Country Profile

REGIONAL LIVESTOCK STUDY IN THE GREATER HORN OF AFRICA

ERITREA

ICRC
INTERNATIONAL COMMITTEE OF THE RED CROSS (ICRC)
LIVESTOCK STUDY IN THE GREATER HORN OF AFRICA
ERITREA COUNTRY PROFILE
ISBN 9966-7116-2-7

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<table>
<thead>
<tr>
<th>ACRONYMS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACORD</td>
<td>Agency for Cooperation and Research in Development</td>
</tr>
<tr>
<td>ADFA</td>
<td>Asmara Dairy Farmers Cooperative Association</td>
</tr>
<tr>
<td>AHS</td>
<td>African horse sickness</td>
</tr>
<tr>
<td>ARD</td>
<td>Animal Resources Department</td>
</tr>
<tr>
<td>ARIS-S</td>
<td>Animal Resources Investment Sub-Sector Programme</td>
</tr>
<tr>
<td>AU-IBAR</td>
<td>African Union Inter African Bureau for Animal Resources</td>
</tr>
<tr>
<td>ARI</td>
<td>Acute Respiratory Infection</td>
</tr>
<tr>
<td>CAA</td>
<td>Civil Aviation Authority</td>
</tr>
<tr>
<td>CAHW</td>
<td>Community Animal Health Worker</td>
</tr>
<tr>
<td>CAP</td>
<td>Consolidated Appeals Process</td>
</tr>
<tr>
<td>CAPE</td>
<td>Community Animal Health and Participatory Epidemiology</td>
</tr>
<tr>
<td>CARE</td>
<td>International NGO</td>
</tr>
<tr>
<td>CBPP</td>
<td>Contagious Bovine Pleuropneumonia</td>
</tr>
<tr>
<td>CCPPP</td>
<td>Contagious Caprine Pleuropneumonia</td>
</tr>
<tr>
<td>CRS</td>
<td>Catholic Relief Services</td>
</tr>
<tr>
<td>ERP</td>
<td>Emergency Reconstruction Programme</td>
</tr>
<tr>
<td>ERREC</td>
<td>Eritrean Relief and Rehabilitation Commission</td>
</tr>
<tr>
<td>FMD</td>
<td>Foot and mouth disease</td>
</tr>
<tr>
<td>HS</td>
<td>Haemorrhagic septicaemia</td>
</tr>
<tr>
<td>ICC</td>
<td>Information Coordination Centre</td>
</tr>
<tr>
<td>ICMPEC</td>
<td>International Cooperation, Macro-Policy and Economic Coordination</td>
</tr>
<tr>
<td>ICRC</td>
<td>International Committee of the Red Cross</td>
</tr>
<tr>
<td>IDP</td>
<td>Internally Displaced Person</td>
</tr>
<tr>
<td>IGA</td>
<td>Income Generating Activities</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>kебабие</td>
<td>Administrative area / locality</td>
</tr>
<tr>
<td>NAP</td>
<td>National Action Programme for Eritrea</td>
</tr>
<tr>
<td>NCD</td>
<td>Newcastle Disease</td>
</tr>
<tr>
<td>NEMP-E</td>
<td>Eritrean Code of Conduct for Sustainable Development</td>
</tr>
<tr>
<td>NLDP</td>
<td>National Livestock Development Plan</td>
</tr>
<tr>
<td>PACE</td>
<td>Pan African Control of Epizootics</td>
</tr>
<tr>
<td>PENHA</td>
<td>Pastoralist and Environment Network in the Horn of Africa</td>
</tr>
<tr>
<td>PPR</td>
<td><em>Peste des petits ruminants</em></td>
</tr>
<tr>
<td>PRA</td>
<td>Participatory Rural Appraisal</td>
</tr>
<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Plan</td>
</tr>
<tr>
<td>SWG</td>
<td>Sectoral Working Group</td>
</tr>
<tr>
<td>TSZ</td>
<td>Temporary Security Zone</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>VAM</td>
<td>Vulnerability Assessment and Mapping</td>
</tr>
<tr>
<td>WFP</td>
<td>World Food Programme</td>
</tr>
<tr>
<td>zobā</td>
<td>Administrative district / province</td>
</tr>
</tbody>
</table>
FOREWORD

These Country Profile reports are supplements to ICRC’s Livestock Study in the Greater Horn of Africa carried out in 2004. The Country Profiles should be read in conjunction with the main study and provide more detail on the livestock situation in each country.

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.

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. 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 study concludes that most livestock dependent systems in the Greater Horn of Africa occur in Dis-equilibrium environments, 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 dis-equilibrium environments requires a more flexible response or tracking strategy where 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. The dis-equilibrium philosophy maintains that:
• 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.

The study recognises that pastoralism is a dynamic production system and 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.

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).

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

Based upon the wording of the recent ICRC Assistance Policy, proposed 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. 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.

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 in the main study. 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 wider adoption of a tracking strategy approach.

With half the Horn of Africa’s population reliant on animals to a significant extent for their survival, the region currently accounts for the ICRC’s greatest operations in the world. 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.
2.1. Background

Eritrea has suffered from 30 years of war, and accommodates up to 500,000 internally-displaced persons, refugees or expellees. The population of Eritrea is 4.4 million, 65% of which are below the poverty line, with poverty worst in the urban and highland areas. This has been aggravated by four years of poor, erratic rainfall and drought. In 2003, an estimated 2.3 million people were affected by the effects of war and drought, and were in need of emergency food assistance.

Map 2.1. Eritrea

2.1.1. Geography and Livelihoods

70% of the country is arid, the mean annual rainfall is less than 400 mm, and the mean annual temperature is 26°C. 70% of households cultivate, but only 2% have access to irrigated land.

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2.1.2. Socio-Economy

A rural livelihood assessment of Eritrea carried out by CARE, the World Food Programme (WFP) and the Eritrean Relief and Rehabilitation Commission (ERREC) in July 2003 noted:

- The average household size is 5.2 persons, half of whom are dependents (children or elderly).
- 40% of households are female-headed.
- Households in high rainfall zones that rely on agriculture are more food insecure than those in lowlands that depend primarily on livestock. Table 2.1. overleaf shows that the sale of livestock or livestock products in the main source of cash for most households.
- 65% of households surveyed have less than the minimum money to meet minimum consumption requirements.

