30 to 50% of transport costs. 27,000 goats were thus marketed, when the normal marketing system would have collapsed. However, many loop-holes and much abuse were noted, and the system requires close monitoring and reporting to be successful. In Turkana District, a similar intervention failed entirely due to traders manipulating transport and market figures¹⁸⁰. This type of intervention thus requires abuse prevention mechanisms.

5.3.13. Agriculture - Irrigation and Spate Diversion

Many policy makers view the arid and semi-arid lands livestock areas as wide expanses of fertile land suitable for irrigation and cropping. Agriculture, either rain-fed or irrigated, is often considered as one of the alternative livelihoods for failed livestock keepers. Irrigation can take several forms:

- Pumping water from permanent lakes and rivers;
- Harnessing flood¹⁸¹ or spate water flows from seasonal rivers through the construction of weirs, walls and canals.

Another water catchment technique is the construction of low walls in depressions to trap rainwater, then sowing seeds as the water recedes (i.e. flood recession farming).

Many attempts have been made to harness rivers for irrigation. The required technology and skills are available within most Greater Horn of Africa countries. The stumbling block is often the social dimension of ownership, access and labour. The skeletons of many old irrigation schemes can be found in the arid and semi-arid lands of Somalia, Kenya and Ethiopia, proving that irrigation is a technical possibility. However, the sustainability of these large-scale irrigation systems is questionable

¹⁸⁰ Aklilu and Wekesa, 2001; various Vétérinaires sans Frontières project reports.

¹⁸¹ Flood diversion is discussed in section 5.3.21. above.

as many break down or run into disrepair, and their users fail to maintain, repair or re-establish their crops. Reasons for this include the following:

- Users lack the farming skills or the interest to engage in arable farming;
- The users often believe that manual labour or cultivation is unacceptable and “beneath them”, and the hard labour required to create and maintain irrigated fields is thus lacking;
- Crops can be grown successfully, but their transport or marketing is economically unsustainable;
- Traditional landowners sub-let or sub-contract the farms to outsiders from highland areas who have a history or experience of cultivation, and when the land becomes sterile or canals are damaged they don't contribute to their rehabilitation;
- Governments or agencies often restrict the traditional owners' access to irrigated land;
- The physical irrigation infrastructure may block livestock access to riverbanks for watering, leading to tension between farmers and pastoralists.

Most interventions are initiated by governments or international non-governmental organisations relying on large aid budgets. The expensive establishment of the necessary infrastructure is not matched with the required follow-up planning, management training or maintenance costs.

Studies in lowland Ethiopia have shown that seasonal rivers can be harnessed; if floods occur three times per year, the water can thus be used to obtain 45 tonnes of forage per hectare. One hectare would provide enough fodder to feed 90 cows or 700 small stock for 90 days.

In Turkana District many spate diversion activities have been undertaken. They have succeeded as long as the implementing agency maintained its supervision of the project, but soon stalled once left to community management. Many projects were initiated on food-for-work basis, and no community ownership or involvement was integrated into their planning.

In parts of Somalia there is evidence of very old spate diversion canals and irrigated fields. Moreover, many agro-pastoralists are successful in farming along the Shabelle and Juba rivers.

Experience shows that pastoralists can become farmers if the agricultural conditions are satisfactory. The provision of advice, inputs and training is nevertheless necessary if failed pastoralists are expected to farm.

The ICRC is involved in such projects in Ethiopia and Somalia. Its experience has shown that irrigation from permanent rivers tends to be more reliable than harnessing flood water from seasonal rivers (however, some increase in crop yields has been observed after ICRC input). The decision as to whether flood diversion is best for fodder production or for crop production must be discussed with the community.

As part of the diversification and the provision of alternative livelihoods to supporting livestock systems in the Greater Horn of Africa, **appropriate** irrigation support is recommended in specific areas.

5.3.14. Agriculture - Dryland Farming

Dryland farming in areas experiencing less than 400 mm rainfall is very risky, and erratic rainfall distribution means that harvests are unlikely to be obtained every year. Only appropriate crops should be grown. The farming of local or appropriate fodder crops should be integrated into the approach. Interventions in dryland farming must adopt a participatory land use planning (PLUP) approach,

so as to address the risks and problems, and ownership and access issues before their actual implementation.

Encouraging the use of improved rain and water catchment techniques (such as bunds, contour ridges and micro-catchments) can reduce the risk of crop failure. Appropriate methods of cultivation (e.g. ox-ploughing) have also been tried to improve water penetration¹⁸².

As part of the diversification approach to livestock systems, dryland farming is an option but is very risky and needs considerable long-term input. It is recommended that qualified agronomists determine the suitability of support to dryland farming in traditionally livestock areas. If suitable, this support should only be extended in combination with participatory land use planning (PLUP) and the establishment of improved water catchment (e.g. bunds, micro-catchments, etc.).



ICRC/Piers Simpkin

Rainfed fodder production for livestock requires further development in arid areas.



ICRC/Piers Simpkin

The production of irrigated fodder plants has been attempted, but raises questions as to its economics, in addition to whether food crops are more important than fodder crops.

5.3.15. Diversification

As highlighted in Chapter 2, pastoralism is struggling to survive as a sustainable livelihood. It is essential therefore for pastoralists in the Horn of Africa to:

- find ways of making livestock keeping much more profitable in terms of monetary return;
- or
- diversify away from exclusive livestock dependency. In other words, a significant proportion of the pastoral population must find livelihoods outside of pastoralism. Recognition of this fact is recent (1980s); as a result, attempts at diversification have only shown little impact to date.

Most past interventions have aimed at diversification outside of livestock, which should remain the prime objective. However, there is also scope for diversification within the livestock sector itself.

5.3.15.1. Diversification outside the livestock sector

Education - encouraging children to attend school and obtain jobs, either locally or in the cities (i.e. leaving home). In many cases the educational opportunities in pastoral areas are limited in number and quality. Curricula are often highland based; as a result, pastoral students cannot compete effectively with their highland counterparts. Many students drop out of education after primary level

¹⁸² Some studies suggest that ox-ploughing may increase water loss through greater evaporation.



ICRC/Bruno Mesureur

Irrigation: An alternative to livestock is agriculture, provided that irrigation is available.

and only obtain low paid artisan jobs. There are of course exceptions and, in some countries, positive discrimination exists towards recruiting indigenous people to government civil service positions in their home areas. It is however clear that some civil service leaders (in pastoral areas) are painfully under-educated for their position, and this itself discriminates against the rapid or sustainable development of a given area.

The educational system itself has generated a lot of employment of teachers from livestock keeping families.

Religion - Many people are “employed” as catechists and koranic teachers.

Farming - See sections 5.3.13. and 5.3.14. above.

Trade¹⁸³ - Many organisations have devoted attention to new livelihoods for both rural and urbanised livestock owners in the form of trade capacity improvement. Training in micro-enterprise management (MEM) and income-generation activities (IGA), and the provision of credit have transformed the lives and potential for many existing and former livestock owners. Most interventions have been aimed at groups (both men's and women's groups), or more particularly at women.

¹⁸³ See section 5.2.2. above

Trading groups or cooperatives have experienced mixed success in pastoralist systems, often because the business overheads and risks are very high.

Most trade opportunities for women are in the charcoal, fuel wood or petty retail sector, whilst men often enter the livestock marketing or transport trade.

Other support attempts have aimed at the tourism, mining (gold) and semi-precious gem trade, or harvesting forest products such as gum arabic, myrrh, etc.

If agencies do not address the above alternatives directly, they should nevertheless include them in dialogue efforts (see section 5.3.24. below).

5.3.15.2. Diversification within the livestock sector

Specific interventions to support diversification within the livestock sector should be encouraged. Past and potential interventions include the following:

- Switching ownership from drought-susceptible cattle and small stock to camels;
- Livestock raising to fill expensive niche markets or provide value-added products;
- Processing hides and skins;
- Manufacturing leather based artefacts;
- Bones, bonemeal or bloodmeal production;
- Fodder production and harvesting;
- Improved livestock marketing industry.

Such interventions are often limited to specific areas or conditions, and may not be replicable on a large scale.

Suitability needs to be considered on a country-to-country basis. Innovative and appropriate interventions are required; agencies should at least maintain a watching brief on opportunities.

5.3.16. Community-Based Early Warning Systems (CB EWS)

Early warning systems (EWS) are a relatively new component of the disaster management cycle. Community involvement in EWS is just emerging as one step towards its ownership of the entire disaster management cycle (see below). The Arid Lands Resource Management Project (ALRMP) in Kenya and Save the Children-UK are probably the leaders in the field.

Early warning is now a major component of the disaster management cycle and, if used in conjunction with the Household Economy Approach currently applied by the ICRC, can provide a tool in disaster response. CB EWS is a process larger than the activities of just a few organisations, but the ICRC should participate in it. Activities and approaches will vary from country to country.

Agencies should monitor country-based progress in the field, and integrate it into their dialogue and harmonisation efforts.

5.3.17. Community-Based Disaster Management

Community-based disaster management is a new concept in the disaster and relief world; as such, it has not been tried or tested. The aim is to expand community involvement beyond just information

gathering and early warning. Just as development programmes use participatory techniques in prioritising interventions, there can also be further community participation in disaster management planning and mitigation. The ultimate objective is the establishment of disaster management plans at village or community level, indicating clear roles, responsibilities and modes of response for different types of disaster. Community members should take an active role in the planning and management of disaster response.

5.3.18. Community-Based Human and Animal Health Workers

Many organisations have established community-based human and animal health programmes. Whilst both systems are very effective and conflict resilient, they also face constraints and problems, some of which could be overcome by linking the two systems. Common problems include the following:

- Insufficient “business” (or financial) returns to ensure either system's independent sustainability;
- Drug supply problems;
- Service payment problems;
- Cold chain requirements;
- Policy constraints.

To date, no agency has linked the two systems. Some argue that there is a risk of “*community health workers misusing veterinary drugs to treat humans*” and vice-versa. Misuse is already considerable (especially in terms of antibiotic capsules intended for humans but used to treat animals) however; linking animal and human health with appropriate training will reduce these risks. Ideally, community animal health workers (CAHWs) should also be trained to treat people, and community health workers (CHWs) trained to treat animals.

Agencies should advocate for links between the two systems. In addition, where the ICRC already runs primary health care programmes (e.g. parts of southern Sudan and Gode in Ethiopia) and considers livestock interventions, it should endeavour to link the two.

This approach should be part of dialogue initiatives, and should be carried out in the field where activities include both animal and human health interventions.

5.3.19. Natural Resource Management Institutions or Committees

A history of range management in East Africa shows that, in colonial times, pastoralists were forcibly evicted from certain areas, livestock was purchased compulsorily, and government officers (backed by the local administration or the police) enforced all resource management issues.

In the 1960s and 1970s, local government chiefs were given powers to control deforestation, tree cutting and overgrazing. As long as governance was strong, this system was effective. Over time, however, it allowed local chiefs to fine or obtain bribes from offenders.

In the 1980s and 1990s, the emphasis moved to non-governmental organisations to work with communities in deliberately closing areas to grazing, and making joint decisions on water point development and management. The livestock keeping societies' traditional rules and regulations on resource use and maintenance were recognised. The Boran Gada system in Ethiopia and Kenya for

example was noted for its effective management of water points particularly. Natural resource management (NRM) committees were formed in Kenya, Somalia and Ethiopia. Committee members were elected from the local communities, were trained in NRM and given local powers to control local resource use. Some of these powers and plans were based on old traditional systems. These committees often became mediators in natural resource conflicts.

Whilst the impact of the NRMs has varied from place to place, some have had considerable success. NRMs are often linked to water user associations, and can generate their own income from fines and water sale, *inter alia*. Around towns, the NRMs have also organised clean-up campaigns of plastic bags, for example.

With a little input, NRM committees could be useful partners in terms of cash-for-work and water point interventions. The suitability of this type of approach depends on local ability and the availability of relevant alternative committees. Specific training by specialised staff may be required¹⁸⁴.

5.3.20. Feed Supplements for Livestock

Fodder supplementation in stress periods is a traditional coping mechanism in many pastoral societies. Women can often be seen walking long distances or climbing steep cliffs to obtain grass, pods, leaves or roots with which to feed young calves, milking animals or breeding stock. Lopping, or cutting tree branches, is another form of fodder supplementation. In recent years, it has also become common to see women selling these natural fodder supplements on the market.

The trend towards agro-pastoralism in some countries has also resulted in more crop residues being transported over longer distances to markets by camels, donkeys or ox-carts. In fact during the current study, riverine farmers in Gode, Ethiopia, were uprooting maize plants even before they had reached the “cob” stage as the value of a maize stem as animal feed was higher than the cob's.

Governments and non-governmental organisations have been relatively slow at adopting the idea of supplying fodder or feed supplements in emergencies. This is probably due to the low availability of local fodder supplements, the large distances and high costs of transporting fodder from production to stress areas. Another problem is the difficulty to anticipate the required duration of fodder supplementation and the number of animals to feed.

Where non-governmental organisations and governments have started providing feed supplements, the intervention is very popular. Initially animals that are accustomed to free-range foraging need some encouragement or training to eat stall or trough fed pellets, meal or blocks. Appetizers such as molasses or salt have been added.

5.3.20.1. Lessons learned

- Feed supplementation can be integrated into destocking programmes, where animals are purchased in exchange for feed;
- Only core breeding stock or pack animals should be selected for feeding;

¹⁸⁴ For instance, from the ICRC's Water & Habitat or Economic Security Units.

- Sufficient water must be available as molasses and urea concentrates make animals thirsty;
- Animal feeding centres can be established;
- Animals selected for the provision of feed supplements should also receive veterinary inputs;
- Feed supplements should be made available for sale at full cost for non-breeding animals;
- Livestock feed can be expensive to transport and difficult to obtain (the intervention must be prepared early);
- The use of pellets or blocks results in less wastage than meal and powder forms;
- The number of animals to be fed and the duration of feeding should be agreed upon with beneficiary communities before implementation;
- Feed supplementation can also focus on animal trade routes to keep the market system open and prices stable. This could mean subsidising the cost of feed for traders.

During droughts in Eritrea, the Government purchase crop residue and hay (from farms in border areas), and transport and sell it to livestock owners at a subsidised price. In 2003, the Ethiopian Government also provided forage for livestock in pastoral areas with support from the Food and Agriculture Organisation.

In 1999, a religious organisation in Marsabit District, northern Kenya purchased 180 tonnes of livestock feed at US\$ 267 per tonne, at a total cost of US\$ 48,000. This was enough to supplement the feed of 8,000 small stock daily for 3 months. The poorer livestock owners were targeted and had to exchange three of their goats for 22.5 kg of feed. The goats thus paid to the non-governmental organisation were then kept, fed and later used for restocking at the end of the drought. At the end of the drought these animals were worth US\$ 20 each, a total value of US\$ 160,000 ¹⁸⁵.

Individuals have learned from the above experience and have subsequently set up “famine relief camps for livestock”. Lautze et al. ¹⁸⁶ suggest that animals could be kept alive in this manner, then sold back to owners after the drought or stress period. In future, non-governmental organisations could possibly contract private individuals to feed “destocked” animals during droughts and guarantee a market for the animals by supporting restocking at the end of the drought.

Sandford and Habtu¹⁸⁷ however feel that the establishment of livestock camps is unfeasible in Ethiopia. They estimate that a household of five African Adult Male Equivalents (AAME) require seven breeding cows to remain alive in order to rebuild their herd to a sustainable level within four years. Each cow requires 6 kilogrammes of normal dry feed per day, but if some natural vegetation remains, then the supplement should be 3 kg per day or 2.25 tonnes of normal feed per household for three months. They also suggest that three months should be the duration of supplementation. In Ethiopia the options include the following:

- Standing hay on the grazing reserves of pastoralist associations - but the required reserve surface would need to be at least 4,000 ha to support the breeding cattle of 1,000 households. This area is unlikely to be available in most pastoral regions;
- *Opuntia* cactus - 300 ha of cactus would feed the cattle of 1,000 households. Spineless varieties would have to be introduced, planted in advance, protected from grazing, and may be restricted to areas receiving 400 mm of rain or more;

¹⁸⁵ It is unclear whether the value of the fodder included transport costs from Nairobi.

¹⁸⁶ 2003.

¹⁸⁷ 2000.

- Hay imported from the highlands; this is obviously possible only if it is available and affordable, and its price is likely to rise if it is ordered in bulk;
- *Enset* leaves purchased outside of pastoral areas; this is feasible in the Southern Nations, Nationalities, and Peoples Region (SNNPR), but not in Somali Region;
- Molasses/urea block mix - this nevertheless still requires significant amounts of natural forage as bulk and extra water for the animals. It can be toxic if fed alone.

They report that the feeding of urea blocks was tried in Borana in 1996, but showed no significant benefits. Importing hay is also the most costly.

Sandford and Habtu's main question relates to the acceptability of providing free fodder (valued at 2,800 Ethiopian Birr¹⁸⁸ for 7 cows for 3 months) where humans are expected to work for their food, and where the cost of the local grain required to support one household for a year would only be 1,500 Ethiopian Birr¹⁸⁹. More research into this issue is clearly required.

The feasibility of supplementary fodder programmes will depend on local fodder form, cost, and availability. Establishment of fodder plots could be considered in the form of cash-for-work interventions. Further studies on the possibilities in each country are required before exact interventions can be designed, budgeted and implemented.

5.3.21. Emergency Water Interventions

Many emergency water interventions have been implemented for both livestock and human benefits. Emergency responses include the following:

1. The construction or repair of shallow wells, water tanks, *berkads* and *hafir* dams;
2. The drilling of new boreholes and the repair or maintenance of existing boreholes;
3. Water trucking or tankering.

Whilst it is recognised that water is essential in nutrition and for life, many of these emergency interventions have caused larger, long-term problems such as settlement, overgrazing, resource destruction and, in some cases, increased tension over pasture and water.

It is generally agreed that emergency water interventions should be ephemeral - or designed only to last the duration of the shock period, after which the service is disbanded or the source closed down. In practice however most emergency interventions are permanent, and are handed over to the local government or community and, in the absence of training or provision for maintenance, they soon break down or are destroyed.

Current thinking also recommends that any water intervention should be planned with local communities. Ideally the community should contribute towards its construction or cost, and be trained in its operation and maintenance. Water levies or fees should be charged to guarantee sufficient income for supply maintenance.

¹⁸⁸ US\$ 318.

¹⁸⁹ US\$ 170.

In Ethiopia, Sandford and Habtu¹⁹⁰ suggest that emergency water supplies benefit the rich rather than the poor; in some cases, they may actually reduce labour opportunities for the poorest who provide manual labour to rich herd owners in exchange for food, animals or cash. These authors also suggest that water trucking is so expensive the money may be better spent on alternative interventions. Sandford and Habtu however recognise as an “outstanding achievement” Hope for the Horn's hiring of 55 privately-owned water tankers over a 47 day period in 2000 to deliver 14.5 million litres of water to 305 distribution centres in Deghabur Zone of Somali Region (Ethiopia). This initiative helped 250,000 people and 900,000 livestock. They conclude however that the finance used in water tankering (43.5 Ethiopian Birr¹⁹¹ per month per human, and 174 Birr¹⁹² per month per cow) is better used on other interventions.

This type of approach is highly suitable with Water & Habitat assistance but expensive, and must be implemented in accordance with the above guidelines and long-term considerations.

5.3.22. Conflict Resolution

Conflict resolution was originally the preserve of governments alone, and mostly took the form of punishment in retribution of past raids. Diaries of colonial administrators from the late 1800s list the frequent punitive raids launched against pastoralist tribes such as the Turkana in Kenya, the Afar in Ethiopia and various Somali clans.

More recently conflict resolution has taken the form of development incentives to reduce the causes of conflict (e.g. poverty reduction, natural resource management, water point development, etc.). These activities are undertaken by international¹⁹³ and local¹⁹⁴ non-governmental organisations, church groups¹⁹⁵, and pastoralist associations¹⁹⁶. The conflict component of the African Union's Inter African Bureau for Animal Resources (AU-IBAR) supports many of these activities and facilitates initiatives such as cross-border meetings.

Conflict resolution can be costly and time consuming, requiring many meetings that involve diverse livestock owners and youth up to the ministers of state, military and police officers. Peace crusades with the involvement of women are proving successful in creating dialogue between warring groups at the grassroots level.

Whilst many criticise conflict resolution as only creating a “temporary respite in hostilities”, a major recent achievement was the support by AU-IBAR of the negotiation of the successful migration of 100,000 Turkana cattle out of Turkana District, Kenya, to graze in Uganda during the 1999-2001 drought.

5.3.23. Tsetse Fly Control

The approach to Tsetse fly control and the management of human and animal trypanosomiasis has

¹⁹⁰ 2000.

¹⁹¹ US\$ 5.

¹⁹² US\$ 19.

¹⁹³ Such as Oxfam, the Hararghe Catholic Secretariat (HCS) and the Intermediate Technology Development Group (ITDG).

¹⁹⁴ Such as the Ethiopian Pastoralist Research and Development Association (EPARDA); Community Initiatives Facilitation Assistance (CIFA), and the Pastoralist Integrated Support Project (PISP), both local Kenyan NGOs.

¹⁹⁵ New Sudan Council of Churches (NSCC), catholic missions.

¹⁹⁶ Wajir in Kenya.

evolved radically over the years. Projects were originally established to create barriers by destroying all wildlife and cutting down the bush. These have now been replaced by “sterile male release”, aerial spraying with insecticides, and strategic trapping and elimination using chemical barriers or the use of live baits.

Much debate persists on the best approach. The choice between methods also depends upon whether the goal is to eradicate the Tsetse fly or just to control it. Aerial spraying with insecticides can be environmentally damaging; trapping on the other hand is effective to a certain point, but once fly numbers and clinical cases of trypanosomiasis are reduced, the participants often stop maintaining the traps, and the flies begin to multiply again.

The ICRC ran a successful¹⁹⁷ Tsetse control project in Lower Juba, Somalia, eventually stopped due to unsatisfactory implementation modalities (community involvement) and security concerns. The need for Tsetse control remains, both in Lower Juba and in Gambella, Ethiopia. Control methods change continually, and it is thus recommended that agencies develop links with the Kenya Trypanosomiasis Research Institute (KETRI) and Farming in Tsetse Control Areas (FITCA) to ascertain the best methods and approaches for each locality.

This approach is suitable where livestock is displaced to Tsetse infested areas. It however requires some training, but the implementing agency could then withdraw from the project, leaving it to the community (community-intervention project - CIP).

5.3.24. Dialogue and Harmonisation

Prior to the 1990s, little harmonisation existed among agencies regarding emergency interventions. Over the last decade, however, major efforts have been made to improve the efficiency and effectiveness of emergency interventions. In Sudan, most interventions were coordinated at the time of writing either by the Governmental Humanitarian Aid Commission (HAC) in the north or by the United Nations-Operation Lifeline Sudan (UN-OLS) in the south. In Ethiopia and Eritrea, emergency response is coordinated by the Ethiopian Disaster Preparedness and Prevention Commission (DPPC) and Eritrean Refugee and Relief Commission (ERREC) respectively. In Kenya, the Office of the President - through the District Steering Group (DSG) of the Arid Lands Resource Management Project (ALRMP) - prioritises and coordinates development and emergency interventions. Whilst there is little coordination in terms of agency interventions in Somalia, the Somali Aid Coordination Board (SACB) does act as a coordinating body with donors.

Coordination in development and emergency interventions does improve both their cost effectiveness and their impact. Less wastage and duplication occur, and it is possible for emergency interventions to help strengthen long-term sustainable development interventions without undermining them.

Although it is well documented that most livestock interventions in “non-equilibrium” environments require a flexible tracking strategy approach, no agency currently applies the strategy (see section 5.5.4. below).

¹⁹⁷ The number of flies caught dropped by 70-80% within the first weeks.

5.3.25. Flood Diversion

Demographic pressure, global warming, deforestation and denuded rangelands have all led to an increase in the number of disasters associated with floods in the rangelands of the Greater Horn of Africa.

Whilst many livestock keepers (e.g. the Afar in Ethiopia) depend on annual floods to improve the pastures for their livestock, the timing and severity of the flood are important. The changing environment means that normal flooding can now be disastrous for some communities. Floods along the Shabelle and Awash rivers in Ethiopia, and the Tana River in Kenya, have led to the deaths of thousands of people and animals in the last few years.

Activities aimed at diverting rivers and building flood barricades have been implemented with mixed results. Balancing the need for flood to regenerate pastures whilst ensuring against the loss of life and crops through excessive flooding requires some engineering and water management skills.

The ICRC provides sacks for sandbags to implement flood control activities along parts of the Shabelle and Juba rivers in Somalia. Similar activities can be considered for selected river basins in other GHA countries when required, and in consultation with qualified Water & Habitat technicians.

5.4. Lessons Learned from Other Organisations

The lessons learned below are adapted from the 2002 FARM-Africa strategy for pastoral areas. This study has found the following:

“The livelihoods of pastoralists in the arid and semi-arid regions of Africa are under enormous pressure. Conflicts over natural resources, reduced livestock marketing opportunities, livestock diseases, repeated droughts and political marginalisation all conspire to make the pastoral way of life increasingly difficult. However, FARM-Africa has shown that the lives of pastoral peoples can be improved through improving livestock and range management; improved livestock and product marketing; opportunistic cropping; conflict resolution; drought mitigation and livelihood diversification. In order to achieve this pastoralists increasingly realise that they need more effective education and skills training, greater political representation and more effective organisations representing their views and providing services and support”.

5.4.1. Lessons Learned

- The commitment of organisations or associations to pastoralist communities must be long-term;
- The application of agencies' operational policies must be consistent to ensure trust and respect;
- Chances of success are higher when supporting a community's own initiatives;
- To reach consensus on crucial issues of community development, district forums for pastoralists on animal health should be promoted and supported;
- Action plans drawn at the end of every engagement with the community promote responsibility and accountability;
- Agencies should harmonize their training curricula and approaches to ensure uniformity;
- Training should be appropriate and of immediate use;
- Selection criteria for trainees should be determined by the community members, with proper guidance from the agency sponsoring the course;

- Concerns on areas of coverage, gender and potential for competition among community animal health workers (CAHW), animal health auxiliaries and agencies need to be addressed;
- By using CAHWs in all animal health interventions, agencies will promote local initiatives;
- Gender considerations should be promoted in community-based animal health work, and women should be trained to care for all classes and types of livestock;
- Supplying free handouts to trainees compromises the programme's sustainability. Only information should be handed out freely;
- Cost sharing increases the chances that benefits gained from the provided assistance will be sustained;
- Encouraging CAHWs to diversify their businesses allows them to remain active throughout the year;
- A reliable supply of quality veterinary drugs increases the chances of investment in the livestock industry;
- The introduction of cooperative veterinary drug stores is not feasible since members cannot realise immediate returns on their investment;
- Regular refresher training is essential.

5.4.2. Recommendations

- Participant success can be increased by assuring the quality of the training and training methods and giving the CAHWs adequate support;
- Micro-credit schemes suitable for pastoral regions need to be developed;
- CAHWs should receive training in micro-enterprise management as well as their veterinary training;
- Increasing the training of pastoralists (through pastoral training centres, mobile training teams or pastoralist associations) will benefit the livestock industry tremendously;
- CAHWs need to be legally recognised by parliaments and supported to deliver animal health services.

5.4.3. Principles

5.4.3.1. Networks

Plans should only be drafted following exhaustive discussion with all other organisations and agencies working in the area; religious organisations, for example, have been long established in some of these areas and have a wealth of knowledge.

5.4.3.2. Sustainability

- Creating dependency should be avoided. The possible consequences of any intervention must be considered before implementation.
- Community commitment and full, unsubsidised contribution to service costs must be ensured. Alternative methods for dealing with emergencies or the poorest of the poor should be found (e.g. vouchers for drugs);
- Building the capability of local personnel to deliver services should be preferred to direct project implementation;
- The setting of action plans and progress review should be supported regularly at all levels including the lowest possible (grassroots);
- Training costs should be shared. This may slow down the implementation rate of the training, but improves training quality because those attending demand good service. Farmers/livestock owners should not be paid per diems for attending training workshops unless they are sent on

a study tour for several days outside of their zones. In the long term, once out of the acute phase and into the chronic or post-crisis situation, beneficiaries should pay for training;

- Follow-up and refresher courses are as important as the initial training;
- Realistic exit strategies must be identified during the project planning stage;
- Pastoral development takes a long time, and the priorities of development agency, donor and implementer may change during project implementation.

5.4.3.3. Participatory methods

- Interventions must be planned with ministry officials and pastoralist groups themselves. Where possible, community based planning, monitoring and evaluation (CBPME) should be applied;
- Local knowledge and experience should provide the basis for planning;
- Communities should be involved in quarterly project reporting and planning meetings;
- A clear strategy needs to be applied to all project components, as does a logical framework approach;
- Seasonal activity calendars must be drawn up with the community and involved agencies; activities must be planned in accordance with that calendar.

5.4.3.4. Equity

Differences in gender roles, wealth distribution, age sets, ethnicity, religion and cultural values need to be taken into consideration.

Agencies should standardise information-gathering methodologies, and donors should support emergency preparedness and response¹⁹⁸.

5.5. Basic Principles for Livestock Interventions in the Horn of Africa

5.5.1. The Livelihoods Approach

The ICRC, together with all other agencies, has adopted the livelihoods approach incorporating household food economy and traditional coping mechanisms to determine the best (most acceptable and addressing long-term sustainability) interventions and future options. This approach is highly recommended and must be further strengthened on the ground.

The ICRC, donors and other agencies should adopt “tracking strategies and opportunistic management” to enable flexibility, and must be aware that many of the livestock lands have limited potential, thus interventions must link to population growth projections and “livelihood sustainability” issues.

5.5.2. Prevention, Preparedness and Response

Pastoralism in many countries is a livelihood having to adapt to globalisation; as a result, it is in a transitional/emerging stage threatening the long-term future of many pastoralists even in peaceful areas. Shocks such as conflict, drought, flood or hailstorm have to be factored into the “normal” long-term production cycle as natural calamities are to be expected every four to seven years, with major shocks occurring every ten to fifteen years.

¹⁹⁸ Action Against Hunger (*Action Contre la Faim* - ACF)-USA, 2003.

Most humanitarian organisations, donors, government ministries and development agencies are placing increasing emphasis on “famine early warning, drought preparedness and response, disaster planning and management”. Therefore, it is only logical for organisations involved in conflict to include a conflict prevention or mitigation strategy in their response mechanisms. Adopting a pre-emptive approach will not only reduce the costs and resources needed for emergency response, but also provide better information to design and implement it (e.g. number of people likely to be affected, their needs and alternative coping mechanisms and the likely geographical area to be covered). Agencies must engage in the existing networking and coordination systems.

Lessons learned about early warning systems (EWS) include the following:

1. The need to strengthen government involvement in early warning;
2. To be sustainable EWS must be simple and target the user level;
3. Organisations and individuals involved in EWS must also engage in systematic dialogue with officials;
4. EWS must include contingency plans backed up with the capacity to respond (a need for donors, governments or implementers to have an immediate contingency fund);
5. EWS focus too much on food distributions, and lack indicators for alternative interventions;
6. Conflict EWS need to be improved.

5.5.3. Timescales

The expression “long term” appears frequently in the above paragraphs, and the ICRC, donors and other agencies must recognise that very few livestock interventions can be short, one-off interventions. Livestock systems are more complex and less predictable than agricultural or cropping systems, and they require greater levels of care and daily management. This full-time commitment in terms of daily manpower may be considered a disadvantage in conflict situations, and is a situation that pastoralists have adapted to by making wide use of children to manage the livestock; however, livestock production systems probably survive or avoid conflict more effectively than static crop systems.

5.5.4. The Tracking Strategy

It is also necessary for the ICRC, donors and other agencies to adopt a “tracking strategy” in their livestock interventions: they may begin with one intervention, but must understand that it will be necessary to change it as circumstances change. Examples include the combination of destocking and emergency slaughter with emergency veterinary provision, changing to emergency purchase and provision of fodder, and moving onto restocking with veterinary inputs.

Most livestock and conflict emergencies occur in “non-equilibrium” environments whose management requires flexible tracking strategy interventions. **Despite the theory, no agencies currently apply a complete tracking strategy approach to interventions.**

The ICRC, agencies and donors must be flexible. Pastoralism is complex and needs to track opportunity. There will be occasions when restocking and destocking is recommended and run concurrently in the same country, but in different areas or in the same area, but at different times.

5.5.5. Livelihood Diversification

The pastoralist livelihood is considered to be in “terminal decline”. Future livestock interventions

should not be aimed at animals alone. Activities supporting diversification or enabling people to move out of pastoralism should also be encouraged.

5.5.6. Integrated Emergency Response

An integrated approach to pastoralist interventions should be adopted. Water, irrigation, cash-for-work and food-for-work interventions should all be aimed at improving the possibilities of future livestock rearing. Irrigation projects in arid and semi-arid areas should include fodder production; work schemes should include erosion control, fodder banks, micro-catchment construction, and tree planting, among others.

Any agency (including the ICRC) engaging in water development must integrate an element of land use planning and the establishment of local water committees, not only to maintain and manage the water point, but also to protect the local natural resources from destruction by the resulting increase in pressure from water.

Rather than just treating the symptoms of conflict in livestock systems, agencies and donors should also try to address the cause, or at the very least avoid exacerbating it. Although this appears to be obvious, in many modern emergencies, the consequences alone tend to be addressed.

5.5.7. Coordination, Dialogue and Harmonisation

In the presence of an official government, and a coordinating body with a livestock policy or guidelines, agencies should follow these guidelines providing they do not undermine their key principles. In the absence of government or such a coordinating body, an agency (including the ICRC) may have to take the lead in establishing a code of practice or *modus operandi* for livestock issues to ensure that activities in the livestock sector do not undermine the progress made by other organisations.

5.5.8. Cross-Border Interventions

Most agencies¹⁹⁹ concentrate on a regional approach concerning livestock movement (either by trade or by raiding). Much of the emphasis is on Rinderpest eradication and contagious bovine pleuropneumonia (CBPP) control, both of which are subjected to strict protocols and methodologies. This report recommends that the ICRC leave the technical aspects of disease control to the professionals, that it respond only if specifically requested to do so, and that it should fit within the relevant countries' set standards and guidelines for operation.

5.5.9. Community Involvement

In complex emergencies, community involvement in the response is essential. Experiences in the livestock sector in Sudan and northern Kenya have shown that community livestock service providers can continue to operate effectively in conflict zones, whilst non-governmental organisations and government personnel have had to withdraw. Not only is community involvement essential, but the ownership of responses by the community should also be considered, integrating local resource and personnel levels.

¹⁹⁹ The European Commission, the UN Food and Agriculture Organisation (FAO), the Panafrican Programme for the Control of Epizootics (PACE), Vétérinaires sans Frontières (VSF).

True “community involvement” requires time and commitment. To ensure effective community involvement (ownership) in livestock issues, agencies must be prepared for longer-term intervention, and include the training of community members in some interventions.

5.5.10. Conflict Response and Prevention

It is likely that most livestock owners in Africa have not been affected *directly* by active conflict, but the majority face the wider consequences of conflict. These include the lack of services and infrastructure, reduced access to resources and the influx of human and animal populations. It is suggested that mortality resulting from the indirect effects of conflict is higher than that caused by its *direct* effects. In such situations, therefore, the ICRC and other agencies should be willing to address both prevention and response interventions.

In the Horn of Africa, poverty and access to resources are the root causes of much of the prevailing tension. The impact of interventions must therefore be studied in terms of humanitarian response and poverty alleviation. Scrutiny and linking of immediate benefits to future anticipated impact (positive or negative) are required at the planning stage of any assistance intervention.

5.5.11. New Breeds, New Technologies

Issues regarding the introduction of new improved breeds require careful consideration in each situation. Existing livestock breeds have adapted to local conditions and particularly to feed shortage, dehydration and extremes of climate. Introducing “more productive” breeds should only be attempted once the primary production system and environment have been satisfactorily improved to ensure the resource supply required to maintain the new, higher maintenance, animals even during shocks.

5.5.12. Data Collection and Monitoring

Information gathering can be complicated due to issues of definition. Adopting standard procedures of participatory rural appraisal/rapid rural appraisal (PRA/RRA) and the Food Economy approach has been recommended above. However, many livestock owners do not actually count their animals, but know them by name or position in the herd. This must be recognised and incorporated into any data collection system.

5.5.13. Sharing Lessons Learned and Best Practices

International agencies should publish internal lessons learned between regions. For example, practices and approaches that have proven successful in South America or Asia should be exchanged with, or tried in, Africa.

5.5.14. Partnerships

The ICRC's mandate requires it to operate through the Movement of Red Cross/Red Crescent Societies wherever possible. This is not always possible when implementing livestock interventions, for a number of practical reasons.

If it is impossible to operate through the resident National Society, the ICRC should consider implementing through local partners, particularly international or local non-governmental organisations (NGO) and community-based organisations (CBO) that meet ICRC standards in terms

of neutrality, impartiality, transparency and accountability. The advantages of this include:

- Non-equilibrium livestock systems in the GHA require a tracking strategy with interventions that go beyond purely emergency interventions. By creating links and supporting local organisations, agencies can implement the emergency intervention stage of the tracking strategy, whilst the partner NGO/CBO can continue to implement the non-emergency prophylactic, mitigation, transition, reconstruction and development interventions.
- Local knowledge and support contributes to the safety of agency personnel and infrastructure.
- Some countries such as Kenya have already introduced an emergency response programme²⁰⁰ that documents required action but needs support in its implementation. Working independently outside of this structure can have a negative impact. Working through an organisation that is within the structure but still independent contributes to the positive impact of interventions.
- Working through local intermediaries can avoid the creation of “high expectations from foreign aid organisations”.

²⁰⁰ Arid Lands Resource Management Project (ALRMP) and District Steering Groups.

CHAPTER 6

Policies

Table 6.1. below summarises the main livestock related policies and approaches in the region. Each country has different policies but it is not possible to analyse their actual impact within this study.

Table 6.1. Animal health and livestock marketing service provision

	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	Sudan
Service provision	Government	Government	Government and NGO.	Government and private sector	NGO and private sector	Government, private sector in North; NGO in south.
Private sector veterinary drug provision	Minimal: 1 veterinarian	Non-existent Technically illegal	Emerging but extremely weak due to government policies on drug purchase.	Present, but uneconomic in ASAL areas.	Present but limited	Strong in north, but weak in south.
Acceptance and presence of CAHWs	Accepted but very few trained	Accepted, but all non-operational	Accepted but only operational with NGO support.	In discussion, not officially accepted yet, but CAHWs are common in lowlands.	Accepted but very few in practice.	Accepted and active
Guidelines on training CAHWs	None available	None available	√	√	In preparation by PACE	√
Minimum standards and duration of CAHW training	None available	None available	√	√	In preparation by PACE	√
Livestock marketing	Private sector	Private sector	Private sector	Private sector	Private sector	Private sector

6.1. Country Policies

6.1.1. Djibouti

Generally the Government accepts transhumance and nomadism as the only way to use the arid rangelands. Early attempts at settling pastoralists were opposed by the people.

The Government's policy is one of “decentralisation”, where the Ministry of the Interior's District Commissioner is responsible for collecting money from residents to implement the latter's own priorities. The Government also provides funds, but there is no taxation of livestock producers.

In 2000, the Government also elaborated an interim poverty reduction strategy, aiming at resuming economic growth, developing human resources, strengthening social safety nets, and modernising the functioning of the state and promoting good governance²⁰¹.

Apart from the “free veterinary services” policy, which is unsustainable and already seems to be ineffective, most policies are pro-pastoralist.

Readers are referred to the Food and Agriculture Organisation's (FAO) Djibouti “*Programme special pour la Sécurité alimentaire*” (PSSA) Phase 1-2002 documents for the Government's three-year and US\$ 353,000 plan for possible livestock interventions. These include the following:

- Improving fodder production;
- Sensitising farmers to better animal health and establishing village pharmacies;
- Better genetic selection;
- Market place development;
- Introduction of modern bee-keeping technology;
- Poultry development.

No emergency livestock intervention plans or guidelines are available.

6.1.2. Eritrea

There is no specific Government policy document for livestock or for Food Security in Eritrea; however, the current policy of the Ministry of Agriculture's Animal Resources Department is outlined in the 1998 document “Animal Resources Investment Sub-Sector Programme” (ARIS-S).

The Government presented a short-term (1998-2000) and medium term (2000-2003) National Livestock Development Plan (NLDP); however these plans never materialised due to the war and economic factors. According to these Plans the key areas for livestock intervention were:

- Improved smallscale dairy production through cattle and dairy goats in the highlands, Anseba, North and South Red Sea Provinces;
- Improved small ruminant meat export in western lowlands;
- Improved beef cattle development in Gash Barka region;
- Small-scale poultry production in central region;
- Improving pig production, bee keeping, and hides and skins production;

²⁰¹ Famine Early Warning Systems Network (FEWSNET), 2003.

- Livestock marketing and animal health.

Most interventions are planned to be implemented by the Government²⁰².

The NLDP was overtaken by the Emergency Reconstruction Programme (ERP) launched in June 2000 to assist farmers affected by war and drought in Debub and Gash Barka zobas. In the ERP, three activities are planned for the Animal Resource Department:

- The purchase and distribution of 600,000 imported Fayoumi chicks from Egypt, to 25,469 beneficiaries;
- The distribution of 4,600 beehives;
- Procurement of US\$ 112,000 of veterinary drugs.

The January 2002 Ministry of Agriculture's National Action Programme to combat desertification and mitigate the effects of drought (NAP), and the Eritrean 1995 Code of Conduct for Sustainable Development (NEMP-E) both provide useful guidelines for livestock sector interventions.

The draft Poverty Reduction Strategy Plan (PRSP) was launched on 30th July 2003, but has not been fully adopted to date. Although not studied by the consultant, this document also contains elements of interest to anyone planning to implement livestock projects in Eritrea.

One constraint highlighted during discussions relates to the modalities of community work. Some non-governmental organisations run cash-for-work programmes to improve water conservation through terracing activities; on the other hand, towards the planting season, the Government also mobilises the military and communities for short periods of time to perform the same activities, but on an unpaid basis. In any context, but particularly in the Eritrean setting, relevant non-governmental organisations must be thoroughly aware of official procedures and priorities.

The Ministry of Agriculture in principle is against destocking, as the national herd size is small.

The Ministry also supplies all drugs, but some farmers are unable to afford veterinary drugs. There is no private sector involvement in drug supply as it is currently illegal.

Regarding animal health, the Government provides free vaccination against Rinderpest, foot and mouth disease (FMD), contagious bovine and caprine pleuropneumonia (CBPP & CCPP), rabies and peste des petits ruminants (PPR). Farmers are expected to pay for clinical services and the treatment or prevention of haemorrhagic septicaemia (HS), Newcastle Disease (NCD), African horse sickness (AHS), trypanosomiasis, blackleg and pox.

²⁰² Private sector activity was also temporarily included in production, marketing and animal health provision sectors, but this is no longer the case since 2002.

Box 6.1. Eritrean Government papers containing useful guidelines

- Animal Resources Investment Sub-Sector Programme (ARIS-S, 1998);
- National Livestock Development Project (NLDP) document;
- Emergency Reconstruction Programme (ERP) June 2000;
- Draft Poverty Reduction Strategy Plan (PRSP) of 30th July 2003;
- National Action Programme for Eritrea to Combat Desertification and Mitigate the Effects of Drought (NAP) by the Ministry of Agriculture (January 2002);
- Eritrean Code of Conduct for Sustainable Development (NEMP-E, 1995).

6.1.3. Ethiopia

Ethiopia is more advanced than many of its neighbours in terms of early warning systems and policies on response to livestock disasters.

Since 1993, the Ethiopian Relief and Rehabilitation Council (RRC, that later became the Disaster Preparedness and Prevention Commission - DPPC) applies a “livestock preservation” directive which includes the following²⁰³:

- The distribution of fodder through Government depots, for pastoralists to take away;
- Fodder production programmes with incentives for pastoralists to grow their own;
- Livestock camps - the equivalent of supplementary feeding centres but for animals - where pastoralists bring their breeding animals to be watered and fed by the Government until the end of the drought;
- Permission for pastoralists to graze the forest areas during droughts;
- Improving water points and, consequently, water distribution for livestock;
- Establishing livestock purchasing centres where the Government buys animals from pastoralists to avoid distress sales;
- Restocking.

The Ethiopian Government is currently drawing up a livestock “master plan” funded by the African Development Bank (ADB), the project costing US\$ 3.35 million over 20 years.

Veterinary and livestock policies are integrated into the larger existing Agriculture Policy. In addition, a “proclamation” on animal disease control exists.

Plans exist for some contingency planning for emergencies at regional level, but policies as to what interventions can or cannot be done are lacking.

The Government is in favour of the privatisation of veterinary services, but some sources consider that “privatisation is still many years away”. Private veterinarians are few and to be found only in the big cities.

Sandford and Habtu's 2000 study showed that the United States Agency for International Development (USAID), the European Union (EU) and the UN World Food Programme (WFP)

²⁰³ Whilst acknowledged or planned, it is unclear whether the Government actually implemented any of the interventions.

provide 75% of the food delivered to Ethiopia. The overall aims of these three major donors tend to influence policy and interventions types towards saving lives and minimising long-term destitution.

6.1.4. Kenya

Kenya has several policies and laws linked to the livestock sector. The most relevant²⁰⁴ encourages the privatisation of veterinary drug supply, and recognises the importance of community animal health workers (CAHW) in the arid pastoral lands but not in the highlands. The policy has divided up services between the public and private sectors, as illustrated in Table 6.2 below.

The Department of Veterinary Services has drafted “Guidelines for the Implementation and Management of Community-Based Animal Health Service Delivery System” in 2003. The rather optimistic aim is to upgrade existing CAHWs to diploma (i.e. animal health auxiliary) level within the next few years.

The Office of the President in January 2004 drew up an outline for a “National Policy for Conflict Management and Community Safety”.

6.1.5. Somalia

In the absence of any form of central government since 1991, there are no current official livestock policies or strategies. The United Nations have a Joint Action and Recovery Plan (JARP) for 2002-2003 based on protection and integration, education, human health and food security.

In 2003, the United Nations Food and Agriculture Organisation (FAO) employed a consultant to design a Somali Livestock Sector Strategy. It concentrates on the following pillars:

- Animal production: management, welfare, individual performance, diversification of production, nutrition and feed supply;
- Animal health and disease control: Government/private partnership, quarantine, certification;
- Livestock marketing and trade: private sector, product processing;
- Human resource capacity building and institutional strengthening: training.

The FAO's 1993 long-term goals are to open up water points, repair wells, restore pastures and restock with livestock once a central Government is restored. The FAO's original aims to build veterinary centres were changed to fit the aims of other organisations (including the ICRC) to support the privatisation of services. Its plans to support privatisation of veterinarians included the provision of credit for drugs, veterinary instruments, a vehicle and training. Quality control was also of concern. For agro-pastoralists it suggested credit for selective restocking, and small-scale poultry production, especially aimed at women.

In 2003, the Somaliland Government were adopting a policy based on the former Somalia legislation, but one that recognises the legitimacy of CAHWs.

²⁰⁴ Policies and Strategies for the Delivery of Veterinary Services in Kenya, Government of Kenya, 2002, attached in the individual Country Profile for Kenya.

Table 6.2. Policy on service provision in the livestock sector²⁰⁵

Public goods	Toll goods (Private/public²⁰⁶)
Epidemic disease control Zoonotic disease control (Quarantine services, movement control and disease surveillance) Some extension services Some research Production of frozen semen Control of food borne diseases Control of holding grounds Construction of dams and boreholes Import and export of livestock Slaughterhouse licensing and inspection Control of quality of laboratory services Vaccination for notifiable disease Training Market information Drug quality control Disaster management	Vaccine production Diagnostic services Veterinary clinics Communal dips Semen distribution Some research Construction of dams Some extension services Market information Technology development Project planning and management Environmental conservation Breeding stock
Common pool goods (Public)	Private goods (Private)
Tsetse control on communal land Construction of large dams	Endemic disease prevention and control Meat inspection and processing Construction and maintenance of cold rooms Veterinary input supply Room temperature semen production Sale of semen and artificial insemination GoK contracted vaccination Vaccine production Clinical and laboratory services Construction of dams Training Technology development Market information Hides and skins improvement

²⁰⁵ From Kosura, 2002.

²⁰⁶ Public and Common goods are to be funded by the State; Toll goods can be funded from public and/or private sector; and Private goods are expected to be funded by the private sector or the consumers.

6.1.6. Sudan

Official livestock policies exist throughout the country. The Government livestock policies have been in existence for decades and encourage private veterinary practice and full payment for vaccinations and treatments. In rebel held areas the Operation Lifeline Sudan (OLS) Standards and Guidelines act as a loose policy for livestock issues²⁰⁷. The Sudan Relief and a Rehabilitation Association (SRRA) is drawing up a new livestock policy (not completed at the time of writing).

The past emphasis in Sudan has mainly been Rinderpest control and eradication. Most resources were channelled into vaccination. Initially, vaccinations were provided free of charge; currently livestock owners pay a fee for vaccinations. In both rebel and government held areas livestock owners now have to pay full price for veterinary drugs. The aim is to achieve 165% cost recovery, and for the agencies to then hand over the veterinary drug supply to the private sector. In Government areas, services are provided through Government and private veterinarians, although most treatment is actually carried out by the livestock owners themselves. In rebel held areas, drugs are still generally supplied through non-governmental organisations (NGOs) to community based animal health workers who treat the animals. Drugs were heavily subsidised by non-governmental organisations until 2001, when full cost recovery is supposed to have been achieved.

Recently the Sudanese Government has allocated more resources to supporting the export market, with less emphasis on disease control.

6.1.6.1. Ministry of Animal Resources and Fisheries plans

The Sudanese Government is seeking funding for livestock projects; its priorities include the following:

- A five-year project to improve milk production through the introduction of dairies and artificial insemination (AI) services in capital cities;
- A twelve-month project to restock the herds of 4,000 families with 10 small stock each;
- A five-year dairy goat project (5 imported goats per family for 2,000 farmers) to improve urban and suburban milk supply in capital cities.

The Government is also preparing “peace projects” incorporating livestock using the “peace funds”. Emergency or short-term plans include restocking herds belonging to internally displaced persons with small stock and poultry or fishing materials, and training community animal health workers. Mid-term plans include the rehabilitation of veterinary clinics, while long-term plans include establishing training centres.

6.2. Donor and Regional Organisation Policies

Various donors have issued policy documents for livestock interventions in the Horn of Africa.

The United States Agency for International Development (USAID) has published several documents that reflect the current thinking on pastoralism described in Chapter 2²⁰⁸. The key USAID foci are:

- Livelihoods and alternative incomes;
- Preparedness (not only emergency response);
- Good governance and civic education;
- Support to conflict reduction;
- The consideration of the cultural aspects of modernisation;

²⁰⁷ Attached in the individual Country Profile for Sudan.

²⁰⁸ Readers are referred to Ndikumana et al., 2002, and USAID, 2002.

- Improved education - adult and Micro-Enterprise Management (MEM);
- The definition of roles, and improved coordination;
- Community empowerment;
- Private sector development;
- Trade stimulation;
- Pilot projects in veterinary service delivery, quarantine facilities, water sources, carrying capacity and herd off take, marketing studies.

The European Union (EU) has issued a document drawn up in the 1990s, and is planning to update its policy in 2003-04.

The Paris-based *Organisation internationale des Epizooties* (OIE) is the official adviser to the World Trade Organisation (WTO) regarding animal diseases or pathogens transmitted from livestock or livestock products that may affect other livestock and humans in importing countries. To facilitate export from African countries where diseases are frequent and disease control and testing structures limited, the OIE has developed a policy of establishing export zones, where the necessary safeguards could be established for testing and disease control; this would improve the acceptability of animals from these zones to “market” countries, even though the necessary controls may not be fully established as a whole in the country of origin. Export zones tend to be geographic.

After a recent study, the OIE is considering adopting instead a compartmentalisation policy, which is not based on geographical divisions, but on isolated (compartmentalised) production systems. Presently, it is especially relevant to poultry (more than to large stock), but the OIE - through the African Union's Inter African Bureau for Animal Resources (AU-IBAR) - is considering this approach for animal meat production.

AU-IBAR has published a series of livestock Policy Briefing Papers as follows:

- No. 1: Africa Needs Animals.
- No. 2: The Livestock Revolution and Opportunities for Africa.
- No. 3: Policies that Help Livestock Trade.
- No. 4: Strategies to Promote Livestock Production, Trade and Marketing in Africa.
- No. 5: Veterinary Privatization.
- No. 6: Pastoral Women and Livestock Service Delivery.
- No. 7: Dryland Myths: Policies that Hurt Pastoralists.
- No. 8: Towards Pro-Pastoralist Policies in Africa.
- No. 9: Community-based Approaches in Livestock Development: The Means and the End.
- No. 10: Pastoralism and Conflict: Getting Policies Right.

These Policy Papers provide information on current policy, and make recommendations for future policy amendments for livestock issues in the region.

Non-governmental organisations such as Save the Children have also issued policy documents at regional and country level, but they are not particularly specific to livestock. Policies differ between organisations as the overall aims and goals vary between organisations and between countries.

The Italian non-governmental organisation Cooperazione Internazionale (COOPI) has published a workshop report titled “*Harmonisation of NGOs activities in the Livestock sector in Kenya - Somalia - Ethiopia Ecosystems*”²⁰⁹.

²⁰⁹ COOPI, 2001.

CHAPTER 7

Early Warning Systems, Databases and Networks

7.1. Early Warning Systems

Much of the information on early warning systems (EWS) below has been obtained from the November 2001 Food and Agriculture Organisation (FAO) report on Drought Related Livestock Interventions.

7.1.1. Regional Climate, Livestock and Food Security Early Warning Systems

7.1.1.1. IGAD Early Warning and Food Information Systems (EWFIS)

The Inter-Governmental Authority on Development (IGAD) runs the EWFIS project, with technical assistance provided by the FAO and other development agencies including the USAID-funded FEWSNET. The project has had mixed results and little impact.

7.1.1.2. AU-IBAR Pastoralists Livelihood Programme (PLIP)

The African Union Inter African Bureau for Animal Resources' (AU-IBAR) Pastoralists Livelihood Programme (PLIP) includes a project for information collection. The collected data should facilitate the production of a computer model likely to predict 6 months in advance the occurrence of Rift Valley Fever based on climate patterns and livestock concentrations.

7.1.1.3. Drought Monitoring Centre (<http://www.dmc.co.zw> and <http://www.meteo.go.ke>)

Following the devastating droughts in eastern and southern Africa in the early 1980s, Drought Monitoring Centres (DMC) were established in the Meteorological Departments of Kenya (Nairobi) and Zimbabwe (Harare) in 1989. The DMC originally included 21 participating countries including Djibouti, Ethiopia, and Kenya, expanding to 24 with the inclusion of Eritrea, Namibia and South Africa under its second funding phase.

DMCs acquire near real time rainfall and temperature data from participating countries. Numerical weather prediction products from Advanced Global Centres are also acquired on a daily basis. Every month, conditions on the El-Nino/Southern Oscillation (ENSO), Sea Surface Temperature Anomalies (SSTAs) and other anomaly patterns are obtained from the Climate Prediction Centre (Washington) and the National Climate Centre (Melbourne). Every ten days and every month, rainfall and temperature data is subjected to statistical analysis to establish its characteristics. The products are used to predict rainfall patterns in the next ten days, whereas the seasonal forecast is formulated on the basis of conditions of ENSO, SSTAs and other indices. Impact assessments on agriculture are made for each of the two time scales. DMCs produce monthly climatic reports that include three-month outlook reports.

7.1.1.4. African Centre for Meteorological Applications for Development (<http://www.acmad.ne/uk/>)

The African Centre for Meteorological Applications for Development (ACMAD) is engaged in five major areas of activity:

1. Global products evaluation;
2. Environmental applications for development;
3. Transfer of technology;
4. Capacity building;

5. Research in climate and tropical meteorology.

ACMAD's products fall into four basic categories: weather and climate, applications for development, research, and networking. Weather products include continent-wide forecasts, special bulletins on weather events, surface and upper-air analysis, satellite information and special evaluation of precipitation potentials. Climate products involve regular climate monitoring, drought analysis and forecasting, monthly and seasonal outlooks, evaluating 10-day rainfall accumulation potentials, publishing a climate bulletin for Africa, and maintaining a continental climate data bank. Applications for development are specialised forecasts for specific activities, such as farming, protection of plants from diseases and pests, public health, water resource and energy management. Research and networking are achieved by supporting and promoting meteorological research, and exchanging information between member countries that have spent time at ACMAD, thereby creating a network of development practitioners and researchers.

7.1.1.5. Radio and Internet for the Communication of Hydro-meteorological and Climate Related Information (<http://www.ranet2000.org>)

The Radio and Internet for the Communication of Hydro-meteorological and Climate Related Information (RANET) network is an effort of several partners to make climate and weather related information more accessible. RANET is a product of the WorldSpace Foundation (WSF).

7.1.1.6. Famine Early Warning System (<http://www.fews.net>)

The United States Agency for International Development's (USAID) Famine Early Warning System Network (FEWSNET) is presently working in 17 countries across the African continent. FEWS relies on secondary data produced by host governments for its analyses with the exception of satellite imagery (NDVI and Meteosat/Rainfall Estimation), which it receives directly from NASA and NOAA every ten days. FEWS has historic databases of cereal prices, rainfall, agricultural production as well as population and other demographic data from the censuses. Geographic information systems (GIS) are used to do spatial analyses of available data that are included in the System's regular reporting. FEWS works closely with national Early Warning Systems and Market Information Systems where they exist, Ministries of Rural Development or Agriculture, the World Food Programme (WFP) and certain non-governmental organisations. The institution also undertakes frequent field trips to assess food security (availability and access) conditions, often in tandem with WFP, host government partners and NGOs. FEWS produces a widely disseminated monthly food security report.

7.1.1.7. Livestock Early Warning System (<http://www.brc.tamus.edu/lews>)

The Livestock Early Warning System (LEWS) is intended to provide an additional 6-8 weeks advanced notice on the current early warning systems in East Africa. The project combines predictive and spatial characterisation technologies with the formation of a network of collection and measurement sites in East Africa. The system is based on near infrared spectroscopy (NIRS) and faecal profiling technology supported by advanced grazing land and crop models. The foundational technology is comprised of the African Geographical Information System data set used by the Spatial Characterisation Tool that provides spatial analysis of weather, soils, terrain conditions and human and livestock populations. LEWS involves the linkage of several new technologies capable of predicting the current nutritional status of free-ranging animals and the impact of weather on forage supply and crop production among a carefully selected sets of households reflecting a variety of effective environments across diverse landscapes of East Africa.

In Sudan, *Vétérinaires sans Frontières*-Germany (VSF-G) collects information for the LEWS system around Pibor.

7.1.1.8. MARS (<http://mars.jrc.it/food>)

Monitoring Agriculture with Remote Sensing (MARS) is a European Union funded GIS information service providing satellite imagery and photographs over the GHA. Data is used by FSAU amongst others.

7.1.1.9. World Food Programme - Vulnerability Analysis and Mapping (<http://www.wfp.org/vam/>)

The World Food Programme's (WFP) Vulnerability Analysis and Mapping (VAM) department uses state of the art mapping to pinpoint the people most vulnerable to hunger and target their needs. The VAM unit, set up in Rome in 1994, now has sub-units in more than 50 countries. VAM uses a range of monitoring indicators including satellite imagery of rainfall and crop conditions and food prices in local markets. VAM works in collaboration with the Food and Agriculture Organisation's (FAO) Global Information on Early Warning Systems (GIEWS), the Food Insecurity and Vulnerability Information and Mapping System (FIVIMS), the Famine Early Warning System Network (FEWSNET) and non-governmental organisations. The WFP is developing a Standard Analytical Framework (SAF) that attempts to capture the core competencies of VAM, organise them in relation to one another and place them in the context of the WFP's operations.

7.1.1.10. Food and Agricultural Organisation (<http://www.fao.org>)

The Food and Agriculture Organisation (FAO) runs several early warning systems and websites:

- Global Information and Early Warning System (GIEWS) funded by the European Union issues five bulletins per annum with information and alerts on crop assessments and food shortages worldwide.
- Transboundary Animal Disease Information (TADInfo) also provides a software package for veterinarians to manage data analysis and disease reporting. It is widely used in Kenya, Uganda and Tanzania.
- Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) (<http://www.fao.org/ag/agah/Empres>) provides information on disease distribution, disease recognition modules, disease mapping, disease alerts (e.g. avian influenza, Rift Valley Fever, etc.), and tools for veterinary epidemiology.
- Good Emergency Management Practice (GEMP) (<http://www.fao.org/ag/agah/Empres/e-gemp.htm>) provides information on how to respond to different disease outbreaks.

7.1.2. Regional Conflict Early Warning Systems

The need for research into conflict early warning systems in the Horn is widely recognised²¹⁰. Until recently, conflict early warning systems did not exist in eastern Africa. In Wajir District, Kenya, pastoralist associations are now including some indicators of conflict early warning in their community based early warning system; similarly, the Inter-Governmental Authority on Drought and Development (IGADD) Conflict Early Warning and Response Mechanism (CEWARN) project based in Addis Ababa is establishing a regional early warning system, but it is still in the formation stage. The World Bank, the UK Department for International Development (DfID), the US Agency for International Development (USAID) and the Forum for Early Warning and Early Response (FEWER)

²¹⁰ Swift, 1997.

all carry out conflict assessments for countries in the Horn²¹¹. The World Bank's Conflict Analysis Framework publication contains some useful early warning indicators; the Bank conducted a conflict analysis in Somalia through the War-Torn Societies Project between September 2003 and March 2004.

7.1.2.1. Conflict Early Warning and Management Mechanism (CEWARN) (<http://www.cewarn.org>)

CEWARN is a component of IGADD with representation (CEWERU) in all the GHA countries. The objectives of CEWARN include:

- Enabling member states to prevent the development of cross-border pastoral conflicts into larger-scale armed violent conflict;
- Enabling local communities to play an important part in preventing violent conflicts;
- Enabling the IGAD Secretariat to pursue conflict prevention initiatives and to provide technical and financial support;
- Collecting information and data using specific indicators and standardised reporting (setting standards and developing common practices for collecting, reporting and documenting);
- Analysing and verifying information and recognition of crisis development;
- Promoting the exchange of information and collaboration among member states on early warning and response;
- Establishing and managing information databases for early warning and response, including information sharing with other organisations;
- Formulating best/worst and most likely case scenarios and response options;
- Communicating recommendations on policy and response options to decision-makers through CEWERUs in each country.

7.1.3. National Climate and Food Security Early Warning Systems

7.1.3.1. Djibouti

The Djibouti Ministry of Agriculture is responsible for early warning, but the process is not comprehensive. FEWSNET had recently established a national network within Djibouti at the time of writing.

The Ministry of Agriculture provides monthly information on commodity prices.

7.1.3.2. Eritrea

There is no operational early warning system in Eritrea at present. The Famine Early Warning System (FEWS) is not operational in Eritrea, but was establishing a network for data gathering and exchange at the time of writing. The Civil Aviation Authority (CAA) collects rainfall information, and the Food and Agriculture Organisation (FAO) is establishing a new rainfall reporting system called National Food Information System (NFIS), based on CAA information.

7.1.3.3. Ethiopia

Early warning systems are well established in Ethiopia; it is the response to EWS that is missing. According to a 2003 Tufts University study, more than 17 EWS are in use in Ethiopia. These include the Food and Agriculture Organisation's annual harvest assessment, the World Food Programme's needs assessments, the Famine Early Warning System (FEWS), the Livestock Early Warning System (LEWS), and many others.

²¹¹ Readers are referred to <http://pcia.fewer.org> for more detail.

The Ethiopian Disaster Preparedness and Prevention Commission (DPPC) are adopting Save the Children's (SC) Pastoralist EWS as used by SC in pastoralist areas.

In the Ogaden, Save the Children-US run a woreda-based Pastoralist Early Warning System in 8 woredas using the household economy approach and collecting weekly data on rainfall, pasture and water availability, livestock condition, human disease, market prices and terms of trade. Information is sent monthly to Dire Dawa. No conflict early warning information is included, but livestock movements are recorded.

CARE has developed its own Ethiopia Food Information System (CEFIS).

The Ethiopian Ministry of Agriculture wants to develop its own EWS based on GIS to fit the DPPC system, and improve information exchange. Monthly reporting from the pastoral areas is inefficient due to lack of personnel.

7.1.3.4. Kenya

The Kenyan Arid Lands Resource Management Project (ALRMP) is the major data collection project in the ASAL districts. It collects data on a monthly basis from a network of village informants, and publishes a monthly drought-monitoring bulletin for each of the twelve Kenyan ASAL Districts.

FEWSNET publish monthly newsletters and bulletins including a Karamojong Cluster Peace Newsletter. The Intermediate Technology Development Group (ITDG-EA) also publishes a national Peace Bulletin.

7.1.3.5. Somalia

The Food and Agriculture Organisation's (FAO) Food Security Analysis Unit (FSAU, <http://www.fsau.org> or <http://www.unsomalia.org>) based in Nairobi analyses monthly data collected by more than 27 monitors scattered across the whole of Somalia. Data includes climate, market prices and a checklist of food security indicators. The FSAU use the household economy approach (HEA) to analyse the current situation. Monthly bulletins and special alerts are circulated. A massive and comprehensive database of information is available.

7.1.3.6. Sudan

The World Food Programme's (WFP) Technical Support and Vulnerability and Mapping (TSU/VAM) project work on data collected in southern Sudan and carry out harvest and vulnerability assessments (loki.tsu@wfp.org).

The Famine Early Warning System (FEWS - <http://www.fews.net> or emuchomba@fews.net) issues monthly bulletins on climate and pasture conditions in Sudan and Chad, among others. Save the Children-UK's pastoralist livelihood profiles for Sudan contain very relevant information. At the time of writing, the Panafrican Programme for the Control of Epizootics (PACE) was establishing a Rift Valley Fever EWS that covers Sudan.



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Communities must be involved in early warning systems from the establishment phase through to the response.

7.1.4. Traditional Early Warning Systems

Many ethnic groups rely on their own early warning systems based on astrology, atmospheric indicators, animal behaviour, plant growth, folklore and the paranormal (such as intestinology and “tossing the sandals”). The accuracy of traditional EWS has not been analysed sufficiently.

For more information on traditional early warning, readers are referred to C.R. Pratt: “Traditional Early Warning Systems and Coping Strategies for Drought among Pastoralist Communities - North-eastern Province, Kenya²¹², and Fox²¹³.

Some traditional early warning indicators have been included in the DCM framework of Normal, Alert, Alarm and Emergency (see Table 7.1. next page).

7.1.5. Problems with Current EWS and the Future

The persisting need for a better link between EWS and emergency response is widely recognised. This could be a role for the ICRC. Collecting the information can be expensive, but the gap between warning and donor response is still too wide. Methods of establishing trust funds and emergency response funds are being developed.

Future early warning plans are to make them community-based to improve their sustainability. This could involve schools and other local institutions in the collection of data.

Moreover, the shortfalls of conflict early warning remain considerable.

²¹² <http://www.famine.tufts.edu>

²¹³ 2003.

Table.7.1. Traditional early warning indicators from Abyie, Sudan²¹⁴

Indicator	Normal	Alert	Alarm	Emergency
Decrease in rain		X		
Decrease in grass		X		
Low level of water			X	
Decrease in number of migrant birds			X	
Decrease in grain availability		X		
Increase in grain prices				X
Decrease in cattle prices				X
Decrease in wedding ceremonies			X	
Migration of youth				X
Spread of malnutrition				X

7.2. Databases

7.2.1. International and Regional Databases

A number of livestock databases exist in the region. Some databases are regularly updated with field-based information, others are based on “predicted or extrapolated” old information.

The Food and Agriculture Organisation (FAO) runs several major livestock databases which also link into information networks. The main database on all livestock and crop numbers and issues is FAOSTAT on the FAO website (http://www.fao.org/waicent/portal/statistics_en.asp). Readers are also advised to consult the various FAO websites such as GIEWS, TADInfo and GEMP referred to in section 7.1.1.10. above.

Most specialist organisations such as the African Union's Inter African Bureau for Animal Resources (AU-IBAR), the Food Security Analysis Unit (FSAU), the Famine Early Warning System Network (FEWSNET), the World Food Programme (WFP) and the United Nations High Commission for Refugees (UNHCR) have databases relevant to their main areas of interest, and may incorporate livestock information in different formats.

7.2.2. National Databases

7.2.2.1. Djibouti

Whilst no local databases were found, the Governmental Institute of Research into Pastoralism has studied pastoral issues, and a number of research papers are written on Djibouti pastoral systems. The International Livestock Research Institute (ILRI) has plans for key pastoral research issues, but lacks funding to date.

7.2.2.2. Eritrea

There are no up-to-date livestock databases in Eritrea. The Food and Agriculture Organisation livestock figures are based on old census data from 1997. The Eritrean Refugee and Relief

²¹⁴ Source: Fox 2003.

Commission (ERREC) operates the Information Coordination Centre (ICC) with a database called the 3Ws, which lists all non-governmental organisations and UN agencies, and their projects in the country.

7.2.2.2. Eritrea

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7.2.2.3. Ethiopia

The Disaster Preparedness and Prevention Commission (DPPC) has a database on non-governmental organisation interventions. The Panafrican Programme for the Control of Epizootics (PACE) and the Ministry of Agriculture have a database on animal numbers.

7.2.2.4. Kenya

The Kenyan Bureau of Statistics and the Ministry of Livestock collect data, but much of it is out of date or extrapolated from earlier censuses.

The International Livestock Research Centre (ILRI) runs many research projects and different livestock oriented databases. Their main office and libraries are located in Nairobi and Addis Ababa.

The Panafrican Programme for the Control of Epizootics (PACE) has a database on disease outbreaks in the GHA, especially on Rinderpest and other epizootics.

7.2.2.5. Somalia

The European Union funded Food Security Analysis Unit (FSAU - <http://www.unsomalia.net>) of the UN Food and Agriculture Organisation (FAO) is based in Nairobi, and provides information on Somalia based on an analysis of GIS and the household food economy approach. They issue monthly bulletins and food security reports for the whole of Somalia

The UNDOS provide a CD-ROM containing general information on Somalia.

7.2.2.6. Sudan

The Starbase database (<http://www.unsudanig.org>) put together by the United Nations Office for the Coordination of Humanitarian Assistance (UNOCHA) includes human population figures for Sudan and reports from various sectors.

The Food and Agriculture Organisation's Dynamic Atlas (on CD-ROM) includes maps and reports covering food security issues with details on livestock, agricultural and fishery activities by the United Nations and non-governmental organisations operating in South Sudan.

The South Sudan Agricultural Revitalisation Programme (SSARP) is also establishing the New Sudan Centre for Statistics and Evaluation, which integrates agriculture and livestock data. The South Sudan Relief Agency (SSRA) and many non-governmental organisations also provide data collected in their respective working areas.

7.3. Networks

7.3.1. Regional Networks

7.3.1.1. AU-IBAR Red Sea Livestock Trade Commission

The African Union's Inter African Bureau for Animal Resources (AU-IBAR) supports a Livestock Trade Commission (LTC) that covers the Horn of Africa; it establishes and supports livestock trader associations, and builds capacity in animal health inspection and certification, and meat quality assurance. The IBAR is also working to build a predictive vegetative biomass model. The LTC also works to build Middle East confidence in the GHA livestock trade by supporting a quarantining and certification system through the private sector, standardising halal slaughtering practices, and stabilising trade by acting as a conduit for increasing dialogue and pro-actively dealing with emergencies.

They hope to develop a “trading platform” for GHA livestock on the Internet.

7.3.1.2. Community Animal Health Network (CAHNET) (<http://www.cahnet.net>)

The Community Animal Health Network is a joint collaboration between the Community-based Animal Health and Participatory Epidemiology Unit (CAPE), the Intermediate Technology Development Group (ITDG) and FARM-Africa based in Nairobi. CAHNET produces a monthly bulletin on animal health issues in the GHA including articles on Community Animal Health Worker (CAHW) policy, emergency interventions, etc.

7.3.1.3. Pastoralist and Environment Network in the Horn of Africa (PENHA)

<http://www.penhnetwork.org>

The Pastoralist and Environment Network in the Horn of Africa (PENHA) is operational in Eritrea, Ethiopia and Somaliland, with plans to strengthen its presence in Uganda and Sudan. PENHA's mission is to eliminate poverty among the pastoralists in the Horn of Africa through the empowerment of communities and the fostering of sustainable and dignified livestock-based and non-livestock-based livelihoods. Its goals are twofold:

- To empower pastoralist communities and their institutions to play a full role in their own development;
- To influence development policy and development programme design to foster sustainable livelihoods among pastoralists.

The PENHA has issued many research reports of interest to agencies working in pastoral areas. Summaries are provided in Annex 7.1.

7.3.1.4. Pastoral Information Network Programme (PINEP) (<http://pinep@net2000.ke.com>)

The Pastoral Information Network Programme (PINEP) is based in Kenya and its orientation is regional, with activities covering the Inter-Governmental Authority on Drought and Desertification (IGADD) sub-region countries of Djibouti, Eritrea, Tanzania, Uganda, Kenya, Ethiopia and Sudan.

Its main objectives include:

- To generate relevant knowledge for appropriate intervention in dry land development and rehabilitation through research, and through the involvement of local communities to improve production and raise living standards;
- To provide a forum for the dissemination of research results, by bringing together people interested in the field of pastoral development at community, policy-making, practitioner and research levels.

It also runs a Master programme at Nairobi University on range management, and has published more than 20 theses.

7.3.1.5. National Resources Institute (NRI)

The National Research Institute (NRI, based in the United Kingdom) hosts an e-mail discussion forum, and publishes newsletters and booklets on different pastoralist issues and research findings under the Pastoralist Forum and the Pastoralist Development Network.

7.3.2. National Networks

7.3.2.1. Djibouti

None.

7.3.2.2. Eritrea

There are no national livestock databases or early warning systems. The civil aviation authority collects rainfall data and the Food and Agriculture Organisation is establishing a new rainfall reporting system called the National Food Information System (NFIS).

The Eritrean Refugee and Relief Commission (ERREC) maintains an electronic register of the different organisations working in the country²¹⁵. The Pastoralist and Environment Network in the Horn of Africa (PENHA) is present in Eritrea.

7.3.2.3. Ethiopia

The Christian Relief and Development Association (CRDA), a local non-governmental organisation, provides a forum for networking between NGOs. The Pastoralist and Environment Network in the Horn of Africa (PENHA) and the Pastoral Information Network Programme (PINEP) are also present.

7.3.2.4. Kenya

The Community Animal Health Network (CAHNET) and the Pastoral Information Network Programme (PINEP) are both based in Nairobi. The former Kenya Pastoralist Forum networked and lobbied for pastoral issues, but is now disbanded.

The monthly Kenya Food Security Meetings are forums to raise emergency issues and exchange information on the situation prevailing in different districts.

7.3.2.5. Somalia

Except for the Food Security Analysis Unit (FSAU), there are no specific, formal databases, early warning systems or networks within Somalia due to the absence of an official Government. However, very good communication networks exist within Somalia, as does an informal network of information dissemination. Information on Somalia is included in many regional systems. The Somali Aid Coordination Board's (SACB) Livestock Working Group and the Somali Livestock Professionals Association (under the Forum umbrella) are two emerging networks.

7.3.2.6. Sudan

Pastoral Watch (<http://www.angelfire.com/space/almassar/>) is a quarterly publication focusing on nomadic communities in northern Sudan. Al-Massar, a Sudanese local non-governmental organisation, produces it.

²¹⁵ Readers are referred to the individual Country Profile for Eritrea for details.

The Pastoralist Environmental Network for the Horn of Africa (PENHA) (<http://www.penhanetwork.org>) is present in Khartoum, and has published many research papers on pastoralism in Sudan, including many articles on land tenure.

7.4. Conclusions

Early warning systems have improved the possibilities for early response, but gaps persist between needs and response. Information reliability has improved, and targeting has thus been facilitated. Conflict early warning remains unsatisfactory.

Databases exist, although much of the information is obsolete and inaccurate.

Networks exist across the region, but many are dormant. The information flow is generally weak, and rarely reaches the users in livestock areas.

CHAPTER 8

Current ICRC Operations & Implications for Livestock

8.1. Agriculture

The need to diversify away from purely livestock keeping in all countries, but especially in countries such as Eritrea, Ethiopia and Kenya, has been discussed. This need provides scope for close collaboration between livestock and agriculture sectors to investigate possibilities for expanding agro-pastoralism, especially along the banks of permanent rivers. On the other hand, in western Ethiopia and southern Sudan for example, vast expanses of high-potential agricultural land are currently only used for livestock keeping.

However much of the violence in the Horn of Africa is over resources, and much of it is between “graziers and farmers”. Agencies should **ONLY** increase agricultural activities once the risk of tension escalation resulting from competition over land and water has been taken into account. The only approach will be to invest considerable time in participatory land use planning (PLUP)²¹⁶.

Nevertheless, the ICRC is already involved in supporting and encouraging irrigation and agriculture in livestock keeping areas such as the Afar and Somali regions of Ethiopia and parts of Middle Shabelle in Somalia, and there is scope for strengthening links between crops and livestock in these areas.

The matrix below highlights areas for ICRC intervention in this field. The variation in agricultural opportunity and ability within countries is considerable, especially within Eritrea and Ethiopia, thus the matrix has been further broken down into current (or likely future) ICRC operational areas.

Whilst the matrix below provides a launching point for further study and investigation, consideration of the costs and benefits of tractor ploughing compared to ox-ploughing (especially in the different agro-ecological zones of Ethiopia and Eritrea) is also required. Delays in land preparation (due to a scarcity of oxen or to delays in obtaining a tractor to plough the land) lead to significant crop losses and total crop failure for some farmers. There is opportunity to restock the herds of “resettlers” or returnees²¹⁷ with oxen for ploughing²¹⁸; however in some areas “tractor ploughing schemes” would be more cost efficient. A study to determine the best approach is recommended.

More work on intercropping opportunities is required. Fodder crops such as *Leucaena*, *Sesbania*, vetches and various grass species can all be inter- or alley-cropped with food crops. A remarkable absence of such farming techniques was observed during this study. Food crops such as cowpeas, beans, sweet potato and groundnuts all produce leaves that are valuable forage for animals, but again most of these crops were not observed during the field visits. In Kenya, sowing Rhodes grass under wheat, and growing beans under maize has increased cereal yields, and doubled the amount of livestock forage available off the same surface.

²¹⁶ Please refer to the links to Water & Habitat, and Livelihoods and Household Economy.

²¹⁷ Livestock interventions aimed to help displaced persons are limited as the latter often do not have access to land, or may be competing for meagre resources with host communities.

²¹⁸ See Chapter 9 below.

It is recommended that a study be undertaken to map areas where improved farming techniques with suitably adapted food and forage crops can be introduced.

Concerns regarding irrigation and crop farming in livestock areas include the loss of prime pasture land to crops, but also the need to protect the crops from animals; this requires the cutting down of highly palatable and nutritious *Acacia* trees to make thorn fences around extensive areas.

An immediate link between livestock and agriculture is investigating the need for controlling or eradicating the *Prosopis* tree, especially along the Awash River in Afar (Ethiopia). The tree was introduced for fodder, but has now invaded the rangelands displacing many indigenous species. A study into its impact and benefits would be required, as the tree has many uses but is now widely considered as a pest.



ICRC/Piers Simpkin

Prosopis control, to improve natural forage growth, is required along some rivers and basins.

Linking Neem tree products to animal health needs to be explored further. In Kenya, Neem seed cake, Neem oil and soap have been used to treat internal and external parasites in animals. Simple recipes to produce these products in the field (especially in Ethiopia and Somalia) need to be disseminated to livestock owners.



ICRC/Mathias Frese

Neem tree products: seed and powder.

Matrix of Plant : Animal interactions and relative priority to communities in different areas.

Plant-Animal inter-relationship	Eritrea		Ethiopia			Kenya	Somalia		Sudan	
	Gash Barka	Debub	Somali region	Afar region	Gambella	Turkana / Pokot	Middle Shabelle	Gaalgadud /Mudug	North	South
PLUP to increase irrigation	**	*	***	***	**	-	**	-	-	**
Land tenure issues	***	***	**	**	**	*	**	*	**	**
Zero-grazing units	*	*	?	?	*	-	*	-	??	??
Crop residues as fodder suppl.	***	***	***	***	*	***	***	**	***	*
Irrigating fodder crops	*	**	***	***	*	**	**	-	**	-
Non-irrigated fodder crops	*	*	**	**	-	*	*	*	*	-
Improved crop residue and forage storage	*	**	**	**	*	**	*	-	?	?
Neem tree products for livestock	*	*	**	**	*	*	**	*	-	*
Ox-Ploughing	***	***	*	**	**	?	*	-	-	*
Transportation by animal	***	***	*	*	*	*	*	*	?	-

Matrix of Plant : Animal interactions and relative priority to communities in different areas (Continued).

Plant-Animal inter-relationship	Eritrea		Ethiopia		Kenya	Somalia		Sudan	
	Gash Barka	Debub	Somali region	Afar region	Turkana / Pokot	Middle Shabelle	Gaalgadud /Mudug	North	South
Threshing by animal	*	**	-	-	-	-	-	?	-
Oil presses by animal	*	*	-	-	-	-	-	*	-
Lifting water by animal	*	*	**	**	*	*	*	*	-
Dung as fertiliser	**	**	**	**	-	**	-	?	**
Dung as fuel	*	***	-	-	-	-	-	-	-
Mulching / compost	?	?	?	?	?	?	?	?	?
Agro-forestry ²¹⁹ and tree management	**	**	***	***	***	***	*	*	*
Prosopis and “invader” plant control	-	-	*	***	*	*	-	-	-
Beekeeping	**	**	**	*	***	*	*	-	**

KEY:

***	High priority for area
**	Moderate priority for area
*	Important, but low priority for area
?	Status unknown ²⁰
-	Not important

²¹⁹ Including Jojoba, Baobab, Shea butter, Acacia and Neem.

²²⁰ The importance and extent of the use of mulching / compost is unknown at the time of writing. It is however probably quite significant, and would thus deserve specific attention in future.

8.2. Health

In most livelihoods, health depends on appropriate nutrition; as livestock is such an important component of the household economy in the Horn of Africa, healthier livestock will mean healthier people. As discussed earlier (Chapter 1), a healthier population helps reduce impoverishment, one of the key causes of tension and conflict.

Links can be made between activities in the livestock sector and human health, as follows:

1. Zoonotic diseases including bovine measles (*Taenia saginata*), hydatid cysts (*Echinococcus granulosus*), brucellosis (*Brucella abortus* and *melitensis*), tuberculosis (*Mycobacterium bovis*), rabies, mange (*Sarcoptes scabiei*), worms, sleeping sickness (*Trypanosoma sp*²²¹.) anthrax (*Bacillus anthracis*, *Clostridium perfringens*), ringworm, tetanus (*Clostridium tetani*), bacterial dysentery (*Campylobacter jejuni*), Rift Valley Fever, salmonella and plague (*Yersinia pestis*, formerly *Pasteurella pestis*). Plague (carried by lice from rats and mice, and transmitted to humans) can also be a problem but not in all countries. Risks of scrapie²²² and bovine spongiform encephalopathy (BSE) are extremely low in the region.
2. Population growth, maternal child health care, family planning and food security.
3. HIV/AIDs and the increased risk of infections with animal diseases (zoonoses).
4. Training existing and future community animal health workers in human health issues and first aid.
5. Establishing effective cold chain systems for human and animal vaccines.
6. Public/environmental health, especially meat inspection and construction of slaughter slabs.

Catley²²³ identifies research into tuberculosis as the most urgent need in the human-livestock ecosystems. In Eritrea, possible links between increased human tuberculosis and bovine tuberculosis may warrant investigation, but again the possible solutions to the problem (pasteurising milk or slaughtering infected animals) are considered inappropriate at this stage of Eritrea's reconstruction programme.

In 1991, the ICRC veterinary programme in Pochalla, on the border between Ethiopia and Sudan, collected samples from aborting cattle, 80% of which proved positive for brucellosis. However, veterinary studies in Somalia²²⁴ show that less than 2% of camels and small stock in nomadic herds had a brucellosis infection, and so it is unlikely to be a priority for pastoralist health programmes during emergencies.

Of potential interest, particularly in Somalia, are the possible benefits of using synthetic “pour-ons” to control Tsetse fly and trypanosomiasis transmission in Ethiopia. These “pour-ons” are also by chance reported to be reducing the malaria incidence in humans, as the chemical on the cattle also repels mosquitoes from houses around the cattle pens. However, recent alarms²²⁵ suggest that there could be links between “pour-ons” and bovine spongiform encephalopathy (BSE) or Creutzfeldt Jakob Disease (CJD) in humans.

²²¹ Can be transmitted from dogs, pigs and antelope to humans, but very rarely transmitted by cattle or small stock.

²²² Note is taken of the decision by Eritrea in December 2003 to accept a ship full of Australian sheep that had been banned from disembarking in Saudi Arabia due to scrapie.

²²³ 1999.

²²⁴ Baumann, Hassan, Zessin and Abdi, 1990.

²²⁵ Ecoterra, 2003.

Another aspect deserving investigation for potential links is the nomadic herders' current difficulty in securing access to health services. Most health services are static, town-based facilities; the largest, most successful livestock producers on the other hand tend to be mobile and absent from towns for a large proportion of the year. The only method of addressing the problem is to work with the mobile livestock herders, and to adapt to their lifestyle. In Gode, Ethiopia, the ICRC Primary Health Care (PHC) programme is combined with the training of community health workers and traditional birth attendants from these mobile communities. This type of integrated approach would deserve to be replicated elsewhere, and links between these community human health workers and community animal health workers should then be made.

Interestingly, a report issued by the International Livestock Research Institute²²⁶ (ILRI) states: *“What is widely recognised is that many diseases are associated with poor sanitation, poor housing and poor nutrition but zoonotic infections derived from livestock and other animals also take a toll. Gastro-intestinal parasites, for example, directly compete for the food we eat and in situations where under-nourishment is widespread, children fail to thrive and their growth is severely impaired. These infections also adversely affect cognitive development that in later years is reflected in poor performance at school and consequently a reduced ability to obtain good jobs and greater income. The very nature of smallholder farming in developing countries poses a high risk to zoonotic and opportunist infections, particularly to farmers and labourers most intimately associated with livestock”.*

8.3. Livelihoods and the Household Economy

The Household Economy Approach²²⁷ (HEA) is presently the best comprehensive concept for understanding livelihoods. Closer links in information sharing and identifying the role of livestock in HEA are needed. The contribution of livestock to the household economy is often difficult to quantify. In agricultural systems, cropping seasons, harvest dates, and yield estimation formulae (based on field area, seed variety and rainfall) are all defined. In the extensive, nomadic pastoralist livestock systems, animal types and numbers fluctuate, milk yields vary, and the animals may actually be physically far removed from most of the household members for large parts of the year.