The CARE, WFP, ERREC report recommended that, in high rainfall zones dependent on agriculture, efforts should be made to expand off-farm employment and diversify into livestock (depending on the sustainability of the primary resource).

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Box 2.1. Current livestock related conflict elements and likely future developments in Eritrea.

- Continuing effects of conflict on livestock in Eritrea:
  - Lack of pasture;
  - Displaced to unsuitable environment;
  - Theft;
  - Lack of resources (finances) for required inputs;
  - Overcrowding $\rightarrow$ Overgrazing $\rightarrow$ environmental damage
  $\rightarrow$ Disease transmission
  - Lack of government infrastructure and resources.

- The main issue is recovery from conflict and rebuilding livelihoods.

- Possible future conflict developments:
  - Uncertainties regarding the future of the border demarcation;
  - Possible localised conflict between residents, internally-displaced persons and newcomers (especially in Kunama and Nara areas) resulting in reduced access to pasture; displacement; theft, overcrowding and its associated problems.
Table 2.1. Eritrea - Source of cash income from households in the 12 survey zones\(^2\)

<table>
<thead>
<tr>
<th>Source of cash income</th>
<th>% households (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash crop sales</td>
<td>5</td>
</tr>
<tr>
<td>Agriculture labour</td>
<td>38</td>
</tr>
<tr>
<td>Non-agricultural labour</td>
<td>25</td>
</tr>
<tr>
<td>Fishing</td>
<td>3</td>
</tr>
<tr>
<td>Occupational work</td>
<td>2</td>
</tr>
<tr>
<td>Petty trade</td>
<td>4</td>
</tr>
<tr>
<td>Trade</td>
<td>3</td>
</tr>
<tr>
<td>Micro-enterprise</td>
<td>13</td>
</tr>
<tr>
<td>Livestock</td>
<td>54</td>
</tr>
<tr>
<td>Poultry</td>
<td>12</td>
</tr>
<tr>
<td>Remittances (Eritrea)</td>
<td>27</td>
</tr>
<tr>
<td>Remittances (foreign)</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
</tr>
</tbody>
</table>

\(^2\) CARE, WFP, ERREC, 2003.

2.1.3. The Livestock Sector in Eritrea

80–90% of rural Eritreans own some form of livestock, and animal production is considered to be the main source of cash and protein. More than 56% of the land surface is browsing or grazing land; less than 5% of land is cultivated, and 33% is barren. This provides a measure as to the importance of livestock to the national and local household economy.

Table 2.2. overleaf shows the estimated Eritrean national livestock population based on extrapolations from the last census (carried out in 1997).

Table 2.2. Eritrea - Livestock Population

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>1,927,470</td>
<td>1,928,000</td>
</tr>
<tr>
<td>Sheep</td>
<td>2,128,944</td>
<td>2,129,000</td>
</tr>
<tr>
<td>Goats</td>
<td>4,661,780</td>
<td>4,662,000</td>
</tr>
<tr>
<td>Camels</td>
<td>318,910</td>
<td>319,000</td>
</tr>
<tr>
<td>Equines</td>
<td>518,640</td>
<td>500,000</td>
</tr>
<tr>
<td>Chickens</td>
<td>1,134,265</td>
<td>2,500,000</td>
</tr>
</tbody>
</table>

Average household holdings are 3-4 cattle and 10-20 small ruminants in the highlands, and 10-20 cattle and 30-40 small ruminants in the lowlands\(^3\). Table 1.3 below provides a better breakdown of livestock ownership from the results of a more detailed survey carried out by CARE, the World Food Programme and the Eritrean Relief and Rehabilitation Commission (ERREC) in 2003.

\(^3\) Ministry of Agriculture, 2003.
Table 2.3. Eritrea - Household ownership (%) of livestock

<table>
<thead>
<tr>
<th>Species</th>
<th>Number</th>
<th>Mean % households owning</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>None</td>
<td>82</td>
<td>72-92</td>
</tr>
<tr>
<td></td>
<td>1-5</td>
<td>13</td>
<td>9-16</td>
</tr>
<tr>
<td></td>
<td>&gt;6</td>
<td>4</td>
<td>1-8</td>
</tr>
<tr>
<td>Goats</td>
<td>None</td>
<td>53</td>
<td>26-86</td>
</tr>
<tr>
<td></td>
<td>1-5</td>
<td>28</td>
<td>11-42</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>12</td>
<td>1-20</td>
</tr>
<tr>
<td></td>
<td>&gt;11</td>
<td>6</td>
<td>1-18</td>
</tr>
<tr>
<td>Donkeys</td>
<td>None</td>
<td>49</td>
<td>33-77</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;2</td>
<td>6</td>
<td>3-13</td>
</tr>
<tr>
<td>Camels</td>
<td>None</td>
<td>86</td>
<td>61-99</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;2</td>
<td>3</td>
<td>0-11</td>
</tr>
<tr>
<td>Chickens</td>
<td>None</td>
<td>65</td>
<td>27-95</td>
</tr>
<tr>
<td></td>
<td>1-5</td>
<td>24</td>
<td>8-33</td>
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<tr>
<td></td>
<td>6-10</td>
<td>7</td>
<td>0-15</td>
</tr>
<tr>
<td></td>
<td>&gt;11</td>
<td>6</td>
<td>1-10</td>
</tr>
</tbody>
</table>

More exact figures are provided by a 2002 ICRC assessment, and presented in Table 2.4. below.