ICRC/Piers Simpkin

Adopting the Household Economy Approach requires strong community links and sound communication skills.

Tracking the changing role of livestock is best done within the HEA methodology. Past trends can then be used to predict changes, and to plan livestock interventions accordingly.

The Household Economy Approach also identifies alternative coping mechanisms for support in finding alternative livelihoods. The HEA can also be used to identify when coping mechanisms change to survival strategies.

²²⁶ Perry et. al., 2001.

²²⁷ For a comprehensive presentation of the method, please refer to "The Household Economy Approach - A Resource Manual for Practitioners", Save the Children Development Manual no. 6 (2000). The ICRC, however, doesn't apply the method as such, but rather the approach within its broader concept of Economic Security, a definition of which can be found on the ICRC website (<http://www.icrc.org>), and in A. Mourey, "Manuel de nutrition pour l'intervention humanitaire" (see below).

Current thinking on livestock systems in the GHA points toward the greater need for diversification away from livestock (rather than an intensification of the livestock system). The HEA is essential in defining existing alternatives and available opportunities; it also measures the scope or “expandability” of the existing livestock contribution to the overall household economy. For instance, the HEA can determine whether a specific household should concentrate on its own milk consumption, or whether selling the milk to purchase grain would be preferable.

The proposed scrutiny of developing agro-pastoralism as an alternative to pure pastoralism requires considerable participatory land use planning (PLUP), in line with the livelihoods and HEA approaches.

8.4. Nutrition

Livestock products are an important source of food, and contribute to good nutrition in the Horn of Africa²²⁸. Studies have shown that, regardless of wealth ranking, the growth of children from families owning milking animals is significantly better than those from families without livestock. A study comparing households that only produced crops with households that also owned livestock showed that the latter's income was higher.

The consumption of animal products is particularly important for population groups with increased needs due to growth (such as children), pregnancy and lactation. It has also been shown to reduce levels of anaemia and strengthen the immune system.



ICRC

The nutritional needs of beneficiaries should be considered carefully when planning destocking or emergency market support programmes

Animal products are rich in essential nutrients, especially protein, iron, calcium and zinc. Their bioavailability is higher than the same nutrients of vegetable origin. Furthermore, Vitamin B12 is almost exclusively found in animal products.

Beyond the clear nutritional value of animal products, their traditional processing and storage warrant further investigation in terms of hygiene, the risks of spoilage or loss, and the potential value added resulting from product processing.

²²⁸ For further detail, readers are referred to Alain Mourey: "Manuel de nutrition pour l'intervention humanitaire", ICRC publication 2004, Chapters 3 and 5.

The following nutritional risks and hazards of keeping livestock were identified²²⁹:

- An increase in diarrhoea cases and child mortality;
- The risk of zoonotic disease from the consumption of raw animal products;
- The risk of drug residue ingestion by humans when withdrawal periods are not observed.

In spite of the possible risk of earlier termination of breastfeeding in livestock-owning households, maternal milk is often gradually replaced by animal milk during the weaning process.

Animal products (including eggs and milk) are very important components in nutrition, and vulnerable populations depending on relief food - such as internally-displaced persons - often have lost their access to them. Displaced persons tend to keep what little livestock they can to ensure their economic future - animals represent productive assets in this perspective, rather than food sources (with the possible exception of poultry). However, from the livestock perspective, the options for supporting displaced persons (IDPs) through livestock are very limited. It is necessary to further consider the ways to overcome the physical and management limitations of livestock keeping by IDPs, to enable them to benefit from the nutritional advantages of products such as milk and eggs.

8.5. Water and Habitat

The main link between water development programmes and livestock is the strategic location of boreholes, shallow wells, sub-surface dams, ponds, dams, *berkads* and rock catchments to ensure that livestock watering requirements are incorporated. Strategic water point development should encourage migration and rotational grazing rather than settling livestock in restricted areas and causing further environmental damage. Planning new water installations should always include an assessment of its impact on livestock, the natural resources, cultural sensitivities and ownership. Water is a key resource and often the cause of violence amongst livestock owners.

Excess water development can adversely affect the habitat, leading to changes in the water table and changes in access or user rights. Irrigation often affects soil salinity in ASAL areas, and makes once fertile areas barren.

Water extraction methods may affect the labour demands for watering livestock and, in some societies, labour availability is a constraint. In other societies on the other hand the labour requirement to provide water for livestock is a key opportunity and coping mechanism for thousands of people. Facilitating water supply may thus result in a net loss of labour opportunities for many.



ICRC/Piers Simpkin

The water requirements of livestock and water point development need to go hand in hand.

²²⁹ International Livestock Research Institute - ILRI, 2000.

Improving sanitation with the construction of pit latrines and slaughter slabs can reduce the risk of zoonoses, particularly bovine measles and hydatidosis. Further benefits could be derived from the inclusion of veterinary laboratories and drug stores in the reconstruction of health centres and rural hospitals (e.g. Eritrea).

There is general agreement in all countries that the collection of information on water needs and livestock systems in general can be improved, and that all sectors could develop links for improved monitoring and evaluation.

Less time spent collecting water enable women to be more productive, but increasing human populations in pastoral areas is widely seen as a major problem. **Sanford and Habtu, 2000**



ICRC/Piers Simpkin

Human and animal power is sometimes more renewable and sustainable than modern mechanical power sources.

It is predicted that much of the world's future conflict will be over water²³⁰. In the Horn, the major future risk will be tension over the use of the water in the Shabelle and Juba rivers. Both rivers originate in Ethiopia but are essential to much of Somalia's agricultural and livestock future. Hydro-electric dams, large and small-scale irrigation schemes in Ethiopia could have a major consequence on Somalia's economic future. There is need for both internal and cross-border planning using participatory land use planning (PLUP) for future management of water in both countries.

8.6. Links Between All Sectors and Livestock

Some key **approaches** are recommended in this livestock study²³¹, some of which could be adopted by the other sectors to form a standard approach.

Agencies are encouraged to monitor the impact of economic security interventions on other sectors. Monitoring and evaluation can support data or information collection; joint needs assessments, problem prioritisation and intervention selection should be encouraged.

Where appropriate, the issuing of vouchers²³² to the neediest target groups should be considered for veterinary drugs, human health services, seeds, food, paraffin, and essential household items, among others. Vouchers promote private sector development, boost the local economy, cause less economic

²³⁰ IRIN, 9th December 2003.

²³¹ See Basic Principles discussed in section 5.5. above.

²³² An approach already in use by the ICRC in Israel/Palestine.

disruption due to emergency interventions and, in the long-term, link emergency interventions to sustainable livelihoods.

In a few areas, there could be scope for the distribution of lightweight tarpaulins or nylon sheeting to protect both the pastoralists and their small stock from the devastating effects of the first cold rain at the end of stress periods²³³.

8.7. Effective Targeting

Populations affected by conflict are often displaced, and often destitute. Efforts to help the poorest through livestock interventions, especially in the ASAL areas in the Horn of Africa, usually fail because a minimum set of parameters are needed to manage livestock in ASAL areas successfully. These parameters include physical assets such as manpower, transport animals and weapons, as well as social assets such as filial ties, access and user rights. Many long-term displaced people lose these assets and rights during their absence (or after the shock), and the power base may have changed fundamentally, estranging the returnee from his/her own homeland.

This report does consider livestock support to the poorest; however, most recommended interventions²³⁴ are likely to target those still owning some livestock and falling into the “poor” or “middle” wealth categories. Nevertheless, even if this is the case, the “poorest of the poor” will still benefit as the whole pastoral system is based on kinship, food sharing, gifting and insurance, and the trickle-down effect is probably stronger in pastoral systems than in many other livelihoods.

A protected or improved livestock system (resulting from assistance interventions in the livestock sector) can yield the following indirect benefits for the poorest:

- Increased milk availability;
- Lower milk prices;
- Higher chances of receiving alms from middle or rich livestock owners;
- Increased labour opportunities;
- Increased trade improves competition and better food prices;
- Re-establishment of traditional safety nets.

A table illustrating how the recommended livestock interventions directly benefit the poorest is included in Chapter 9²³⁵.

There is potential to work with the poorest wherever sedentary farming or suburban systems are an option, but these conditions are limited in most GHA countries. Whilst irrelevant to GHA countries, the establishment of small animal farming (e.g. rabbits, guinea-pigs, etc.) could significantly benefit the displaced or poor (and female-headed) resident populations affected by conflict in the Great Lakes region, as they are a popular source of bush meat and require very little feed or maintenance.

²³³ Distributed essential household items normally include tarpaulins and shelter material. The first cold spell or rainfall at the end of a drought, dry season or stress period probably kills more animals (and humans) than the combined dry season or drought period. Provision of lightweight tarpaulins or sheeting to cover the family and the weakest animals should be considered. This is probably most applicable in agro-pastoral areas and some nomadic areas.

²³⁴ See Recommendations in Chapter 9.

²³⁵ Section 9.8. “Effective Targeting”.

CHAPTER 9

Recommendations: Future Livestock Interventions

9.1. Recommended Approach to Interventions

Emergency response mechanisms in the Horn of Africa are largely based on the assumption that droughts will be the major emergency. The typical emergency response (or intervention) cycle comprises different phases as illustrated in Figure 9.1. below. A similar table by Lautze *et al.*²³⁶, based on the drought cycle management, but incorporating the advantages and disadvantages of each intervention is provided in Annex 9.1.

Figure 9.1. Drought Cycle Management ²³⁷



There is no equivalent “conflict management cycle”. Conflict early warning systems are only just developing, and the ICRC's central mandate in conflict may justify a specific emergency response cycle of its own.

The above cycle is deemed sufficient for managing drought amongst livestock owners and pastoralist systems in the Horn of Africa. Nevertheless, it represents a “closed” system, insofar as it concentrates on protecting and repairing existing livelihoods, with only minimal regard to new livelihoods or diversification. The pastoralist livelihood however is a dynamic, or “open”, system (see overleaf).

²³⁶ 2003.

²³⁷ Source: Drought Cycle Management (DCM) in the Greater Horn of Africa, the International Institute of Rural Reconstruction (IIRR), 2003.

Two important issues emerge from the above cycle:

1. Different interventions must be carried out at different times; but, more importantly:
2. Any agency planning emergency interventions must be aware of other interventions during “normal” times, and endeavour to structure interventions to complement (rather than disrupt) the cycle. This second issue opens the debate on the need for a “tracking strategy”.

In the ICRC crisis terminology as defined in its recent Assistance Policy, the above cycle could be considered in terms of **Pre-Crisis**, **Acute Crisis**, **Chronic Crisis**, and **Post-Crisis**²³⁸. The various recommended interventions provided in the chapter below are labelled accordingly. Special emphasis is placed on interventions in acute and chronic crisis situations, considered to be the ICRC priorities. Some interventions (humanitarian dialogue for example) cannot be restricted to one specific crisis stage, and may in fact be required throughout the cycle; on the other hand, some chronic crisis interventions could also be considered as “preventive” (or “pre-crisis”) interventions as they may mitigate the impact of an anticipated shock.

The recommended interventions in terms of economic security are **relief** and **livelihood support** (the latter comprising of **production** and **structural interventions**):

- **Relief interventions** aim primarily at saving lives and protecting livelihoods at immediate risk due to emerging or acute crisis. This is achieved by providing access to the economic goods that are essential for survival when these can no longer be obtained independently²³⁹.
- **Production interventions** aim at generating food and/or income, and ultimately restoring sustainable livelihoods in pre-, chronic and post-crisis environments. This is achieved by protecting and/or enhancing household or community assets that provide the means of production²⁴⁰.
- **Structural interventions** aim at the rehabilitation of sustainable productive assets through the improvement of processes and institutions that directly influence the target population's assets and liabilities. This is achieved by engaging key service providers and/or other key stakeholders in the provision of the inputs required to achieve longer term service provision in a vital sector.

As such, relief interventions are most appropriate in acute crises, production interventions in chronic crises, and structural interventions in post-crisis environments, although types of intervention overlap according to observed needs and the situation analysis.

Many of the recommended interventions are targeted at responding to some of the specific problems of the Horn of Africa pastoralist livelihood system as presented in Chapter 4.

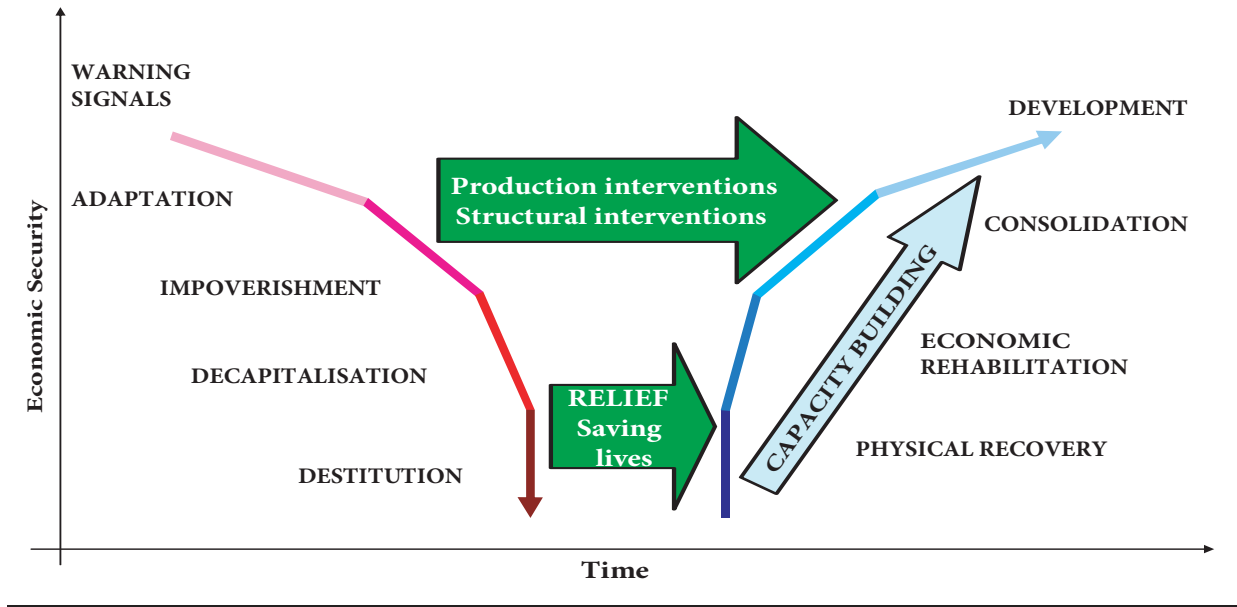
Figure 9.2. below illustrates the application of this approach to the ICRC's crisis process (to be found in Chapter 1).

²³⁸ Readers are referred to the ICRC Assistance Policy, Doctrine ref. 49/2004, for comprehensive definitions. Crisis levels are defined with respect to the observed coverage of the population's essential needs. In summary, pre-crisis refers to situations where essential needs are still covered, but at risk of no longer being covered; acute crisis to situations where essential needs are no longer covered; chronic crisis applies to situations where essential needs are covered to some extent, but the context remains volatile and acute crisis could resume; post-crisis refers to situations where essential needs are again covered, but the infrastructure ensuring this needs coverage remains fragile and requires support. Readers are referred to <http://www.icrc.org> for the full text of the Assistance Policy.

²³⁹ Examples include the provision of essential household items, food, and agricultural and veterinary inputs.

²⁴⁰ Production interventions also aim at strengthening coping mechanisms (e.g. destocking).

Fig. 9.2. The Crisis Process and Possible Interventions



As has been mentioned above, the drought management cycle above appears to operate in a “closed” system. The pastoral livelihood typical of the Greater Horn of Africa however is not a “closed” system, but a dynamic system that is currently in decline. It is in decline because the frequency of shocks is increasing; in addition, the recovery time following each shock is insufficient for the remaining assets to reach the levels required to support families through the next shock. The ICRC's mandate therefore allows it to intervene not only in emergency situations (i.e. acute crisis), but also in pre-crisis, chronic crisis (transitional) and post-crisis settings in these predominantly livestock-dependent areas.

The above crisis process can thus be further adapted to reflect the pastoralist situation (see Figure 9.3. overleaf).

Fig. 9.3. The Crisis Process and Possible Interventions

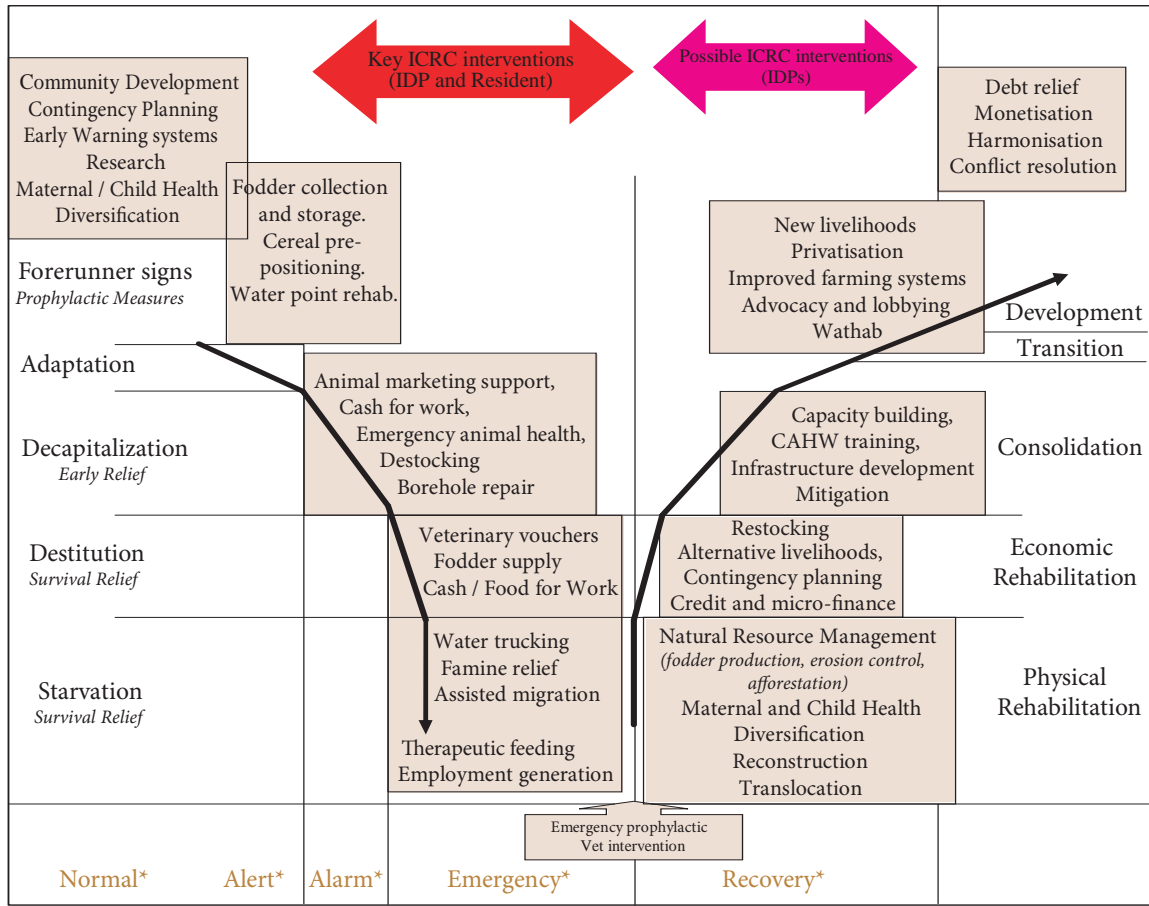


Figure 9.3. above combines the ICRC Crisis Process (see Chapter 1) with the traditional drought management cycle of Figure 9.1. (asterisks). The recommended interventions below have also been adapted and thus presented in the following format:

- 9.2. Interventions in pre-crisis environments;
- 9.3. Relief interventions in acute crisis;
- 9.4. Livelihood support interventions in chronic crisis;
- 9.5. Livelihood (structural) support interventions in post-crisis environments.

A complete “tracking strategy” requires intervention at all stages of this cycle. The resulting costs (in terms of positive or negative humanitarian units, and of financial or manpower units) will depend on the stage of the cycle where interventions are launched.

Constraints and interventions to be avoided (i.e. pitfalls) are discussed in Sections 9.7. and 9.11. below.

9.1.1. General Principles

General principles for intervention in livestock livelihoods at regional level are presented in section 5.5. above. In keeping with the comments above, it is emphasised that agencies should apply the poverty monitoring tool (or Household Economy Approach), and that due consideration should be given to **saving livelihoods**, not just lives. If livelihoods are not considered, the action of “saving lives” will only profligate the continuation of conflict as the livelihood is necessary to survive. Livelihoods

thus influence both human survival and economic security; the ICRC defines economic security as follows (see also Chapter 1):

- Economic security is the situation of a household or community that is economically self-sufficient;
- Economic security is achieved when the livelihoods of households or communities allow them to meet their essential economic needs (or compulsory expenditures) in a sustainable way, as defined by their biology, environment, and cultural standards.

Figure 9.3. above further emphasises the need for the development and application of a complete “**tracking strategy**”, with interventions changing over time. No organisation has successfully managed to adopt the full tracking strategy approach, usually because of funding restrictions, or limitations of mandate or vision. Agencies may be unable to comply with the complete tracking strategy; however, maintaining at least a presence in the region and advocating for change may enable them to create partnerships with other organisations to complete the strategy (mobilisation of relevant stakeholders).

Examples of indicators and exit strategies are provided in Annex 9.2²⁴¹. They are intended to facilitate decision on the timing and type of interventions within the tracking strategy, and they will vary according to context.

As shown in Chapters 2 and 4, pastoralists purposefully keep more animals than their immediate needs require (to ensure sufficient animal reserves for quick liquidation in case of shock, in exchange for food or cash); it is therefore important to improve the “liquidation” channels, and ensure that excess animals can be easily and quickly disposed of, before they lose value.

Niamer Fuller²⁴² has noted that “*traditional safety nets²⁴³ that depended on the large group are weaker or no longer exist. Only the smaller (family or kin) safety nets are still strong - shared labour, split herds, reciprocal exchange etc. Agencies can be in a position to provide safety nets in the form of famine relief, cash for work or supplementary feeding*”. However, interventions such as destocking, transport subsidy and credit or insurance schemes should also be provided by agencies if relevant and feasible.

Finally, the incorporation of target beneficiaries in **planning, implementing and owning** their own disaster management response mechanisms (from early warning through to emergency response and recovery) should improve targeting and impact.

²⁴¹ The list is indicative only, and certainly does not contend to be exhaustive. Readers should bear in mind that it has been drafted within the framework of the ICRC’s specific approach to crises in the Horn of Africa.

²⁴² 1999.

²⁴³ Such as restocking, in-kind credit, and village level insurance schemes.

9.2. Interventions in Pre-Crisis Environments

This section discusses interventions that **should be considered** in support to the animal production sector in the Horn of Africa.

Pre-Crisis interventions: duration, repeatability²⁴⁴, and priority in ICRC concern areas

Interventions in Pre-Crisis	Duration	Repeat-ability	Priority											
			DJ	ER	ET			KY	SO	SD		IDP	Ret.	Res.
			tsz	gm	gd	af	tk	df	st					
Humanitarian dialogue	1 day –12 months	H	H	H	H	H	H	H	H	H	H	H	H	H
Fodder production	12-24 months	M	M	H	L	H	H	M	H	H	L	M	L	H
Improved marketing	12 months	L	H	M	M	H	H	H	L	M	H	L	L	M
Identifying grazing areas to support the livestock in emergencies	1-3 months	H	H	H	L	H	H	H	M	H	M	L	L	H
Diversification and provision of alternative livelihoods	3-12 months	M	M	H	M	H	H	H	M	H	H	H	H	H
Irrigation schemes that are pastoralist friendly	24+	L	M	M	M	H	H	H	M	M	M	H	H	H
Peace dividends	3-24 months	H	NA	L	M	L	H	H	H	M	M	M	M	M

Key:

- DJ: Djibouti, ER: Eritrea (tsz: Temporary Security Zone), ET: Ethiopia (gm: Gambella, gd: Gode, af: Afar); KY: Kenya (tk: Turkana); SO: Somalia; SD: Sudan (df: Darfur, st: South Sudan).
- H = High, M = Moderate, L = Low, NA = Not Applicable.
- IDP = Internally Displaced Persons, Ret = Returnees, Res = Resident

Prevention activities in livestock or pastoralist systems are based on conflict resolution, peace building, drought preparedness, livelihood strengthening and diversification, and disaster early warning. The choice between relief and production interventions evidently also depends on the analysis of other agencies' (and/or stakeholders') coverage of observed needs.

Pre-emptive interventions (such as fodder production, improved marketing, identifying areas to support livestock in emergencies, and the provision of alternative livelihoods) would reduce the impact of shocks, and protect civilians from the tension and trauma that often results from shocks.

Diversification will also strengthen the recommended “protection of livelihoods” approach. Diversification and protection of livelihoods will contribute to the prevention (or at least the mitigation) of future livestock-based catastrophes or disasters. Box 9.1. below, extracted from Lautze et al.²⁴⁵, provides examples of asset protection interventions for Ethiopia.

²⁴⁴ Repeatability = some interventions can only be implemented once due to their cost or long-term duration (Low repeatability). Others can be implemented for short durations and if the emergency has not abated by the end of the intervention can be repeated and replicated in the same area or in adjacent areas ad infinitum (High repeatability).

²⁴⁵ 2003

“Pastoralist friendly” irrigation schemes should be encouraged, where access to water and fodder crops or crop residues for pastoralist use are integrated into the planning and design process.

There is also a need for further research on many pastoralist issues. More trials are required in the improvement of rangeland productivity, and more study into the costs and feasibility of supplementing livestock feeds, for example.

Box 9.1. Examples of asset interventions in Ethiopia

(Lautze *et al.*, 2003)

Human assets: food aid; nutrition; health; training (vocational, administrative, humanitarian response and principles); conflict resolution; meat distributions.

Financial assets: cash grants; cash loans; CFW; Employment Generation Schemes (EGS); FFW; traditional loan and credit schemes; local purchase of commodities (livestock in pastoral areas); debt relief; lifting of livestock export bans; livestock market transport subsidies; livestock off take; local monetization.

Physical assets: seeds; livestock restocking; emergency water points; community based animal health care; livestock disease surveillance; grain banks; grain storage; supplemental fodder; tools.

Natural assets: pasture recovery; afforestation; watershed management; erosion control; nurseries; fisheries.

Social assets: women's livestock marketing associations; capacity building of woreda administration, local NGOs, churches, mosques and institutions; technical exchanges between organisations; traditional safety nets.

Moral assets: traditional peace enforcement; unity and common resource management; harmonisation; planning for the future; self-respect and self-help.

9.3 Relief Interventions in Acute Crisis

This section discusses interventions that **must be included** in any programme intended to support the animal production sector in the Horn of Africa within acute crisis phases.

Interventions in Acute Crisis	Duration	Repeat-ability	Priority											
			DJ	ER	ET		KY	SO	SD		IDP	Ret	Res	
			tsz	gm	gd	af	tk	df	st					
Humanitarian dialogue	1 day – 12 months	H	M	H	M	M	H	H	H	H	H	M	M	M
Emergency Veterinary Interventions	1-3 months	H	M	M	M	H	H	H	H	H	M	L	M	H
Supplementary fodder and livestock feeding	1-3 months	H	H	H	M	H	H	H	M	H	M	M	M	H
Employment Generation	1-3 months	H	M	M	M	M	H	H	M	M	M	H	H	H
Destocking	1-3 months	M	L	M	L	H	H	H	M	H	M	M	M	M
Purchase for Slaughter	1-3 months	H	L	L	M	M	M	M	L	M	M	M	L	M
Emergency slaughter for tinned or dried meat	1-3 months	H	L	L	M	M	M	M	L	M	M	M	L	M
Transport subsidy	1-3 months	H	M	M	M	M	M	M	M	M	M	L	M	M
Cold-stress preparedness and shelter provision	7 days – 1 month	H	M	H	M	H	H	H	H	H	M	M	H	H
Water point development	10 days – 12 months	H	H	H	M	H	H	H	H	H	M	M	H	H

Key:

- DJ: Djibouti, ER: Eritrea (tsz: Temporary Security Zone), ET: Ethiopia (gm: Gambella, gd: Gode, af: Afar); KY: Kenya (tk: Turkana); SO: Somalia; SD: Sudan (df: Darfur, st: South Sudan).
- H = High, M = Moderate, L = Low, NA = Not Applicable.
- IDP = Internally-displaced persons; Ret = Returnees; Res = Residents.

9.3.1. Humanitarian Dialogue

Negotiation between competing groups or national governments to enable the migration of livestock from drought-areas into satisfactory pasture areas is an increasingly important issue; it is, however, rarely addressed. During the 2000 drought, the African Union's Inter African Bureau for Animal Resources (AU-IBAR) successfully negotiated with Karamojong elders and politicians for 100,000 Turkana cattle to cross the border from Kenya into Uganda. This approach is perceived to be low in cost and to yield a major impact, but requires considerable communication, dissemination and negotiation skills for the population to be aware of the plans, and to ensure safe passage. This entails many meetings and supporting influential leaders to meet and discuss frequently - this can raise costs significantly.

Field²⁴⁶ notes that dialogue can also take the form of advocacy for emergency support, be it as food relief or support to emergency marketing interventions. Dialogue in favour of marketing interventions could include requesting governments to alert donors, open roads, improve communication, ensure security, issue or waive price controls, instigate temporary changes in quarantine or veterinary regulations, improve veterinary services to meet international standards, and open trekking routes or grazing reserves. Dialogue groups established during emergencies often succeed in improving the long-term situation.

Dialogue also includes planning or partnering with other organisations to harmonise and cooperate in implementation; this is necessary to implement a complete tracking strategy.

9.3.2. Emergency Veterinary Interventions

Some reports suggest that many emaciated animals die from disease rather than malnutrition in droughts, as resistance and antibody levels are low.

The provision of emergency veterinary drugs, particularly anthelmintics and acaricides to small stock, has been estimated to improve survival by 20%²⁴⁷. It is also believed that anthelmintics treatment can increase the life of droughted animals by 1-2 months.

Some agencies have also treated cattle and camels for trypanosomiasis; during times of stress, the disease can manifest itself more strongly within the animal and, since animals often have to feed in areas that they would not normally enter, they are exposed to Tsetse or other biting flies.

Mass vaccinations, particularly in cattle, have also been undertaken against stress related diseases such as haemorrhagic septicaemia (HS) or pasteurella. Some veterinarians claim that anthrax is also more frequent in droughts or when pasture is exhausted, as animals pull up the roots of plants and thus come into contact with the anthrax spores in the dust or earth. Vaccination campaigns may need to target large numbers of animals in order to meet the minimum required coverage levels.

Technicians argue that, if animals are emaciated and hungry, anthelmintics will not be absorbed properly and the vaccines will not produce a strong antibody response. They argue that animals should be fed supplements for 7-10 days before treatment, which theoretically is correct, but in the emergency situations common in the Horn of Africa is usually impossible.

It is recommended to follow the trend away from operating direct non-governmental livestock treatment or vaccination projects, and train community animal health workers to treat or vaccinate the animals. This approach has proven to be much more sustainable in conflict as community health workers remain on the ground and blend into the civilian population during conflict; non-governmental organisation staff and infrastructure on the other hand are clearly more conspicuous.

It is recommended that community animal health workers be linked to the private sector veterinarians. Two new approaches to emergency veterinary interventions deserve specific attention:

1. The distribution of veterinary vouchers, and support to the private sector approach;
2. The use of antibiotics and simple shelter materials to prevent the massive livestock mortality associated with heavy rainfall at the end of stress periods.

²⁴⁶ In preparation.

²⁴⁷ Aklilu and Wekesa, 2002.

Readers are referred to Annex 9.3. for details on the support to privatisation and the use of emergency veterinary vouchers for livestock owners.

9.3.3. Supplementary Feeding

Most livestock emergencies associated with drought or conflict result from a lack of fodder and poor nutrition. Feed supplements can be provided in the form of imported hay, grains, feed concentrates (grain mixtures, blood or fish meal) or pellets (a mixture of hay roughage and concentrated feeds). Supplements can also be in the form of local resources previously collected and stored, such as *Acacia* pods or hay. Agencies should be prepared to carry out some supplementary feeding for livestock when conditions permit.

Often the most limiting factors are price, availability and the cost of transport between production and delivery points. To minimise costs and maximise impact it is recommended that only core breeding animals receive feed supplements. Old, dry or low producing animals should not be fed.

Needy families selected democratically through the community based wealth ranking system should be provided with livestock feed²⁴⁸ in exchange for some of their non-breeding animals which should be slaughtered and shared amongst key beneficiaries within the community²⁴⁹. If they exchange breeding stock for fodder, the animals should be kept and fed on concentrates, and used for restocking after the drought or displacement period.

Box 9.2. Cost Benefit of Supplementary Feeding
(Aklilu and Wekesa, 2001)

180 tonnes of feed at US\$ 267 per tonne cost a total of US\$ 48,000. This was enough to feed 8,000 small stock daily for 3 months. At the end of the drought, these animals were worth US\$ 20 each, a total value of US\$ 160,000.

There is a need to increase the availability of supplementary feed to livestock producing areas, or to find cheaper locally available sources of feed such as grass stalks mixed with molasses or waste paper soaked in chicken dung urea²⁵⁰.

In extensive livestock systems, feed supplements in the form of powder or meal are often blown away by the wind or scattered by the animals, resulting in high wastage. Pellets or feed blocks are recommended accordingly. Ideally further pilot studies should be undertaken before large-scale feeding is done.

²⁴⁸ 22.5 kg of concentrates can supplement the feed of one sheep or goat for three months.

²⁴⁹ See Destocking Section 9.3.5.

²⁵⁰ Toxicity can occur beyond maximum figures for urea intake. The maximum safety level is a molasses/urea mix of 0.5-0.7 kg per animal per day.

Box 9.3. Feed requirements for animals in the deserts of northern Kenya

(Field, 1993)

- Camels consume 1.67% of their live weight per day, goats 2.58%, sheep 2.63% and cattle 3.27%;
- Daily dry matter intake (DMI) is calculated by multiplying these figures by actual mean live weights giving the following results: camels need 5.02 kg per day, cattle 5.39 kg per day*, sheep 0.63 kg per day and goats 0.64 kg per day. This figure is sufficient for maintenance;
- To allow for production costs (milking and growth) the DMI calculations should be increased by 10% - 5.52 kg per day for camels; 5.39 kg per day for cattle** ; 0.69 kg per day for goats and 0.70 kg per day for sheep.

*: Ethiopian figures indicate 6kg DMI for cattle.

** : Figure does not change from maintenance figure in this case as the research was carried out on young “growing” cattle with the production cost already included in maintenance figure.

9.3.4. Employment Generation

The term employment generation in this context is used to cover cash-for-work (CFW) and food-for-work (FFW) activities. Longer-term employment generation is also essential, and should be considered as a pre-crisis (prevention), chronic crisis (transition) or post-crisis activity rather than only as an emergency intervention.

The ICRC and most governments in the Horn of Africa are encouraging cash-for-work instead of food-for-work. CFW activities should benefit the community (e.g. road building, school construction, etc.). Livestock-based communities will benefit from cash-for-work schemes in the short and long terms, provided these schemes address environmental and livestock issues.

Possible interventions include the following:

- The rehabilitation of water points or local municipal abattoirs and slaughter slabs;
- Improved rainwater infiltration through the construction of 25 sqm micro-catchments and bunds for growing fodder trees and grasses²⁵¹;
- Soil erosion control, gabions, terracing and the planting of fodder or fuel trees;
- The control or eradication of *Prosopis*²⁵² and other parasitic or “invader” weed control;
- The construction of livestock marketing infrastructure;
- Field preparation for fodder production;
- Canal preparation for irrigation;
- The desilting of dams and shallow pans using human labour and animal power;

²⁵¹ Fodder production and emergency supply. Lucerne, cowpeas and vetch can be grown under irrigation; sorghum and pearl millet stover can be grown in lowlands. New species introduced include oats (*Avena sativa*) and Sudan grass (*Sorghum sudanense*); Rhodes grass (*Chloris guyana*) and elephant grass (*Pennisetum purpureum*) can be tried if adaptable. Vetaver grass for soil stabilisation and fodder in highland areas. *Lablab purpureus* is also a drought tolerant fodder. *Leucaena leucophylla* and Pigeon Pea (*Cajanus cajan*) do well if rainfall is more than 400mm, and *Atriplex nummularia* should be grown in areas with less than 200 mm rainfall

²⁵² Contingent on the views of local governments and livestock owners as to *Prosopis*, whether it is good or bad.

- In permanent settlements, the construction of permanent livestock pens with dry stone walling and live fences, or the fencing of agricultural fields with live fences rather than having to cut *Acacia* branches to continually repair temporary fences.

The dangers of cash-for-work or food-for-work destroying community self-help mechanisms must be appraised carefully when planning the activities.

9.3.5. Destocking

Destocking is perhaps the most widely used emergency intervention in pastoralist areas. Destocking involves the purchase of animals whilst they are still in fair condition (ideally at the pre-crisis stage through to the early emergency stage). The animals are slaughtered immediately and the meat is distributed fresh to needy groups in the area. Alternatively, the meat can be air-dried and transported to areas that lack protein.

Generally cattle, sheep and goats are the main targeted species. There are several possible variations on the approach:

1. If food is available on local markets, animals in good or fair condition can be purchased for cash at the market price, while weaker animals can be purchased according to a sliding scale. Pastoralists use the cash to buy high energy cereals on the market.
2. If food is unavailable on local markets, weakened stock can be exchanged for cereals on a sliding weight-for-weight basis. Field²⁵³ observed the exchange of livestock on such a programme in northern Kenya on equal terms of 1 kg of cereal for 1 kg of animal liveweight for animals in good or fair condition, and 0.5 kg of cereal per 1 kg liveweight for weak animals, and as little as 0.25 kg of cereal per kilogramme liveweight for seriously weak animals. This approach has also been referred to as food-for-stock (as opposed to food-for-work).
3. The third approach is to purchase or exchange animals for a combination of cash and animal feed (or fodder); the cash is then used to buy food for humans and the animal fodder used to feed a portion of the remaining herd (see Supplementary Feeding). In many areas where pastoralists are unused to providing animal feed to their stock, a certain amount of sensitisation and extension work may be required.

The value of the skins can be used for reimbursement of transport costs, but it is probably better devoted to covering the local labour costs.

Ideally the animals should be slaughtered on slaughter slabs, but alternative mobile, low cost systems such as plastic sheeting can also be used.

9.3.6. Purchase for Slaughter

Purchase for slaughter is a similar principle to destocking; however, it targets animals in good condition instead of the weak. In typical drought or shock conditions caused by displacement, cattle lose condition first, followed by sheep and goats. Camels generally manage to maintain a good body

²⁵³ 2001.

Box 9.4. Traditional meat preservation methods

There are many traditional methods of preserving meat.

In Ethiopia, strips of meat (1-2 cm wide) are hung on string or laid on metal mesh and dried in the shade for 3-5 days (*quanta*).

In Somalia, *nyirri nyirri* is made by air drying thin strips of flesh for 24 hours, cutting the strips into small cubes (0.5-1 cm) and deep-frying in camel hump fat or vegetable oil. It can then be stored (saturated in fat) in a container for up to six months without refrigeration.

Biltong is made by soaking steaks in brine for 24 hours and air-drying them for 3-5 days. The flesh can be dried in thin strips or as whole steaks.

Meat can also be hot smoked or cold smoked.

condition longest. Young, old and female animals tend to lose condition faster than adult male animals.

Past experiences in Purchase for Slaughter in Kenya targeted male camels. One agency²⁵⁴ donated 10 male camels to schools for feeding to the pupils, resulting in increased class attendance; another²⁵⁵ bought 100 local camels for slaughter and consumption by the residents of the area. In Kenya, an estimated 35,000 camels are considered to be surplus to essential needs and potentially marketable²⁵⁶. These camels could yield approximately 9,000 tonnes of meat at a cost of about 350 million Kenyan Shillings²⁵⁷. It would be interesting to compare the costs of shipping and transporting a similar amount of vegetable protein (beans or soya) to northern Kenya: transport costs for these camels would be minimal as they are already present in the target areas, and can be walked to the slaughter points. The injection of cash for purchasing these animals would also have stimulated the local economy.

9.3.7. Emergency Slaughter for Tinned or Dried Meat

One approach worth investigating is providing the means for farmers to slaughter animals and return with quality tinned or dried meat to their homes, thus ensuring at least a protein supply during the shock period. This approach is only likely to work if no other proteins are supplied by relief agencies.

Alternatively, the implementing agency can purchase and slaughter the animal, process and tin the meat, and distribute the meat to its target population. In areas where agencies deliver food or essential household items, back-loading distribution trucks with livestock for tinning could be considered (see Section 9.3.8. below).

Tinned meat is heavy to transport, but is very nutritious compared to many other sources of protein; on the other hand, dried meat is light and durable.

²⁵⁴ FARM-Africa

²⁵⁵ The Lutheran Church.

²⁵⁶ Heath, 1992.

²⁵⁷ US\$ 4.7 million.

9.3.8. Transport Subsidies

Market transport subsidies should be considered, but only if the normal marketing system has failed. Trucks contracted by agencies could be used by livestock traders for “back-loading”: following the delivery of material assistance to disaster areas, the trucks would return to base with livestock. Traders would have to purchase the animals directly from the livestock owners and contribute to transport costs.

Some attempts by non-governmental organisations to provide transport subsidies have been undermined by corruption and the need for verification and proof of sales.

9.3.9. Cold Stress Preparedness and Shelter Provision

It is difficult to predict the onset of rainfall at the end of a drought. It is nevertheless recommended to encourage the use of shelter for livestock; massive livestock mortality from pneumonia is quite frequent when rains begin at the end of shock periods. In some situations and areas, it would be possible to encourage livestock owners to protect their weakest small stock by providing shelter in the form of tarpaulins or nylon sheeting. Towards the end of the stress period this could be combined with contagious caprine pleuropneumonia (CCPP) vaccination or preventive treatments and mineral licks. This may only be manageable in agro-pastoral systems where animals remain near their homesteads. In purely nomadic systems the animals and their owners are often located a long distance from home and shelter at the time the first rainfalls (and thus unlikely to benefit from houses or shelter), but some may consider migrating with lightweight tarpaulins to shelter both their family and small stock²⁵⁸.

9.3.10. Water Point Development

Water development in arid areas requires a great deal of planning and the inclusion of environmental considerations. The presence of permanent water often leads to settlement, overgrazing and a general breakdown in the physical and moral environment. Water provision is expensive and is often the major financial drain in emergency interventions.

Water is often also a prime cause of friction in arid areas. Establishing permanent water points (even during droughts or other emergencies) should be avoided in pastoralist areas unless they can be strictly regulated. Even in under-utilised areas, the provision of water points has detrimental long-term effects, as these areas are often the only remaining grazing reserves; therefore, only the strongest and best adapted animals can benefit from them as they are the only areas that remain during extreme conditions.

ICRC Water & Habitat activities, especially in Somalia, are based on both human and livestock needs. The improvement or protection of water points improves human health. It may also improve livestock health as water points are often a source of infection by worms or other conditions. A cleaner (drier) immediate environment may reduce worm survival, but this is questionable. Growing congregations of livestock at water points are likely to increase infection in the presence of contagious diseases.

Water trucking and the delivery of water into *berkads* (cement tanks) or bladders and drums is an expensive short-term option. It is most effective when “transiting” or enabling animals to migrate out of problem areas to pockets of forage. It is recommended that emergency water interventions be

²⁵⁸ This type of shelter would also offer protection against wind chill, which is probably more dangerous than the rain itself.

limited to “transit water trucking”, emergency repairs to existing boreholes in areas with good grazing, and temporary water supply in grazing areas (but only if the source can be closed once the emergency has subsided).

Longer term water interventions should again consider temporary water sources; this can involve desilting existing pans or shallow dams, or excavating shallow dams either through cash-for-work or by machinery.

Emergency water interventions should include a local management and maintenance plan (established through the training of a Water Users' Association or Natural Resource Management Committee) that can service the water supply and also ensure the protection of natural resources.

9.3.11. Environment Clean-Up Days

A simple but effective intervention (that can be implemented by host National Societies or local non-governmental/community-based organisations) are environmental clean-up days. During stress periods, many animals are forced to feed on litter due to hunger. Many animals die from impacted stomachs due to the consumption of plastic bags. Raising awareness and encouraging the responsible disposal of household litter could reduce this mortality.

In the longer run, supporting and promoting local ways of recycling plastic waste into fence-poles, building material, roof-tiles or artefacts would be even more beneficial. In some towns²⁵⁹, local traders' associations have agreed to ban the use of plastic bags and are reverting to the use of paper bags (whose consumption is safe for livestock).

²⁵⁹ E.g. Dukana in Kenya.

9.4. Livelihood Support Interventions in Chronic Crisis

This section discusses interventions that **must be incorporated** in any programme intended to support the animal production sector in the Horn of Africa within chronic crisis settings.

Interventions in Chronic Crisis	Duration	Repeat-ability	Priority											
			DJ	ER	ET			KY	SO	SD		IDP	Ret	Res
			tsz	gm	gd	af	tk		df	st				
Restocking	3-12 months	H	M	M	M	H	H	H	H	H	H	L	H	M
Restocking with oxen or donkeys for ploughing and transport	2-3 months	H	M	H	H	H	H	M	M	M	M	M	H	H
Fodder production	12-24 months	M	M	H	M	H	H	H	M	H	M	H	H	H
Credit and micro-finance	6-12 months	H	M	H	M	H	H	H	M	M	M	H	H	H
Support to privatisation	9-12 months	H	M	L	M	H	H	H	H	H	H	H	H	H
Strengthening pastoral livelihood through advocacy, diversification, dissemination	1 day – 24 months	H	M	H	M	M	M	H	M	M	M	L	H	H

Key:

- DJ: Djibouti, ER: Eritrea (tsz: Temporary Security Zone), ET: Ethiopia (gm: Gambella, gd: Gode, af: Afar); KY: Kenya (tk: Turkana); SO: Somalia; SD: Sudan (df: Darfur, st: South Sudan).
- H = High, M = Moderate, L = Low, NA = Not Applicable.
- IDP = Internally-displaced persons; Ret = Returnees; Res = Residents.

There is some overlap (or continuity) between interventions in acute and chronic or post-crisis. Humanitarian dialogue and water development, for example would be continuous processes whatever the situation. Other rehabilitation activities (such as restocking) would qualify as post-crisis or chronic crisis interventions following emergencies.

9.4.1. Restocking

If restocking is considered an appropriate intervention in a certain area under specific conditions, then local restocking mechanisms²⁶⁰ should be recognised. In Somalia, four traditional restocking mechanisms exist, and amongst the Nuer and Dinka in Sudan there are nine. Restocking programmes should build upon (or at the very least avoid damaging) these traditional systems, although in some parts of Ethiopia it is recognised that the advent of external restocking mechanisms has already destroyed traditional systems.

The principles of restocking should include the following:

- The herds of pastoralists should only be restocked in the absence of sustainable local alternative livelihoods;
- The community must identify the beneficiaries for such an intervention;
- Local restocking contributions must be matched, but a sufficient mix and quantity of animals are

²⁶⁰ Catley, 1999.

necessary to ensure full independence and self-sufficiency on the part of the beneficiaries (**i.e. minimum of 4 TLU/AAME**);

- Caution is required in restocking the herds of permanently destitute or chronically poor beneficiaries, as they will probably have already lost their links and rites within the pastoral system;
- Restocking must be linked with marketing or the promotion of improved herd management;
- The inclusion of improved milch goats should be considered for agro-pastoralists (using micro-credit and involving women's groups);
- There is much debate as to whether the animals should be donated (i.e. a gift) or re-distributed (the offspring); the local community should decide this. If it is intended for re-distribution, and the offspring is to be passed on to other families, the second beneficiary family must be identified at the time of selecting the first (or initial) recipient. The second family will thus have more incentive to monitor the herd than any project staff member;
- Restocking also requires the supply of feed (for about one year) to the beneficiaries to pre-empt the immediate consumption of their new core breeding stock²⁶¹;
- Restocking in ongoing or chronic crisis is inadvisable.

Restocking is controversial, and it has to be carefully planned. The case study below (Box 9.5.) illustrates that it can succeed for some families.

Box 9.5. Restocking Case Study

(Adolph and Lindquist, 2001)

In 1997, in Marsabit District of Kenya, the herds of 776 families were restocked with a total of 40 small stock and 1-2 camels. The 2001 evaluation (i.e. after 4 years, 3 of which were drought years) found that:

- 74 families had less than 20 small stock
- 407 families had 20-40 small stock
- 84 families had 40-60 small stock
- 41 families had 60-80 small stock
- 5 families had more than 80 small stock.

62% of families were “failing”, but 38% were succeeding despite continued drought.

Restocking with small stock at the end of a drought is recommended as sheep and goats have the fastest breeding (or herd growth) rates and shortest recovery times. At the end of the drought, when food and fodder production is likely to be higher than the number of animals available to consume it, sheep and goats will thrive. However, even sheep and goats are environmentally destructive and susceptible to drought. Thus after 2-3 years agencies should try to encourage the exchange or sale of small stock for camels (more drought tolerant and less environmentally damaging).

Failure to change herd species with drought cycles keeps pastoralists continually on the brink of disaster.

²⁶¹ Similar to the practice, and rationale, of seed protection food rations, where the provision of seeds and tools to farmers is accompanied by food rations to avoid beneficiaries eating the seeds prior to sowing.

Restocking with “improved breeds” must be very carefully considered. In most ICRC concern areas in the Greater Horn of Africa, the infrastructure or required back-up (such as improved vaccination and veterinary treatment services, or concentrated feed supplies) are unavailable. The need to improve the economic security of internally-displaced persons is an important priority for the ICRC. However, displaced persons often lack the access - or the resources required to secure access - to pasture or other natural resources to support any livestock. The opportunity to provide displaced persons with poultry is very tempting, but improved poultry does require additional veterinary services that are often not available beyond the timeframe of the specific intervention. Without regular access to vaccines against Newcastle Disease and some other highly contagious diseases, most imported poultry projects rapidly fail.

9.4.2. Restocking with Oxen or Donkeys

Ox ploughing has been recommended to the ICRC in the 1990s for southern Sudan and Ethiopia, but is also appropriate in many parts of Eritrea and Somalia. In these countries, the lack of equipment often limits output. Timely (early) land preparation also improves yields and increases the likelihood of harvesting. Higher yields in turn improve the local economy, while benefiting the livestock by producing more crop residues for animal fodder.

Restocking can aim at two levels:

1. Providing internally-displaced persons or the “poorest of the poor” with draught animals; the displaced can then act as “contractors” to plough for others on a crop-sharing basis or against cash payment. It would be linked to the integrated pastoralist livelihood approach (see Box 9.6. below), where the oxen plough for a 1-2 month period and are then sold, or used within the transport business to pull carts (donkeys may be preferred in some areas). Credit is provided and business is contracted taking advantage of the terms of trade²⁶².
2. Providing middle and rich wealth group farmers and agro-pastoralists with draught animals on a sliding cost sharing or cost recovery basis. Cost sharing can be in the form of cash payment or crop sharing. In this scenario, the ox-plough restocking programme should be run by the community for the community.

Restocking interventions should address the following considerations:

- The choice between oxen and donkeys for ploughing, and the provision of ploughing equipment and local seeds if necessary;
- The provision of appropriate equipment and harnessing;
- Training in good animal traction management and animal welfare.

Animals can be used not only for ploughing but also for transport.

9.4.3. Fodder Production

Seasonal or protracted periods of insufficient livestock nutrition is a key problem. Interventions are required to address this situation, through the increase of fodder availability or the reduction of livestock needs (migration, destocking or slaughter). The following should therefore be included in interventions intended to support animal production in pre-crisis, chronic crisis and post-crisis settings:

- Development (or support to the development) of fodder crops and innovative feed sources within or close to pastoral areas;

²⁶² See Section 9.4.4. and Box 9.6. below

Box 9.6. Internally Displaced Persons, Opportunity and Diversification

Many internally displaced persons (IDPs) lack the opportunity to generate an income during their displacement.

The accommodation of IDPs in camps provides an interesting opportunity for training - either to improve their existing skills, or to teach them the skills required to enter a new livelihood (especially once they return to their area of origin or settle in a new area).

IDPs who were originally livestock keepers should be given skills that allow them to return to their home areas and contribute either improved services to livestock (e.g. livestock trader, butcher, community animal health worker or ox-ploughing), or activities that are not related to livestock (e.g. micro-economic management, income-generating activities, community health work, and teaching).

- The establishment of a system for the manufacture of protein/urea/straw feed-blocks, or training of farmers in the production and distribution of feed-blocks;
- Interaction and collaboration with communities to establish temporary enclosures, which are reseeded or improved by planting fodder using micro-catchments on a cash-for-work basis;
- The investigation of commercial fodder supply possibilities; these could include the use of cheap ingredients including waste paper, wood shavings, seaweed, Neem seed cake, brewery, sugar and fruit factory waste, poultry waste, fish meal, straw or cactus;
- Interaction and collaboration with communities to establish lowland, spineless cactus (*Opuntia sp.*) plantations;
- The investigation of under-sowing cereals in highland areas with Rhodes grass and legumes;
- Interaction and collaboration with agro-pastoralists to introduce drought-tolerant multipurpose food and fodder crops such as cowpeas, groundnuts, sweet potato, maize, sorghum, millet, wheat, and barley, among others;
- The investigation of the rehabilitation by communities of derelict or eroded land and saline flats using salt-tolerant plants such as *Atriplex nummularia*, *Sueda sp.*, and *Casuarina sp.*;
- The encouragement of and support to agroforestry interventions and alley farming.

Fodder production can be irrigated or rainfed. Differences in opinion and priority may obviously arise between farmers as to whether to produce food crops, cash crops or fodder crops. The choice should be made in a participatory manner based on needs, economics, and sustainability. Rainfed fodder plots based on rainwater catchment methods will be more productive (e.g. bunds, trenches, micro-catchments, etc.). Many of these interventions should be linked to existing pump and gravity irrigation, and community intervention projects (or micro-projects).

9.4.4. Beekeeping

Beekeeping is a natural coping mechanism adopted by pastoralists and farmers in times of stress. Even in normal years many herders harvest wild honey for home consumption or sale. The establishment of apiaries through the distribution of improved bee-hives to the poor wealth category would provide alternative means of income; some training in improved bee-hive management would be required.

9.4.5. Credit and Micro-Finance

The provision of credit and micro-finance could contribute to reducing the chronic poverty common in so many pastoralist areas. Many livestock owners complain that they have to buy cereals for food when grains are most expensive and their livestock fetches the lowest prices. Agro-pastoralists meanwhile complain that they have to purchase food and farm-inputs on credit, and pay in grain at harvest time when the crop prices are lowest.

One aspect to be considered is support to credit or village banking schemes that could effectively even out the terms of trade across the year to benefit the producers of both livestock and grain. Credit would be offered to livestock owners during the dry season allowing them to buy food without having to sell their animals when prices are low; the livestock owners would repay credit during the wet or harvest season when livestock prices are high. Agro-pastoralists and farmers would be offered credit in the wet season and at harvest time when grain prices are low, and repay in the dry season when grain prices are high.

Credit would see livestock owners through the stress periods of drought or displacement; credit is already a common coping mechanism.

Village banks would enable livestock owners to sell stock when prices are high, and save the money to buy grain in the dry season when the value of their livestock drops.

Such programmes should be implemented through local credit organisations where they exist.

9.4.6. Support to Privatisation

As noted in Chapter 5, the privatisation of veterinary and animal health services should be encouraged in order to:

1. Improve the sustainability of the delivery system whilst also strengthening the local economy;
2. Ensure that services are delivered freely and fairly even during times of conflict (this can be supported by the voucher system as described below).

Support to privatisation may include the following:

- Training;
- Provision of credit;
- Emergency veterinary voucher schemes;
- Advocating for policy change.

9.4.7. Strengthening the Pastoral Livelihood - Improving Livestock Management

The improvement of livestock management implies a broad approach based on accepting that community based animal health services and privatisation should be the main avenue of veterinary service delivery, both in emergencies and in normal years. Whilst in most areas these activities can be undertaken by non-governmental organisations and not by the ICRC, in areas where no other agency is operating the ICRC by default must provide the service. This can be done through support to the private sector and community animal health workers through training in livestock and health issues, training in basic business enterprise, the provision of initial start-up kits (veterinary equipment and drugs) or credit, and linking to private sector supply routes.

Support to community animal health workers (CAHW) as the frontline in disease prevention and control will also facilitate access to remote populations.

Contribution to the improvement of livestock management involving CAHWs and livestock owners would include training in the following fields:

- Nutrition and natural resource management;
- Hygiene;
- Marketing;
- Breeding.

Training sessions would also provide the opportunity to identify methods of reducing livestock losses to predation - e.g. suitable night enclosure made out of renewable materials (dry stone walling). They could also result in the identification of mechanisms to reduce tension between farmers and livestock owners - e.g. encouraging the use of more effective enclosures made out of local materials such as rocks and daub for dry stone walling and *Euphorbia sp.* for live fencing.

9.4.8. Dialogue, Diversification and Dissemination

Possible humanitarian dialogue, dissemination and diversification interventions to strengthen the livestock economy in transition (or chronic and post-crisis) situations include the following:

- In increasingly agricultural areas with permanent rivers (e.g. Afar and Region 5 in Ethiopia), participatory land use planning (PLUP) should provide the basis to include access to water and pastures. PLUP should be performed **before** the initiation of new irrigation projects for resettled displaced persons or even host communities, and would reduce the risk of tension between livestock keepers and farmers.
- Where no strategy exists, governments and non-governmental organisations should be supported in developing a strategy on emergency livestock interventions through meetings, workshops and visits to neighbouring countries.
- The possibility of cultivating fallow land with leguminous fodder grasses and crops for livestock consumption should be investigated. This could include the provision of ploughing oxen, seeds and di-ammonium phosphate (DAP) fertiliser to farming areas. The DAP can be fed to livestock in emergencies.
- Agencies should attend food security and livestock sector meetings at country level and district (local) level.
- Awareness should be raised among livestock owners as to harmful traditional practices and the traditional belief of keeping livestock for prestige. On the other hand, livestock owners should be trained in commercial livestock keeping, so as to shift to local and export markets.
- Any agricultural and water development plans must give livestock access and mobility issues due consideration.
- In its dialogue with host governments, the ICRC (as indeed any agency involved in the livestock sector) should include the issue of support to pastoralism through an environment that is favourable to sustainable Community Animal Health Services and improved livestock marketing.

9.5. Livelihood (Structural) Support Interventions in Post-Crisis Environments ²⁶³

This section discusses livelihood support interventions that must be incorporated in any programme intended to support the animal production sector in post-crisis settings in the Horn of Africa.

Interventions in Post-Crisis	Duration	Repeat ability	Priority												
			DJ	ER	ET			KY	SO	SD		IDP	Ret	Res	
			tsz	gm	gd	af	tk		df	st					
Diversifying and adding value to animal by-products	12+ months	M	M	M	M	H	H	H	H	H	M	M	L	M	H
Marketing	12+ months	M	H	H	H	H	H	H	H	H	H	H	M	H	H
Coordination – Harmonisation	12+ months	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Dialogue, diversification, dissemination in and networking in the long-term development or “normal” environment	12+ months	H	M	H	M	H	H	H	H	H	M	M	M	H	H

Key:

- DJ: Djibouti, ER: Eritrea (tsz: Temporary Security Zone), ET: Ethiopia (gm: Gambella, gd: Gode, af: Afar); KY: Kenya (tk: Turkana); SO: Somalia; SD: Sudan (df: Darfur, st: South Sudan).
- H = High, M = Moderate, L = Low, NA = Not Applicable.
- IDP = Internally-displaced persons; Ret = Returnees; Res = Residents.

9.5.1. Diversification and Animal By-Products

Various means exist to diversify within the livestock system, and to generate extra income by adding value to animals or their products. To be successful, however, these projects need to allow for considerable training and community planning so as to complete the tracking strategy.

9.5.1.1. Condensed milk

Condensing milk is one way of converting a locally available (in large quantities in normal times) product into a nutritious food that will last into emergency periods. Moreover, it requires neither refrigeration nor specific technology.

Box 9.7. Preparation of condensed milk

Add 2 parts of sugar to 4 parts of fresh milk and boil over open fire until 2 parts remain.
Store in a clean dry tin or jar.
Will last for 6 months without refrigeration if kept closed.

9.5.1.2. Dairies and milk processing

Dairies and milk processing, and their associated demands in terms of refrigeration and electricity, are highly vulnerable to conflict unless kept basic. To reduce these risks, existing traditional technologies need to be considered and adapted where possible; only appropriate new technology should be introduced.

²⁶³ Especially in the absence of other agencies, or if related to its “residual responsibility” (i.e. a population previously supported by the ICRC, and whose needs persist).

Field²⁶⁴ recommends the following principles:

- Train livestock owners jointly with their wives in any new methods;
- Identify the best gender group to lead the work;
- Undertake pilot projects or trials with mini-dairies before planning large scale, high technology, capital-intensive programs;
- Measure the cost effectiveness of mini-projects to ensure sustainability;
- Fulfil both current and future domestic needs before embarking on export.

9.5.1.3. Hides and skins

During emergencies, whether caused by drought or conflict, large-scale livestock mortality may occur. In many Muslim countries, the skins will be left to rot on the carcass, as it is unclean or not *halal* to remove the skins if the animal has died without the proper slaughtering. This results in a loss of the animal's value, but also of the hide's salvage value.

Hides and skins from healthy animals are a valuable commodity; in most pastoral areas however, their price is low due to the poor quality of flaying and drying. The hides and skins of sick or “droughted” stock are of poorer quality, lightweight and of lower value.

There is opportunity for livestock owners to generate more income by improving the quality of hides and skins. Sensitisation and training in better flaying techniques, shade drying, salting, storage and sale of hides and skins is required. The dangers of excessive branding and tick infestation should also be pointed out.

Processing the hides and skins and crafting the leather also add value.

9.5.2. Marketing

Poor livestock marketing and a lack of commercialised livestock keeping is a major constraint to the future of livestock keeping in the Horn of Africa. Therefore, any activities in the livestock sector (e.g. humanitarian dialogue) should highlight the problem of livestock marketing.

9.5.3. Coordination - Harmonisation

There is a need to improve networking and links to early warning systems, government departments, the United Nations, international and local non-governmental organisations, research stations, and local communities.

Specific areas of need include the following:

- The establishment of micro-credit/micro-finance systems at village level and in camps for internally displaced persons.
- Cash-for-work bonus systems based on the protection of specific areas and tree survival rates²⁶⁵.
- Cost recovery, subsidised services and sustainability.
- Thorough problem analysis in each region/village.
- The completion of the tracking strategy from emergency through rehabilitation and consolidation.

²⁶⁴ In preparation.

²⁶⁵ Cash-for-work on tree planting: pay 75% of the allocated cash at implementation, and the balance into a village bank or community credit scheme 2 years later when tree seedling survival is measured.

9.5.4. Dialogue, Diversification, Dissemination and Networking

Much background work can and should be done outside emergencies. Engaging in sustained advocacy, diversification, dissemination and networking efforts in a more “normal” or peaceful environment will ultimately enhance emergency interventions during shocks. By definition, these are times when interlocutors are less absorbed by *ad hoc* responses, and more open to dialogue. Possible avenues for dialogue include the following:

- Linking exchange rates for destocking to the terms of trade for cereals.
- Investigating the potential for diversification in agriculture areas into off-farm opportunities or into livestock improvement and in purely livestock rearing areas - investigating opportunities for diversifying out of livestock.
- Investigating the potential for “animal asylums” or feedlots: stressed livestock can be transferred to areas where there is sufficient fodder supply without causing stress to the local resident livestock, or where there is no risk of exacerbating environmental damage. This scheme could be linked to vouchers for stock, where livestock owners buy animals back after the emergency has subsided.
- Investigating the possibilities of establishing livestock banks, where animals are bought from livestock owners in stress areas or during shock periods, the animals are maintained and sold back to the owners at a later date. The economics and practicality of livestock banking are yet to be tested.
- Cooperating with sectoral working groups (SWG) and advocating for the privatisation of veterinary drug supply and the adoption of voucher systems linked to private sector delivery to ensure sustainability, even in emergencies.
- Participating in emergency response and development planning at village level.
- Advocating for pastoralist-friendly policies in dialogue with governments and officials.
- Encouraging the adoption of participatory land use planning (PLUP) by governments and aid agencies, in order to avoid external interventions generating conflict.

9.5.4.1. Diversification and alternative livelihoods

Field²⁶⁶ lists the following possibilities for diversification in pastoralist livelihoods. Annex 9.4. provides a list of other local and global development interventions to support both the urbanised and rural pastoralists in the Greater Horn of Africa as recommended by Field.

Natural Resources

i) Livestock based

- The preparation of hides and skins;
- The use of horns and bones for bone meal or carving;
- The sale of manure for fuel and fertiliser;
- Livestock trading;
- Butchery businesses;
- Dairy and milk processing;
- Manual labour herding and watering stock or acting as night-watchmen for wealthy owners;
- Draft and transport - ploughing.

²⁶⁶ In preparation.

ii) Non-livestock based

- Sand and ballast for building;
- Salt for highland areas;
- Minerals and semi-precious stones;
- The sale and transportation of water (e.g. by donkey cart), or the professional digging of hand-dug wells and rock catchments;
- Wood for fuel either as wood fuel or charcoal, building, fencing, carving²⁶⁷ ;
- Vegetation products - wild foods and herbs;
- Gum Arabic (*Acacia senegal*);
- Frankincense (*Boswellia sp.*) growing in northern Somalia (Kenyan species are less valuable);
- Myrrh (*Commiphora myrrha*) is an important article of commerce in north-eastern Kenya. The gum of opoponax (*C. holtziana*) is used as a tick repellent;
- Aloe vera, used in cosmetics;
- Improved beekeeping to increase honey and wax production;
- Fishing: lake and sea;
- Hunting: tracking and guiding;
- Retail trade with beadworking and crafts;
- Common alternative employment opportunities in pastoral areas: in the army, the police, wildlife services, government administrations, community nurses and animal health workers, doctors and veterinarians, catechists, “*madarasa*” and “*dugsi*” teachers, athletes, lawyers, councillors, politicians and credit trainers (trainers of trainers);
- Grain milling;
- Tea shops and hoteliers;
- Managing credit groups.

Another alternative could be the identification of niche markets such as wild game (i.e. ostrich, oryx, buffalo, crocodile or eland) utilisation or ranching.

9.6. Other Important Activities in Pastoralist Areas

- Mine clearance;
- Conflict resolution and peace building;
- Education;
- Population control;
- Civil rights.

9.7. Pitfalls

This section discusses aspects that **must be avoided** by any programme intended to support the animal production sector in the Horn of Africa.

Agencies involved in livestock interventions must avoid the following:

- Undermining, even destroying, traditional safety nets and restocking systems;
- Rushing to restock internally displaced persons, as this may create additional tension and, at the very least, raises serious questions of sustainability;

²⁶⁷ This may easily be over-exploited

- Restocking herds belonging to internally displaced persons or returnees with imported poultry in the absence of a strong, sustainable government (or private) provision of Newcastle Disease (NCD) vaccination services;
- Excluding the community from planning and implementation;
- Providing insufficient numbers of animals to support a family sustainably (i.e. minimum of 4 TLU per AAME);
- Restocking the permanently destitute or long-term poor, as this only keeps them artificially in a livelihood which they would otherwise abandon. In other words, this approach only postpones complete destitution without providing alternatives.
- Being the intermediary for returned stock in “passing on the gift” restocking programmes;
- Restocking displaced persons before they return to their home areas or are settled permanently. If they are settled in a more permanent fashion, fuelling tension with the host community by restocking (due to increased competition from additional livestock) must also be avoided;
- Undermining long-term development;
- Creating dependency;
- Expecting livestock alone to support growing human populations.

Agencies should also consider the possible negative impact of their interventions on labour opportunities and markets (e.g. mechanical water pumping).

9.8. Effective Targeting

Dealing with livestock owners is often perceived as supporting the richer or middle wealth groups. The poorest of the poor often own no livestock and no assets whatsoever, whilst the poor may possess a few individual animals, probably insufficient to provide much in the form of daily sustenance and more than likely herded or cared for far from home with a richer relative, or left to roam freely around the settlement (as many of the poor are drawn to settlements in order to benefit from relief) probably only under the periodic (crepuscular) care of a child. Internally displaced persons meanwhile often lack the access or user rights to grazing or water resources in their area of temporary settlement. Therefore, targeting livestock interventions at the poorest of the poor and internally-displaced persons will in many cases be unsuccessful.

A few exceptions exist, however. They include the following:

- Restocking with oxen for ploughing and generating an income by ploughing for others;
- Issuing donkeys or camels to individuals to generate income (through the provision of transport to others);
- Poultry restocking in selected areas where the government or veterinary infrastructure can guarantee future vaccination and follow-up²⁶⁸.

Table 9.1. on the opposite page shows how the different recommended interventions help the poorest of the poor.

All these interventions benefit the poorest through a trickle down effect; Table 9.1. thus intends to highlight the **additional direct** benefits that the poorest will derive from such interventions.

²⁶⁸ At the time of writing, no area visited met the necessary requirements.

Table 9.1. Impact of recommended interventions on the poorest of the poor

Emergency (relief) interventions in pre-crisis and acute crisis	Direct benefit to the “poorest of the poor”
Dialogue.	
Emergency veterinary interventions.	
Supplementary fodder and livestock feeding.	Improved labour opportunities.
Employment generation.	Guaranteed labour opportunities.
Destocking.	Improved labour opportunities and direct beneficiaries of the meat produced.
Purchase for slaughter.	Improved labour opportunities and direct beneficiaries of the meat produced.
Emergency slaughter for tinned or dried meat.	Improved labour opportunities and direct beneficiaries of the meat produced.
Cold-stress preparedness and shelter provision.	Saves lives of humans and animals.
Transport subsidy.	
Water point development.	Improved access to water; labour opportunities.
Medium-term interventions in chronic crisis (transition)	
Restocking.	Some may be direct beneficiaries.
Restocking with oxen or donkeys for ploughing and transport.	Many will be direct beneficiaries.
Fodder production.	Potential wage labour opportunities.
Credit and micro-finance.	Many may be direct beneficiaries.
Support to privatisation.	
Strengthening pastoral livelihood through advocacy, diversification, dissemination.	Some may become farmers, traders and benefit from alternative livelihood support.
Long-term interventions in post-crisis	
Diversifying and adding value to animal by-products.	Labour opportunities.
Marketing.	Labour and income-generating activities opportunities.
Coordination & harmonisation.	
Dialogue, diversification, dissemination in and networking in the long-term development or “normal” environment.	New livelihood opportunities.

Any livestock intervention intended to target the poorest of the poor should concentrate on small stock and poultry²⁶⁹ particularly.

One method to ensure effective targeting is to develop a strategic livelihood plan based on seasonal calendars and local resources (see Livelihoods and HEA in Chapter 8), and that associates livestock interventions with credit, business and other income generating or diversification opportunities. No such livelihood plan exists for pastoral systems, but one could be developed along the lines suggested in Box 9.8. overleaf.

²⁶⁹ Poultry interventions can be risky if post-intervention requirements are not met.

Box 9.8. Integrated Livelihood Plan

Internally displaced persons (IDPs) can generate income through the provision of one or two draught animals* (oxen, donkeys or camels) and high energy fodder one month ahead of the ploughing season. This allows the beneficiaries to:

- Train oxen (or donkeys or camels), and be contracted to plough for the host community;
- Hire land for their own planting or crop shares;
- Sell the oxen at the end of the ploughing season;
- Provide paid labour in fields (weeding and harvesting);
- Purchase donkeys to transport the harvest and crop residue;
- Devote the money generated by ox/donkey sales and labour to buying cereals at harvest time (when cereal prices have dropped);
- Obtain credit to stockpile extra grains;
- Store grain and sell it when grain prices rise;
- Buy oxen at the end of the dry season when livestock prices are low, train them and repeat the above process.

The plan should also allow IDPs to benefit from training in honey production, fishing, hides and skins preparation, basic artisanship and making artefacts.

The provision of credit should be along the lines set by the Grameen Bank or village banking. Other internally-displaced persons can be employed in banking and within the proposed credit system.

*: Provided that doing so will not fuel existing tension with the host community or artificially encourage the IDPs to remain displaced rather than return to their areas of origin.

“I take credit from shop-keepers to buy grains in the dry season, when grains are expensive and the value of my animals are lowest. Then have to repay the same value of the credit in terms of grain or animals in the wet season when grain is cheap and livestock more expensive”.

Livestock owner at Denan, Ogaden region, Ethiopia.

“One thing that ICRC might consider is to understand the livestock ownership by wealth group; I suspect that the poorest have no cows at all and that the proportionate contribution of small ruminants and poultry to the most vulnerable groups is high”.

A. Bisson (Operation Lifeline Sudan Livestock Coordinator, Sudan, 2003)

9.9. Gender

*“You can catch up with a man who has a better horse in a day;
You can catch up with a man who has better grazing in a year;
but you wont catch up with a man who has a better wife in all your life”*

Somali proverb, quoted in UNICEF, 2002.

Gender roles are well defined within most livestock owning societies, but they vary between different ethnic groups. Gender issues must be included in any planned livestock interventions²⁷⁰.

In most non-Islamic societies women have very little ownership of the animals themselves, especially of the more valuable large stock such as camels and cattle, but do have user rights. In Islamic societies such as Somalia women do own cattle and small stock, and are free to dispose of them at will, but most are heavily influenced by their husbands or male relatives.

Al-Massar²⁷¹ state that in Islamic societies women can inherit livestock. However, in most pastoral societies, women don't inherit livestock when their husbands die, but in some places this is changing with modern times (e.g. Somalia).

Gender roles are likely to change as boys and young men enjoy increased access to education and enter the decision-making age groups.

In Darfur, Sudan, both men and women milk animals, but the milk is the “property” of the wife who can spend the proceeds as she wishes²⁷². In parts of Darfur, the ICRC has noted that agro-pastoral women inherit both land and stock, and contribute these to the new family holdings when they marry; these women bequeath one-third of their own land and/or stock to their daughters, and two-thirds to the boys²⁷³.

In nomadic societies that are shifting towards opportunistic agriculture or agro-pastoralism, Al-Massar²⁷⁴ note that much of the cultivation is done by the women, but that women in Darfur are widely consulted in matters such as the marriage of children, the sale of property, movement patterns, *inter alia*. They also state that nomadic women often enjoy greater freedom and influence than women in other societies and that, when families can afford it, women are allowed to withdraw from work. Agro-pastoralist women decide which part of the communal family land is tended as a priority, and involve their children in the work accordingly; they decide when to assist their husband in tending his own land²⁷⁵.

Much of the woman's role is nevertheless devoted to maintaining and caring for the home: cooking, cleaning, collecting water and firewood, child care, packing and building the house when migrating.

²⁷⁰ The reader is referred to: “Addressing the Needs of Women Affected by Armed Conflict - an ICRC Guidance Document”, ICRC publication 2004.

²⁷¹ Al-Massar, 2003.

²⁷² Ibid.

²⁷³ ICRC findings, Jebel Si, North Darfur, 2004. The higher ratio for male children is explained by interlocutors by the fact that the boys will need these assets to marry, whereas the girls will keep their inheritance when they marry in addition to receiving “bride prices”.

²⁷⁴ Al-Massar, 2003.

²⁷⁵ ICRC findings, Jebel Si, North Darfur, 2004.

Table 9.2. below provides a generalised picture of gender roles within livestock societies.

Early marriage is very common in pastoral societies, with girls as young as 12 or 13 marrying much older men. This can affect the long-term success of female-oriented interventions insofar as young women targeted in such interventions may soon be unavailable to pursue the resulting activities as they will need to look after their families as a priority.

The presence of women in local administration is only a recent feature of many nomadic areas, and is largely a result of considerable insistence on the part of governments and aid agencies.

Women's associations or groups exist traditionally in some societies, especially in Ethiopia where women create strong associations to assist one another in times of need (e.g. funerals, child care, cultivation, etc.). These traditional associations can provide an excellent basis for working with women. More recently, with the encouragement of aid agencies, thousands of women's or youth groups have emerged. Many of these have formed only to access external donor support, and caution and investigation is urged before working with these modern groups.

Female circumcision is also commonly found in pastoral societies. Its associated preparation, recovery and health risks (both physical and emotional) may incapacitate some of the most productive members of the pastoralist society for some time.

Table 9.2. Gender roles within livestock societies

Men	Women	Young men	Girls
Decision making	Distribution of food including milk.	Milking camels	Milking cows and small stock
Herding	Herding	Herding	Herding
Milking camels	Milking cows and smallstock.	Milking	Milking cows and small stock
Slaughtering animals	Preparing food and milk by-products.	Slaughtering animals	
Buying and selling animals	Fetching fodder for weak animals.	Stealing animals - restocking	
Watering animals	Watering animals	Watering animals	Watering animals
Protection of family herds	Loading load camels and moving camp.	Protection of family herds	
Pasture surveys	Preparing hides and skins	Paying bride-price	Preparing hides and skins
	Looking after lambs and kids	Pasture surveys	Looking after lambs and kids
	Preparation of milking bowls and storage containers.		
	Selling leather handicrafts		

9.10. Requirements

Livestock activities do entail more input than the distribution of essential household items; they are usually not one-off activities, but require planning with the community, dissemination and awareness raising, and monitoring of the inputs. Some of the recommended interventions can be designed within existing ICRC community intervention (and pump or gravity irrigation) projects.

Agencies should build an institutional memory based on experience: many lack the specialised expertise, and thus hesitate to implement the necessary interventions in livestock areas. The staff of local organisations or National Red Cross/Red Crescent Societies could contribute significantly to livestock interventions, provided they have the relevant experience and interest; considerable training would nevertheless be required. Furthermore, much of this staff is town-based, while livestock activities are generally rural. As discussed in Chapter 3, links to the staff of existing non-governmental and community-based organisations **active in livestock** would be beneficial.

9.11. Constraints and Challenges

Outstanding concerns, constraints and challenges include the following:

- The lack of information on herd sizes, resource access and migration routes, and alternative sources of fodder.
- The need to find ways of improving the productivity of (or rehabilitating) poor quality arid lands.
- The lack of quality private sector animal health services, and a livestock owner mentality that is reluctant to pay for services.
- Water point development can cause settlement, excessive livestock densities and overgrazing.
- The massive population growth in camps for internally-displaced persons, and in urban and pastoral areas of the Greater Horn of Africa generally. The arid areas and livestock livelihoods can only support a limited population.
- Cash-for-work can affect the community spirit, and undermine self-help, community coping and recovery mechanisms.
- The difficulty of distinguishing traditional livestock raiding from political expansionism and commercial raiding, all expressed through livestock theft.
- The difficulty of determining the limitations of traditional credit systems (e.g. defining at what stage water vendors cease to grant credit to livestock owners), and the criteria for the approval of credit for livestock owners.
- The lack of knowledge regarding traditional relationships between riverine farmers and pastoralists as to land use, access and utilisation or payment for crop residue.
- The lack of intervention in feeding cattle with locally available grass stalks mixed with molasses, fishmeal or chicken dung urea.
- The need for a participatory review of the impact of *berkads* and the future of nomadic pastoralism.
- The need to investigate the impact and best methods of implementing a Tsetse control project either as a community intervention project, or as an emergency intervention.
- The vast size of GHA countries (e.g. Sudan) complicates implementation; this, in turn, entails considerable costs and the danger of over-expansion.
- The challenge of addressing cross-border livestock issues more efficiently.

9.12. Opportunities

The working environment of the Horn of Africa nevertheless also provides the following opportunities:

- The accommodation of internally displaced persons or refugees in camps provides the opportunity to engage in training in alternative livelihoods.
- The critical long dry season (which puts stress on stock and pressure on resources) varies from country to country²⁷⁶. Interventions can be prepared for specific periods, except in Sudan where livestock community-intervention projects may be required at any time of the year.
- Introducing improved breeds is possible but only in certain locations, and does require extra veterinary or nutritional care.
- Restocking host communities can be considered with breeding sheep and goats, or donkeys and camels for ploughing, but only if the environment is not already overgrazed and/or if new resources are available²⁷⁷.

9.13. Areas Requiring Further Research

The following is a discussion of areas for external intervention that would warrant further investigation or experimentation. Whilst many of the issues regarding the management of equilibrium and dis-equilibrium environments are now known, a number of aspects require further research, understanding and experimentation, as follows:

- It is necessary to identify specific suitable emergency and development interventions in both equilibrium and dis-equilibrium environments in each of the target areas and countries.
- Conflict and drought contingency programming (i.e. strategic intervention and withdrawal). Indicators and likely timescales need to be defined.
- The availability of alternative livelihoods or production systems in the pastoral or agro-pastoral environments of the Horn needs to be investigated, as does the potential for value-added products.
- The opportunities, benefits, threats and costs to pastoralists resulting from urban growth also need to be investigated. A “SWOT” (strengths, weaknesses, opportunities and threats) analysis of sedentarisation would be useful, the results of which could be used to minimise the negative impact of internally-displaced persons' camps and settlement, and maximise the opportunities of sedentarisation to livestock owners.
- It is known that, if flocks fall below a critical mass, then rapid decapitalisation occurs which is very difficult to reverse. Can this critical mass be determined and the cost of conserving or protecting this nucleus be compared with the costs of supporting the owners in a sustainable manner (i.e. a sustainable livelihood)?

²⁷⁶ May-June is the critical time in Eritrea; April in Ethiopia.

²⁷⁷ In a peaceful south Sudan, modern farming will be able to support the introduction of improved milk goats and grade cattle, but only after veterinary services reach the required standard.

- The specific form of pastoralist banking needs to be defined. Moreover, the inter-relation between “bank account interest rates” and “herd growth interest rates” needs to be determined. Another challenge is securing the system in conflict zones, without jeopardising its access by illiterate and mobile livestock owners.
- Another area requiring further investigation is pastoralist participatory research possibilities and priorities: “on-herd” trials, studies in long-term economic security of agro-pastoralism vs. pastoralism, and energy input/output from women's communal plots compared to individual plots.
- An outstanding question relates to the integration of (or lack thereof) increasing poverty, global warming and environmental destruction into the dis-equilibrium theory.

Agencies, through their own livestock interventions, may be able to contribute answers to some of the above; they must nevertheless also keep in touch and up-to-date with developments in the livestock and pastoral sector to ensure that interventions are applicable and cost effective.

ANNEXES

Annex 2.1

EQUILIBRIUM AND NON-EQUILIBRIUM MANAGEMENT SYSTEMS.

Source: “*New Thinking in Range Ecology: A Brief Summary*”, Sandford and Habtu, 2000.

Introduction

It may be easier to understand the way the consultants approach this assignment and the key assumptions that underlie their conclusions if a brief summary is given of their framework of thinking about arid land ecology. Basically the consultants subscribe to the framework contained in what is sometimes described as “New Thinking” [or New Directions] in range ecology. This framework is set out in detail in two books (the proceedings of major scientific workshops). The books are:

- Behnke, R.H., Scoones, I. and Kerven, C. (Eds.) 1993. Range ecology at disequilibrium: New models of natural variability and pastoral adaptation in Africa. Overseas Development Institute, London.
- Scoones, I. (Ed.) 1995. Living with uncertainty: New directions of pastoral development in Africa. Intermediate Technology Publications in Africa. London.

The framework is summarized below:

Old and New Thinking about arid land ecology and management

The “old thinking” about arid land ecology, which the “new thinking” is replacing and which dominated thinking and planning for pastoral development over the last century, emphasized the 2-way interaction between rangelands vegetation and the herds that graze them. It particularly emphasized the damage that excessive grazing by livestock can have on the future composition (by plant species), the quantity-produced and the ground cover of the vegetation. As a consequence, it stressed the need to estimate and then to apply the correct “carrying capacity”, i.e. the number of animals which could safely (i.e. “without causing degradation”) graze a defined unit of area (e.g. a hectare or km²) even in the driest year. The old thinking insisted that good range management consisted in ensuring that the density of animals feeding on the vegetation (“the stocking rate”) never exceeded the “carrying capacity”. Attention was therefore focussed on incentives and regulations to compel pastoralists to reduce their herd sizes where the aggregate of these exceeded the carrying capacity. Both in developed and developing countries these efforts to force pastoralists to destock were rarely successful.

The “old thinking” was rarely challenged by scientists until the early 1970s. Thereafter scientists from a variety of disciplines, especially theoretical and wild-life ecologists, but also economists, anthropologists and some range scientists began to develop new ways of thinking about the interactions between range vegetation and animals. Towards the end of 1980s, this thinking by discrete individuals and disciplines coalesced into “the New Thinking”. A key element in the new thinking was the distinction between “equilibrium” and “disequilibrium” (=“non-equilibrium”) range-ecology systems. In equilibrium systems there are strong interactions, in both directions, between livestock and vegetation, and the concerns of the “old thinking” about degradation caused by overstocking are valid. In “disequilibrium systems” the casual link between grazing pressure and degradation is weak.

The essence of the “New Thinking” in respect of the African pastoral system is as follows (drawn from Scoones 1995 page 174):-

- Grazing systems in many parts of Africa are not “in equilibrium”, i.e. livestock and vegetation do

not control each other. External shocks (e.g. drought or war) rather than endogenous processes (e.g. low calving rates due to malnutrition) determine livestock numbers and the state of vegetation.