Table 2.4. Eritrea - Livestock holdings and wealth ranking - Debub and Gash Barka

<table>
<thead>
<tr>
<th>Species</th>
<th>Poor: 47-65%</th>
<th>Middle: 23-30%</th>
<th>Rich: 12-23%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>0</td>
<td>1 oxen 1 cow</td>
<td>1-5</td>
</tr>
<tr>
<td>Sheep/goats</td>
<td>1-5</td>
<td>10-15</td>
<td>10-40</td>
</tr>
<tr>
<td>Camels</td>
<td>0</td>
<td>1</td>
<td>3 – Varies greatly from village to village</td>
</tr>
<tr>
<td>Donkeys</td>
<td>0-1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chickens</td>
<td>2</td>
<td>3-4</td>
<td>1-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Poor: 52-66%</th>
<th>Middle: 20-35%</th>
<th>Rich: 10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>0-3</td>
<td>3-6</td>
<td>10-40</td>
</tr>
<tr>
<td>Sheep/goats</td>
<td>1-5</td>
<td>10-15</td>
<td>10-30</td>
</tr>
<tr>
<td>Camels</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Donkeys</td>
<td>0-1</td>
<td>1</td>
<td>1-2</td>
</tr>
<tr>
<td>Chickens</td>
<td>2</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

4 Averaged from 12 survey zones (CARE, WFP, ERREC, 2003).
5 Households in selected villages of Debub and Gash Barka (ICRC assessment, 2002).
In 2002, the United Nations estimated that 10-20% of Eritrea’s livestock had perished, with the remaining 80% seriously vulnerable to drought loss and disease due to weakness. However, losses in the parts of Gash Barka and Debub visited in the course of this study were found to be much lower than 20%, and the good rains and resulting forage condition meant that most of the livestock were in good or fair condition. Normal losses due to disease are estimated at 5-8% and 10-15% per annum for cattle and small stock respectively. Other sources indicate an average mortality of 5% per annum for adult stock, and 25% mortality for young stock.

Livestock management systems vary depending on the environment. Cattle, sheep and goats kept in an agro-pastoral system are the main species in the highlands, with oxen representing 50% of the bovine population. In the highlands, agriculture is more important than livestock, and oxen are widely used for ploughing. 20% of all cattle in Eritrea are used for traction. There is some semi-intensive, semi-sedentary dairy farming and poultry production around the main highland urban centres, making use of brewer’s grains and other agricultural and industrial by-products.

Agro-pastoralism is also the major livelihood on the escarpments (i.e. the steep hillsides dividing highland and lowland between Tsonora and Senafe in Debub, and between Debub and Red Sea Provinces), with more importance placed on small ruminants (sheep and goats) than cattle.

In the lowlands livestock are more important than crops and are transhumant – moving south in the dry season and north back to the homes with small farms in the wet season. Only a small proportion of Eritreans are true migratory pastoralists (in parts of Anseba and North Red Sea and South Red Sea zobas) and, in these areas, crop residues contribute about 8% to livestock diet.

Surprisingly, the average value of household assets (both in highland and lowland areas) found by the CARE survey is Eritrean Nakfa 4,222 for livestock, compared to Nakfa 148 for own food crop production, and Nakfa 1,569 for other assets. Therefore, although the average livestock holding may be small, it is of high value.

Animals are not only important as capital assets and savings, but also for sale by generating cash. Meat and milk are important components of the Eritrean diet, and can also be sold for income.

Draft animal power is also a key contributor to crop production. Oxen are extremely important for ploughing, whilst camels, donkeys and mules are important for transporting crops and crop residues, either directly as pack animals or by pulling carts. Camels, horses, donkeys and mules are widely ridden or used for moving household items or trading commodities. Animals are also extremely important in operating sesame oil mills and for the transportation of water. Pony carts are also a form of income generation, transporting both goods and people.

Animal traction in Eritrea is as important as it is in Ethiopia; in terms of world rating, both countries rank very high for the use of animals for power. Camels, mules, donkeys and horses are all widely ridden and utilised for power and traction in general, much more so than in any of the other countries in the Horn.

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8 This requirement has to be considered when planning emergency marketing or supplementary feed interventions; or when estimating animal numbers available for local or export markets.
9 US$ 312.
10 US$ 11.
Animal exports used to be a key contributor to the national economy, but livestock marketing between Ethiopia, Sudan and Eritrea has largely stopped as a result of the conflict between Ethiopia and Eritrea. Household income from livestock sales varied from Nakfa 685 to 1,100\textsuperscript{12} in 2002-2003, depending on wealth grouping\textsuperscript{13}.

Important animal diseases listed by Woodford\textsuperscript{14} appear in Table 2.5. below.

Most of the cattle in Eritrea are of the zebu type. Barka cattle in the western lowlands produce 6 litres of milk per day, while the Arado cattle found in Debub are smaller, produce less milk and meat but are better for traction. There are only 6,000-8,000 exotic cattle, owned by 800-1,000 commercial dairy farmers. Several breeds of local sheep exist, and over 32 breeds of local goat. Caution should be observed before any improved breeds are introduced, as most of the indigenous stock are well adapted to the harsh conditions found in Eritrea.

<table>
<thead>
<tr>
<th>Cattle</th>
<th>Small stock</th>
<th>Equines</th>
<th>Poultry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhagic septicaemia (HS)</td>
<td>Mange</td>
<td>African Horse Sickness (AHS)</td>
<td>Newcastle Disease (NCD)</td>
</tr>
<tr>
<td>Lumpy Skin Disease (LSD)</td>
<td>Internal parasites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foot and Mouth Disease (FMD)</td>
<td>Respiratory disease</td>
<td></td>
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<tr>
<td>Internal parasites</td>
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<tr>
<td>Trypanosomiasis</td>
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</tbody>
</table>

Chicken and chicken products are important for most communities; chickens may lay 10 to 15 eggs in a month\textsuperscript{16}. Egg production from the Egyptian chicken decreases as households exhaust the stocks of proper chicken feeds. In Gash Barka, high die-off of the Egyptian chickens is reported, although in Debub mortality is lower. Regular epidemics of an as yet unidentified disease occur in March-April most years\textsuperscript{17}.

Honey is an important source of income, especially for households in the northern highlands of Senafe and Menekseyto\textsuperscript{18}. Households own up to six beehives, each yielding at least 5-10 kilogrammes, valued at Nakfa 30-50\textsuperscript{19}. Many areas are suitable for bee-keeping with an abundance of 

\textit{Acacia} trees (especially 

\textit{Acacia mellifera}); however, many respondents claimed that bees had either been destroyed or had migrated during the war. High deforestation levels during the war may partly explain the reported decrease in the bee population.

In summation, livestock is very important to household food security, especially in the lowland areas of Eritrea.