- In these non-equilibrium systems grazing by livestock has only a small effect on the productivity of grasslands.
- Therefore an “opportunistic” or “tracking” strategy, in which livestock numbers (and so the demand for feed) closely matches in time the production of grass is the best way to avoid wasting feed supply which, for the most part, can not be economically stored [from non-drought year to drought year].
- African rangelands are heterogeneous (highly varied) in space, producing different and amounts and qualities of feed at different times and in different places. This feed cannot be economically transported, and therefore herd mobility is desirably to exploit them best.
- Efforts to improve management in these disequilibrium systems should focus on improving the efficiency of opportunism/tracking. This is done by ensuring the quickest and least costly methods of adjusting the “demand” (deriving from the number, species, breeds and age/sex composition of herds) for feed to the “supply” of feed which is largely determined by rainfall.
- Whereas the “Old Thinking” stressed the potential for improving the productivity (quantity/quality of feed output) of the vegetation by applying the correct stocking rates, the “New thinking” has not yet identified specific ways of improving productivity. Many adherents to the “New Thinking” believe that the overall productivity of the pastoral systems may best be improved by focussing on quite small patches of land which are the final “fall-back” areas for pastoralists’ herds in times of drought. The amount/quality of feed available at the height of the drought in these final fall-back areas determines the size of the breeding herd from which herd numbers can be reconstituted when the drought is over.
- As a rule of thumb, Africa’s “disequilibrium systems” are the norm in rainfall areas where the variability of rainfall as determined by the “coefficient of variation” (CV) of annual rainfall is in excess of 30%. In East Africa the CV is usually in excess of 30% where mean annual rainfall is less than 600mm. However there is some divergence of opinion between scientists as to whether the bulk of the Borena pastoral system in Ethiopia is “equilibrium” or “disequilibrium” although rainfall puts it mainly on the disequilibrium side.

Some implications for management and development of the New Thinking

The list below (drawn from Scoones 1995 page 35) identifies the main practical implications for the management and development of pastoral systems:-

- In highly dynamic, non-equilibrium environments land degradation is *not* the major issue it was once assumed. Therefore boreholes and water points should continue to be a priority in the areas where water is a limiting factor. The cost of bare ‘sacrifice’ zones immediately surrounding each borehole is usually outweighed by the benefits of more efficient fodder use and higher livestock populations. However, very high densities of boreholes in arid environments may ultimately result in a decreased resilience of the system as the patchy nature of the environment

is destroyed. Changes in resource access following borehole investment also remain a concern.

- Maintaining the size and health of animal populations through investments in veterinary care also remains a priority. High populations do not necessarily impose long-term environmental damage, and healthy animals are able to track environmental variations more effectively. Conventional veterinary support, through vaccination campaigns, needs to be complemented by decentralised animal health services and the indigenous knowledge of herders themselves.
- Conventional range management in dry areas is of limited value. Technical support should be focussed on particular niches where productivity increases are most likely. Investment in the development or creation of key resource patches, for instance, deserves attention from technical experts. Breeding programs using exotic breeds should be abandoned in favour of improving the physiological tracking capacity of indigenous breeds.
- So-called ‘traditional’ pastoral systems have higher returns (when these are calculated to include the cost of products consumed by pastoralists as well as those sold) than ranches under comparable conditions. The ranch model for pastoral development in dryland Africa therefore should be abandoned in favour of support for existing systems.
- To make systems more flexible, pastoral institutions will have to be particularly strong. Greater emphasis needs to be paid to institutional capacity building. ‘Institutional Organisers’ working with local pastoral associations, provide opportunities for supporting the development of local institutions. This will require major re-training of field extension staff.
- Investment in marketing and infrastructure still has a role. The need to secure livelihoods through cash sales of animals remains an imperative in pastoral areas. Good access to market facilities and information permits more effective tracking. Investments should focus on improving tracking abilities in order to sustain pastoral economies, rather than simply focussing on red meat production. Instead of investments in large abattoirs or freezing facilities, investment in basic infrastructure, including roads, will remain important in pastoral areas.
- Policy analysis and reform need much greater attention. Instead of simply focusing on boosting meat production from pastoral areas, policies are needed to ensure the economic viability of pastoral communities and their contributions to the national economy. This means examining policy options that allow flexible planning and development, enhanced capacity for tracking, secure but flexible resource tenure systems, and the development of effective and strong pastoral organizations at both local and national levels.

Population growth, range productivity and sustainable livelihoods

This section of this note is a further development (not specifically dealt with in the two books identified at the start of this note) of the logical implications of the New Thinking.

- The New Thinking debunks the Old Thinking’s idea that the productivity of the rangelands can be improved by stabilizing the stocking rate at a conservative level below what pastoralists want it to be. The adoption of the New Thinking, therefore, takes away the need for the enormous waste of resources and administrative energy involved in trying to force pastoralists to adopt conservative stocking rates. This waste has characterized range developments in Africa. It does

not, however, substitute any alternative method of improving the productivity of range vegetation. At present no significant alternative method has been found.

- A step-up in total productivity from range systems can be derived from improved animal health. This step-up may be of the order of 20%-30%, but further productivity increases can only be obtained by improving the nutrition of animals, i.e. by improving feed supply, which at present price ratios, means improving the primary productivity of the range.
- In most pastoral systems in Africa human population growth is probably positive (the quality of the census data is usually poor), and growth rates of the order of 1.5-2.5% seem to be normal.
- Once the “step-up” achievable by improved animal health is attained, and some improvement is made in the “efficiency of opportunism/tracking”, a growing human population is dependent on a fluctuating resource base but one without a long-term upward trend in productivity made possible by the application of technological advance. At present there is a sharp contrast between pastoral and cropping systems in this respect. Most cropping systems have economic or nearly economic technologies for substantially improving land productivity. Disequilibrium pastoral systems do not.
- We must therefore, as a growing human population depends on a level of output without a corresponding upward trend, expect increasing impoverishment, destitution and incidence of famine in pastoral areas leading to ever more increasing needs for increasing quantities of emergency relief. Unless productivity-increasing technologies can be quickly found the only ways to avoid this scenario are:-
 - Control of population growth;
 AND/OR
 - Diversification of economic activities away from reliance on pastoralism into other sorts of activity within the pastoral areas;
 AND/OR
 - Emigration of a substantial proportion of the pastoral population from pastoral into non-pastoral areas and occupations.

The Borena traditional practice was to control population growth (source: Asmerom Legesse 1973), but this tradition has now ceased. In other countries/parts of the world where pastoralism has escaped from the poverty trap, both of the last two of these methods have been successful. However there has frequently been extreme human stress in making the transition.

- Much more emphasis needs to be given in Ethiopia in the future to devising and testing on small scale at first, methods to facilitate the transition of a substantial number of those born into pastoral families from pastoral to non-pastoral ways of life. Such transition has occurred in Ethiopia in the past but with significant stress. Mobile pastoralism, along traditional lines, remains the most efficient way of exploiting the natural vegetation of the pastoral areas, but it cannot cope with significant increase in the human pastoral population. The transition seems to occurring more frequently and rapidly in other countries in Africa than in Ethiopia.

Annex 3.1

TABLES OF HERD SIZES FOR DIFFERENT WEALTH CATEGORIES FOR VARIOUS PASTORALIST AND AGRO-PASTORALIST GROUPS IN THE GREATER HORN OF AFRICA.

Djibouti

No data

Eritrea

Livestock ownership and wealth ranking for villages in Debub and Gash Barka *zobas* in Eritrea.

Debub villages	Poor	Middle	Rich
Cattle	0	1 oxen 1 cow	1-5
Shoats	1-5	10-15	10-40
Camels	0	1	3 varies greatly from village to village
Donkey	0-1	1	1
Chicken	2	3-4	1-5
% population	47-65%	23-30%	12-23%

Gash Barka	Poor	Middle	Rich
Cattle	0-3	3-6	10-40
Shoats	1-5	10-15	10-30
Camels	0	1	2
Donkey	0-1	1	1-2
Chicken	2	3-4	
% population	52-66%	20-35%	10-30%

Ethiopia

Livestock ownership and wealth ranking for households in the Korahai Pastoralist FEZ of Somali National Regional State, Ethiopia¹.

	Very Poor	Poor	Medium	Rich
Cattle*	2-3	2-3	30-60	40-150
Sheep/goats	20-40	50-60	100	150-200
Camels*	0-1	3-6	30-80	100-120
Donkey	1-2	1-2		
% population	39	21	20	19
HH size	7-9	7-9	8-10	8-10
*	And / or	Or / and	Or	Or

¹ Action contre la Faim, 2001.

KenyaWealth Group Characteristic of Ariaal pastoralists in Kenya².

	Ariaal	Rendille	Kenya NS³
	Rich	Medium	Medium
Cattle	25	11	15
Shoats	110	101	67
Camels	20	12	12
HH size	6		8

Wealth Group Characteristic of Turkana District⁴.

	Pastoralists			Agro and settled pastoralists		
	Rich	Medium	Poor	Rich	Medium	Poor
Cattle	300-500	100-300	<100	>50	30-50	30
Shoats	500-2000	200-500	<200	>200	100-200	100
Camels	50-100	20-50	<20	>20	5-20	<5
Donkeys	10-20	5-10	1-2	>10	5-10	1-2
HH size	6	6	6	6	6	6

Wealth Group Characteristic of Turkana – Kaaleng⁵.

	Pastoralists		
	Rich	Medium	Poor
Cattle	20	6	0
Shoats	125	45	8
Camels	13	6	0
Donkeys	7	3	2

² Field, 1986; Field & Simpkin, 1985.³ NS = Not Stated⁴ Clarke, 1996.⁵ Source: GoK, 2001

SomaliaWealth Ranking of Gaalgadud pastoralists, Somalia⁶.

	Poor	Middle	Better off
Cattle	0-5	5-10	15-20
Shoats	40-50	100-125	200-250
Camel	5-10	10-20	30-50
Donkeys	1-2	0	0
No. of	0	0-1 (30% of Pop.)	1-2 (50% of pop.)
% of POP.(mid point)	40-50 (45)	30-40 (35)	15-25 (20)
HH size	6-8	7-9	8-10

Wealth Group Characteristic of Addun FEZ, Somalia⁷.

	Poor	Middle	Better off
Shoats	40-60	80-120	150-200
Camel	2-5	10-15	25-30
No. of			1-2
% of pop (mid point)	25-30	45-55	20-25
HH size	5-6	6-8	8-10

Wealth Group Characteristic of Hawd FEZ⁸.

Wealth Breakdown	Poor	Middle	Better Off	Rich
% of Population	20-35%	45-55%	10-25%	2-5%
HH size	6-7	7-8	9-10	10-12
No. of Wives	1	1	1-2	1-3
Persons living with the HH	0	0	1-2	2-3
Persons living away	1-2	0	0	0
Shoats	50-60	80-100	140-160	250-300
Camel	4-6	8-10	15-25	40-70
Pack camel	1	2	2-3	2-3
Donkey	1	0-1	0	0
<i>Berkads</i>	0	0-1	1	1-2

⁶ FSAU, 2003.⁷ FSAU, 2001.⁸ FSAU, 2003.

Wealth Group Characteristic of Sool and Sanaag FEZ⁹.

Wealth Breakdown	Poor	Middle	Better Off
% of Population	25-35	45-55	15-25
Shoats	70-90	120-150	200-250
Camel	5-10	20-30	50-80
Pack camel	1-2	2-4	4-6
Donkey	0	5-10	10-15
Cattle	0	5-10	10-15

SudanWealth Group Characteristic of Abyei province, Sudan¹⁰.

Wealth Breakdown	Poor	Middle	Better Off
% of Population	60	30	10
No. of Wives	1	2	3-4
Shoats	0-1	4-5	8-10
Cattle	0	3-4	10-15
Area cultivated (<i>feddans</i>)	0-0.	1.5	2-3

Wealth Group Characteristic of Kassala State IDPs, Sudan¹¹.

Wealth Breakdown	Poor	Middle	Better Off
% of Population	50	37	13
Shoats	1		14
Cattle			1
Area cultivated (<i>feddans</i>)	2-3		2-4
Firewood and kinship support	XX		

⁹ UN, 2003.¹⁰ UNOCHA, 2003.¹¹ UNOCHA, 2003.

Annex 6.2

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

**POLICIES AND STRATEGIES FOR THE DELIVERY OF
VETERINARY SERVICES IN KENYA**

**DEPARTMENT OF VETERINARY SERVICES
AND
KENYA VETERINARY BOARD**

FINAL DRAFT

FEBRUARY 2002

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Acronyms

AEZ	-	Agro-Ecological Zone
AG	-	Attorney General
AI	-	Artificial Insemination
ASALs	-	Arid and Semi-Arid Lands
ASMP II	-	Agricultural Sector Management Programme II
CAIS	-	Central Artificial Insemination Station
CAHWs	-	Community-Based Animal Health Workers
CAP	-	Chapter (Laws of Kenya)
DVS	-	Director of Veterinary Services
FVM	-	Faculty of Veterinary Medicine
GDP	-	Gross Domestic Product
GoK	-	Government of Kenya
HMPL	-	High and Medium Potential Lands
KALT	-	Kenya Association of Livestock Technicians
KMC	-	Kenya Meat Commission
KNAIS	-	Kenya National Artificial Insemination Services
KSPCA	-	Kenya Society for the Protection and Care of Animals
KVB	-	Kenya Veterinary Board
KVA	-	Kenya Veterinary Association
KWS	-	Kenya Wildlife Service
MTEF	-	Medium-Term Expenditure Framework
MoU	-	Memorandum of Understanding
NGO	-	Non-Governmental Organisations
OAU/IBAR	-	Organisation of African Unity/Inter-African Bureau on Animal Resources
OIE	-	Office' Internationale Epizooties
PHSO	-	Principal Hides and Skins Officer
PRSP	-	Poverty Reduction Strategy Paper
SACCO	-	Savings and Credit Cooperatives
SAPs	-	Structural Adjustment Programmes
SAGA	-	Semi-Autonomous Government Agency
VAT	-	Value added Tax

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1. Fish and livestock producer groups, associations and/or societies (Dairy Goat Association of Kenya, Breeder Associations, Fish Traders' Association and Cooperatives, Pastoral Associations and Livestock Marketing Council)
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4. Manufacturers of livestock and veterinary inputs.
5. Livestock production and health experts and veterinary service providers.
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Executive Summary

1. Livestock contributes significantly to the welfare of Kenyans. Upto 10 per cent of the Gross Domestic Product and 30 per cent of the farm gate value of agricultural commodities originate from livestock. The livestock sub-sector also provides raw materials for the local dairy, meat, hides and skins, wool and hair processing industries.
2. Concern with the deterioration in efficiency in delivery of veterinary services in light of dynamic physical and policy environment prompted the Department of Veterinary Services to review the policies and strategies, which can be in place to make the livestock sub-sector enhance its contribution to the national economy. Before the structural Adjustment Programmes (SAPs) promoted by the International Monetary Fund (IMF) and the World Bank since 1980s, the Government either highly subsidized cost of veterinary inputs or met the full cost of service delivery. Once the implementation of the SAPs became a reality, sustenance of the delivery of veterinary services as before became impossible.
3. In response to the unfolding situation, the Government instituted several policy strategies in the livestock sub-sector aimed at attaining sustainable and properly balanced investments and provision of services between the public and private sector and beneficiaries. The recent changes include the transferring of most of the holding grounds to county councils, transfer of dip management to community dip committees, the provision of veterinary drugs and chemicals at cost and the liberalization and privatization of delivery of veterinary services including clinical and artificial insemination services. The Ministry of Agriculture and Rural Development had to be restructured and the role of the Public and Private Sector in providing the services defined.

The privatization process was adopted as an alternative aimed at strengthening veterinary services, improving the provision of veterinary inputs and encouraging the development of private practices and businesses. However, this is not working as well as anticipated. As a result, artificial insemination, curative and preventive medicine and the distribution of veterinary inputs were thrown into a free for all market (*Laissez-faire* - black-market), with unqualified persons offering services and inputs. There was, therefore, an urgent need to review policies and laws governing the delivery of veterinary services and inputs to reflect the current economic policies and trade practices.

4. The policies regulating delivery of veterinary services in Kenya have not been regularly reviewed to respond to the changing environment in the livestock sub-sector. Consequently, a number of policies have constrained livestock production and efficient delivery of veterinary services to the end-users. The constraints have included:
 - Relatively high cost of services and inputs;
 - Low level of awareness of benefits of animal health care;
 - Poor returns from livestock enterprise;
 - Inadequate supplies of veterinary inputs;
 - Inadequate storage facilities for drugs and vaccines in district veterinary offices;
 - Cattle rustling in the ASALs;
 - Domestic and wildlife interactions, which result in disease outbreaks and conflict;
 - Breach of quarantine regulations;
 - Large-scale outbreak of otherwise controllable diseases;

- Inadequate feeds and supplementation; and
 - Disappearing indigenous information base and ethno-veterinary practices.
 - In addition, there has been very limited public awareness of the existing policies.
5. The review of legislation and policies regulating the delivery of veterinary services has been going on since 1998. To this end, a Secretariat was constituted and mandated to coordinate this exercise on behalf of the Director of Veterinary Services (DVS), the Kenya Veterinary Board (KVB), the Kenya Association of Livestock Technicians (KALT), Kenya Veterinary Association (KVA), Faculty of Veterinary Medicine (FVM), OAU/IBAR and other relevant stakeholders.
 6. To ensure that the process of policy development and legislative review and reforms involved all stakeholders, regional grassroot stakeholders' workshops were held in Nakuru, Kisumu, Eldoret, Isiolo and Kilifi. The objective of the workshops was to collect issues raised by the various stakeholders as a benchmark for reviewing the current policies and laws and to form a basis for development of harmonized policies for the delivery of veterinary services in Kenya.
 7. The Department has a vision of Kenya with sustainable livestock production and marketing system, where there is optimal animal health, production and welfare, where epizootic notifiable diseases and pests are controlled or absent, biodiversity maintained, veterinary vaccines and drugs are of good quality and where public health, food security and wealth creation are assured. The Department sees its mission as that of facilitating efficient veterinary services for production, marketing and consumption of safe and high quality animals, animal products and by products as well as to contribute to the maintenance of bio-diversity for sustainable development.
 8. The Divisions of the Department as well as the Board reflect the core functions, which the Department has been mandated to perform. These are:
 - Formulation, Implementation and Monitoring of Veterinary Policies.
 - Development and Co-ordination of Programmes in Animal Health Sector.
 - Information Management for the Animal Sector.
 - Regulatory Management and Quality Control of Inputs, Livestock, Livestock Products and By-products.
 - Management and Control of Animal Pests and Diseases.
 - Provision and Facilitation of Extension Services in Animal Health and Production and Research Agenda Setting and Research Liaison and Co-ordination in Animal Health.
 - Management and Conservation of the Natural Resource base for Livestock.
 - Monitoring and Management of Food Security and
 - Regular Review of Veterinary Legal Framework.
 9. The core functions spelt above are meant to fulfill specific objectives so as to achieve the vision of the Department. These are to:
 - Control and eradicate epizootic notifiable diseases and pests in collaboration with stakeholders to facilitate local and international trade.
 - Encourage cost effective local production of disease control inputs.
 - Improve livestock production systems through the use of appropriate breeding practices.
 - Acquire, test and adopt/adapt new technologies/innovations with potential for improved, accelerated and sustained livestock growth.

- Develop and maintain national indigenous animal genetic resources, while safeguarding bio-diversity losses.
 - Ensure the wholesomeness of animal products for both human and animal consumption.
 - Contribute towards improvement of hides, skins and leather industry value added activities.
 - Provide continuing in-service training for staff and adapt training curricula to meet private sector demands.
 - Carry out quality assurance of veterinary vaccines, biologics, drugs and pesticides.
 - Undertake disease diagnosis, epidemiological surveys and surveillance in collaboration with other stakeholders.
 - Provide livestock extension services to farmers in partnership with other stakeholders.
 - Create an enabling environment for the participation of the private sector in service delivery.
 - Monitor and evaluate projects and programmes in veterinary services.
10. The policies and strategies for Animal Breeding Services include:
- Strengthening management and regulatory framework.
 - Promote the delivery of breeding services.
 - Facilitating adequate financing of breeding services.
 - Promotion of training and extension.
 - Promotion of establishment and use of superior bulls where appropriate.
11. The policies and Strategies for Animal Disease and pest control include:
Putting in place a strong Veterinary Department with adequate financial and physical capacities for efficient prevention, control and eradication of livestock diseases and pests.
- Promotion of accessibility of animal health services especially in the ASALs.
 - Promotion of affordability of inputs for prevention, control and eradication of animal diseases and pests.
 - Promotion of collection and collation of information on disease occurrence and spread and facilitate extension services.
 - In collaboration with other relevant stakeholders, facilitating livestock marketing to enhance disease prevention, control and eradication.
 - Putting in place adequate control measures for trypanosomosis and tsetse.
12. Policies and Strategies for Veterinary Laboratory and Quality Assurance Services include:
- Enhancing capacity for the provision of accessible and effective diagnostic and quality assurance services.
 - Promoting the regulation of production and quality assurance of products for veterinary use and research.
13. Policies and Strategies for Animal Welfare Services include:
- Regular review of policy and legal frameworks related to animal welfare.
 - Strengthening financial base of animal welfare bodies/agencies.
 - Promoting the availability of and accessibility to extension services in animal welfare.
 - Promoting the teaching of animal welfare in all institutions that undertake training in animal sciences.

14. Policies and Strategies for Veterinary Projects Planning and Management Services include:
 - Strengthening policy/Project Project Cycle Management.
 - Prioritising project investment areas in collaboration with the relevant stakeholders.
 - Ensuring that no project with animal-health component is implemented in Kenya without the knowledge and approval of the Director of Veterinary Services.
 - Institutionalising impact assessment of livestock projects.

15. Policies and Strategies for Veterinary Training Services include:
 - Facilitating the provision of adequate human, physical and financial resources in training institutions.
 - Enhancing the monitoring, supervision and enforcement of approved standards, training guidelines and curricula.
 - Promoting collaborative linkages between relevant stakeholders.

16. Policies and Strategies for Veterinary Public Health Services include:
 - Creating an enabling legal and regulatory framework and harmonize service delivery in veterinary public health countrywide.
 - Facilitating creation of adequate capacity (human, physical and financial).
 - Facilitating adequate training and extension.

17. Policies and Strategies for the Hides and Skins Improvement and Leather Development Services is largely to:
 - Promote use of cost effective inputs for value adding.
 - Strengthen capacity building in human, financial and physical resources of the service.
 - Strengthen the management and regulatory function of the service.
 - Strengthen Quality assurance strategy.

18. Policies and Strategies for Animal Identification Services include:
 - Facilitating establishment of identification codes/marks for specific regions and other animal species.
 - Facilitating revitalisation of the Registrar of identification marks of animals and identification activities.
 - Promoting humane identification methods of livestock and to ensure quality of hides and skins.
 - Facilitating amendment of the Branding Act (Cap 357).

19. Policies and Strategies for Veterinary Board Services include:
 - Regular review of the Veterinary Surgeons Act and Board policies to cater for animal health technicians and other animal health service providers.
 - Strengthening the capacity of the Board to better regulate veterinary education and inspection practices and laboratories.
 - Promoting continuing education for the veterinary professionals.

20. Monitoring and Evaluation of Policies and Strategies

The stated polices and strategies will need to be closely monitored and evaluated to ensure that the path towards achieving the vision is maintained and any adjustments made if necessary. The evaluation will entail tracking deliverable outputs and expected outcomes for each strategy and policy respectively.

21. The preconditions for success for the policies and strategies in achieving the stated vision will depend on a number of factors. These include:
- Commitment and willingness by government to adopt and implement the proposed policies and strategies.
 - Commitment by all relevant stakeholders to provide the necessary support by playing the roles specified in the proposal.
 - Availability and access to markets for the anticipated increased livestock and livestock products and by-products.
 - Governments in the region will support border harmonization and conflict management meetings.
22. The time frame for the vision to be attained is 10 years. However, regular monitoring and evaluation will be necessary to establish if the policies and strategies require adjustment. The future of the livestock industry and by extension the welfare of most Kenyans lies in careful implementation of the strategies proposed.

CHAPTER 1. INTRODUCTION

1.1 Background

Livestock production contributes significantly to the welfare of Kenyans. Current statistics show that livestock contributes up to 10 percent of the Gross Domestic Product and 30 percent of the Farm Gate Value of agricultural commodities of which a substantial portion of the income arises from trade, both local and international. The Livestock sub-sector also provides raw materials for the local dairy, meat, hides and skins, wool and hair processing industries.

Livestock production is carried out in High and Medium Potential Lands (HMPL) and in the Arid and Semi-Arid Lands (ASALs). Livestock population in Kenya is estimated at just over 60 million. These include 27 million chicken; 13 million cattle of which 10 million are beef cattle and 3 million are dairy and dairy crosses; 10.4 million goats; 7.9 million sheep; 1 million camels; 600,000 donkeys; and 300,000 pigs. ASALs of Kenya occupy 80 percent of the land surface and hold 75 percent of the livestock population, the livestock sub-sector accounts for 90 percent of employment and more than 95 percent of family income. In the HMPL, which occupy 20 percent of the country, livestock provides employment to more than 50 percent of the agricultural labour force.

Historically, the livestock production in the ASALs has been characterized by low intensity of land use and livestock with low genetic potential, both of which have contributed to the low output per unit of land. Intensifying land use, upgrading the quality of livestock and providing appropriate support for the sub-sector have been recognized as priorities.

1.1.1 Livestock Production Systems

Classification of production systems is based on 4 factors - species, product, economies of scale and Agro-Ecological Zones (AEZ). According to the latter classification, AEZ 1-4 are arable areas while AEZ 5-7 are ASALs. Livestock production in the ASALs is either: semi-sedentary; agro-pastoral; or pastoral.

The traditional nomadic and transhumant pastoral systems, based upon communal grazing in the ASALs are well adapted to the annual and seasonal variations in rainfall and vegetation. Mobility is an essential strategy if the pastoralists are to access water and grazing and avoid a build up of worms and attacks by tsetse flies, biting midges and other pests. The migration, however, offers logistical problems to the provision of veterinary services when animals are in inaccessible and often highly insecure areas. In addition, the movement exposes the migrating herds to risks of contracting highly contagious diseases such as rinderpest, foot and mouth disease and contagious bovine/caprine pleuropneumonia. In addition the delivery of veterinary services is hampered by the harsh environment, inadequate financial resources allocated for recurrent and development expenditures, shortage of transport and veterinary inputs, lack of agro-based industries, the poor infrastructure, severe shortage of veterinary personnel, the upsurge of diseases which had previously been controlled and emerging diseases. Alleviation of such problems is expected to improve livestock productivity and the off-take rates. This may encourage the producers to offer more animals and animal products to the market than are currently the case.

The provision of veterinary services is, however, unlikely to improve if the present delivery systems

are left in place. There is need to introduce other modes of delivery systems where the beneficiaries are involved, while encouraging the private sector to invest in the ASALs. This is especially critical now that the Government is facing tight budget outlays and hence the need to reduce expenditure in some services.

To reduce the high cost associated with delivery of services and guarantee its sustainability an “all inclusive approach” in designing, developing, testing, implementing and monitoring an appropriate service delivery system is needed.

1.1.2 *Private and Public Goods*

Since not all the services can be privatized, there is need to distinguish the difference between private and public goods in the delivery of veterinary services. This distinction is given in Figure 1.

Figure 1

Public goods	Toll goods (Private/public)¹
Epidemic disease control	Vaccine production
Zoonotic disease control (Quarantine services, movement control and disease surveillance)	Diagnostic services
Some extension services	Veterinary clinics
Some research	Communal dips
Production of frozen semen	Semen distribution
Control of food borne diseases	Some research
Control of holding grounds	Construction of dams
Construction of dams and boreholes	Some extension services
Import and export of livestock	Market information Technology development
Slaughterhouse licensing and inspection	Project planning and management
Control of quality of laboratory services	Environmental conservation
Vaccination for notifiable disease	Breeding stock
Training	
Market information	
Drug quality control	
Disaster management	

¹ **Public and Common goods** are to be funded by the State; **Toll goods** can be funded from public and/or private sector; and Private goods are expected to be funded by the **private sector** or the consumers.

Common pool goods (Public)	Private goods (Private)
Tsetse control on communal land Construction of large dams	Endemic disease prevention and control Meat inspection and processing Construction and maintenance of cold rooms Veterinary input supply Room temperature semen production Sale of semen and artificial insemination GoK contracted vaccination Vaccine production Clinical and laboratory services Construction of dams Training Technology development Market information Hides and skins improvement

1.1.3 The Structure of the Department of Veterinary Services

The Department of Veterinary Services is one of the five technical Departments in the Ministry of Agriculture and Rural Development. The Department is headed by the Director of Veterinary Services under, which falls eight divisions. These are:

1. Veterinary Laboratory Investigation Services Division.
2. Veterinary Vector Control Division
3. Veterinary Extension Services Division
4. Veterinary Training and Clinics Division
5. Veterinary Disease Control Division
6. Veterinary PMSU Division
7. Veterinary Public Health, Hides and Skins Improvement Division
8. Artificial Insemination Services Division

The Division heads are based at the headquarters. The Provincial Directors of Veterinary Services are in charge of Veterinary Service delivery at the Provincial level; The District Veterinary Officer at the District level, the Divisional Veterinary Officer at the Division Level, while the Animal Health Technicians are expected to deliver the grassroots level services to the farmer or trader.

¹ The others are Departments of Agriculture and Livestock Production, Cooperatives, Fisheries and Land Reclamation

The Kenya Veterinary Dairy Board (the Board) in consultation with the Director of Veterinary Services is mandated by the Veterinary Surgeons Act (Cap 366) to make provision for registration of Veterinary Surgeons and regulate veterinary education and to deal with other matters incidental to and related to veterinary practice.

The operational structure (organogram) of the Department is given in chart 1.

1.1.4 The Vision of the Department

The Department has a vision of Kenya with sustainable livestock production and marketing system, where there is optimal animal health, production and welfare, where epizootic notifiable diseases and pests are controlled or absent, biodiversity maintained, veterinary vaccines and drugs are of good quality and where public health, food security and wealth creation are assured.

1.1.5 The Mission of the Department

The Department sees its mission as that of facilitating efficient veterinary services for production, marketing and consumption of safe and high quality animals, animal products and by products as well as to contribute to the maintenance of bio-diversity for sustainable development.

1.1.6 The Core Functions of the Department

- The Divisions of the Department as well as the Board reflect the core functions which the Department has been mandated to perform. These are:
- Formulation, Implementation and Monitoring of Veterinary Policies.
- Development and Co-ordination of Programmes in Animal Health Sector.
- Information Management for the Animal Sector.
- Regulatory Management and Quality Control of Inputs, Livestock, Livestock Products and By-products.
- Management and Control of Animal Pests and Diseases.
- Provision and Facilitation of Extension Services in Animal Health and Production and Research Agenda Setting and Research Liaison and Co-ordination in Animal Health.
- Management and Conservation of the Natural Resource base for Livestock.
- Monitoring and Management of Food Security and
- Regular Review of Veterinary Services Legal Framework.

1.1.7 The Objectives

The core functions spelt above are meant to fulfill specific objectives so as to achieve the vision of the Department. These are to:

- Control and eradicate epizootic notifiable diseases and pests in collaboration with stakeholders to facilitate local and international trade.
- Encourage cost effective local production of disease control inputs.
- Improve livestock production systems through the use of appropriate breeding practices.
- Acquire, test and adopt/adapt new technologies/innovations with potential for improved, accelerated and sustained livestock growth.
- Develop and maintain national indigenous animal genetic resources, while safeguarding bio-diversity losses.
- Ensure the wholesomeness of animal products for both human and animal consumption.
- Contribute towards improvement of hides, skins and leather industry value added activities.

- Provide livestock extension services to farmers in partnership with other stakeholders.
- Create an enabling environment for the participation of the private sector in service delivery.
- Monitor and evaluate projects and programmes in veterinary services.

1.1.8 Rationale for the Policies and Strategies.

Efficient delivery of Veterinary Services will require that the roles of each stakeholder is determined and clarified to minimize duplication of efforts. The identified roles must also be matched to capacity to undertake the roles. Where there is no capacity to undertake the role, the public sector must find mechanisms to ensure that the roles are performed. If the role falls within the public domain with insufficient capacity, temporary outsourcing is necessary while capacity is being built. If the service delivery role falls within the private sector domain with insufficient capacity, the public sector must facilitate the evolution of a strong private sector to undertake the roles.

In order to achieve the stated vision, it is incumbent on the public sector to formulate relevant policies to ensure that the public sector service delivery is efficient while at the same time the private sector is given an enabling environment to undertake the desired service delivery functions expected of them. Once clear policies are in place the actors will use the signals to design appropriate strategies to fulfill their respective roles in an efficient and profitable manner. An all inclusive approach in designing, developing, testing, implementing and monitoring an appropriate service delivery system is required to ensure sustainability.

1.1.9. Organization of the policy document

This report is organized as follows:

Chapter 1 gives the background, the structure, vision, mission of the Department as well as the rationale for identifying the policies and strategies. The next Chapter highlights the identified constraints to effective delivery of veterinary services by broad thematic areas of service delivery. Chapter 3 gives the policies and strategies, categorized by the thematic areas. Chapter 4 details the Monitoring and evaluation of the stated policies and strategies. Chapter 5 gives conclusions and the way forward for these policies and strategies while the executive summary is at the beginning of this report.

CHAPTER 2

CONSTRAINTS TO EFFECTIVE DELIVERY OF VETERINARY SERVICES

The constraints faced by each of the divisions in the Department were determined through consultation with the relevant stakeholders. They are enumerated according to the broad functional areas in the Department and the Kenya Veterinary Board.

2.1 Animal Breeding Services

2.1.1 *Weak management and regulatory systems*

- Inadequate monitoring and supervision of AI service providers.
- Inadequate enforcement of existing legislation governing provision of AI services.
- Management and performance of Bull Evaluation (progeny testing) by Livestock Recording Centre, Dairy Recording Services, and C.A.I.S. is unsatisfactory to some stakeholders.
- Inadequate monitoring of marketing trends of breeding services with a view to fostering competition and preventing price fixing.
- Continuing ban on export of breeding material.

2.1.2 *Weak delivery of breeding services*

- AI services are not readily accessible to many farmers.
- Poor infrastructure.

2.1.3 *Prohibitive cost of breeding services*

- The charges levied by breeding services providers are relatively high.
- Scarcity of breeding stock.
- Relatively high cost of investing in breeding services owing to costly inputs and lack of credit facilities.
- Inadequate qualified inseminators.
- Poorly performing AI services providers (high numbers of repeat breeders).
- Poor infrastructure.

2.1.4 *Inadequate training and extension*

- Poor feedback systems for relaying results of bull screening.
- Inadequate training facilities for farmers.
- Inadequate numbers of inseminators.
- Inadequately trained AI service providers.
- Poor heat detection at farm level and cultural and customary inhibitions among others.
- Limited awareness of the benefits of using AI services for breeding purposes.
- Inadequate and/or lack of knowledge on artificial breeding of emerging species.
- Limited awareness of the existence of and benefits of belonging to breed societies.

2.1.5 *Improper management of bull schemes*

- Increased incidence of in-breeding due to improper record keeping by farmers.
- Relatively high incidence of venereal diseases in areas where natural mating is practiced.
- Poor management and use of selected breeding bulls.
- Use of non-progeny tested bulls.

2.2 Animal Disease and Pest Control

2.2.1 Inadequate human, physical and financial resources

These inadequacies emanate from:

- Limited capacity (human, financial and physical).
- Inadequate planning for disease emergencies.
- Inadequate epidemio-surveillance.
- Unavailability of high quality vaccines and drugs.
- Wildlife as a source of diseases and pests.
- Inadequate laboratory confirmation/ diagnosis of animal diseases.
- Inadequate support for analysis tick control services (chemicals, formulation and strength).
- Unsustainable technologies especially pest control (tsetse traps).
- Inadequate linkages with other institutions (local and international).
- Trans-boundary nature of some pests such as tsetse fly and diseases.
- Poor tick control exit strategies by the Government.
- Many fake or adulterated drugs in the market.

2.2.2 Poor accessibility to over 70% of the national livestock population

These constraints are a direct consequence of the situation found in Arid and Semi-Arid Lands (ASALs). They include:

- Vastness and poor physical infrastructure in the ASALs.
- Insecurity and harsh environment.
- Nomadism and transhumance.
- Road banditry.
- Livestock raids.

2.2.3 High Cost of veterinary inputs for disease prevention, control and/or eradication, and pest control.

These generally result from:

- High cost of veterinary inputs.
- Low relative return on livestock investment.
- High cost of animal health service delivery.
- Rampant use of fake drugs, vaccines and acaricides.
- The non-existence of animal holding facilities during court cases related to illegal animal movement and the associated court delays.

2.2.4 Inadequate information on the occurrence and spread of livestock and wildlife diseases within the country and in neighbouring countries.

This inadequacy which applies to situation within and without the country results from:

- Inadequate knowledge of appropriate animal health management of emerging animal diseases and camels.
- Socio-cultural factors.
- Inadequate stakeholder participation in disease prevention and control.
- Inadequate epidemio-surveillance.

2.2.5 Inadequate enforcement of animal disease control regulations.

Movement of livestock and livestock products within the country and across the national borders have existing rules and regulation which merely need to be enforced. Inadequacy enforcement results in:

- Cross-border movement of livestock regardless of disease transmission implications.
- Inadequate and inefficient enforcement of zoo-sanitary regulations.
- Inadequate regulation governing import/ export of living modified organisms.
- Poor exit strategies by the government eg. The hurried exit of the Government from tick control programmes.

2.2.6 Inadequate facilitation of livestock marketing

Efficient livestock marketing should lead to effective disease control. Inadequate facilitation of livestock marketing leads to:

- Insufficient marketing structures.
- Inadequate livestock movement regulation.
- Inadequate coordination with other stakeholders.

2.2.7. Inadequate tsetse and trypanosomosis control measures.

This inadequacy leads to:

- Research on tsetse and trypanosomosis control not focused.
- Challenges posed by non-tsetse transmitted trypanosomosis such as *T. evansi* and *T. vivax*
- Development of resistance by pests to chemicals in use for control and chemo-resistance to available trypanocides in the market.

2.3 Veterinary Laboratory And Quality Assurance Services

2.3.1 Inadequate human, physical and financial capacity

- Inadequately trained personnel
- Inadequate number of personnel
- Inadequate staff incentives
- Inadequate/poor/insufficient:
 - Physical infrastructure
 - Information on laboratory inventory
 - Equipment & supplies
 - Diagnostic technologies
 - Private sector participation
 - Sample collection and submission
 - Quality assurance of laboratory assays
 - Research on disease occurrence in the country
 - Inaccessible veterinary laboratory services
 - Inadequate satellite laboratories in the field.
 - Delayed laboratory confirmation of disease.
 - Inadequate information exchange on diseases.
- Inadequate/poor/insufficient:
 - Epidemiological data
 - Institutional linkages -collaboration
 - Communication technology

- Inadequate diagnostic capacity for emergency response, i.e.:
- Inadequate/poor/insufficient:
 - Skilled human capacity
 - Funding and other inputs
 - Legal framework
 - Inter-sectoral collaboration

2.3.2 Inadequate legislation and regulatory framework in veterinary laboratories

- Inadequate biosafety guidelines
- Inadequate rules, regulations, guidelines governing the production and quality assurance of products for veterinary use and research
- Overlap on the roles of various agencies in regulating veterinary inputs e.g. Director of Veterinary Services, Kenya Bureau of Standards, Department of Public Health, Pharmacy and Poisons Board and Pesticide Products Control Board.

2.3.3 Inadequate public awareness

- The need for laboratory confirmation of diseases
- The need for accurate information on diseases
- Adverse effects of diseases on animals and hence the need for disease prevention.
- The need for veterinarians and animal health technicians to confirm animal diseases.

2.4 Animal Welfare Policies

2.4.1 Inadequate legal and policy provisions for relevant institutions

The KVB, DVS, KWS, KSPCA and the Attorney General (AG) need to be coordinated to provide direction on animal welfare issues. Lack of this coordination leads to:

- At household, farm and market level
 - Traditional practices such as roasting of live chicken and goats, engaging in bull and cockerel fights and breaking of wings of birds before offering them for sale.
 - Inappropriate housing and handling of animals on farms and markets.
 - Household owners, farmers and livestock producers reacting violently to domestic and wild animals straying on their properties/farms.
 - Sale of unvaccinated and poorly managed pets by the roadside or livestock markets.
- During transportation and slaughter
 - Inadequate implementation of guidelines on handling, holding and transporting of animals.
 - Inadequate implementation of guidelines on construction and management of slaughter facilities.
 - Poorly skilled personnel handling, holding or transporting and slaughtering animals.
- Weak-enforcement of existing legal provisions
 - Act of omission and/or commission by the veterinary, livestock and wildlife professionals and the law enforcement agencies including provincial administration, police, customs and immigration.
 - Limited power of entry and search for KWS personnel.
 - Inadequate standards and guidelines governing animal experimental procedures.
 - Non-enforcement of existing by-laws prohibiting or limiting the keeping of certain species of animals, including exotic pets, companion animals and livestock in urban centres.
 - Unavailability of precise and documented procedures for owning or/and transferring of ownership of wildlife and exotic animals

- Limited guidelines stating at what point an animal ceases to be “ a wild animal and becomes “ a domesticated animal”.
- Inadequate and ineffective legal and policy provisions governing wildlife cropping and sport hunting and animals used in sports, exhibitions and/or draught.
- Ineffective policing and inadequate forensic facilities and procedures to differentiate meat from various sources.
- Unregulated mushrooming of slaughterhouses.
- Inadequate funding for animal welfare.

2.4.2 Inadequate capacity to monitor and minimize cruelty to animals.

- Limited awareness among policy makers, administrators, companion animal owners and farmers, professional and technical livestock and wildlife sector service providers of the importance of animal welfare and what constitutes animal abuse.
- Limited strategies for monitoring the use of chemicals and/or drugs to enhance the performance of animals in sports or exhibitions.
- Inadequate surveillance systems to monitor animal housing and enclosures, race tracks, training procedures, exercises or training practices designed for animals used for sports or exhibitions.
- Lack of clear-cut guidelines on the use, withdrawal or retirement of animals used for draught or sports.

2.4.3 Limited animal welfare extension services.

- Inadequate information on the effects of standard animal husbandry practices on farms, zoos or sanctuaries, (such as housing, confinement, declawing, cropping ears, docking and castration without anaesthesia) on animal welfare.
- Limited dissemination of information on the effects of confinement and research procedures on the welfare of wild and domestic animals in laboratories, zoos and sanctuaries.
- Poor dissemination of information, locally, on the effects on animal welfare of the present methods of transporting animals, such as camels, sheep, goats, cattle and pigs on lorries and chicken in crowded crates and the effects of pre-slaughter and during slaughter handling procedures on animal welfare.
- Inadequate information to companion animal owners on the real implications of owning pets and especially in urban areas.
- Insufficient funds allocated for animal welfare.

2.4.4 Inadequate training in animal welfare and supervision of service providers

This inadequacy affects the veterinary practice, livestock production as well as wildlife management. It results from:

- Inadequate training of the various categories of service providers in livestock markets and slaughterhouses and wildlife in national parks and reserves.
- Inadequate guidelines on laboratory animal care in schools, colleges and research institutions.
- Limited and ineffective supervision of the various categories of service providers in livestock markets, slaughterhouses, trade routes, racetracks and animal exhibition areas.
- Insufficient funding for refresher courses in animal welfare.

2.5 Veterinary Projects Planning and Management Services

- Weak policy/projects monitoring and evaluation systems
- Inadequate involvement of the Director of Veterinary Services and other relevant stakeholders in the policy/project cycle management

- Inadequate involvement of local professionals in the Project Cycle Management
- Inadequate involvement of Director of Veterinary Services in impact assessment of livestock projects.
- Inadequate capacity (finance, personnel and physical)

2.6 Veterinary Training Services

- Inadequate funding with respect to facilities, training and scholarships.
- Inadequate manpower in terms of numbers and skills.
- High turnover of trainers in training institutions.
- Limited training institutions and courses offered.
- Inadequate collaboration between local, regional and international institutions.
- Inadequate review of training guidelines and curricula.
- Inadequate association between the consumer and training institutions.
- None of the professionals in the livestock sub-sector undergoes internship/residency programmes.
- Scarce employment opportunities.

2.7. Public Health Services

- Inadequate legislation and regulatory framework for veterinary public health service delivery.
- Unharmonized service delivery in public health within the country.
- Inadequate human, financial and physical capacity to support veterinary public health service delivery countrywide.
- Inadequate training institutions and training curriculum.

2.8. Hides and Skins Improvement and Leather Development Services

2.8.1 High Cost of inputs to value adding

- High cost of materials for curing, processing and tanning equipment.
- High cost of energy.
- High cost of borrowing.

2.8.2 Inadequate capacity in human, financial and physical resources.

- Inadequate trained manpower in aspects of rawstock and leather technologies and environmental protection.
- Inadequate technology transfer to the producers and traders in the sub-sector.
- Inadequate budgetary provisions
- Inadequate working tools for staff
- Poor infrastructures
- Inadequate market information systems especially in the ASALs.
- Inadequate extension staff to cover all areas of production especially in the ASALs
- Inadequate participation by the private sector in the improvement portfolio

2.8.3 Inadequate enforcement of regulatory functions

- Inadequate policy frame work to facilitate the growth and development of the sub-sector
- Inadequate enforcement of environmental protection legal guidelines
- Inflow from imported second hand footwear, leather-goods and non-leather imitation goods.

2.8.4 Weak quality assurance operational frame work

- Inadequate policy and legal framework for the implementation of approved standards of the hides, skins and leather grading.
- Poor linkages with other collaborating agencies locally, regionally and internationally in standardization of raw-stock and leather/leather-goods.

2.9 Animal Identification Services

- Sharing of identification marks between regions
- Dormant Registrar of livestock identification and identification activities
- Outdated legal provisions for livestock identification
- Lack of identification procedures for other animal species
- Inadequate harmonization of identification of animals.
- Most livestock owners are not aware of the importance of animal identification.

2.10 The Kenya Veterinary Board Services

2.10.1 Limited regulatory role of the Act

- Animal health technicians and community animal health workers are not recognized as Animal health service providers.
- Private veterinary laboratories and veterinary inspectorate are not catered for.
- Pharmacy and Poisons Act Chapter 244 prohibits animal health providers from trading in veterinary drugs.

2.10.2 Limited human, physical and financial resources

This inadequacy leads to:

- Irregular review or revising of curricula in veterinary education

This particular consequence has the following implications:

- Inability to finalize Curriculum to train community health workers in ASALs.
- Inability to review curricula used to train diploma and certificates and certificate holders in animal health and production.
- Inability to specify time frame for reviewing curricula of the Faculty of Veterinary Medicine, University of Nairobi.
- Inability to engage sufficient adequate human resources and acquire the needed physical facilities.

- Weak capacity to enforce the Act

This has resulted in:

- Non-payment of statutory fees - Some veterinary surgeons not paying their retention and/or practice license fees.
- Employment of unregistered veterinary surgeons - Some non-governmental organizations and development agencies employ unregistered veterinary surgeons.
- Misuse of veterinary drugs - Misuse of veterinary drugs by lay people and professionals.
- Over the counter sale of veterinary drugs - some pharmacists sell veterinary ethical drugs over the counter, without prescriptions from veterinary professionals.
- Submission of disease occurrence data - most private practitioners do not remit their disease occurrence data to the Department of Veterinary Services.

- Limited capacity to interact with other relevant stakeholders.

This constraint leads to:

- The law-enforcing agency (the police) being unwilling to act on cases of unethical and unlicensed practices reported to it.
 - Limited meetings with Ministers, Heads of Departments and NGOs.
 - Inadequate consultative meetings between the regional Veterinary Boards.
-
- Inadequate continuing veterinary education among the professionals.
 - Veterinary professionals are not aware of their roles in the promotion of animal welfare.
 - There is relatively poor reading culture among the veterinary professionals.

CHAPTER 3 POLICIES AND STRATEGIES

3.1 Animal Breeding Services

Food Security challenges for the future will be to intensify milk, meat, honey and eggs production so that output can keep pace with the rapid population increase. An essential component of a strategy to meet the demands for these commodities for the future shall remain the establishment of successful breeding programmes in poultry, cattle, pigs, sheep, goats and other domestic animals. To meet these challenges, the Department shall seek to improve the quality of livestock through sound breeding policies and ensure increased productivity through production and use of superior and disease-free livestock, while at the same time ensuring the conservation of indigenous genetic material.

Artificial Insemination (AI) services were started in Kenya in 1935 and are a major component of animal breeding aimed at improving the quality of animals. AI services were organized by breeders' associations and were concentrated on large-scale dairy farms and commercial ranches with the main aim of improving the genetic potential of livestock and control of venereal diseases. These services were run by the Central Artificial Insemination Station (CAIS) from 1946, but were taken over by the Kenya National Artificial Insemination Services (KNAIS) in 1965.

The government with some external financial and technical support was able to develop an elaborate and relatively effective national AI field service based on a “daily runs” delivery system with semen provided at highly subsidized costs. Alongside the AI field services, bull schemes were also established in some areas to complement this mode of AI delivery to farmers, which steadily improved over the years, peaking in 1979. However, with increasing financial requirements to service the AI programme, and the introduction of the Structural Adjustment Programmes (SAPs), the government introduced privatization of AI services in 1991. Since then, the performance of these services and the breeding industry in general has been declining.

The Overall Objective of policies for animal breeding services is to improve the quality of our animals and their productivity through sound breeding policies.

The Specific Objectives are to:

- improve the genetic quality of our livestock for increased productivity;
- conserve the genetic diversity of our livestock; and
- control venereal diseases.

3.1.1 Policies and Strategies

1. Strengthen management and regulatory framework.

This strategy will be through the following interventions and their respective activities.

- Strengthen and modernize the existing quality control laboratories at the C.A.I.S.
 - Review and establish capacity of the quality assurance laboratories at Department of Veterinary Services with a view of strengthening and modernizing them.

- Regularly review the performance of the animal breeding industry and address any impediments to its development.
 - Undertake a review of the animal breeding industry and identify existing constraints.
 - Evaluate animal breeding service providers including C.A.I.S. on a regular basis.
 - Research and develop animal genetic resources conservation through utilization.
 - Undertake economic evaluation of indigenous breeds.
- Regulate and supervise local commercial production, exportation and importation of breeding animals, semen, embryos and clones.
 - Revise guidelines for and, supervise local commercial production, exportation and importation of breeding animals, semen, embryos and clones to conform to the O.I.E standards.
- Encourage interaction between breed societies and farmers to create opportunities for improving animal breeding.
 - Facilitate interaction between breed societies and livestock owners.
 - Encourage regional and international linkages with other breed societies and livestock farmer organizations.
- Formulate appropriate policy and legal framework to support animal breeding programmes including importation and exportation of genetic material.
 - Develop and implement supportive and policy and legal framework to support animal breeding programmes.
 - Develop and implement guidelines for the exportation and importation of breeding material.
 - Popularize the new policies and laws.
- Regularly review the ban on export of breeding material.

2. Promote the delivery of breeding services.

This will be achieved through the following interventions and their respective activities.

- Decentralize the activities of C.A.I.S. and allow more stakeholders to be involved in semen production and distribution.
 - Establish more satellite stations of the C.A.I.S. where feasible.
 - License other semen producers and distributors.
- Make artificial breeding services available where needed.
 - Encourage other relevant stakeholders to invest in and undertake provision of breeding services.
- Encourage establishment of farmer groups, co-operatives and other community-based initiatives to undertake artificial breeding services or operate bull schemes where AI services are not feasible.
 - Encourage other relevant stakeholders to invest in and undertake provision of breeding services.
 - Create awareness on the benefits of good animal breeding.

- In collaboration with other stakeholders, improve rural infrastructure.
 - Mobilize all relevant stakeholders to establish appropriate infrastructure.
- Encourage recruitment of other animal species (both indigenous and exotic) into breeding programmes.
 - Recruit other animal species into artificial breeding programmes.
 - Strengthen and modernize the Kenya Livestock Breeders Association.
- Characterize and preserve indigenous livestock genetic material.
 - Characterize and preserve indigenous breeds.
 - Document indigenous breeding technologies/practices.
 - Establish animal gene banks.

3. Facilitate adequate financing of breeding services.

This will be achieved through the following interventions and respective activities listed under.

- In collaboration with relevant stakeholders, encourage revitalization of lending institutions like the Agricultural Finance Corporation and facilitate formation of a livestock farmers' bank to provide livestock farmers with credit facilities.
 - Undertake a feasibility study on the viability of a livestock farmers' bank
 - Facilitate the establishment of a livestock farmers' bank.
- In collaboration with relevant stakeholders, encourage provision of credit to farmers by rural based SACCOs, microfinancial institutions and NGOs for purchase of inputs and setting up of private AI practices.
 - Facilitate strengthening of local institutions that provide credit.
- In collaboration with relevant stakeholders, promote formation of farmer groups in order to qualify for and seek assistance from credit programmes to invest in improved stock.
 - Facilitate the formation of farmer groups to mobilize their resources.
 - Encourage farmer groups to be service providers.
- Encourage partnership with the Kenya Dairy Board in financing animal breeding programmes.
 - Encourage the Kenya Dairy Board to finance animal breeding programmes.

4. Promote training and extension.

This will be achieved through the following interventions and respective activities listed under.

- Regularly review training curricular for inseminators, training and retraining extension officers.
 - Create awareness amongst AI technicians on their role in disease control.
 - Train and retrain extension workers with emphasis on female extension workers where male-female interactions are culturally restricted.
 - Review and harmonize training curricular for inseminators.
- Promote the provision of appropriate, accurate and up to date information on artificial breeding.
 - Establish a central data bank on artificial breeding and disseminate such information to farmers on a regular basis.

- Create awareness on benefits and shortcomings of animal upgrading programmes especially in ASALs.
 - Offer short-term courses on animal breeding to farmers.
- Promote the use of artificial breeding where appropriate and natural mating where artificial breeding is not appropriate.
 - Facilitate progeny testing of bulls.
- Promote harmonization of curricular used in training of artificial inseminators.
 - Review and harmonize training curricular for inseminators.
- Promote the use of mass media in delivery of extension messages.
 - Design and package extension messages on animal breeding, which are gender sensitive and in local languages and disseminate them through the print and electronic media.
- Promote the use of local dialects in packaging and delivering of extension messages.
 - Design and package extension messages on animal breeding, which are gender sensitive and in local languages and disseminate them through the print and electronic media.
- Evolve appropriate extension policy to promote provision of appropriate extension messages.
 - Develop and implement an appropriate extension policy.
 - Repackage available information on animal breeding as appropriate.
 - Disseminate the information packages through the most appropriate channels.
- Encourage farmers to keep proper breeding records.
 - Facilitate training of farmers in record keeping.
- Encourage farmers to take part in progeny testing programmes.
 - With other relevant stakeholders, source for desirable breeding bulls/stock and set up pilot bull/breeding schemes which can act as learning centres for livestock keepers.
 - Facilitate entry of farmers in the Kenya Stud Book.

5. Promote establishment and use of superior bulls where appropriate.

This will be achieved through the following interventions and their respective activities.

- Promote use of progeny tested breeding males.
- Facilitate progeny testing of bulls.
- Encourage stakeholders to source for desirable breeding bulls/stock and set up pilot bull/breeding schemes.
 - With other relevant stakeholders, source for desirable breeding bulls/stock and set up pilot bull/breeding schemes which can act as learning centres for livestock keepers.
 - Provide guidelines for bull schemes.
- Promote regular screening of breeding males and make such information available to farmers.
 - In collaboration with relevant stakeholders, encourage taking of samples from breeding bulls for laboratory screening for venereal diseases and fertility evaluation on a regular basis and establish efficient feedback loops to inform farmers and the Department of Veterinary Services of such results.

- Encourage use of selected superior breeding material for breeding in ASALs.
 - In collaboration with relevant stakeholders, facilitate identification/development of superior breeding material for use in ASALs.
- Promote use of indigenous knowledge on breeding and its blending with modern breeding technologies in ASALs.
 - In collaboration with other stakeholders, evaluate and validate indigenous knowledge and practices.
- Encourage smallscale farmers to practice milk recording and enlisting themselves with the Kenya Stud Book.
 - Facilitate entry of farmers in the Kenya Stud Book

3.2 Animal Diseases and Pests Control

Frequent occurrence of major epizootic diseases remains the main constraint to increasing livestock productivity and enhancing trade. The Director of Veterinary Services (DVS) is empowered to control and eradicate animal diseases and pests by the Animal Diseases Control Act (CAP 364); the Cattle Cleansing Act (CAP 358); Rabies Control Act (CAP 365); Branding Act (CAP 357); and Crop and Livestock Production Act. Until the eighties, the Government was the major provider of animal health services, but this role has become less effective over the years because of decreasing budgetary allocations. At the same time, the implementation of Structural Adjustment Programs (SAPs) removed subsidies in the provision of veterinary services and inputs, and introduced privatization and commercialization. Progressive steps have been taken in the last few years including the withdrawal of Government services from artificial insemination (AI), clinical services, drug distribution, and dipping for tick control.

The overall objective of these policies and strategies is to prevent, control and/or eradicate animal diseases and pests.

The specific objectives are to:

- facilitate prevention, control and eradication of epizootic diseases of livestock (including emerging livestock species) using appropriate interventions.
- facilitate sustainable control of pests (including tsetse flies and ticks) using environmentally safe interventions.
- regulate movement of livestock and livestock products within the country and across national borders.
- provide, in collaboration with other relevant organizations, rapid response or emergency preparedness to mitigate effects of either epizootic diseases or emerging/ exotic diseases.
- provide effective and reliable epidemio-surveillance of animal diseases.
- facilitate and coordinate service providers in animal health and pest management.
- enhance trade in animals and products of animal origin nationally and internationally.

3.2.1 Policies and Strategies

1. Put in place a strong Veterinary Department with adequate financial and physical capacities for efficient prevention, control and eradication of livestock diseases and pests.

This will be achieved through the following interventions and respective activities.

- Diversify sources of funding to support prevention, control and eradication of animal diseases and pests.

- Collect revenue at full cost of service delivery.
 - Source for funds from development partners and other stakeholders through projects and programs.
 - Recruit appropriate manpower.
 - Promote continuous training of Departmental staff and other stakeholders on new technologies in disease and pest control.
- Adopt regional approaches to disease and pest control
 - Develop MOUs between countries within the region.
 - Develop regional strategies for control and eradication of animal diseases and pests.
 - Implement the adopted strategies.
 - Establish disease free zones within the country.
 - Put in place emergency preparedness plans
 - Set up capacity for early warning.
 - Set up capacity for early response.
 - Develop emergency preparedness contingency plans
 - Establish linkages with the National Disaster Committee

2. Promote accessibility of animal health services especially in the ASALs.

This will be achieved through the intervention and their activities.

- Promote private sector participation
 - Put in place legal framework and set guidelines and protocols that encourage private sector participation in animal diseases and pests control programmes.
 - Hold consultative workshops with the private sector.
 - Make recommendations for tax incentives to promote establishment of private sector service delivery especially in the ASALs.
 - Identify other private and shared goods for private sector involvement.
 - Contract out certain services to the private sector as and when appropriate.
- Facilitate validation and subsequent marketing of traditional remedies
 - Promote the validation of ethnoveterinary practices and products.
 - Promote the use of validated ethnoveterinary practices and products.

3. Promote affordability of inputs for disease prevention, control, eradication and pest control.

This will be achieved through the intervention and their activities.

4. Promote affordability of inputs for prevention, control, and eradication of animal diseases and pests.

- Recommend tax incentives on inputs.
- Encourage the private sector to give affordable prices on inputs.
- Strengthen local vaccine production capacity.
- Promote the validation of indigenous knowledge and ethno-veterinary practice.

5. Promote collection and collation of information on disease occurrence and spread and facilitate extension services.

This will be achieved through the following interventions and respective activities.

- Strengthen disease surveillance, laboratory diagnosis and information dissemination
 - Undertake disease surveillance, reporting and investigation.
 - Undertake timely disease control measures.
 - Analyze animal health data.
 - Develop information packages.
 - Disseminate information.
 - Involve communities in disease surveillance and reporting.
- Enhance collaboration with relevant institutions and organizations including the private sector.
 - Establish institutional linkages.
 - Establish electronic communication (e-mail and internet services)
- Strengthen regulatory framework for efficient prevention, control and eradication of animal diseases and pests. This will be achieved through the following interventions and respective activities.
- Harmonize issuance of regulatory permits and enforce regulations on movement of animals and animal products within and across national borders
 - Review procedures for issuance of permits.
 - Strengthen linkages with law enforcement agencies.
 - Enforce movement regulations.
 - Design animal movement permits for different purposes -Slaughter and breeding.
 - Raise awareness among pastoralists on the benefits for livestock movement controls and why they are required.
 - Promote community based livestock movement control systems.
 - Minimize livestock-wildlife interface.
 - Enforce sanitary regulations at all ports of entry and exit.
- Regularly review policies, laws, rules, and regulations on animal diseases
 - Review policies, laws, rules, and regulations on animal diseases.
 - Enact regulations on tsetse and trypanosomosis control.
 - Review policies and laws on tick control.
- Strengthen mechanisms for quality assurance of veterinary inputs
 - Review existing mechanisms for quality assurance.
 - Update mechanisms for quality assurance.

6. In collaboration with other relevant stakeholders, facilitate livestock marketing to enhance disease prevention, control and eradication.

This will be achieved through the following interventions and respective activities.

- Facilitate development of slaughterhouses and meat processing plants in the ASALs, where feasible.

- Hold stakeholder workshops.
- Facilitate livestock trade and market studies.
- Revitalize/ establish livestock trade routes and holding grounds
 - Identify appropriate livestock trade routes and holding-grounds.
 - Revitalize/ establish appropriate trade routes and holding grounds.
- Promote exchange of information on livestock diseases both within the country and regionally
 - Acquire and disseminate information on livestock diseases in the country and in the region.
- Promote partnership approach to service delivery especially in the ASALs.
 - Promote the establishment of sustainable community based animal health delivery systems especially in the ASALs.
 - Promote the establishment of the delivery of veterinary services and inputs by the private sector.

7. Put in place adequate control measures for trypanosomosis and tsetse.

This will be achieved through the following interventions and respective activities listed under.

- Develop and implement policies on trypanosomosis and tsetse control.
 - Develop the policies, in collaboration with the relevant stakeholders.
 - Implement the policies, in collaboration with the relevant stakeholders.
- Carry out directed research on tsetse and trypanosomosis control
 - Carry out research on non-tsetse transmitted trypanosomosis.
 - Carry out research on trypanosidal drugs resistance.
- Regulate and control the use of trypanocides and chemicals used for pest control.
 - Approve and register all trypanocidal drugs and chemicals for pest control.
 - Monitor chemo-resistance to trypanocides and chemicals used for pest control.

3.3 Veterinary Laboratory And Quality Assurance Services

Veterinary laboratory services in Kenya were introduced at Veterinary Research Laboratories, Kabete in 1910 as an exclusive government function. Since then, the demand for laboratory services has grown phenomenally, resulting in another national veterinary laboratory and five regional laboratories each with several operational satellites. This increased demand, coupled with other factors such as the current liberalized economy, the increasing incorporation of the private sector as service providers in the delivery of veterinary laboratory services, the adoption of internationally set quality standards, the emergence of new and more efficient technologies for rapid animal disease diagnosis, and the availability of novel products processed using contemporary biotechnology, has demanded that veterinary laboratories re-orientate their policies, rules, regulations and services. The laboratories support the livestock industry and the Veterinary Department's core function of management and control of animal pests and diseases by providing, in collaboration with other relevant stakeholders, efficient and cost-effective services in areas such as disease diagnosis, investigation, surveillance and epidemiological surveys. Veterinary laboratories also perform the role of regulatory management and quality assurance of veterinary laboratories, animals, animal products, by-products and animal health/production inputs, which is another core function of the Veterinary Department. The aim is to ensure quality and safety of animal production inputs, animals and animal products, thus enhancing public health, environmental quality and local and international trade.

The overall objective of the laboratory and quality assurance services is to facilitate the provision of effective, efficient, and accessible diagnostic and quality assurance services.

The specific objectives are to:

- To facilitate the provision of prompt, efficient and effective disease diagnosis and investigations, disease surveillance, epidemiological surveillance and vaccine performance monitoring.
- To provide quality assurance and certification of veterinary laboratories, animal production inputs, vaccines and other biologics, drugs, pesticides, feeds, premixes and livestock products.
- To facilitate the establishment of an inspection and compliance system of animal health and production inputs and animal products.
- To promote the use of appropriate validated technologies/innovations with potential for improved and sustained agricultural growth.

3.3.1 Policies and strategies

1. Enhance capacity for the provision of accessible and effective diagnostic and quality assurance services.

This will be achieved through the following interventions and respective activities listed under.

- Establish and implement appropriate staffing and staff training mechanisms.
 - Carry out a training needs assessment
 - Strengthen human capacity.
 - Establish an appropriate staff-training programme.
- Establish and implement appropriate staff motivation and retention schemes.
 - Re-deploy staff according to their qualifications
 - Review scheme of service and provide recognition/service awards.
- Strengthen the capacity of both public and private laboratories to carry out laboratory diagnosis and quality assurance of animal, animal products, by-products and animal health/production inputs.
 - Establish a National Veterinary Quality Assay Laboratory.
 - Develop legal statutes that consolidate the regulation of veterinary inputs by the Director of Veterinary Services.
 - Obtain inventory, rehabilitate and rationalize usage of equipment to create economies of scale
 - Procure technology driven equipment and obtain and use efficient, accurate and modern diagnostic technologies with high throughput.
 - Strengthen supportive infrastructure
 - Develop legal statutes that encourage the commercialisation of already existing laboratory services
 - Develop legal statutes that encourage private sector involvement.
 - In collaboration with the Kenya Veterinary establish certification and licensing procedures for both private and public laboratories.
 - Enhance laboratory capacity to meet emerging challenges e.g. Forensic sciences.

- Enhance accessibility of veterinary laboratory services to relevant stakeholders.
 - Set up additional satellite diagnostic and quality assay public and/or private laboratories.
- Enhance stakeholder awareness on the need for laboratory confirmation of animal diseases.
 - Hold meetings, such as workshops, educational field days and barazas, to educate stakeholders on the need for laboratory confirmation of animal diseases and the need for accurate information on animal diseases
- In collaboration with the Kenya Veterinary Board establish internationally acceptable performance standards for public and private laboratories.
 - Establish appropriate internationally acceptable assay validation and laboratory accreditation systems.
- Establish inspection and compliance systems to ensure compliance with the requirements of the National Biosafety Committee and also with internationally set standards
 - In collaboration with the Kenya Veterinary Board, establish a veterinary inspectorate unit to carry out inspection of veterinary laboratories, animals, animal products, by-products and animal health and production inputs to ensure compliance with internationally set standards. It will also ensure that all biologics and genetically modified organisms imported into Kenya are handled according to the requirements of the National Biosafety Committee.
 - Strengthen the biological, chemical and physical containment of both public and private laboratories, in collaboration with the Kenya Veterinary Board.
 - Establish effective zoo-sanitary inspectorate at all points of entry for animals, animal products, by-products, animal health inputs and genetically modified organisms.
- Provide adequate sources of funding.
 - It will be crucial that higher budgetary allocation from the government is secured and/or generated revenue through service charge be retained for use. Alternatively, service grants from suitable organizations can be solicited for.
- To strengthen research linkages and enhance demand-driven research.
 - Develop research programmes that are demand-driven.
 - Involve beneficiaries in identifying issues to be addressed by research.
 - Encourage beneficiaries to invest in research.

2. Promote the regulation of production and quality assurance of products for veterinary use and research.

This will be achieved through the following interventions and respective activities listed under.

- Establish and regularly update rules, regulations and guidelines for production and quality assurance of products for veterinary use and research.
 - The Director of Veterinary Services and the Kenya Veterinary Board will establish and regularly update rules, regulations and guidelines for production and quality assurance of products for veterinary use and research, in consultation with the Attorney General.

- Develop supervisory, advisory and regulatory criteria for public and private veterinary laboratories.
 - The Director of Veterinary Services and the Kenya Veterinary Board will develop supervisory, advisory and regulatory criteria for public and private veterinary laboratories, in consultation with the Attorney General.
- Consolidate the various regulators of veterinary inputs under the coordination of the Director of Veterinary Services e.g. Kenya Bureau of Standards, Department of Public Health, Pharmacy and Poisons Board and Pesticide Products Control Board.
 - Establish effective collaboration with other institutions and organizations involved in quality assurance.
- Promote the collection, collation and dissemination of accurate information/data on the occurrence of animal disease in Kenya and in the region. This will be achieved through the following interventions and respective activities listed under.
- Enhance the Veterinary Laboratory Division's capacity for efficient data processing, retrieval and dissemination.
 - Strengthen capacity for efficient data processing, retrieval and dissemination.
 - Periodically produce animal disease review bulletins.
 - Acquire and use relevant information technology to network laboratories and veterinary and other relevant offices in the field (e.g. E-mail) for effective communication.
 - Establish effective collaboration with institutions and organizations (national and international) on matters relating to laboratory diagnosis of animal diseases.
- Promote the provision of rapid and accurate diagnosis to respond to disease emergencies. This will be achieved through the following interventions and respective activities listed under.
- Establish capacity for rapid diagnosis when handling emergencies on livestock/animal diseases.
 - Make adequate financial provisions for emergency response.
 - Establish memoranda of understanding, operational guidelines and legal framework for necessary authority and response during emergencies.
 - Establish links with the National Disaster and Relief Committee.
 - Maintain stocks of necessary emergency inputs.

3.4 Animal Welfare Services

Animal welfare is often abused under various circumstances and such abuse affects animal growth and production. The Prevention of Cruelty to Animals Act Cap 360, which is a criminal Act, makes most such offences punishable under the law. Animal welfare is an obligation of various authorities including the Director of Veterinary Services (DVS), the Director Kenya Wildlife Service (KWS), the Kenya Veterinary Board (KVB) and the Kenya Society for the Prevention of Cruelty to Animals (KSPCA). These authorities are expected to work in collaboration with law enforcement agencies to promote the observance of the provisions of the various Acts. Despite rapid changes in livestock production systems and the introduction of consumptive utilization of wildlife, these pieces of legislation are not harmonized for the smooth functioning of the industry.

The overall objective of policies and strategies for animal welfare services is to facilitate responsible and humane care, use and management of sport, companion, research and farm animals, pets and wildlife, whether free roaming or in zoos and sanctuaries.

The specific objectives are to:

- regularly review the existing statutes and develop supporting policy framework to better address animal welfare issues.
- monitor and mitigate against animal abuse (cruelty to animals).
- increase awareness on the importance of animal welfare.
- promote training in animal welfare of service providers in veterinary practice, livestock production and wildlife management.

3.4.1 Policies and Strategies

1. Regularly review policy and legal frameworks related to animal welfare.

This will be achieved through the following interventions and respective activities listed under.

- Promote the establishment of National Animal Welfare Oversight Body and its entrenchment in the legal statute(s).
 - In collaboration with the AG, the KSPCA, the KVB, DVS and KWS review their respective Acts and policies to create and entrench the National Oversight Body in the statute(s).
 - Develop and standardize personnel and facility inspection and certification procedures.
 - Develop and standardize research and practice ethics in institutions.
 - Facilitate the formation of animal welfare committees in institutions.

2. Strengthen financial base of animal welfare bodies/agencies.

This will be achieved through the following intervention and activities listed under.

- Diversify sources of funding for the animal welfare bodies and widen the base of prospective animal welfare inspectors.
 - Collaborate with international welfare organizations in sourcing for funds.
 - Organize fund raising for animal welfare and lobby for allocation.
 - Develop and standardize personnel and facility inspection and certification procedures.
 - Develop and standardize research and practice ethics in institutions.
 - Facilitate the formation animal welfare committees in institutions.

3. Promote the availability of and accessibility to extension services in animal welfare.

This will be achieved through the following intervention and activities listed under.

- Involve relevant stakeholders in the provision of extension services in animal welfare.
 - Hold consultative meetings to create awareness among stakeholders on the importance of animal welfare during production, marketing, transport and slaughter.
 - Involve professionals in veterinary practice, livestock industry and wildlife management in the delivery of animal welfare extension services.
 - Promote the use of humane slaughterhouses and facilities.
 - Promote responsible animal ownership.
 - Propose alternatives to the baiting practice to control stray dogs/rabies.

4. Promote the teaching of animal welfare in all institutions that undertake training in animal sciences.

This will be achieved through the following intervention and activities listed under.

- Establish a source of trainers of trainers in animal welfare to build the capacities of training institutions.
 - Develop training curricula in animal welfare for training institutions.
 - Recruit and train trainers.
 - Deploy trainers to train trainers in institutions.
 - Train law enforcement officers in animal welfare.
 - Create awareness among law enforcement agencies on their role in animal welfare.
 - Induct continuing education courses in animal welfare.

3.5. Veterinary Projects Planning and Management Services

The Project Monitoring Unit provides support to the Department of Veterinary Services to enable it achieve its vision and mission by ensuring that projects and programmes are identified, planned, implemented and monitored in line with existing government policies.

In future, it will be ensured that there is active participation of stakeholders in all stages of the project cycle processes including impact assessment.

The overall objective of policies and strategies for project planning and management services is to facilitate collaborative identification, execution and monitoring of projects and programmes for efficient allocation of resources.

The specific objectives are to:

- support and harmonise the process of project identification and planning to avoid duplication of efforts in the investment.
- ensure monitoring and evaluation and impact assessment of projects and programmes
- facilitate co-ordination of projects and programmes by stakeholders

3.5.1 Policies and Strategies

1. To strengthen policy/Project Project Cycle Management.

This will be achieved through the following intervention and activity listed under.

- Strengthen and involve the Director of Veterinary Services in participatory Project Cycle Management and impact assessment through training and awareness creation of the stakeholders and private sector
 - Train the stakeholders and beneficiaries on Project Cycle Management and Participatory methodologies.

2. Prioritise project investment areas in collaboration with the relevant stakeholders.

This will be achieved through the following intervention and activity listed under.

- Establish priority areas of investment using available policy documents e.g. Poverty Reduction Strategy Plan Matrix and Medium Term Expenditure Framework.
 - Rationalise and prioritise livestock projects/programmes.

3. Ensure that no project with animal-health component is implemented in Kenya without the knowledge and approval of the Director of Veterinary Services.

This will be achieved through the following intervention and activities listed under.

- Involve the Director of Veterinary Services and other relevant stakeholders, especially those in the private sector, in the project cycle management to ensure ownership and sustainability of projects.
 - District veterinary officer to make an inventory on all projects and programmes and send the same to the Director of Veterinary Services.
 - develop MoUs between beneficiaries, stakeholders and funding agencies.
 - Identify projects, in collaboration with stakeholders, that require support.
- Facilitate the involvement of local professionals in policy/project cycle management.
 - Involve local professionals in developing, monitoring and evaluation and impact assessment
 - Strengthen capacity for all areas of project cycle management.
- All projects shall be designed to have exit strategies.
 - Develop exit plans for all animal health projects

4. Institutionalise impact assessment of livestock projects.

This will be achieved through the following intervention and activity listed under.

- Institutionalise impact assessment in collaboration with other relevant stakeholders.
 - Involve stakeholders in project identification, development, monitoring and evaluation and impact assessment

3.6 Veterinary Training Services

The government recognizes the need to intensify training of its staff to enhance development in the livestock industry. Though the Department has been unable to absorb all new graduates since 1989, training and equipping the livestock industry with certificate, diploma and degree-holders still remains a priority as the graduates are being trained for self-employment within the industry.

The overall objective of policies and strategies for training services is to develop human resources for enhanced productivity in the livestock sub-sector.

The specific objectives are to:

- maintain high standards of training in all institutions.
- encourage personnel in the public and private sector to continuously upgrade their skills.
- collaboration with the Kenya Veterinary Board and the Kenya Institute of Education, to regularly review and approve curricula and training guidelines.
- Undertake training needs assessment.

3.6.1 Policies and Strategies

1. Facilitate the provision of adequate human, physical and financial resources in training institutions.

This will be achieved through the following interventions and respective activities listed under.

- Diversify sources of funds through a diversified livestock-oriented programmes
 - Establish short specialized training courses covering all aspects in animal husbandry in all training institutions as dictated by demand.
 - Offer short courses to livestock producers in all animal health and production training institutions.
 - Establish continuing education courses for all service providers.
- Promote training programmes to provide value added training to help staff better adopt their new changing roles.
 - Initiate middle level to post-graduate training in areas of leather and rawstock technology, animal health, meat processing technology and other areas relevant to the sub-sector.
 - Establish appropriate training programmes, which address the unique environmental conditions in the ASALs.
 - Strengthen the teaching of extension in all training institutions.
 - In collaboration with the Kenya Veterinary Board, offer diploma, post-diploma, advanced degree (graduate, Diploma, MSc., PhD) programmes in all institutions training personnel in animal health.
- Improve incentives for trainers.
 - Review the scheme of service for trainers.
 - Introduce awards for excellence and long service.
- Encourage private sector participation and investment in more training institutions.

2. Enhance the monitoring, supervision and enforcement of approved standards, training guidelines and curricula.

This will be achieved through the following intervention and activities listed under.

- Regularly review and approve standards, training guidelines and curricula for training institutions, in collaboration with the Kenya Veterinary Board.
 - Harmonize curricula and examinations and standardize accreditation and certification procedures for training institutions.
 - Train trainers of trainers for the animal health and production training institutions.

3. Promote collaborative linkages between relevant stakeholders.

This will be achieved through the following intervention and activity listed under.

- Promote consultative meetings, collaborative training and research between local, regional and international institutions.
 - Hold regular consultative meeting with relevant stakeholders

3.7 Public Health Services

Veterinary public health was started in the country in 1940's to deliver services to the main export abattoirs namely: Kenya Meat Commission (KMC) and Uplands Bacon Factory (UBF). The Ministry of health provided Meat inspection services for the country. In effort to bring meat inspection services under one authority country wide, the Meat Control Act Cap 356, was enacted in 1972. This act empowers the Department of Veterinary Services to take control of all meat inspectorate services from the Ministry of health.

The overall objective of policies and strategies for public health services is to provide quality assurance and safety in foods of animal origin in collaboration with other relevant stakeholders.

The specific objectives are to:

- Provide veterinary public health services in collaboration with other relevant stakeholders
- Develop appropriate policies and review of legislation related to veterinary public health
- ensure surveillance and control of zoonotic diseases (animal diseases that are transmissible to humans), drugs and chemical residues in foods of animal origin
- Facilitate the adoption of environmentally friendly practices within and without veterinary public health institutions such as slaughterhouses and meat processing facilities.
- provide training of skilled manpower in collaboration with other relevant stakeholders
- Provide of humane treatment of slaughter-stock

3.7.1 Policies and Strategies

1. Create an enabling legal and regulatory framework and harmonize service delivery in veterinary public health countrywide.

This will be achieved through the following interventions and respective activities listed under.

- Harmonize service delivery by service providers while working towards the final exit of the Department of Public Health and opening up for private sector participation.
 - Provision of meat inspectorate services by the Director of Veterinary Services.
 - Licensing of private meat inspectors once the regulatory framework is in place.
- Expand veterinary public health authority to adequately cover butcheries and meat processing plants through;
 - Development of appropriate legal framework.
- In collaboration with other stakeholders, develop and adopt standardized Meat Inspection Code for game and other non-conventional livestock (e.g. rabbits, ostriches) in accordance to codex guidelines through adoption and implementation of standardized guidelines.
- Harmonize inspection and certification of all foods of animal origin and by-products to be under the authority of the Director of Veterinary Services.
- Promote enforcement of legislation for environmental protection at slaughter premises and processing plants.
- In collaboration with other stakeholders enforce humane treatment of animals from source to slaughter points.
 - Creation of public awareness to animal welfare issues

- Implementation of statutes, rules and regulations governing animal welfare.
- Review the Meat Control rules to accommodate private sector participation through;
 - Licensing of Private meat inspectors.
- Adopt and adapt contemporary food/meat inspection procedures.
- Adopt and adapt close supervisory network for meat inspectors and other service providers.

2. Facilitate creation of adequate capacity (human, physical and financial).

This will be achieved through the following interventions and respective activities listed under.

- In collaboration with the private sector, encourage the establishment of adequate centralized slaughter facilities for all animal species particularly poultry, camels and pigs.
- Promote upgrading of existing low standard slaughter slabs through;
 - Creation of awareness on public health standards.
 - Implementation of legal requirements on standards.
- Encourage the establishment of slaughterhouses and processing plants in the ASALs where feasible.
- Provide adequate levels of funding for operation costs through appropriate budgetary support.
- Promote private sector involvement in the inspection of foods of animal origin through their incorporation into the legal framework.
- Contract out to the private sector meat inspection services where skilled manpower is a constraint

3. Facilitate adequate training and extension.

This will be achieved through the following interventions and respective activities listed under.

- In collaboration with other relevant stakeholders, open up adequate training opportunities in veterinary public health country wide through increased training institutions.
- In collaboration with other stakeholders, develop curricula and widen course scope within veterinary public health.
- Improve information systems between Veterinary Public Health, Disease Control, Veterinary Laboratory Services and other stakeholders through strengthening of information linkages.
- In collaboration with other stakeholders, create public awareness on the dangers of consuming un-inspected foods of animal origin and environmental concern related to veterinary public health through the development of appropriate information packages and dissemination.

3.8 Hides and Skins Improvement and Leather Development Services

Hides and Skins Improvement and Leather Development Services started in 1909. In 1947 the first legislation for the service and the legal framework was put in place. The mandate at that time was to serve the country for the improvement of hides and skins and setting the ground for the development of the leather processing industries.

Recently the domain of this service has been extended to cover both domesticated and emerging livestock in the country. Primarily the service is set to deliver quality improvement and leather development to facilitate growth of the sub-sector by adding to products using environmentally friendly technologies. The Hides, Skins and Leather Trade Act Cap. 359 provides for three roles including: the regulatory role, which aims at designating the operational areas for curing and processing of hides and skins to control the spread of diseases; the quality assurance, which primarily reduce loss during value adding and facilitate production of high quality hides and skins through approved standards in grading; and improvement services (or extension), which utilize participatory methods to exchange technical know-how on the husbandry, flaying, curing and post curing operations, and dissemination of information amongst the stakeholders. Besides these three roles, due to structural changes, a fourth role has emerged, that of environmental protection.

The overall objective of policies and strategies for hides and skins improvement and leather development services is to facilitate growth and development of an effective and efficient Hide, Skins and leather sector.

The specific objectives are to:

- facilitate provision of efficient Improvement service (extension) in collaboration with other stakeholders.
- regulate by ensuring standards adherence, arbitration on grading and certification while stimulating the sector towards industrialization and applying appropriate environmental friendly technologies.
- facilitate market information systems especially in the ASALs.
- facilitate an enabling environment in the trade through regular review of policies and law governing the sub-sector
- provide appropriate quality assurance services in collaboration with relevant stakeholders.

3.8.1 Policies and Strategies

1. Promote use of cost effective inputs for value adding.

This will be achieved through the following intervention and activity listed under.

- Incentives by the government by reduction of VAT, scrapping of the presumptive income tax on hides, skins and leather, zero-rating duties on raw materials for processing leather and manufacturing leather goods.
 - The DVS to regularly recommend for review of the taxation regime to favour value added activities adding.
- Strengthen capacity building in human, financial and physical resources of the service. This will be achieved through the following interventions and respective activities listed under.

- Train specialized manpower for the sub-sector with other relevant organizations
 - Develop a training strategy after a training needs assessment is done to cover all the cadres and preparing a plan of action on staff training for approval by Departmental Training Committee, Ministerial Training Committee and Directorate of Personnel Management to cover the first five years.
- Facilitate technology transfer to the stakeholders to stimulate development of the sub-sector in collaboration with the relevant stakeholders
 - Conducting and participating in stakeholder seminars and field days to impart and sensitize on improvement activities
- Provide adequate budgetary allocation and implementation of a self-sustaining hides, skins and leather development service through cost-sharing initiatives in collaboration with the relevant stakeholders.
 - Preparation of a position paper to the Veterinary Services Development Fund and Departmental budgetary Committee to propose improvement of the funding level.
- Make working tools for the staff available for use.
 - Initiate improvisation and purchasing of staff working tools.
- Strengthen infrastructural development initiatives by collaborative inter-sectoral participation with the relevant stakeholders.
 - Participate and make recommendations to the inter-sectoral Medium Term Expenditure Framework meetings.
- Establish appropriate for market information systems especially in the ASALs in collaboration with other relevant developmental agencies
 - Develop linkages on market information systems focusing in the ASALs and strengthening;
- Train staff and producers on marketing skills.
- Institutionalize periodic price information dissemination strategy.
- Facilitate the development of improvement packages to create awareness in quality, quantity production and environmental protection
 - Set up a unit under the principal hides and skins officer (PHSO) to coordinate extension\improvement activities in liaison with other officers in the field and developing appropriate curing methods for the ASALs.
- Promote of private sector participation in a framework defining entry/exit plan of action in the improvement domain.
 - Holding stakeholders meeting to develop an action plan on entry\exit of improvement portfolio
 - Establishment a Hides, Skins and Leather Advisory Board
- Strengthen the management and regulatory function of the service. This will be achieved through the following interventions and respective activities listed under.

- Review of legal and policy framework and implementation schedule in aspects of disease control, quality assurance and environmental protection.
 - Initiating and participating in legal and policy review exercises
 - Holding periodic meetings with relevant stakeholders on issues of environment, quality assurance and related issues
- Offer policy support to encourage domestic value added activities in the sector
 - Forming guidelines on all levels of intervention for value added activities
- Strengthen Quality assurance strategy. This will be achieved through the following interventions and respective activities listed under.
- Participating in standards formulation and developing stronger linkages with all the relevant stakeholders.
 - Adoption of approved standards and creating awareness to staff and relevant stakeholders by strengthening linkages with all organizations on quality assurance
- Strengthening the capability in providing quality assurance service with other relevant stakeholders
 - Increasing staff output towards farmers/producers on contact and dissemination rate
 - Train frontline staff, butchers/producers and flayers on appropriate methods of ante and post slaughter operations to improve on quality hides and skins.

3.9 Animal Identification Services

The Branding Act Cap 357 makes provision for identification of livestock by making specific marks on cattle, the creation of Registrar of Brands and maintenance and up dating of Brands register. Branding is a tool of disease surveillance and a measure to control cattle theft.

The Act ignores identification of other animal species. The situation is further compounded by dormancy of the brand Registrar and lack of an updated register. In the past, cattle identification was performed using hot iron, however, new identification technologies have been developed such as tattooing, ear tagging, microchips and nitrogen marking. The policy and legal frameworks need to be repealed and redrafted to take on a new title “Animal Identification Act” which will accommodate other species and new technologies of animal identification.

The overall objective of the policies and strategies for identification services is to facilitate identification of animals using approved identification technologies.