\textsuperscript{12} US$ 51-82.
\textsuperscript{13} CARE, WFP, ERREC, 2003.
\textsuperscript{14} 2001.
\textsuperscript{15} Woodford, 2001.
\textsuperscript{16} ICRC Assessment, 2002.
\textsuperscript{17} ICRC Nairobi.
\textsuperscript{18} Spelling of this place name varies from Menchuseyto to Meneksoito to Menkusoito and Monoxoito.
\textsuperscript{19} US$ 3-4.5 - ICRC Assessment 2002.
2.1.4. Current Livestock Situation

Failed *Azmera* rains (March-June) and late *Kremti* (June-September) rains in 2002 reduced cereal production and may have led to the loss of 20% of livestock in some sub-zobas. The *Bahri* rains that occurred from November to March only in the coastal plains of Northern and Southern Red Sea zones and the eastern escarpment were too poor for crops, but improved the status of the pasture. Despite poor *Azmera* rains in 2003, the *Kremti* rains were reasonable in many of the livestock producing areas and the rangeland throughout all of Gash Barka and most of the Debub lowlands.

In highland areas, the *Kremti* rains due from June to September started well, but a prolonged dry spell in July meant that the crops also dried before the rains resumed in late July. Thus grains may be in short supply but crop residues for livestock should still be widely available in most areas. In the eastern lowlands, rains due from October to February should normally enable some further recovery of pastureland and opportunities for stock to migrate there from Debub.

Most observed cattle, sheep and goats were in good or fair condition. Many of the observed load camels were only in fair to poor condition, but this is likely to be normal as many load camels are kept “fit or lean” to harden them like athletes. All of the breeding camels observed were in good condition.

2.2. Problem Analysis

The livestock sector is described as “traditional”: only slightly developed, or “low input - low output”. It is prone to natural disasters and characterised by unregulated migrations.

The major constraints listed by the Ministry of Agriculture include:

- Feed shortages;
- A change in pasture species with an increase in less palatable plants;
- Diseases;
- Low genetic potential of the animals;
- Poor marketing;
- A lack of trained manpower.

The Food and Agriculture Organisation (FAO) identified the key livestock problems as follows:

- Poor nutrition (with an estimated shortfall of 3 million tonnes of crop residues in 2003);
- Lack of know-how of technical personnel;
- Limited practical skills of smallholders;
- Traditional management practices;
- Weak extension services.

“Modern farming has affected migration routes. *Pastoralism is dying due to loss of mobility*”...........

Dr. Berhane Woldemichael, Executive Director, Haben.

The key constraints to the livestock system (within the already limiting climatic, economic, social and geographical conditions prevalent in the whole of Eritrea) identified in the course of this study are presented as existing or emerging problems below.

2.2.1. Current Constraints to the Livestock Sector in Eritrea

2.2.1.1. Livestock Nutrition

At certain times of the year, especially from late February to May, levels of livestock nutrition are poor. Food deficiency is due to the reduced access to, and availability of, pasture. Access has been affected in several ways, as discussed below.

**Conflict**

Conflict has affected access to pasture in four ways:

1. The border with Ethiopia is effectively closed. Previously, livestock owners and their livestock could cross the border at will to utilise pastures in Ethiopia;
2. Border tension has excluded Eritrean herdsmen and livestock from entering the border area, and from free use of the Gash River;
3. Land mines placed along the border have deterred livestock owners from taking livestock into these prime grazing lands. Mine accidents involving both children and livestock have been reported;
4. Large camps of displaced people have occupied former grazing areas, and led to heavy utilisation of the vegetation (including the use of grasses for thatching and the cutting of trees for fuel and shelter).

**Expanding agriculture**

The expansion of agriculture and the increased cultivation of former livestock grazing lands have caused animals to be excluded from cultivated areas to ensure that they do not destroy the crops. This also results in lower overall pasture availability. Although these areas become available again after a period of 2 years when they are intentionally left fallow, the quality of the “fallow” pasture is lower than that of the natural pasture.

**Land tenure**

Commercialisation, private ownership and individualism, and the establishment of farms for resettlement projects all exclude livestock owners from their traditional grazing lands.

Although not a direct result of the war between Eritrea and Ethiopia, the closure of the Sudan border due to insecurity has resulted in a suspension of the supply of oilseed cake and wheat bran (that were widely used as animal feed).
Nutritional stress is compounded by lack of access to water, or the poor distribution of water points and the need for animals to walk long distances through overgrazed areas to reach water. This is a problem particularly in parts of the Gash Barka basin.

2.2.1.2. Traditional management
Most livestock owners still try to maximise their livestock holdings for prestige and “insurance”. This is important in purely nomadic pastoral systems; in agro-pastoral systems however, productivity can be increased by keeping fewer, higher potential animals under slightly improved management. Whilst livestock owners do feed their stock with crop residues, there is scope for improving the feeding system.

2.2.1.3 Overgrazing and soil erosion
The conflict and a more chronic long-term trend towards overstocking have led to signs of overgrazing and the associated soil erosion, particularly in parts of the Debub lowlands. The study identifies this as a growing problem, but it is surprising to note how few areas have suffered severe soil erosion compared to similar areas in Kenya and Ethiopia. The dangers of soil erosion are well understood in Eritrea, and the terracing and gabion methods of control are skilfully used. The topography, climate and soil type also affect the rate of soil erosion.

2.2.1.4 Livestock diseases and Ministry of Agriculture resources
No major signs of disease were observed during the course of this study. However, disease and infection levels are likely to be in “chronic equilibrium”, with occasional outbreaks or epidemics that can cause high morbidity and mortality levels.

Only few of the interviewed livestock owners regularly treat their animals, and usually only take the very sick animals for treatment at Government clinics. There is no attempt at strategic disease control, and the only form of prevention is the annual vaccination campaign against one or two specific epizootic diseases carried out for free by the Government services.

Access to veterinary services and the availability of veterinary drugs are both limited. Each sub-zone has a veterinary officer and a Government clinic, but they are based in the administrative centres and may be far from the livestock concentration areas. Transport for veterinary staff to livestock areas is sometimes limited. Village pharmacies sell human medicines but are forbidden to sell livestock drugs.

Many of the professionally qualified veterinary staff are involved in administrative issues rather than purely technical activities or have been conscripted into the military. Paravets and community animal health workers exist but again the vast majority are inactive due to war – some have died, others are in the military, some displaced. Many community animal health workers found it non-economic to provide services using a 20% mark-up on drug prices.

2.2.1.5. Absence of a livestock export market
Eritrea is reported to have exported small stock to the Middle East before the war; since the war official livestock exports have stopped, but domestic livestock prices have increased, as Eritrea was a net importer of animals from Ethiopia.

Establishing an export market, especially for small stock, would increase prices, encourage livestock off take and improve household security for the general population.
2.2.1.6. Support for modern emergency livestock interventions
The long history of war in Eritrea has given the population great national pride and has helped them to solve many of their internal problems themselves with little external donor aid or exposure. However many developments that have taken place in the pastoral and livestock sector in other Horn of Africa countries appear not to have been taken up by the Eritrean Government.

Two key areas that lag behind in Eritrea are the privatisation and liberalisation of veterinary service delivery, and the adoption of livestock emergency interventions such as destocking, market support and emergency marketing. Dialogue and exposure to such systems may enable the Ministry of Agriculture to respond more effectively to livestock emergencies.

2.2.1.7. Predation
Many farmers in both Gash Barka and Debub complained of predation by hyenas and jackals. It is likely that the population of both species increased during the war and, with the cessation of hostilities, is now forced to find sources of food from live animals.

2.2.2. Emerging Problems
2.2.2.1. Increasing demands on livestock
The income of most rural Eritreans generally depends on agricultural activities or the sale of livestock and livestock products. As the effects of peace and globalisation become established in Eritrea, needs will also grow. As a result, the requirements for, and the turnover of, “cash and commodities” will increase. Since livestock is the key source of cash, owners will try to maximise their livestock capital. A greater off take of energy from the animals 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 (through people trying to maximise livestock numbers) will increase pressure on the land.

2.2.2.2. Growing human population
The effects of the conflict and the subsequent displacement and impoverishment of the population have led to some degree of breakdown in traditional coping mechanisms, values, customs and controls. People increasingly tend to exploit local resources to their own benefit rather than the benefit of the wider community or clan.

Increased human population growth (especially that witnessed in the camps for internally-displaced persons in Debub) will increase pressure on an already resource-poor agricultural and grazing land. Livestock production can only be raised to a certain level, and will quickly reach a point where livestock and livestock products cannot support the needs of the growing human population. Improvements in agricultural production and major diversification into other livelihoods will be required.

2.2.2.3. Livestock raiding
Livestock raiding and theft are recent problems that have arisen from the international conflict, although the raiding itself can be either international or local. Cases of cross-border theft were reported to be frequent around Shambuko in Gash Barka with a few hundred animals stolen since the end of hostilities, whilst in Senafe sub-zone more than 4,000 cattle were reported to have been stolen from Aramo and Menekuseyto areas.

21 Spelling of this place name varies from Menchuseyto to Menekoito, Menkusito and Monoxoito.
Local livestock theft has become a problem, especially around camps for internally-displaced persons. The problem occurs in both directions – host communities accuse the displaced of stealing their animals, whilst the displaced complain of theft of their stock by host communities as well as problems in accessing fuel wood and other local natural resources. Tensions are likely to increase as the limited resources are exploited by growing numbers (due to immigration or displacement) of humans and livestock.

2.2.2.4. Access and migration
Access has been mentioned as an existing problem (due to expanding agricultural / cultivated areas) and is likely to deteriorate in future. Migration is essential for livestock survival both in pastoral and agro-pastoral systems. Closure of migration routes due to expanding agriculture, urbanisation, or legal and political (and “individual”) developments will lead to massive livestock mortality, and deal a fatal blow to both the pastoral and agro-pastoral livelihoods. Since 1992 more agriculturalists have begun farming the riverbanks, a trend that has already led to clashes between locals, resettled people and investors.

Many governments consider migration or “nomadism and transhumance” as a primitive management system. Discussion is required with government to debate the essential role and need for migration and livestock movement under the climatic and environmental conditions common to Eritrea.

The literature often states unregulated animal movement as a major constraint to the livestock system. Uninformed attempts to control or regularise movement in order to reduce disease risks may be more threatening to the livestock system than the current problems associated with movement.

2.2.2.5. 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 Government officers alike. A general lack of information on livestock numbers, management aims and techniques and migration routes is a constraint to Government, United Nations, non-governmental organisations and ICRC planners and policy makers. The current status of livestock amongst the internally displaced and the war-affected populations of Eritrea is totally unknown. Numbers are based on very old census figures with estimated changes integrated each year. A census based on participatory rural appraisal (PRA) techniques would be beneficial.

2.2.3. Specific Effects of Conflict on Livestock in Eritrea
In the short duration of the consultancy, it was difficult to estimate actual livestock numbers, losses or current ownership levels. Interviews with livestock owners were too short to result in meaningful information to triangulate with other sources, but such information could be useful if collected in a reliable and accurate manner.

The pie-chart overleaf provides a breakdown of livestock losses by cause for Menekuseyto in Debub. A 2002 assessment estimated the livestock loss at between 30-40% in Gash Barka with an 80% reduction in Debub, due to conflict as well as drought. Although at the moment it is not clear how much livestock remain in both areas.

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23 Report of the joint Government of the state of Eritrea-United Nations Annual needs assessment 2001. The difference between this figure and those estimated during the course of this study (see section 2.1.3. above is probably explained by the fact that different areas were investigated.
Indirect effects of conflict mainly include displacement, lack of pasture, water or health control, which in the long term may be just as damaging as the more obvious direct effects of conflict on livestock.

### 2.3. Cross-Border Issues

Eritrea’s major cross-border issue concerns the conflict with Ethiopia, the complete closure of the border and the total breakdown in livestock trade and migration between the two countries. This has had a major effect of the economy and livelihoods of the rural people, making them more prone to other shocks such as drought.

The spread of contagious bovine pleuropneumonia (CBPP) in Eritrea was blamed on the importation or migration or trade of cattle from Ethiopia into Red Sea Province. Other major livestock diseases do not seem to have been such a problem, as most diseases are likely to be endemic in both countries.