The specific objectives are to:

- provide guidelines and regulations for identification of livestock with approved identification technologies.
- minimise livestock rustling within and across borders
- Enhance disease surveillance and control.
- Provide a harmonized method of animal identification for breeding.

3.9.1 Policies and Strategies

1. Facilitate establishment of identification codes/marks for specific regions and other animal species.

This will be achieved through the following interventions and respective activities listed under.

- Identify specific identification marks for specific regions and other animal species.
 - Review the existing identification marks
 - Develop and implement new identification marks for new regions
 - Train personnel for livestock identification
 - Establish and implement uniform animal identification systems.
- Educate the communities on identification marks and their importance
 - Hold border harmonisation and regional meetings
 - Support council of elders to deal with livestock rustling
 - Hold stakeholders consultative meetings to increase awareness on the importance of animal identification

2. Facilitate revitalisation of the Registrar of identification marks of animals and identification activities.

This will be achieved through the following intervention and their activities.

- To revitalise the registrar of identification marks and activities
 - Revitalise the Registrars' office
 - Up-date the register

3. Promote humane identification methods of livestock and to ensure quality of hides and skins.

This will be achieved through the following intervention and activity listed under.

- Encourage use of humane identification methods and minimise damage of hides and skins
 - Identify and adopt new identification technologies

4. Facilitate amendment of the Branding Act (Cap 357).

This will be achieved through the following interventions and activity listed under.

- Amend the Branding Act
- Regularly review the Animal Identification Act.
- Review and up-date the Animal Identification (Branding) Act and amend to meet OIE standards

3.10 The Kenya Veterinary Board Services

The Veterinary Surgeons Act Chapter 366, which created the Kenya Veterinary Board, is an Act of Parliament whose date of commencement was 13th October 1953. The Act was enacted to make provision for registration of veterinary surgeons and regulate veterinary education and to deal with other matters incidental to and related to veterinary practice. Since the enactment of the Act it has undergone several revisions the last one having been made in 1993. Currently it requires to be amended to accommodate other trained animal health services providers.

The overall objective of the policies and strategies for the Kenya Veterinary Board Services is to make provision for registration of veterinary surgeons and other service providers and regulate veterinary education and deal with other matters incidental and related to veterinary practice

The specific objectives are to:

- register all qualified veterinary surgeons and other animal health service providers.
- license and regulate veterinary practices.
- monitor and regulate curricula of veterinary education.
- promote adherence to code of ethics and conduct among animal health providers.
- To regularly review Veterinary Surgeons Act Cap 366 and rules therein, in conjunction with the Director of Veterinary Services and the Minister at the time in-charge of Department of Veterinary services.

3.10.1 Policies and Strategies

1. Regularly review the Veterinary Surgeons Act and Board policies to cater for animal health technicians and other animal health service providers. This will be achieved through the following intervention and activities listed under.

- The Board in collaboration with the Director of Veterinary Services, and the Minister at the time in charge of the Department of Veterinary Services will regularly review policies and the Act and make rules as deemed necessary.
 - The Board shall register veterinary graduates from Universities and institutions not recognized by the Board only if - (a) s/he possesses skills that are not available locally or (b) s/he has brought in funds for a specific project in a given area and for a specified period. In both cases the veterinary professional in question must be willing to be understudied by a Kenyan veterinary professional at the cost of the applicant.
 - Any non-governmental organizations, Community based organizations or development agencies wishing to retain the services of a veterinary professional from Universities and institutions not recognized by the Board shall be required to retain a Kenyan veterinary professional counterpart to understudy their appointee. The organization is obliged to notify the Board the capacity in which the Kenya counterpart is employed.
 - Review the Veterinary Surgeons Act and rules and/or Board policies to accommodate other service providers.
 - Register on payment veterinary surgeons and animal health technicians as they apply.
 - Register foreign trained veterinary surgeons and animal health technicians who pass the proficiency exam.
 - Maintain names of veterinary professionals and practitioners in the various registers after the payment of retention fee and/or practice fees.
 - Receive all applications for private new clinics and laboratories. Only premises run by registered veterinary professionals shall be inspected before the veterinary practitioner is licensed on payment of a fee.
 - Inspect and license new private veterinary clinics, hospitals and laboratories.
 - Routine inspection of operational veterinary clinics and laboratories and drug outlets.
 - Handle disciplinary and arbitration cases.
 - Finalize curriculum for community animal health workers (CAHWs).
 - Board to interact with other relevant GoK Departments, NGOs, Community-Based Organizations, which provide animal health services.

2. Strengthen the capacity of the Board to better regulate veterinary education and inspection practices and laboratories.

This will be achieved through the following intervention and activities listed under.

- The Board will source for funds to strengthen its capacity through fees payable by professionals, levies where veterinary services are provided or/and through development partners.
 - Set a Board of examiners for all veterinary professional trained in institutions not recognized by the Board.
 - Develop proposals to attract funds from the Veterinary Services Development Fund and other development agencies.
 - Review curricula for veterinary professionals in both private and public institutions at least once every ten years.
 - Maintain names of veterinary professionals and practitioners in the various registers after the payment of retention fee and/or practice fees.

3. Promote continuing education for the veterinary professionals.

This will be achieved through the following intervention and activities listed under.

- The Board shall promote the quality of delivery of veterinary services by facilitating continuing education courses and encouraging veterinary professionals to participate in scientific conferences, seminars and workshops and through strengthening its regulatory role.
 - Inform relevant stakeholders of its decisions and any important issues/events through the print and electronic media and organize scientific seminars, conferences and workshops.
 - Establish electronic communication e.g. e-mail and internet services

CHAPTER 4

MONITORING AND EVALUATION OF POLICIES AND STRATEGIES

The stated policies and strategies will need to be closely monitored and evaluated to ensure that the path towards achieving the vision is maintained and any adjustments made if necessary. The evaluation will entail tracking deliverable outputs and expected outcomes for each strategy and policy respectively. The outputs and expected outcomes are outlined in this chapter according to the specific group of services considered. It is anticipated that the planning and monitoring unit of the Department will take up the role of monitoring and evaluation.

4.1 Animal Breeding Services

- An efficient and strengthened AI services delivery system in place.
- Animal breeding services accessible to farmers.
- Trained personnel to run the animal breeding industry.
- Farmers enlightened on artificial breeding of animals.
- Animals with high genetic potential and productivity.
- Venereal diseases controlled.
- Appropriate and enabling policy and regulatory framework for a sustainable animal breeding industry in place.
- Established quality assurance laboratories for breeding materials at Department of Veterinary Services.
- Other animal species part of artificial breeding programmes.
- An animal gene bank in place.
- More players in the animal breeding industry.
- Appropriate infrastructure.
- Central data banks established.
- Bull schemes established.
- Progeny tested bulls.
- Short term courses for farmers.
- Harmonized training curricular for inseminators.
- Appropriate extension packages available to farmers.
- Stakeholders keeping records.
- Superior and disease breeding males in ASALs.
- Linkage with regional and international breed and farmer organizations.
- Information on economics of breeding indigenous animals available.
- An inventory of Kenya's indigenous livestock genetic resource available.
- Documented indigenous breeding technologies and practices.
- Guidelines and procedures on the export and importation of livestock available.
- Livestock producers and other players in the livestock sub-sector aware of the new policies and regulations.

4.2. Animal Disease and Pest Control

- Improved Financial resources
- Human and physical capacity developed.
- Prevention, control and eradication of animal diseases improved.
- Validated ethnoveterinary practices and products in use and being marketed.

- Prevention and control of animal pests improved.
- Memoranda of Understanding for regional approach in place.
- Emergency preparedness mechanism in place.
- Private sector participates in animal health service delivery especially in the ASALs.
- Affordable inputs available.
- Disease surveillance strengthened.
- Laboratory diagnosis strengthened.
- Linkages with institutions and organizations established.
- Regulatory permits and issuance procedures harmonized.
- Collaboration with law enforcement agencies strengthened
- Movement of livestock and livestock products regulated.
- Supportive policies, laws, rules and regulations in place.
- Mechanisms for quality assurance of veterinary inputs strengthened
- Awareness on opportunities for investment in ASALs created.
- Livestock trade routes and holding-grounds revitalized/ established.
- Information on livestock diseases available regionally and is disseminated.
- Communities are sensitized on the benefits of controlling livestock movement.
- Communities participate in livestock movement control.
- New technologies on trypanosomosis and tsetse control are developed.
- Resistance to chemo-therapeutics for trypanosomosis minimized.

4.3 Veterinary Laboratory and Quality Assurance Services

- Adequate manpower that is appropriately trained.
 - A training needs assessment carried out
 - Additional staff recruited
 - Staff appropriately trained
- Appropriate infrastructure in place
 - A National Veterinary Quality Assay Laboratory in place
 - Existing diagnostic laboratories strengthened.
 - Supportive infrastructure in place
 - Appropriate and functional equipment in place
- Laboratory services that are accurate and efficient.
- Laboratory services that are accessible to the livestock sub-sector
- Regulation of veterinary inputs consolidated under the Director of Veterinary Services.
- Legal statutes that facilitate commercialisation of laboratory services in place.
- Operational rules, regulations, guidelines and authority/legal framework in place for public and private diagnostic, quality assay and research laboratories in place.
- Stakeholder awareness on the need for laboratory confirmation and the need for accurate information on animal diseases created
- Increased sample collection and submission
- Appropriate diagnostic and quality assurance technology and standards in place in public and private laboratories.
- Assay validation and accreditation systems for laboratories established.

- Efficient data analysis systems established.
 - Accurate laboratory data on animal disease outbreaks available.
 - Effective feedback mechanisms with clients in place.
 - Decisions on disease control improved.
 - Animal disease review bulletins produced periodically.
- Effective and efficient means of communication in place.
- Effective linkages with other laboratories, institutions and organisations established.
- Memoranda of Understanding in place to enhance multidisciplinary approach (inter-ministerial, inter-agency links) to issues.
- Adequate financial resources available.
- Appropriate biological, chemical and physical containment in laboratories in place.
- Appropriate inspection and compliance mechanisms developed
 - Zoo-sanitary inspection points in place at all points of entry
 - Mechanisms that ensure that all biological materials comply with the standards and requirements of the National Biosafety Committee established.
- Operational guidelines and legal framework to enable quick and accurate diagnosis during emergencies established.
 - Readily available emergency inputs in place.

4.4 Animal Welfare Policies

- Laws are changed as appropriate.
- National Animal Welfare Oversight Body entrenched in the statute(s) and operational.
- Institutional animal welfare committees formed and are functional.
- Linkages with regional and international animal welfare organizations created.
- Regular fund raising meeting held.
- Standards on various aspects of animal welfare documented and in place.
- Standardized facility and personnel inspection procedures documented and in place.
- Budgetary support is provided.
- Honorary animal welfare officers appointed.
- Consultative meetings held.
- Memorandum of understanding between the relevant stakeholders in animal welfare.
- Documented and actualized procedures of responding to cases of animal abuse and emergencies.
- Better informed pet owners.
- Humane slaughterhouses and facilities widely established.
- Humane slaughter methods widely practiced.
- Training curricula on animal welfare developed.
- Trained trainers of trainers in animal welfare.
- Deployed trainers of trainers to institutions.
- Trained law enforcement officers.
- Law enforcement officers aware of their roles in animal welfare.
- Continuing education in animal welfare held.
- Reduced incidences of animal abuse and cruelty.

4.5 Veterinary Projects Planning and Management Services

- The Project Cycle Management articulated and applied by stakeholders.
- Livestock projects and programmes prioritised and implemented without duplicating of efforts.
- Ownership of projects/programmes is ensured.
- Local professionals involved in Project Cycle Management.
- Memoranda (memorandum) of Understanding developed.
- Inventory of projects and programmes in place

4.6 Veterinary Training Services

- Standardized accreditation and certification procedures in place.
- Harmonized and standardized curricula and examinations in place.
- Retain skilled manpower in the public training institutions.
- Improved financial base for the institutions.
- Increased number of training institutions.
- Expanded revenue base to meet operational costs.
- Collaboration between institutions.

4.7 Veterinary Public Health Services

- Meat inspectorate services provided and harmonized.
- Private meat inspectors licensed.
- Regulatory legal framework for private practise developed.
- Action plans for construction and modernisation of slaughter facilities available.
- Environmental practises adopted/adapted.
- Standards of residues in meat adopted.
- Residues analysis services provided.
- Training within the meat sector opened up to the relevant stakeholders.
- Code for game meat inspection and non-conventional animals developed.
- Inspection of all foods of animal origin and animal products will be under veterinary certification.
- Major zoonotic diseases will be under control.
- Safety of foods of animal origin from source to plate.
- Improved human health within a sustainable environment.
- Improved animal welfare from production to slaughter.

4.8 Hides and Skins Improvement and Leather Development Services

- Efficient and effective improvement service.
- High quantity and quality value added products available.
- Trained and specialized manpower.
- An environmental protection strategy in place and the environment is protected.
- Processing and manufacturing in private sector domain.
- Established hides, skins and leather advisory board.
- Market Information system linkages are established.
- Developed extension packages.
- Policy and legal framework for the sub-sector are established.

4.9 Animal Identification Services

- Revitalised Registrar and identification activities.
- Appropriate identification marks for each region and animal species.
- An up-dated register.
- Informed stakeholders on the importance of animal identification.
- Incidences of cattle rustling are reduced.
- Appropriate and cost-effective technologies identified and adopted.
- An appropriate and relevant identification Act in place.
- Appropriately trained personnel.

4.10 The Kenya Veterinary Board Services

- An amended Veterinary Surgeons Act.
- Supportive policies in place.
- Up dated registers for veterinary surgeons, animal health technicians available.
- Board of examiners in place.
- Proficiency examinations set.
- Register for all licensed private clinics and laboratories.
- Reviewed Veterinary training institutes curricular.
- Private clinics and laboratories inspected
- Reported cases heard are and determined.
- Annual license and retention fees paid.
- Proposals to source for funds developed.
- Board sub-committee constituted.
- Informed stakeholders.
- Continuing education courses are held.

CHAPTER 5

CONCLUSIONS AND THE WAY FORWARD

Despite the dynamic policy and physical environment affecting livestock production, marketing, consumption, biodiversity and welfare, the policies regulating delivery of veterinary services in Kenya have not been reviewed in response to the changes. Consequently, a number of policies have constrained efficient delivery of veterinary services to the consumers to achieve desirable outcomes. At the same time, there has been limited public awareness of the policies pursued by government with respect to delivery of veterinary services.

The aim of the policies and strategies spelt out in this document was to provide guidelines to veterinary practitioners in public and private sector, farmers, investors, frontliners extension workers, researchers, civic leaders and all relevant stakeholders to develop a common understanding regarding the policies and strategies to be adopted by the Department of Veterinary Services in undertaking the mandated role.

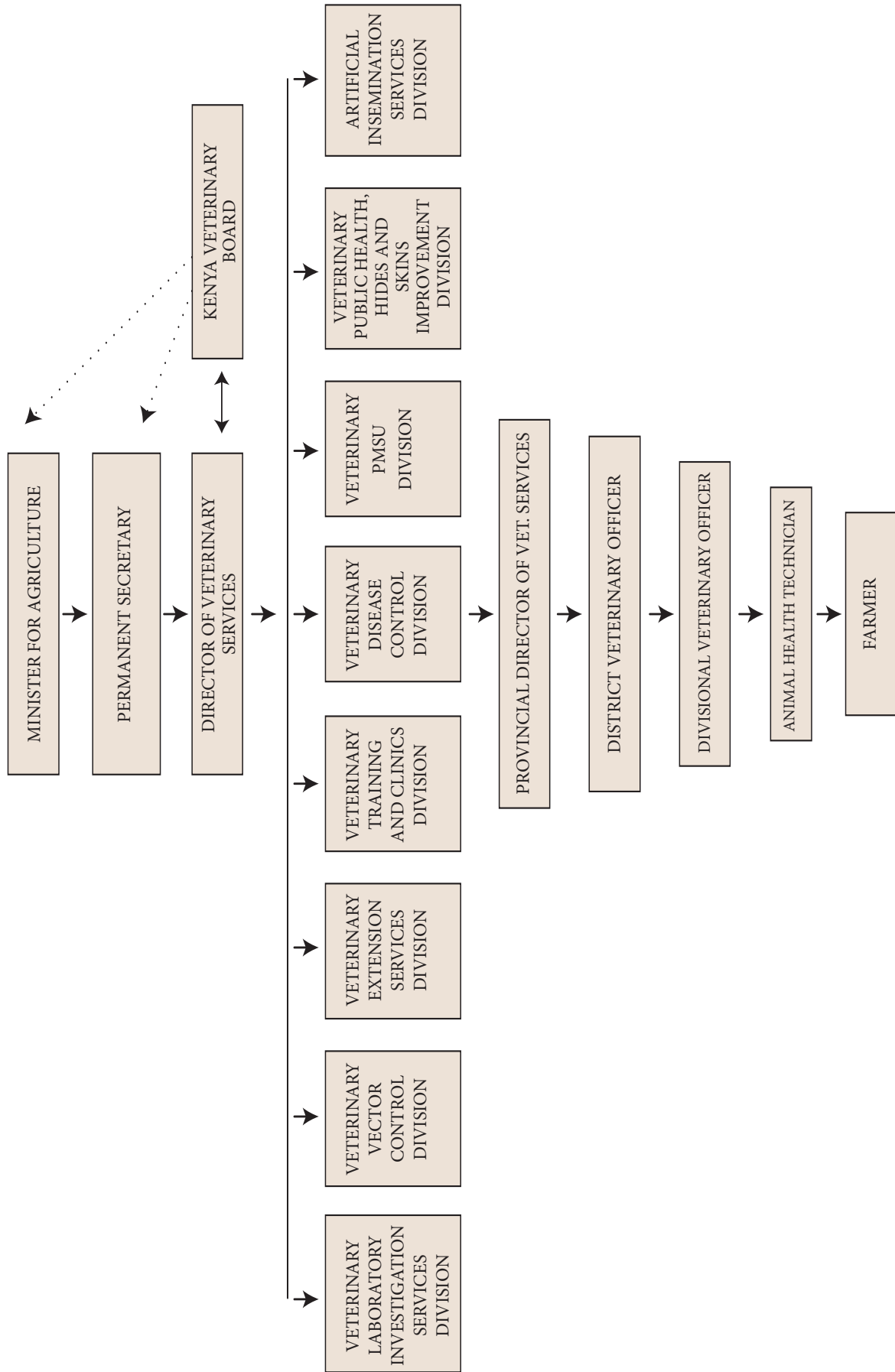
The policies and strategies have been identified through a consultative process, including relevant stakeholders. The constraints to achieving efficient delivery of veterinary services were identified before coming up with the appropriate policies and interventions to overcome the constraints.

The preconditions for success for the policies and strategies in achieving the stated vision will depend on a number of factors. These include:

- Commitment and political good will to adopt and implement the proposed policies and strategies.
- Commitment by all relevant stakeholders to provide the necessary support by playing the roles specified in the proposal.
- Availability and access to markets for the anticipated increased livestock and livestock products and by-products.
- Governments in the region will support border harmonization and conflict management meetings.

The time frame for the vision to be attained is 10 years. However, regular monitoring and evaluation will be necessary to establish if the policies and strategies require adjustment. The future of the livestock industry and by extension the welfare of most Kenyans lies in careful implementation of the strategies proposed.

Existing Organogram for The Department of Veterinary Services



Annex 6.3

**OLS LIVESTOCK PROGRAMME
STANDARDS AND GUIDELINES FOR
PARTICIPATING AGENCIES
1999**



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1. Introduction

This document has been prepared through a process of consultation with UNICEF and NGO co-ordination and field staff, and counterparts, during various livestock co-ordination meetings in Lokichokio and Nairobi during 1998 and 1999.

The aim of these standards and guidelines is to assist all OLS agencies implementing livestock projects in southern Sudan to carry out high quality work for the benefit of the southern Sudanese people. All agencies should read this document and take the standards and guidelines into account when planning projects, writing proposals, developing budgets etc. We have set ourselves some high targets to reach and it may be that not all of these standards and guidelines can be met by all agencies at all times, especially under the very exacting conditions in many parts of southern Sudan. However all agencies should aim to reach them wherever and whenever possible. A process of peer review is outlined in section 7 with the aim of identifying projects with problems and assisting those projects to solve those problems.

The situation in southern Sudan is constantly changing and therefore this document should be updated on an annual basis to reflect the current situation.

2. OLS Livestock Programme Goal

- to improve household food security in southern Sudan through increasing productivity of livestock

3. OLS Livestock Programme Objectives (long term)

- eradicate rinderpest from southern Sudan
- control epidemic and endemic diseases
- develop effective and sustainable animal health services

4. OLS Livestock Programme Strategies

- development of sustainable community-based animal health service
 - capacity-building - UNICEF/NGO personnel, animal health workers, counterparts, communities
 - training of animal health workers at all levels
 - cost recovery system for animal health services
 - facilitate participation by all sectors of the community - young, old, male, female, rich, poor
 - complement EVK with modern disease control methods
 - participatory approach to planning, implementation and evaluation
 - facilitate privatisation of animal health services in areas where it is feasible
- co-ordination of activities between UNICEF and NGOs, with counterparts, between northern and southern sector
- development of livestock policies relating to disease control and use of medicines
- maintain emergency response capacity

- effective monitoring and evaluation system
- comprehensive rinderpest vaccination and active disease surveillance

5. Core Livestock Programme Activities

5.1 Capacity-building - workshops, training, dialogue, supervision, gender balance

- counterparts
- community, VCC
- animal health workers - CAHW, AHA, Stockpersons

5.2 Disease Control

- rinderpest control - vaccination, sero-monitoring, surveillance, outbreak -reporting
- other disease control - vaccination, treatment
- livestock movement
- supply of vet equipment and medicines
- ethno-veterinary knowledge
- public health

5.3 Payment for Animal Health Services

- cost recovery system
- remuneration of animal health workers
- privatisation

5.4 Monitoring and Evaluation

- baseline survey
- planning
- reporting - monitoring forms and narrative
- evaluation

5.5 Emergency Response

- monitoring
- contingency planning

5.6 Agency Administration

- recruitment
- communications
- administration
- logistics
- fund-raising
- transport
- co-ordination

6. Standards and Guidelines

6.1 Capacity-building

In line with one of the main objectives of the livestock programme, development of an effective and sustainable animal health service, capacity building is an important part of the programme.

6.1.1 Community participation

The community is defined as everyone living in a given geographical area; men, women, young and old. It includes livestock owners, animal health workers, traditional leaders (chiefs, cattle camp leaders, god leaders), civil administrators, and relief officials (SRRA, RASS, FRRA).

Guidelines:

- The long term aim of all projects should be for the community to take full responsibility for relevant aspects of the project.
- Agencies should have a plan for the gradual hand-over of all the components of the project to the community.
- Effective community participation should be fostered through workshops, dialogue and meetings.
- The roles and responsibilities of different members of the community should be agreed and understood (development of a social contract).

Standards:

- An organisational chart should be developed with the participation and agreement of all stakeholders, detailing the relationships between the agency and the community and within the community.
- The organisational chart should be based on the suggested basic organogram (Annex One).
- The organisational chart should be easily understood, indicate reporting and supervisory relationships, and should aim to empower trained members of the community. It should clarify the role of UNICEF and NGO as facilitators.
- The organisational chart should be reviewed and revised as the project evolves.
- At least one three-day community dialogue workshop should be carried out per location per year.

6.1.2 Veterinary Co-ordination Committees (VCCs)

Guidelines:

- The committee should represent the community and act as the link between the community, the NGO, and the community-based animal health project.
- It should be involved in planning, implementation, monitoring and evaluation of the programme.
- formation and selection of the VCC should be the responsibility of the community, with guidance from the agency.
- Committee composition; there should be a fair social and geographical representation. Livestock owners should be in the majority and women should be represented. Literacy of all members is not essential. The agency should play an advisory role.
- The agency should work with the committee towards a clear understanding of its roles and responsibilities. The committee should be trained appropriately to understand and carry out these roles and responsibilities effectively following OLS livestock programme VCC training guidelines; emphasising livestock programme methods and policies, roles and responsibilities of the VCC, book-keeping and record-keeping, and participation.

Standards:

- At least one VCC per payam/sub-district.
- The VCC should meet at least once every three months.

6.1.3 Counterpart Relationships and Participation

Counterpart is defined as the relief organisation (SRRA, RASS, FRRA) and the animal health officers of the relief organisations.

Guidelines:

- The agency-counterpart relationship should be transparent and show mutual respect.
- The agency and counterpart should practise participatory planning, implementation, monitoring and evaluation.
- There should be a clear understanding of the roles and responsibilities of both the agency and the counterpart.
- Dialogue should be used to resolve differences and grievances.

Standards:

- Agencies should provide copies of all project proposals and reports to counterparts at national and county/district levels. Counterparts similarly should share their proposals and reports with the agency.
- Agency field staff should meet with local vet co-ordinator/supervisor at least once per month. Where the agency does not have a permanent presence agency staff should communicate with the local vet co-ordinator/supervisor at least once per month.
- Agency project co-ordinators should meet with the Chief Veterinary Co-ordinators of SRRA, RASS or FRRA as appropriate at least once every six months.

6.1.4 Gender

Guidelines:

- All projects should be gender-sensitive at all stages; planning, implementation, monitoring and evaluation
- Agencies should encourage participation of all members of the community in the project. Where necessary agencies should seek to empower marginalised members by specifically consulting and targeting representative organisations or individuals.
- Agency staff should receive gender-awareness training and put it into practise.
- All agencies should be equal opportunities employers.
- The agency should facilitate improved understanding and attitude to gender issues through training and education of community.
- Where appropriate agencies should practise positive discrimination to reduce gender imbalance e.g. women should be encouraged to attend and participate in community dialogues and workshops with men or in their own groups.

6.1.5 Training

6.1.5.1 Community-based animal health workers (CAHWs)

Guidelines:

- CAHWs should be trained following the curriculum of the OLS Livestock Programme CAHW Training Manual. The manual should be reviewed every two years and revised where necessary.
- CAHWs should be able to diagnose and treat local endemic diseases, carry out vaccination against rinderpest and other diseases, report disease outbreaks, manage cold chain for vaccination, collect cost recovery money, correctly fill monitoring forms and conduct community dialogue. The importance of dialogue should be emphasised during the training.

- Potential CAHWs should be selected by their community to work in their home area as per the criteria in the OLS Livestock Programme CAHW Training Manual and should be deselected by their community if not performing properly.
- The minimum number of CAHWs required to provide basic services to the project area should be agreed with the community taking into account livestock population, clan structure, livestock movements and geographical area.
- After training the agency should provide follow up, supervision, veterinary technical support and refresher training.
- CAHWs should be reintroduced to their communities after training by the agency.

Standards:

- The CAHW training course should be at least 14 days duration.
- Refresher training should be carried out after 6-12 months, and should be at least 3 days of continuous training. Total days of refresher training should be at least 7 days in a 12 month period.
- CAHWs should be trained in groups of not more than 15 and at least 5.
- CAHW training should be facilitated by two trainers of which at least one is an experienced animal health professional. Adequate translation should be provided.
- On qualification the CAHW should receive a certificate, identification card and a basic CAHW kit (Annex Four).

6.1.5.2 Animal Health Auxiliaries (AHAs)

Guidelines:

- AHAs should be able to carry out all the CAHWs duties, collect and check CAHWs monitoring forms and cost recovery, supervise CAHWs, assist in training and translation, conduct community dialogue, prepare reports, collect samples for disease investigation and respond appropriately to a report of a disease outbreak as detailed in the OLS Livestock Programme Outbreak Reporting Guidelines and Sampling Procedures.
- AHA training should follow the approved curriculum developed by VSF-Belgium and the OLS Livestock Programme.
- The South Sudan Animal Health Training Institute should be manned by qualified and experienced staff.
- AHA selection should be carried out jointly by the community, counterparts and the agency and should adhere to the selection guideline outlined in the document AHA Selection Procedure.
- After qualification the agency should provide follow up and on-the-job training for the AHA in the field.

Standards:

- The AHA course should be a minimum of four months continuous residential training.
- A certificate of qualification should be issued, and the AHA reintroduced back to the community.
- At least one AHA should be trained per payam/sub-district
- Minimum qualification of AHA trainers should be Stockperson.
- Class size should be a maximum of 22.

6.1.5.3 Stockpersons

Guidelines:

- Stockpersons should be able to do all the duties of an AHA but should also be capable of project planning, supervision, training and co-ordination.
- Stockpersons should be selected from AHAs who perform well during training and field work.
- Their training should be based on the standard VSF-B curriculum developed in collaboration with OLS Livestock Programme.
- The South Sudan Animal Health Training Institute should be manned by qualified and experienced staff.
- After qualification the agency should provide follow up and on-the-job training.

Standards:

- Stockperson course should be a minimum of five months continuous residential training.
- Stockpersons should be issued with a certificate of qualification.
- At least two stockpersons should be trained per county or one per district.
- Minimum qualification of a Stockperson trainer should be Stockperson with additional training skills and 1-2 years field experience.

6.1.5.4 Fridge Operators

Guidelines:

- Fridge operators should be capable of maintaining the fridges so that vaccines are correctly stored.
- Wherever there is a fridge a member of the local community should be trained to maintain it.
- Training of fridge operators should follow the standard UNICEF fridge operator training curriculum (MSL to provide notes).
- Fridge operators should be literate to ensure good record-keeping.
- Fridge operators should be ready to support both human and animal vaccination campaigns where necessary
- AHAs, Stockpersons and agency staff should be trained as trainers in fridge operation in order to carry out training of local fridge operators.

Standard

- Two fridge operators per location where a fridge or fridges are situated.

6.2 Disease Control

Guidelines

- Community dialogue should be a major component of disease control.

Standards

- All medicines, vaccines and veterinary equipment should only be issued to trained animal health workers.

6.2.1 Rinderpest Eradication

Guidelines

- All agencies should include rinderpest eradication as high priority in their activities; vaccination, sero-monitoring, surveillance and outbreak reporting, as part of the long term objective of eradication of rinderpest from southern Sudan.

- As the OLS Livestock Programme progresses towards rinderpest eradication, activities and policies to reach this goal will vary between areas depending on endemic/epidemic status. All agencies should conform to the current policies and activities agreed for the area(s) in which they are working.

Standards

- Only rinderpest vaccine that has been PAN-VAC tested should be used.
- All heat stable rinderpest vaccine should be stored in a fridge at 2-8 degrees Celsius until issued to vaccination teams.
- Heat stable vaccine should not remain at ambient temperature for longer than 30 days before use. If this should occur by mistake, the vaccine should be clearly labelled with all details, returned to the fridge and sent to Lokichokio in a cool box for testing.
- reconstituted rinderpest vaccine should be used with 2 hours of dilution.
- All cattle should receive three annual vaccinations and should be ear-notched.
- All vaccinations should be recorded using standard OLS punch cards and vaccination forms.
- All rumours or reports of outbreaks of rinderpest-like disease should be reported and investigated following the 'OLS Livestock Programme Livestock Disease Outbreak Reporting Guidelines and Sampling Procedures'.
- At least 40 blood samples should be collected annually from each payam for rinderpest antibody testing to monitor vaccination efficiency.
- All agencies should carry out active surveillance for rinderpest following the OLS guidelines (in preparation).
- OLS agencies should collaborate with non-OLS agencies involved in rinderpest control.
- All agencies should promote the agreed policy of payment for rinderpest vaccine until such a time as it is agreed that vaccination should be free of charge and an alternative system for vaccinator remuneration is in place.

6.2.3 Control of other diseases

Guidelines

- Agencies should identify the most important diseases affecting livestock in their project area through baseline survey and community dialogue, and, where technically possible, train and equip CAHWs to control those diseases.
- OLS disease control policies for individual diseases should be followed by all agencies (Annex Two).
- Medicines and vaccines supplied to animal health workers should be good quality products purchased from manufacturers/suppliers with a proven record of quality.
- Medicines and vaccines supplied to animal health workers should be safe to use, easy to store and transport, should not cause resistance, and should be environmentally safe.

In the interests of sustainability and future privatisation of medicine delivery, medicines supplied should be commonly available in the region and cost-effective provided this does not compromise product quality.

- Medicines and vaccines should be supplied regularly to meet ongoing needs, and supplies increased when necessary to meet increased need e.g. due to outbreaks.
- Medicines should be correctly stored and transported from time of purchase to issue to animal health workers.
- Where possible medicines and vaccines should have at least 12 months before the expiry date at the time of delivery to the agency.

- Expired medicines should be disposed of in an environmentally friendly way (Annex Five).
- All agencies should supply the same or similar medicines and vaccines.

Standards

- No expired drugs or vaccines should be issued to animal health workers, except where they have been tested and shown to be still effective with written evidence from the testing laboratory.
- Each CAHW should be trained to use and issued with at least the minimum range of medicines; one trypanocide, one broad spectrum injectable antibiotic, one anthelmintic, and an acaricide.
- All CAHW treatments should be recorded in the standard OLS picture monitoring forms and summarised in the standard OLS summary forms.
- All vaccinations should be recorded using standard OLS punch cards and vaccination forms.

6.2.4 Veterinary Equipment

Guidelines

- All equipment should be technically and culturally appropriate, easy to transport and use, and easily maintained.

Standards

- At least one fridge and one cool box should be provided per payam/sub-district, security permitting.
- All cold chain equipment deployed should be checked by the UNICEF/OLS cold chain technician as meeting the standards required for use in southern Sudan.
- Each vaccination team should be provided with the basic vaccination kit (Annex Three).
- Each CAHW should be provided with the basic CAHW kit (Annex Four).
- All locations should be equipped with the standard OLS basic sampling kit (as detailed in the Outbreak Reporting Guidelines and Sampling Procedures). This should be regularly replenished as items are used so that the kit is always ready for use in the face of an outbreak.

6.2.5 Livestock movements

Guidelines

- All agencies should regularly monitor the local movement of livestock; for grazing, water, trade or other reason. A seasonal calendar of cattle movement for the area should be prepared in collaboration with counterparts and the community and a copy sent to the OLS Livestock Programme Co-ordinator.
- All agencies in collaboration with counterparts and the community should participate in the development and implementation of an internal and external health certification system for livestock and livestock products, to facilitate internal and external trade.

6.2.6 Ethno-veterinary knowledge (EVK)

Guidelines

- Ethno-veterinary methods and practises (including quarantine) should be investigated, recorded, evaluated, improved and disseminated.
- Effective EVK methods and practises should be encouraged and included in the CAHW, AHA and Stockpersons training courses to complement modern disease control methods.
- All agencies should seek to develop relationships with local EVK practitioners and involve them in the project.

6.2.7 Public health

Guidelines

- At slaughter points all agencies in collaboration with counterparts should promote the development of hygienic slaughtering and butchering practices, and facilitate meat inspection, through training and dialogue.
- All CAHWs should be trained to be aware of the common zoonotic diseases in southern Sudan and know the OLS policies on control of these diseases (Annex Two). CAHWs should be trained to carry out extension in prevention of zoonotic diseases for their community.

Standards

- Animal health workers should be trained to know the milk and meat withdrawal periods of the commonly used medicines, and inform livestock owners.
- Guinea worm awareness should be included in the CAHW training and all CAHWs provided with guinea worm filters and pipes.

6.3 Payment for Animal Health Services

For a sustainable animal health service the long-term aim of the programme is privatisation of animal health services and medicine supplies. For areas of southern Sudan where this is not yet feasible, a system of cost recovery should be put in place.

6.3.1 Cost Recovery

Guidelines

- Payment for treatments and vaccinations must be fully implemented to adequately remunerate animal health workers (including CAHWs, supervisors, co-ordinators, fridge operators and other support staff) and pay for drugs and services. The price charged to the livestock owner should include purchase price, freight, storage and profit.
- The minimum recommended rates of remuneration as a percentage of cost to the livestock owner are 20% CAHWs, 5% supervisors, 2% co-ordinators. Those with the higher level of responsibility should receive the greatest remuneration.
- Wherever possible money collected should be used to purchase medicines. If this is not possible then the money should be utilised in the community.
- Management of revenue should be handled by community elected committees (VCCs) after adequate training, and under supervision of the agency, until such time as a privatised system of medicine supply is in place..
- Resupply of drugs to CAHWs should be on condition that revenue is remitted and reports submitted.
- Payment for vaccinations and treatments may be waived and/or subsidised for a limited period in response to an acute emergency situation e.g. famine, overwhelming disease outbreaks, but only after discussion by the emergency committee (see 5.5). Provision should be made to ensure animal health workers are remunerated for their work even when services are provided free of charge.

Standards

- A monthly financial report for each payam/sub-district should be prepared by the VCC and submitted to the agency.
- A quarterly financial report for each project area should be prepared by the agency
- Every NGO should support the development of a cost recovery management system..

- Every Agency should train the VCC and supervisors in financial management.
- Auditing of funds (physical count versus records) should be carried out every six months by the agency
- Systems should be developed with community participation in place to prevent misappropriation of cost recovery revenue.

6.3.2 Cost Recovery Payment in Kind

Guidelines

- In an area where there is no cash in circulation, a payment should still be made for veterinary medicines and vaccines.
- Anything of value can be used to pay for veterinary services.
- The price of veterinary services in kind should be agreed once per year with the community. Copies of the agreed prices should be sent to project co-ordinators, SRRA/RASS/FRRRA veterinary co-ordinators and the OLS Livestock Programme Co-ordinator.
- The prices should reflect price increases of veterinary services as they are introduced by the programme, although it is understood that this can be difficult especially for minor changes.
- Payment in grain should be discouraged because it encourages treatment on credit at harvest time and is difficult to collect and transport.
- Good records should be kept of all payment in kind transactions. They should be recorded in cash books, including the estimated value of the transactions. Sales should also be recorded.
- Payment in kind should be converted to cash as soon as possible. This is especially true of livestock where local authorities could arrange an auction. NGOs should be encouraged to purchase livestock for their own use (food, training, post mortem demonstration etc.).
- Livestock as payment should be brought to the project base and indentified.
- If livestock are received, they should be ket and cared for in an organised manner. A luak or boma should be constrctued and someone put in charge of the animals.
- Livestock can be used as payment to veterianry workers and in community development projects e.g. school herds.

6.3.3 Privatisation

Guidelines

- Agencies should facilitate the process of moving towards privatisation e.g. developing business management skills for Sudanese vets and animal health workers.
- Agencies should facilitate and participate in exploring opportunities for private medicine trade.
- The programme should work towards developing a model for linking the existing community-based animal health service with a veterinary supervised privatised animal health services whilst ensuring good quality service and good area coverage.

6.4 Monitoring and Evaluation, Information-sharing

Guidelines

- All project information recorded should be shared with the counterpart, neighbouring NGOs, the OLS Livestock Programme Co-ordinator.
- A baseline survey should be carried out in the early stages of the project, using participatory methods of information collection. Baseline information should be updated and added to.
- Sero-monitoring should be carried out to monitor the efficacy of rinderpest vaccination.
- Outbreak-reporting - all projects should report all disease outbreaks following the 'OLS Livestock Programme Livestock Disease Outbreak Reporting Guidelines and Sampling Procedures'. An outbreak is defined as a significant increase in incidence of a particular disease (whether endemic or epidemic) above that which would be normally expected for the time of year.

- All projects should provide monthly situation reports to the OLS Livestock Programme Co-ordinator.
- All projects should provide an activity update at each livestock co-ordination meeting.
- Reports of assessments should be shared with counterparts and other agencies.
- All reports of consultancies, studies, evaluations carried out should be shared via the OLS Livestock Programme Co-ordinator.
- Each agency should provide a detailed annual and (if available) interim reports to the OLS Livestock Programme Co-ordinator detailing main activities, results of main activities, vaccinations and treatments, workshops and trainings, problems and constraints, achievements, livestock situation.
- All agencies should carry out quantitative monitoring of vaccinations, treatments, training and community dialogues, personal profiles using standard OLS forms and returned for database entry.
- Internal Evaluation should be carried out annually at a time agreed by all the participants. It should be participatory, to get the involvement of the community, counterparts and animal health workers. The report should be shared.
- External Evaluations for all projects should be carried out periodically.
- Feedback; the OLS Livestock Programme Co-ordinator should provide quantitative feedback; provide a quarterly database report, and copies of all reports to be filed in the vet office, Lokichokio for easy access.

Standards

- At least 40 serum samples per payam or sub-district should be collected for rinderpest and other disease serology per year.
- Each agency should produce at least one detailed activity report per year.
- Each project should be externally evaluated at least every three years.

6.5 Emergency Preparedness and Response

An emergency in the context of the livestock programme could be a livestock specific emergency such as a major disease outbreak or displacement of large numbers of livestock, or could be a general emergency in which other sectors are also required to respond such as displacement of communities with their livestock, interruption of existing services due to conflict etc.

Guidelines

- The aim of the core programme activities (training, capacity building, supplies) is to maximise resilience and decrease the impact of 'crises' on population and allow effective emergency response.
 - The OLS livestock programme should develop and disseminate contingency plans for the most likely livestock emergencies e.g. major outbreaks, major displacement.
 - The OLS livestock programme should maintain a separate stock of vaccines, drugs, equipment stocks to deal with common emergencies.
- Agencies should be willing to contribute staff time and resources to assist with response to acute emergencies.
 - All agencies in collaboration with counterparts should monitoring the livestock situation (movements, grazing, water) at payam/district level in relation to normal baseline for early warning of emergencies, and feed information to the OLS Livestock Programme Co-ordinator. Agencies should also report any other significant changes in the local situation to WFP or the emergency response section as appropriate.

- In the event of a major acute livestock emergency, an emergency committee should be formed by the OLS Livestock Programme Co-ordinator and NGOs in the area of the emergency, to co-ordinate activities, deployment of staff and resources, and to develop policy for dealing with the situation. The committee should assess the capacity of the existing project to provide an adequate response, the capacity of the community to support the project or the need for extra assistance for CAHWs to continue their work. The response should not undermine the long term sustainability of the project.

6.6 Agency Administration

6.6.1 Planning

Guidelines

- All agencies should practise participatory management and planning.
- All agencies should have a strategic plan.

6.6.2 Staff and Recruitment

Guidelines

- Staff should be suitably qualified, with appropriate experience and attitude. Should be mature, with strong inter-personal skills, proficient in spoken and written English, able to work both unaccompanied and as part of a team, able to work in tough conditions and in security risk areas.
- Should have good communication skills, honest, committed to humanitarian work, empathy for southern Sudanese cultures and conflict, leadership skills.
- For sustainability and capacity building each project should maximise the employment of suitably qualified southern Sudanese at all levels. Opportunities should be provided for southern Sudanese to gain field experience.

Standards

- The ratio of field vet/livestock officer to area in the start up phase of a project should be at least one vet per three payams/subdistricts, taking into account the livestock population. Start up phase is complete once CAHWs, supervisors and VCCs are trained and functioning effectively.
- There should be a minimum staffing ratio of one southern Sudanese per one expatriate in each agency.
- Contract, terms and conditions are required for all staff. They should be realistic and exhaustive in meeting the staff needs in his/her execution of the job. They should include details of responsibility for accommodation, feeding, transport, and security in Lokichokio, Sudan and any other place the person is required to travel.
- Field staff are entitled to R and R following the agreed OLS minimum. It is recommended that no more than 6 weeks should be spent in the field without a break, except in an emergency.
- Staff should be entitled to a minimum annual leave of 20 working days within a 12 month period excluding Sundays and public holidays.
- The contract should specify details of entitlement to sick leave, maternity/paternity leave, compassionate leave, insurance - war, health and life.
- Every new staff member (expatriate and Sudanese out of Sudan for more than 2 years) should attend OLS security an orientation workshop within 4 months of employment, also the livestock co-ordination meeting. The first field visit for vet staff should be with an experienced vet.