Surprisingly, Eritrea’s livestock export trade to the Middle East is very low, possibly because of the limited number of livestock and low stocking rates achievable in the true rangelands. However, even before the war very little livestock was exported through Eritrea, and most Ethiopian livestock was exported from Djibouti or Somaliland. The resumption of trade between Eritrea and Ethiopia could mean that Eritrea could act as a passage for the export of Ethiopian livestock. However, the establishment of the Red Sea Trade Commission export facility in Djibouti\(^\text{25}\) lessens the probability that Eritrea will benefit much from livestock export, unless it develops its own production and export system.

Cross-border livestock raiding also seems to have increased since the war in spite of the relative peace and unity among borderland civilian communities.

The closure of the Sudan border affects Eritrean livestock as many crop by-products and animal feeds such as molasses used to be imported from Sudan; the cost of these products has risen accordingly. Livestock owners complain of high charges or taxes to take their stock into Sudan for grazing.

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\(^{25}\) Backed by the African Union - Inter African Bureau for Animal Resources (AU-IBAR) and the United States Agency for International Development (USAID). Readers are referred to the Djibouti Country Profile for details.
2.4. The Changing Role of Livestock in Eritrea

2.4.1. Uses of Livestock in Eritrea

Livestock in Eritrea serves the following purposes: the provision of milk, meat, butter and transport, and a source of ploughing, capital savings, insurance, cash, marriage and funeral rites, fuel and fertiliser.

Information on the changing role of livestock in the nomadic pastoralist areas of Eritrea could not be collected in the course of this study, as it concentrated on the vicinity of the Temporary Security Zone (TSZ). In and around the TSZ, most people (including all the livestock owners) followed an agro-pastoralist livelihood. The emphasis on crop farming appeared to be increasing. Livestock is considered as a sign of wealth, and whilst many people interviewed aspired to owning livestock, most interlocutors concentrated on crop production, from which they hoped to resume livestock ownership.

Most interviewed people were trying to rebuild their lives after the war; for many (especially as most were agro-pastoralists), the key animal was the ox for ploughing. Others were trying to build up herds of small stock as they reproduce more rapidly than cattle – from only one or two breeding animals to begin with, a nucleus herd can soon be formed.

In summation, livestock continues to play a vital role in the local Eritrean economy, and no major changes or trends in the role of livestock were observed.

2.4.2. Alternative Support Mechanisms

Opportunities for alternative livelihoods are limited by the physical, climatic, social and economic conditions in Eritrea; however, there is probably more opportunity for diversification in the areas of Gash Barka and Debub than in the Red Sea Provinces and the pastoral and agro-pastoral areas in the neighbouring states in the Horn, especially Ethiopia and Kenya.

Surprisingly, the ocean resources are not much exploited. In contrast to Somalia, where destitute pastoralists often become fishermen, in Eritrea there appears to be no or little link between most inhabitants and the sea. This area could be exploited much further in future.\(^\text{26}\)

\(^{26}\) Readers are referred to the Recommendations Section.
2.5. Key Actors
This study does not intend to list all the agencies operating in the country. It will instead restrict itself to activities relevant to the livestock sector.

2.5.1. Government of Eritrea and United Nations
2.5.1.1. Government
The two bodies involved with livestock issues in Eritrea are the Ministry of Agriculture and the Eritrean Refugee and Relief Commission (ERREC). The Ministry of Agriculture is currently being restructured, and its reporting system is very limited.

The Animal Resources Department (ARD) of the Ministry of Agriculture has 18 veterinarians, 27-30 veterinary assistants who graduated with a two-year diploma course, 75 veterinary technicians with a certificate from a six-month training, and 132 community animal health workers each trained for between 30-45 days and who are supposed to receive a follow-up refresher training after six months. Many of these personnel however are either inactive or have been conscripted into the army. The Ministry operates 6 regional and 47 sub-regional livestock clinics.

The agriculture (including livestock) sector is included in the Emergency Reconstruction Programme (ERP) funded by the World Bank, the African Development Bank, the European Union and the Governments of Denmark, France and Italy. Much of the funding from this programme is directed at Debub and Gash Barka zobas. In terms of actual field activities the Ministry operates only small projects: for example, in September 2003, the Ministry trained farmers in beekeeping and issued 50 farmers in Debarwa with 3 modern bee-hives each. Its staff however is closely involved with the projects of non-governmental organisations.

International Cooperation, Macro-Policy and Economic Coordination (ICMPEC) hold a coordinating role especially in all aspects of recovery programmes.

2.5.1.2. United Nations
The Food and Agriculture Organisation (FAO) is the main United Nations agency involved in livestock, and has been rehabilitating 12 veterinary clinics in Debub and Gash Barka zobas. Since 2003, the FAO plans to improve access to water for livestock and the utilisation of local crop residues,
the manufacture of feed blocks, chicken restocking, the control of contagious bovine pleuropneumonia (CBPP), and the refresher training of veterinary and para-veterinary personnel.

The Vulnerability Assessment and Mapping (VAM) unit of the World Food Programme (WFP) has mapped 572 kebabies and divided Eritrea into 14 different Food Economy Zones based on rainfall, elevation and population density. More work is required on describing the livelihoods in each Food Economy Zone. It is recommended that a similar approach be used in designing interventions for each zoba or kebab.

2.5.2. Parastatals and the African Union
There are no parastatals actively involved in livestock issues. The Red Sea Trading Corporation29 has attempted livestock marketing in the past but is not currently dealing in livestock.

The African Union Inter-African Bureau of Animal Resources (AU-IBAR) has two components involved in livestock in the region as a whole. The Pan African Control of Epizootics (PACE) project works through the Government to eradicate Rinderpest and to control contagious bovine pleuropneumonia (CBPP), whilst the Community Animal Health and Participatory Epidemiology (CAPE) project supports the Government in terms of policy development and community animal health systems.

2.5.3. International and Local Non-Governmental Organisations, Pastoralist Associations and Community Based Organisations
The Information Coordination Centre of the Eritrean Refugee and Relief Commission (ERREC) produces an inventory of all non-governmental organisations and agencies operating in Eritrea. The database provides information on agency name, area of operation, donor, budget, target group and type of project.

2.5.3.1. Projects specific to Gash Barka and Debub
At the time of writing, Oxfam was scaling up activities in Debub (but not Gash Barka), and had identified the following potential interventions:

- Short-term (less than 9 months) interventions: water conservation and development; cash for seed; seed distributions; food aid; fishing equipment distribution; public health awareness; malaria control; therapeutic feeding; reducing acute respiratory infection (ARI); improving animal and poultry feed (molasses, brewers grain, fish meal) and water access; providing free Ivomec treatments; and rehabilitating rangeland through irrigation.
- Medium to Long term interventions: improve health services; improve nutrition through better farming practices; provide cash for work on infrastructure improvement; restocking; establishing poultry and handicraft income generation activities; and training paravets.

CARE with CRS carried out a 21-day feed supplement trial with concentrates for 1,500 oxen in four sub-zobas in Debub. They also plan to distribute poultry to female-headed households and are working on providing IGA training and credit to community associations. CRS has also done some water point rehabilitation and training community members in water point maintenance in north Debub.

29 Note: This is not the same as the USAID funded Red Sea Trade Commission
Haben, a local non-governmental organisation have carried out a number of research trials on drought and conflict related matters. Destocking has been attempted by Haben, but the Government does not support it and vetoed it. Enhanced dialogue with the Government on the reasons behind destocking is recommended accordingly. Haben trained 8 paravets in Kirkabet sub-zoba in Anseba and have trial plots on fodder production and spate irrigation for agriculture with sorghum transplanting. They recognise fodder production and emergency livestock feeding as very important and over the next 12-year period they plan to work with 9 kebabies in Kirkabet.

Manitese, a local non-governmental organisation run by women, is involved in poultry production and income-generating activities through diversification in Gash Barka zoba.

Africare, an American non-governmental organisation, provided beekeeping equipment and restocked 4,000 families in Debub, Gash Barka and North Red Sea Zone with dairy goats in 2002.

ACORD implemented seed distribution, dam construction and water supply improvement during 2003, and are active in supporting savings and credit bureaux in Debub.

The Toker Project has a seed distribution and integrated agriculture project that includes pond and well construction in Gash Barka.

The FAO recommends vaccination and fodder supplementation for livestock and the training of vaccinators.

The August 2003 Joint Task Force report recommends the following livestock interventions:
  • Assistance to farmers to collect and store baled hay;
  • Training on proper use of animal feed and reporting mortalities;
  • Strengthening veterinary service provision.

2.5.4. The Private Sector
There are three livestock feed mills in Eritrea, one operated by the Asmara Dairy Farmers Cooperative Association (ADFA). Another is Suchia Feed Company that make cattle feed from imported grains, local brewers waste and molasses. Farmers and non-governmental organisations buy directly from the miller.

Poultry farmers often buy offal and make blood meal for chicken supplements. Erifeed, a feed mill based in Dekam Hare only produces chicken feed.

The Red Sea Trading Corporation used to export livestock (see above).

2.6. History of ICRC Operations in Eritrea
Readers are referred to ICRC Annual Reports. In 2004, livestock concerns are incorporated into the general ICRC approach (livelihood support assistance to returnees).

2.7. Policies
There is no specific Government policy document for livestock or for food security in Eritrea; however, the current policy of the Animal Resources Department of the Ministry of Agriculture is outlined in the 1998 document “Animal Resources Investment Sub-Sector Programme” (ARIS-S). A
number of other Government documents, summarised below, include useful information on various aspects of the livestock sector.

The Government has published a short-term (1998-2000) and medium term (2000-2003) National Livestock Development Plan (NLDP), but these plans never materialised due to the war and other economic factors. These documents stated the key areas for livestock intervention as being the following:

- Improved small-scale dairy production through cattle and dairy goats in the highlands, Anseba, North and South Red Sea Provinces;
- Improved small ruminant meat export in the western lowlands;
- Improved beef cattle development in Gash Barka region;
- Small-scale poultry production in the central region;
- Improving pig production, beekeeping, and the production of hides and skins;
- Livestock marketing and animal health.

Most interventions were planned to be implemented by the Government itself. Increased private sector activity was however also included in the sectors of production, marketing and animal health provision.

The NLDP was overtaken by the Emergency Reconstruction Programme, begun in June 2000 to assist war and drought affected farmers in Debub and Gash Barka zobas. The Programme includes three activities planned for the Animal Resource Department, as follows:

- The purchase and distribution of 600,000 imported Fayoumi chicks from Egypt, to be given to 25,469 beneficiaries;
- The distribution of 4,600 beehives;
- Procurement of US$ 112,000 worth of veterinary drugs.


The draft Poverty Reduction Strategy Plan (PRSP) was not scrutinised during the course of this study, but also contains elements of interest to anyone planning to implement livestock projects.

Of importance is the fact that the Ministry of Agriculture in principle is against destocking, due to the limited size of the national herd. The Ministry 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. However some members of the Ministry do recognise that the future lies in the privatisation of veterinary drug supply.

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**Box 2.3. Government documents 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, 2003);
- National Action Programme for Eritrea to Combat Desertification and Mitigate the Effects of Drought (NAP) - Ministry of Agriculture (January 2002);
Regarding animal health, the government provides free vaccination against Rinderpest, foot and mouth disease (FMD), contagious bovine pleuropneumonia (CBPP), contagious caprine pleuropneumonia (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 the viral pox diseases.

2.8. Databases, Networks and Early Warning Systems

2.8.1. Databases
There are no up-to-date livestock databases in Eritrea; the Food and Agriculture Organisation’s (FAO) livestock figures are based on 1997 census data.

The Eritrean Refugee and Relief Commission (ERREC) operates the Information Coordination Centre (ICC). The Centre provides a database called the “3Ws”, which lists all the non-governmental organisations, United Nations agencies, and their projects in the country.

2.8.2. Networks
The Pastoralist and Environment Network in the Horn of Africa (PENHA) was reported to have a presence in Eritrea, but it was not possible to enquire about its activities in the course of this study. No other Eritrea specific livestock networks were found.

2.8.3. Early Warning Systems
There was no operational early warning system in Eritrea 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 NFIS based on CAA information.