- There should be a minimum work period in Sudan of 2 years although taking into account short funding periods, actual contracts may be shorter than this.
- Remuneration should be competitive with other NGOs to prevent high turnover/movement. Agencies should co-ordinate in order to standardise remuneration.
- Personal development and training - agencies should make individual staff development plans i.e. training workshops in relevant skills.

Veterinary Personnel

- The manager of a CBAHP should be a vet or animal science or animal production specialist, with a relevant degree from a recognised university. Should have a minimum of three years practical field experience preferably working with pastoralists. Should have practical experience of participatory training techniques, preferably knowledge and experience in establishing and managing CBAHP.
- There should be at least one veterinarian per agency.

6.6.3 Communications

Guidelines

- OLS radio communication procedures should be followed.
- Radio messages should be followed up with a hard copy.
- Receipt of messages and letters should be confirmed.
- Radio messages should be short and precise.

6.6.4 Logistics

Guidelines

- There should be a timely supply of adequate quantities of quality inputs for all project areas.
- All NGOs should have clear logistics procedures that are updated regularly with input from the field team.
- Logisticians should have a basic introduction to the procedures and operations of the flight office, UN logistics, dispatch office, radio room, airstrip, UNVET stores and security office.
- All logisticians should understand the names and uses of all veterinary drugs and equipment and storage requirements.
- Drugs, vaccine and equipment orders to be made according to the requirements in the field.
- Vet drugs and equipment are high priority items for manifesting to the field.
- Good reporting systems should be in place to show that inputs are actually delivered to the field.
- Clear labelling of cartons indicating conditions of storage especially items needing cold chain.
- UN agencies to give adequate warning and information regarding changes in procedures.

6.6.5 Funding

Guidelines

- Every OLS agency should have budgeting and financial controls.
- All OLS agencies should practise transparency in material and financial management
- Fund-raising - bearing in mind short term emergency funding, each agency should obtain sufficient funds (or in kind contributions) to maintain standards and guidelines for staffing, activities and technical inputs to establish and provide ongoing support to the project areas until it is fully sustainable i.e. long term commitment to fund-raising.
- Agencies should give an early warning to the livestock programme if there are funding problems to allow time for mutual support.

6.6.6 Transport and mobility

Guidelines

- The field vet teams need to be mobile to respond to the needs of the community, investigation of outbreaks, monitoring of CAHWs, and carrying out community dialogue.
- Procedures for movement of NGO staff outside their base location should be clarified with local security personnel and adhered to. The importance of mobility to programme success should be stressed. Security should always be informed of movement plans.
- NGO team should not remain in one base location without moving out to the field for more than 2 weeks unless training and dialogue is being carried out.
- Ten days is the minimum time to visit a major location.
- A mobile radio should be provided where needed for movements on foot, bicycle, boat or vehicles.
- Agency should equip project area with appropriate, safe and secure transport to allow full coverage i.e. boat, vehicle, bicycles.

6.6.7 Co-ordination

Guidelines

- All agencies should participate in livestock co-ordination meetings.
- All agencies should liaise with other agencies on geographical coverage.

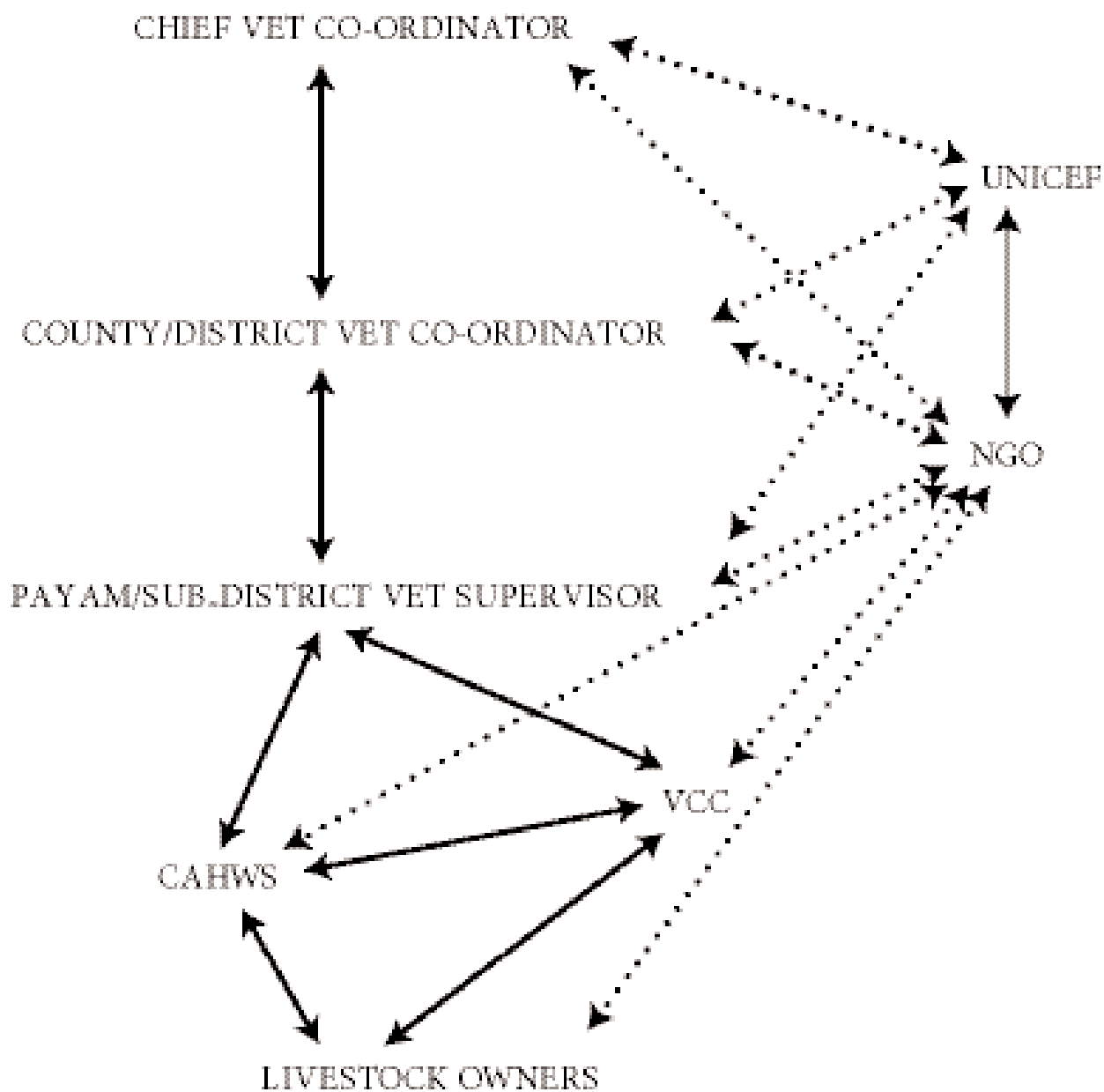
7. Quality Control

A quality promotion group composed of UNICEF (one person) and NGOs (four persons) will be formed to monitor implementation of standards and guidelines. There will be a quorum of 3. The group will meet for an annual review of all projects, a mid-year meeting to address any arising concerns, and call an extraordinary meeting if necessary. There will be an annual rotation of membership. All proceedings should be transparent and fully minuted.

The role of the group will be:

- To review standards and guidelines and update.
- Review projects (proposals, reports, information from counterparts)
- Carry out visits to verify this information.
- If problems are identified, the group will provide feedback to the agency and allow time for improvement, and then review the project again.
- To facilitate implementation of standards and guidelines e.g. identify training needs, assist with redeployment of funds, resources, staff etc.
- Respond to queries and provide information to the OLS admissions and deadmissions committee.

ANNEX ONE: BASIC ORGANISATIONAL CHART



ANNEX TWO: INDIVIDUAL DISEASE CONTROL POLICIES

Trypanosomiasis - all use the same trypanocide

Internal parasites - use broad spectrum anthelmintic

Antibiotic - use broad spectrum long-acting, one injectable

Report all outbreaks as per guidelines

Ectoparasites

- Ticks - tick grease

- Mange - ivermectin, ectopor, synthetic pyrethroids for non-ECF areas. CBPP - treatment and vaccine

HS

TB

CCPP

BQ

Anthrax

FMD

ECF

Brucellosis

Rabies

Others - mastitis, horn cancer, poultry diseases

zoonotic diseases - brucellosis, TB, rabies, anthrax hydatids

ANNEX THREE: BASIC VACCINATION KIT

Hauptner automatic syringe 30cc	one per every two vaccinators
Spare glass barrels	two per syringe
Spare washer kits	one per syringe
0.5 inch reusable needles	one box of ten per syringe
Disposable 2cc syringes	
Disposable 21g x 1 inch needles	
Ear notchers	one per every two vaccinators
Sharpening stone	one per team
Vaseline	one pot per team
Soap	
Punch cards	approximately one per vaccine vial
Vaccination forms	approximately one per 500 cattle
Pens	
Clipboard	one per team
Sterilizing tray	one per team

ANNEX FOUR: BASIC CAHW KIT

Back pack	one
Reusable syringe 20cc	two
Reusable needles 18/16g x 1.5 inch	box 10
Disposable syringe 20cc	five
Disposable syringe 10cc	five
Disposable syringe 5cc	five
Disposable needles 18g x 1.5 inch	ten
Disposable needles 20g x 1 inch	ten
Universal bottles 20cc	two
Rope 2cm diam x 10 meters	one piece
Small saucepan	one piece
Pen	two

ANNEX FIVE**DISPOSAL OF EXPIRED VETERINARY MEDICINES AND VACCINES**

Before starting to dispose of expired veterinary medicines or vaccines, inform the OLS Livestock Programme Co-ordinator that you have some expired stocks. Some medicines and vaccines may still be effective after their expiry date and it may be possible to send samples away to a laboratory for testing for potency. The Co-ordinator will inform you if it is possible to get your stocks tested and make the necessary arrangements. The guidelines below should be used when either the stocks cannot be tested or they have been tested and shown to be no longer effective.

Expired veterinary drugs and vaccines should not be thrown away without special precautions.

Under ideal conditions it is recommended that such products should be incinerated. However with the current situation in southern Sudan where there are not yet proper facilities for disposal, the OLS Livestock Programme recommends the following steps to be taken to dispose of expired veterinary medicines and vaccines.

1. Locate a site at least 2 km away from residential areas.
2. Use a used open drum with holes punched half way up on the sides.
3. Place the expired drugs in the drum, first ensuring that the bottles, vials and ampoules are opened to empty the contents into the drum to avoid explosion.
4. Sprinkle fuel, preferably industrial diesel and burn the contents in the drum.
5. After burning, bury the remains in a hole measuring at least 4 feet deep, away from the water supply.
6. Ensure that the person handling the medicines wears protective clothing to include an overall and gloves.
7. The following people or their representatives must be present and witness the operation:
 - SRRA/RASS/FRRRA secretary
 - Local veterinary co-ordinator and/or supervisor

- VCC member
- NGO vet
- Member of the local authority

After the whole operation, a report indicating the type and quantity of drugs and vaccines disposed of should be prepared, signed and submitted to the OLS Livestock Programme Co-ordinator.

ANNEX SIX REFERENCE DOCUMENTS

VCC TRAINING GUIDELINES (in preparation)

OLS LIVESTOCK PROGRAMME CAHW TRAINING MANUAL

OLS LIVESTOCK PROGRAMME OUTBREAK REPORTING AND SAMPLING GUIDELINES

AHA SELECTION PROCEDURE

OLS STOMATITIS-ENTERITIS ACTIVE SURVEILLANCE GUIDELINES (in preparation)

Annex 7.1

FORUM ON EARLY WARNING AND EARLY RESPONSE (FEWER) WEBSITE INFORMATION:

Conflict sensitive approaches to development, humanitarian assistance and peace building: Tools for peace and conflict impact assessment

Welcome to the joint FEWER, International Alert and Saferworld programme on conflict-sensitive approaches!

This two-year programme was designed to help integrate conflict-sensitive practice into development, humanitarian assistance and peacebuilding, and to help people working in these fields to contribute more effectively to conflict prevention.

Central to this programme is the concept of conflict sensitivity. This is the need for organisations, in particular national governments, donors and civil society, to be sensitive to the (conflict) environments in which they operate, in order to reduce the negative impacts of their activities - and to increase their positive impacts - on the situation and its dynamics. In this sense, conflict-sensitive approaches to development, humanitarian assistance and peace building need to be adopted in situations of violent conflict, as well as of unstable peace.

Through the development of a resource pack, the programme hopes to provide a platform for documenting practice in relation to conflict sensitive approaches, while drawing upon the experiences and lessons learnt from Kenya, Uganda and Sri Lanka. The programme will also generate new knowledge, for example in relation to conflict-sensitive sectoral approaches.

In this sense, this programme, which is undertaken in close collaboration with the Africa Peace Forum (APFO) in Kenya, the Center for Conflict Resolution (CECORE) in Uganda, and the Consortium of Humanitarian Agencies (CHA) in Sri Lanka, represents the first major north-south partnership in promoting and documenting conflict-sensitive approaches.

News

12 March 2004

Resource pack launched online

26 November 2003

The fourth newsletter is available.

30 June 2003

The third newsletter is available.

The Conflict Early Warning and Response (CEWARN) Mechanism in the Intergovernmental Authority on Development (IGAD)

About CEWARN

In 1995 IGAD member states recognized the need to address conflicts in the region. In this region there are thirty potentially threatening inter-communal conflicts; a collapsed state due to internal conflicts; a recent interstate war between two member states; a great number of endemic violent cross-border pastoral conflicts; and, the continued threat of inter-state wars arising from cross-border inter-communal and inter-clan conflicts.

The objectives of CEWARN include:

- Enabling member states to prevent cross-border pastoral conflicts from developing into armed violent conflicts on a greater scale.
- Enabling local communities to play an important part in preventing violent conflicts.
- Enabling the IGAD Secretariat to pursue conflict prevention initiatives and to provide technical and financial support.



Annex 7.2

PENHA RESEARCH PAPER SUMMARIES

PENHA's Mission

The Pastoral and Environmental Network in the Horn of Africa (PENHA)'s mission is to eliminate poverty among the pastoralists in the Horn of Africa through the empowerment of communities and the fostering of sustainable and dignified livestock-based and non-livestock-based livelihoods.

PENHA's Objectives

Fostering sustainable livelihoods requires a co-ordinated approach at the grassroots and policy levels. PENHA therefore commits itself to two goals:

- To empower pastoralist communities and their institutions to play a full role in their own development.
- To influence development policy and development programme design to foster sustainable livelihoods among pastoralists.

The Pastoral and Environmental Network in the Horn of Africa (PENHA) is an African initiative, registered as a UK charity in 1989 by a group of researchers and development workers from the Horn of Africa.

It is more than ten years now since PENHA's inaugural workshop in a hall in London in November 1989 as an African led NGO inspired regional NGOs.

This was celebrated at the end of the African Partners Workshop, which was held in Mbarara, Western Uganda during November 1999.

The African Partners Workshop was a major opportunity for PENHA and its partners to reflect on the past, to celebrate its present achievements and carve out a way forward for future African partnerships.

Over the years of its existence, PENHA has seen both bad days and good days. The Ethiopian- Eritrean conflict, which broke out during May 1998, has had devastating impact on the communities which PENHA works with and on donor confidence in the region. It had to leave behind both the physical structure of its office in Addis Ababa and the vision of basing its central administration in Africa.

PENHA has confronted these problems and has drawn major lessons from the recent crisis: While its mission remains essentially the same, PENHA is now more country focussed and has moved on from the idea of working from just one regional base. Key staff have been assigned to individual countries.

At this stage, PENHA is expanding its activities in Uganda, Somaliland and Sudan and is reviving them in Ethiopia and Eritrea.

List of PENHA publications:

- The North-East Rangelands Development Project(NERDU). The Current Situation in the Horn of Africa: Statements from the Uppsala Forum. Z. Fre, Ref No: 016.
- Land Use Planning in Eritrea. K. Ghebru, Ref No 054.
- Pastoral Development in the Sudan. Abu Sin, Ref No 134.
- The Kohr Baraka Wadi system in North East Sudan: a fragile ecology and the Beja who protect it. Z. Fre, Ref. No 132.
- Report on the Workshop on Pastoral and Agropastoral Women in the Horn of Africa. Ref. No 172.
- Establishing a Pastoral and Environmental Network in the Horn of Africa (PENHA). Ref. No 011.
- Environment, Political Conflict, Sustainability and Resource Management in the Horn of Africa: an African Perspective. Seyoum Gebre Selassie (Ed.) Ref. No. 027.
- Preliminary Study on the Role of Pastoral Women in the Economy: the Case of Somalia. R. Ibrahim Ref No 170.
- The Impact of Government Policy on Livestock Development in Ethiopia. Melesse B. Ref. No 070.
- Pastoralism and Land Tenure Systems in and around the Rahad Irrigation Scheme, East Sudan. Abusin M., Rahman El Mahi, Suliman Y. ref. No. 135.
- Ethnoveterinary Practice and its Role in Pastoral Development. Kheir M. Ref. No. 014.
- “Livestock Trade in the Pastoral Economy: Prospects for the Horn of Africa”. by M. Dolal, Ref. No 020.
- “Pastoralism and Land Tenure Systems in the Horn of Africa - A Case Study in Eritrea: Labka District, Sahil Province”. by Wudassie Yohannes Ref. No 058.
- “Land Tenure Systems in Ethiopia - with a Case Study of the Ogaden”. Yacob Arsano, Ref. No 073.
- “Pastoralism and Land Tenure Systems in the Horn of Africa - report of Survey Conducted in Mensura Area”. by Zerabruk Tesfamariam , Ref. No 057.
- “Research on Pastoralists and Agro-pastoralists in North Western Eritrea: the Case of Forto” (1993). Fre Z. & Musa A. Ref. No 051.
- “Socio Economic Survey Study of Sheeb and Wadi Labka” (1994). Tseggai A., Beyene M., Fre Z. Ref. No 055.
- Proceedings of the Consultative Workshop on Pastoralist Health Issues in the Horn of Africa

- Report on Consultative Workshop on issues of Economic co-operation in the Horn. Nazareth May 1994.
- The North-East Rangelands Development Project (NERDU): A Step in Search of a Model Tesfai A. Ref. No 019.
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Annex 9.1 DROUGHT CYCLE MANAGEMENT & RECOMMENDED LIVESTOCK INTERVENTIONS IN ETHIOPIA

Source: *Lautze et al. 2003.*

Stage	Action	Activities	Advantages	Disadvantages
Normal	Drought preparedness	Community Development		
		Community Capacity/Vulnerability Analysis and contingency planning. Public works that may help in the mitigation of droughts (pasture development, ponds, boreholes, etc.). Conflict resolution (at all times).	See below	See below
Alert / Alarm	Mitigation Activities	Animal health activities, de-worming, etc.	Thwarts deliberate destruction of human life, livestock and property; enables different clans and tribes to live in harmony; allows the sharing of resources by different communities / tribes. Prevents significant losses occurring during droughts and drought breaking rains; de-worming increases the lives of animals by 2-3 months; pastoralists can be trained to provide basic animal health services (CAHWs).	Can be risky for project staff if officials do not support the program; takes a long time; can be expensive because of large number of people and time involved.
		Emergency off-take/ destocking.	Enables herders to get reasonable prices for stocks that could otherwise perish; receiving cash enables them to buy food, water, drugs and to restock; the meat provides them with much needed protein in an otherwise grain-based relief ration; meat could also be provided to orphanages, hospitals and schools; the cash obtained provides opportunities to set up small-scale businesses.	Can interfere with the sustainability of CBAH programs; distorts market prices if drugs are distributed freely; can incur costs to vulnerable families if cost recovery is used. Distorts market prices; may interfere with traditional destocking mechanisms; hard to get donors to fund it on time; high cost and logistical problems with dry meat preparation.
	Transport subsidy to livestock traders.		Enables animals to be sold before they die or become unmarketable; infuses cash into the	Could lead to irregularities if proper control mechanism is not in place; distorts market prices.

Stage	Action	Activities	Advantages	Disadvantages
			economy; if done on a large scale, lessens pressure on the land; helps to facilitate movement of animals; facilitates movement of grain into drought areas.	
		Grazing reserve management / develop irrigated pasture.	Provides pasture and water during droughts or after; reduces the labor requirements spent in search of pasture and water; helps to maintain healthy animals.	Pump irrigation could be expensive; may encourage conflicts to access the irrigated sites.
Emergency	Relief activities	Continue with animal health activities. Livestock feed provision.	As above.	As above.
			Pasture and rangelands suffer during drought; nutritional intervention prevents environmental degradation; has long term benefits for herders; feed security might be more important than food security; enables herders to re-build stocks; cash for work enables herders to purchase feed.	Could outweigh its potential benefit if done over a long period; high transport costs if feed is transported over long distances (cattle need more than 4 pounds of feed per day); may unintentionally attract large numbers of herds.
		Boreholes and wells rehabilitation.	Existing water systems can't support people; so more water sources are needed; under drought condition tinkering may be essential but expensive in the long term; water harvesting allows water to be retained for emergencies; boreholes may provide water in areas that are arid.	May attract large number of people and could be disastrous for the environment; may facilitate the spread of diseases due to the concentration of humans and livestock; may lead to conflicts; may encourage sedentarization; may spread diseases; aquifers can dry over a long term and boreholes need to be capped after the emergency.
		Public works (preferably cash for work).	Cash provides the means to purchase food, other necessities, enables to buy breeding stocks and provides the capital base to start up businesses; the particular project under this scheme will be beneficial to the community.	People may get desperate when the project is completed and there is no more cash for work.
Recovery	Rehabilitation	Restocking	Vital for the rehabilitation of pastoralists who have lost all or most of their stocks; provides the foundation for breeding stocks; reduces the number of potential drop outs. See cash for work, above.	Could be an expensive operation; choosing beneficiaries may be a complex issue; may discourage potential beneficiaries from seeking alternative livelihoods; communities may contribute sick and old animals.
		Rehabilitation of dams, boreholes and other public works through cash for work.	See cash for work, above.	See cash for work, above.

Annex 9.2

DRAFT MATRIX OF WARNING INDICATORS, IMPACT INDICATORS, EXIT INDICATORS AND EXIT STRATEGIES

NOTE: The following matrix is still being developed and refined.

A) ACUTE CRISIS EMERGENCY (RELIEF) INTERVENTIONS

A.1 Emergency Marketing Support.

- » Purchase of livestock for immediate slaughter and meat distribution.
- » For the few animals that are still in good condition at this stage, traders could be subsidised to purchase the fat stock that is suitable for the commercial market

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
People migrate with livestock away from conflict points	Local markets continue	Exit once pasture starts to recover	Phase out programme after 7-10 days warning to sellers
Conflict closes grazing areas or water points	Livestock ToT remain stable	Livestock traders start buying again	Marketing reverts to normal traders as usual
Crop residues and other feed sources are finished	Less environmental destruction	Livestock prices start to rise	Liaise with WFP to ensure food recipients continue to receive alternative food or have sufficient alternatives.
People start to lop (cut) branches off trees	Nutrition status of poorest of the poor remains stable		
Livestock condition starts dropping from fair to poor	Imported protein requirements reduced.		
Milking animals dry up			
Livestock traders stop buying			
Livestock prices drop			
Migration options are not possible			
Coping strategies change to survival strategies			

A.2 Fodder or Water Supply

- » Emergency fodder trucking, including prickly pear and crop residues, from the highlands to the lowlands or livestock areas. It may be necessary to purchase the prickly pear from the resident community.
- » Emergency water trucking to enable livestock to move to distant grazing lands, or alternatively the trucking of livestock out of shock areas to less affected areas if appropriate.
- » Purchase and distribution of urea/straw feed blocks to breeding stock and animals used for ploughing.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
People migrate with livestock away from conflict points	Breeding livestock or ploughing oxen survive	Exit once pasture starts to recover or access to water improves	Phase out programme after 7-10 days warning to owners
Conflict approaches and closes grazing areas or water points	Livestock ToT remain stable	Livestock condition improving	
Crop residues and other feed sources are finished. cactus plantations being eaten by camels and cattle.		Livestock prices start to rise	
People start to lop (cut) branches off trees or dig for water bearing roots.		Herd sizes and mortality rates stabilise.	
Livestock condition starts dropping from fair to poor			
Milking animals dry up Livestock traders stop buying			
Owner slaughters own animals			
Prices of feeds increase and availability decreases			
Coping strategies change to survival strategies			

A.3 Animal Health

- » Internal parasite control campaigns in displaced herds, or for all livestock in shock areas or years.
- » Provision of emergency veterinary drug supply (mainly anthelmintics and acaracides) through government clinics, CAHWs, CBOs or private sector¹.
- » Re-training emergency vaccinators or parasite control personnel; refresher training CAHWs.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
Low stocks or lack of drugs in veterinary clinics.	Breeding livestock or ploughing oxen survive	Exit once pasture starts to recover or access to water improves	Phase out emergency programme after 7-10 days warning to owners
Livestock condition starts dropping from fair to poor	Paravets active after end of emergency	Livestock condition improving	After refresher training or up-grading of paravets to CAHWs
Crop residues and other feed sources are finished. Cactus plantations being eaten by camels and cattle.		Livestock prices start to rise	
Milking animals dry up		Herd sizes and mortality rates stabilise.	
Owner slaughter own young animals			
Prices of feeds increase and availability decreases			
High incidence of bottle-jaw or diarrhoea.			
Coping strategies change to survival strategies			

¹ Using veterinary vouchers to target the livestock belonging to especially vulnerable groups.

A.4 Cash-for-Work (CFW).

- » Provide cash for work for displaced or resident livestock owners who have lost most of their animals and require alternative form of income. CFW activities should aim to benefit future livestock keeping and include:
 - » 25 sqm micro-catchments and bunds for fodder trees and grasses .
 - » Soil erosion control, terracing and fodder tree planting² .
 - » *Prosopis* control.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
Excess sale of key livestock assets and other short-term coping mechanisms	Breeding livestock or ploughing oxen not sold.	Exit once pasture starts to recover and food more widely available	Phase out emergency programme after 30 days warning to CFW participants.
Milking animals dry up.	Fodder trees and shrubs planted and growing.	Livestock condition improving	Plan alternative rehabilitation inputs for those who have lost all livestock.
Owner slaughters young animals	Less erosion, more production.	Livestock prices start to rise	
Livestock keepers migrate into towns.	Fewer <i>Prosopis</i> trees and more plant species recolonise.	Herd sizes and mortality rates stabilise.	
Prostitution and illegal brewing increases in pastoral areas.	Fewer livestock sold or slaughtered.	Traditional income sources start to rise.	
Coping strategies change to survival strategies	Core breeding herds maintained.		

A.5 General

- » The distribution of modern beehives and training of farmers in bee-keeping in selected areas.
- » Agencies should regularly attend food security and livestock meetings.
- » Livestock water needs must be given due consideration within existing and future water development programmes.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
Many livestock dying	Alternative incomes support families.	Exit once pasture starts to recover or access to water improves	Phase out emergency programme after 2 month warning to owners
Coping strategies change to survival strategies	Good collaboration	Livestock condition improving	Area Water development plan approved
Crop residues and other feed sources are finished.	Partnerships with the Government, communities or NGOs.	Livestock prices start to rise	
Milking animals dry up	Other agencies or the Government start to replicate activities.	Herd sizes and mortality rates stabilise.	
Owner slaughters young animals	Honey and bees wax market established.	Honey prices start falling due to over-production	

² Fodder production and emergency supply. Lucerne, cow peas and vetch can be grown under irrigation; sorghum and pearl millet stover can be grown in lowlands. New species introduced include oats (*Avena sativa*) and Sudan grass (*Sorghum sudanense*); Rhodes grass (*Chloris guyana*) and elephant grass (*Pennisetum purpureum*) can be tried if adaptable. Vetaver grass for soil stabilisation and fodder in highland areas. *Lablab purpureus* is also a drought tolerant fodder. *Leucaena leucophylla* and Pigeon Pea (*Cajanus cajan*) do well if rainfall is more than 400mm, and *Atriplex nummularia* should be grown in areas with less than 200 mm rainfall.

B) CHRONIC CRISIS (OR TRANSITION) INTERVENTIONS

B.1 Improving animal survival and production through improved nutrition:

- Development, or support to development, of fodder crops and innovative feed sources.
- Manufacture of, training farmers in, or distribution of - urea / straw feedblocks.
- Temporary enclosures and reseeded or planting fodder using micro-catchments on CFW.
- Investigate fodder supply possibilities from seawater farms and the fodder supply factories including use of waste paper, wood shavings, seaweed, Neem seed cake, fish meal and cactus.
- Establishment of lowland cactus plantations.
- Investigate under-sowing cereals in highlands with Rhodes grass and legumes.
- Strategic water development: digging ponds or wells using CFW.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
To be implemented even in "normal" times	New and traditional supplements availed to livestock owners.	Same as impact indicators	Disseminate information
Coping strategies widely being used.	Reduced mortality	Research and project ideas taken over by other agencies.	Train community facilitators / trainers.
	Farmers storing and producing own feed supplements.		Exit when activities are being done by farmers themselves.
	Fodder banks grown and kept for emergency use.		

B.2 Improving animal survival and production through improved animal health:

- Preventive pneumonia injections and mineral supplements for all breeding stock at end of dry season/drought/nutritional stress period.
- Training of emergency vaccinators to CAHW level.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
Weak, stressed animals.	Animals survive end of stress period and heavy rainfall.	End of stress period	Document lessons learned, disseminate and hand-over activities to government or other agency.
Storms or end of dry season approaching.	No pneumonia related deaths	Vaccinations complete	
Rain forecasted.		CAHWs trained and active	

B.3 Dialogue, Diversification and Dissemination

- Providing IDPs and resettled people with the means to plough, but only in conjunction with participatory land use planning (PLUP), which includes access routes, to water and pastures.
- Assisting government and NGOs in developing a strategy on emergency livestock interventions through meetings, workshops and visits to neighbouring countries.
- Identifying methods of reducing livestock losses to predation - e.g. suitable night enclosure made out of renewable materials (dry stone walling).
- Investigating the possibility to cultivate fallow land with fodder grasses and leguminous food crops. This could take the form of a pilot project by providing ploughing oxen, seed and di-ammonium phosphate (DAP) fertiliser to farming areas. The DAP will replace nitrogen in the soil due to loss of fallow period and in emergencies can be fed to livestock.
- Attending food security and livestock sector meetings.
- Encouraging livestock owners to commercialise livestock keeping towards local and export markets.
- Ensuring that agricultural and water development includes livestock access and mobility issues.
- Preserving migration as much as possible.
- Engaging governments on the issue of sustainable Community Animal Health Services

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
To be implemented even in "normal" times	Reduced impact of disasters	Same as impact indicators	Disseminate information
Coping strategies widely being used	Modern / appropriate livestock farming approaches adopted by farmers.	Research and project ideas taken over by other agencies.	Train community facilitators / trainers and government officers, NGO staff etc.
	Increased production.		Exit when activities are being done by farmers themselves.
	Good harmonisation in approaches and complementarities.		Link to Research organisations

C) POST-CRISIS INTERVENTIONS

C.1 Strengthening Livelihoods:

- Restocking the herds of selected expellees and returnees with improved goats and poultry in conjunction with a CAHW training programme to comply with health requirements.
- Restocking herds of IDPs and residents with poultry, but ONLY if follow-up can be guaranteed.
- Establish micro-credit / micro-finance systems in villages and IDP camps.
- CFW bonus system based on areas protection and tree survival rate³.
- Problem analyses in each region / village.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
Chronic increase in poverty	Reduced poverty	Targets reached.	Hand-over to community and governments or other agencies.
Increasing destitution.	Increased capacity	Capacity built.	
Coping strategies widely being used		Other implementers available.	

C.2 Diversification, Information, Networking, Dialogue

- Links to research stations and forestry research centres for improved fodder.
- Investigating the possibilities of improved beekeeping and honey production.
- Linking exchange rates for destocking to the terms of trade for cereals.
- Cost-benefit studies on the costs, limitations and sustainability of mechanised ploughing paid for by farmers as compared to ox ploughing.
- Investigating the potential for diversification in agriculture areas into off-farm opportunities or into livestock improvement.
- Investigating potential areas for "Animal holidays", where the fodder availability is sufficient not to cause stress to local livestock or environmental damage. This could be linked to vouchers for stock, where livestock owners buy animals back later after the emergency has subsided.
- Working with Sectoral Working Groups (SWGs) and encouraging the privatisation of veterinary drug supply and the adoption of voucher systems linked to private sector delivery to ensure sustainability even in emergencies.
- Participating in emergency response and development planning at village level.

Warning Indicators	Impact Indicators	Exit Indicators	Exit Strategy
High dependence on single livelihood or market	Good harmonisation and complementarity	Same as impact indicators	Village emergency response and disaster management plans in place.
Coping strategies widely being used	Improved local capacity		Hand over and exit.
	Diversified livelihoods.		
	Improved food security and household income.		

³ CFW on tree planting - pay 75% of cash at time of implementation and pay balance into a village bank or community credit scheme 2 years later when tree seedling survival is measured.

D) GENERAL INDICATORS**Warning Indicators**

- Loss of condition
- Mortality
- Decreasing herd size
- Increased remittances
- Rainfall
- Proportion of herds with less than 3 TLU/AAME
- Terms of trade
- Unusual movements / migrations
- Employment situation
- Human nutrition
- Pasture condition

Impact indicators

- Increase in health and livestock numbers
- Increased per capita value of livestock.
- Increased volume in animal products - locally and internationally.
- Increased demand for paid livestock services.
- Herd growth
- Stable terms of trade throughout the year.

Annex 9.3

VETERINARY VOUCHER SCHEMES

Aim

To provide an emergency livestock health intervention that strengthens (rather than undermines) long-term sustainable development interventions in decentralised animal healthcare in pastoralist and ASAL areas of the Horn of Africa. (Pilot test stage).

Problem statement

Animal health service (AHS) delivery in pastoralist and ASAL areas is still very dependent on outside agencies. Attempts to introduce sustainable AHS delivery through the private sector have failed due to provision and perceived risk of subsidised or free veterinary drugs provided by government or NGOs during emergencies. The voucher scheme ensures emergency responses in the AHS sector strengthen rather than undermine sustainable AHS delivery systems in both the private and/or public sector whilst ensuring the needy target groups continue to receive affordable or essential services.

Background

Decentralised CAHS are recognised as the only effective method of AHS delivery in the ASAL areas of Kenya, Eritrea, Ethiopia and Somalia and in the war-torn zones of southern Sudan. In partnership with governments or counterparts, NGOs have trained a large number of CAHWs to provide quality AHS to pastoralists' livestock. The major constraint to long-term sustainability of the system is finding a way for CAHWs to access quality drugs in a timely and affordable manner. Few private sector entrepreneurs are willing to enter the drug supply system due to risk of subsidised or free drugs being provided by government or aid agencies. Other risks include insecurity, low rate of turnover, drug expiry, fake drugs, lack of start-up capital, lack of training / experience and infrastructure, dependency syndrome of livestock owners; lack of knowledge of market prices; unfair competition.

Methodology

Steps to be undertaken during voucher test phase:

1. Identify key areas where CAHWs and private veterinarians, livestock professionals or pharmacists are present. (If one of above is missing, consider training them).
2. Raise awareness amongst all stakeholders.
3. Veterinarian or pharmacist makes agreement with CAHWs.
4. CAHWs help identify needy target group and scale of intervention
5. Suppliers are alerted and provide donor / NGO guaranteed credit to Vet Agro stores / village pharmacists.
6. CAHWs and local authorities identify needy groups
7. Donors support NGOs to provide drug guarantees to Vet Agros
8. NGOs distribute vouchers to needy
9. Needy deliver vouchers to CAHWs and have their livestock treated.
10. CAHWs deliver vouchers to Vet Agro store or private veterinarian and get replenished with same drugs used as per stated on the vouchers + 20% extra in drugs (as form of payment)
11. Vet Agro store or private veterinarian send vouchers to pharmaceutical company or manufacturer / distributor and are sent more drugs including a 25% payment in form of drugs (20% for CAHWs + 5% for Vet Agro store or private veterinarian).
12. NGO refund pharmaceutical company value of vouchers + 25%.
13. Evaluation of impact and replicability.

Strengths

This approach will address many of the constraints faced by the private sector entrepreneur interested in working in ASAL areas and still satisfy the needs of poorer stakeholders, NGOs and donors:

- 1) The supply and process of trading in coupons reduces risks of carrying large quantities of cash
- 2) Coupons are only provided to supply specific drugs that are beneficial to droughted stock or immediate health emergency intervention - ensuring quality drugs
- 3) Enables access by entrepreneur to professional for advice and back-up.
- 4) Trader does not face subsidised competition.
- 5) NGO / donor confident that right target group is benefiting.
- 6) Strengthens local markets / economies.
- 7) Links donors to private sector
- 8) Known quantities / numbers of animals to be targeted - helps planning and lowers risk of oversupply and drug expiry.
- 9) Can create access to capital - Grameen bank style traders groups.
- 10) Private sector (large pharmaceuticals) can buy into community training costs.
- 11) Start as AHS programme, but phased in expansion into agriculture, human health, food aid etc.
- 12) Drugs are not exchanged for cash at grassroots level, thus donor resources are used for purpose intended.

Weaknesses:

- 1) Donor and NGO policies may be inflexible.
- 2) Feeling of sovereignty by governments / agencies threatened by third party "currency".
- 3) Cost of establishment and circulating counterfeit-proof vouchers / tokens.

Opportunities:

- 1) Can be more than AHS alone - could redefine whole aid / development approach
- 2) Reduces dependency
- 3) Creates local markets
- 4) Coordination can be done with government involvement through District Steering Groups (DSGs) or Animal Health Providers Forums (AHPFs) at district level.
- 5) Can launch or strengthen private sector in times of normal adversity (emergency) or difficult business environment.

Threats:

- 1) Massive demand and competition between traders
- 2) Corruption, counterfeiting,
- 3) Over-expansion before time tested
- 4) Poor selection of needy group, nepotism
- 5) Exchanging vouchers for cash (a low rated threat as this could be indicator of impact and change in need).

Replicability:

- 1) Although primarily designed for animal health interventions, same process is replicable for human health, agricultural (c.f. Seed fairs) and food aid programmes.
- 2) Can be implemented in any country

Likely areas of immediate intervention:

- Northern Kenya - Marsabit, Moyale, Samburu, Turkana or Wajir.
- Somalia - Middle Shabelle, Mudug and Gaalgadud, any area with LUA or AHSPA.
- Ethiopia - Ogaden region.
- Sudan - north and south.
- Eritrea - no private sector as yet, but could operate through government veterinarians.
- Djibouti - free services policy and lack of private veterinarians may limit its use.

Timeframe:

Implementation: Vouchers and treatments should cover 3 months, and can be repeated if necessary.

Expected impact / output:

A successful implementation of an emergency CAHS intervention that supports sustainable CAHS delivery systems. Impact and methodology evaluated and results disseminated as best practices.

Stakeholders:

Department of Veterinary Services
Marketing corporations
Pharmaceuticals
Banks
Livestock owners

NGOs
Government
Needy
Traders
Security

CAHWS
Donors
Pastoralists
Local authorities

Stakeholder awareness raising:

Create technical committee at national level (where appropriate)
Lobby donors and NGOs.
Meet with Government and local administration
Plan with pharmaceutical companies
Create coordinating technical committee at district / divisional level of target area
Hold workshops with village traders and pharmacists
Hold workshops with CAHWS
Public announcements with livestock owners and general public
Public distribution of vouchers to needy.

Roles and responsibilities:**DVS and Government and local authorities:**

Support trial with enabling environment

Disseminate and publicise approach

Monitor impact

Ensure accountability

Recognise need for non-dependency creating emergency interventions

Promote privatisation / sustainability

Coordinate with technical committee

Technical committee:

Design project - SWOT analysis of token/coupon approach

Ensure accountability (reduce \fakes)

Coordinate numbers distributed

Pharmaceuticals:

Provide drugs

Sponsor cost of coupon production

Supply drugs on credit to Vet Agros

Traders, Vet Agros:

Join scheme

Transport and supply drugs

Link drug supply to livestock offtake

Key contributors

Livestock owners / Pastoralists / Needy:

Pay full service price

Accept commercialisation - no subsidies

Utilise coupons for self-good (initially not for exchange or sale)

Banks:

Provide credit

Accept coupons as currency

NGOs:

Provide coupons instead of subsidised drugs

Distribute coupons to CAHWs

Define needy groups

Help CAHWs identify needy groups

Donors:

Avoid subsidies

Invest in sustainable AHS delivery

Support voucher / coupon scheme

CAHWS:

Identify needy livestock owners

Ensure sufficient drug supplies in stock

Provide quality services

Accept cash and vouchers for services

Exchange vouchers with vet agros or NGOs

Bureaux of Standards and Security:

Ensure counterfeit drugs and vouchers are restricted

Annex 9.4

ALTERNATIVE DEVELOPMENT INTERVENTIONS TO SUPPORT BOTH URBAN AND RURAL PASTORALISTS IN THE GREATER HORN OF AFRICA

Source: C.R. Field, "*Where There is No Development Agency* ", in preparation.

- Levy fee on livestock for the use and operation of boreholes.
- Supply storage tanks for roof top water catchments
- Promote animal traction using rippers and scoops for desilting dams.
- Require stockowners in permanent settlements to construct permanent night enclosures.
- Provide subsidized solar power for settlement electricity and mobile radios.
- Supply free tree seedlings for village wood lots.
- Supply improved breeding stock at subsidized rates.
- Subsidize camel specific veterinary drugs i.e. antrycide, ivermectin.
- Improve milk-marketing facilities.
- Revive meat factories for emergency livestock off-take.
- Revive livestock export markets especially to the Middle East.
- Develop milk and meat preservation processes.
- Subsidize cost of bed nets, synthetic pyrethroids and anti HIV drugs.
- Offer mobile out-of-school functional adult literacy courses.
- Establish national information network for commodity prices using e-media.
- Promote eco-tourism using camels in scenic areas.
- Reduce bank charges on pastoralist accounts.

It is clear from the foregoing cattle more than other forms of livestock, are faced with the two main problems of drought and disease. The following steps are recommended:

- Drought grazing reserves should be developed for cow/ calf camps, which are the most vulnerable and also the most important stock for post drought herd recovery. Potential reserves exist in most GHOA countries (e.g. in Kenya the rangelands in the Isiolo Holding Ground, South-east Marsabit, North Tsavo East National Park and Galana ranch)
- Develop reserves with provision of boreholes with movable pumps and security.
- Cover operational costs of reserves with fee levied on the grazers.
- Lobby research bodies in Government and the International Livestock Research Institute for more disease orientated participatory research.
- Effective dissemination of disease prevention.
- Pen-side diagnosis and treatment using Community Animal Health Workers (CAHWs).
- Conduct controlled experiments on the cost efficiency of key ethno-veterinary treatments (ITDG, 1966).
- Resurrect and improve abattoirs and plants for both sustained and drought crisis offtake of cattle.
- Find innovative ways of complying with international regulations to provide safe and wholesome cattle products for export.

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