2.9. Evolution of Past Livestock Interventions

2.9.1. Livestock Vaccination
The Eritrean Government has conducted yearly livestock vaccinations free of charge. It was impossible to obtain the exact number of vaccinated animals, or the targeted diseases. Vaccination occurs around September each year when animals return to the villages from dry season grazing areas.

The impact of the vaccination programmes cannot be determined as no data is available, but the fact that Rinderpest has officially been eradicated from Eritrea indicates a positive impact. Control and eradication of contagious bovine pleuropneumonia (CBPP) is the Government’s next priority, but it is restricted by staff and budget shortages.

2.9.2. Restocking the Herds of Families that Support Orphans
The Eritrean Ministry of Labour and Human Welfare runs an annual project to rehabilitate or support households that support orphans or other vulnerable individuals (such as the disabled). Beneficiary families, identified by the local administration, receive between 5,000 and 10,000 Eritrean Nakfa31. Some choose to devote this amount to petty trade and income generation, others use the money to buy breeding or draft animals. The success and impact of the project varies greatly depending on the family involved, and the way it spends the money. The overall opinion is that those who invest in livestock generally do better than those who invest in trade.

30 Readers are referred to Chapter 7 (Section on Regional Early Warning Systems) of the Regional Livestock Report.
31 US$ 372-744.
2.9.3. Restocking with Egyptian Chickens
Over the past few years, the Government and non-governmental organisations have distributed several thousand Fayoumi chicks to families throughout Eritrea. The Food and Agriculture Organisation (FAO) and non-governmental organisations report that this has significantly improved household income and created a market for eggs and poultry. Interviews with farmers in Gash Barka however suggest that the provision of chicks is not always successful, and indicate high mortality (although many crossbred Fayoumi chickens can be seen in most villages). Farmers in Debub on the other hand acknowledge the success of the introduction.

The project can be successful even for internally displaced persons; however, training and follow-up must be provided by the veterinary department or the organisation distributing the chicks, and regular vaccination campaigns against the major poultry diseases must be guaranteed.

2.9.4. Rehabilitation of Veterinary Services
The emergency rehabilitation of veterinary clinics by the Food and Agriculture Organisation (FAO) should improve livestock health delivery, providing that the clinics are sufficiently staffed by Government veterinarians and have adequate drug stocks. It is too early to record any impact. The staff of many existing Government veterinary clinics visited in the course of this study complained that certain drugs (especially Ivomec) were in short supply.

The Food and Agriculture Organisation and the World Food Programme\(^{32}\) have reported the existence of a pilot project to train community animal health workers in Sheib District of North Red Sea Zone. The impact and lessons learned from this should be recorded and disseminated.

2.9.5. Fodder Supplementation, Concentrate Feeding and “Destocking/Cost Sharing”
The impact of the planned CARE and Mercy Corps animal feed supplementation projects will be interesting to follow. Food and nutrition are the major constraints to livestock husbandry in Eritrea, and any new cost-effective methods of supplementing feed should be investigated\(^{33}\).

2.10. ICRC Concern Areas
The joint report drafted by CARE, World Food Programme, and Eritrean Refugee and Relief Commission (ERREC) indicates that highland agricultural households are the most vulnerable to shocks. The ICRC’s main concern area on the other hand is in and near the Temporary Security Zone in Debub and Gash Barka, responding to the needs of those most affected by the conflict.

Table 2.6. overleaf provides a background summary to Eritrea, with special emphasis on the ICRC concern areas of Debub and Gash Barka.

Livestock is the key source of income for families in both Debub and Gash Barka, in spite of Debub being primarily agricultural. The ICRC\(^{34}\) accurately summarises the livestock situation: “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

\(^{32}\) FAO/WFP, 2002.

\(^{33}\) The ICRC should maintain information flows with these organisations to evaluate the possibility of feed supplementation as a future ICRC activity.

\(^{34}\) ICRC Assessment, 2002.
The key target groups38 regarding livestock interventions are:

- Saho and Tigrinya host communities in Debub.

### Table 2.6. Eritrea – Approximate Summary35

<table>
<thead>
<tr>
<th></th>
<th>Debub</th>
<th>Gash Barka</th>
<th>Eritrea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (sq km)</td>
<td>10,000</td>
<td>34,000</td>
<td>124,000</td>
</tr>
<tr>
<td>Sub-zones</td>
<td>12</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Kebabies/localities</td>
<td>912</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Villages</td>
<td>209</td>
<td>841</td>
<td></td>
</tr>
<tr>
<td>Altitude (m)</td>
<td>1,400-2,020</td>
<td>450-2,000</td>
<td>0-3,000</td>
</tr>
<tr>
<td>Rainfall (mm)</td>
<td>400-600</td>
<td>200-300</td>
<td>200-1,200</td>
</tr>
<tr>
<td>Description</td>
<td>Rocky and mountainous</td>
<td>Arid, rocky plains</td>
<td>Mostly semi-arid</td>
</tr>
<tr>
<td>Human population (millions)</td>
<td>0.6</td>
<td>0.5</td>
<td>4.436</td>
</tr>
<tr>
<td>Human density (sq km)</td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Tigrinya: 81% Saho: 14% Tigre: &lt;5%</td>
<td>Mixed: Kunama, Nara, Tigre, Saho, Beja, ...</td>
<td>More than 10 ethnic groups</td>
</tr>
<tr>
<td>Total GDP (US$ millions)37</td>
<td></td>
<td>925</td>
<td></td>
</tr>
<tr>
<td>Life expectancy</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>HDI world rank (/175)</td>
<td>155</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camels</td>
<td>19,000</td>
<td>113,000</td>
<td>0.32 million</td>
</tr>
<tr>
<td>Cattle</td>
<td>490,000</td>
<td>917,000</td>
<td>2,200,000</td>
</tr>
<tr>
<td>Sheep</td>
<td>614,000</td>
<td>675,000</td>
<td>1,560,000</td>
</tr>
<tr>
<td>Goats</td>
<td>706,000</td>
<td>1.7 million</td>
<td>4.7 million</td>
</tr>
<tr>
<td>Equines</td>
<td>174,000</td>
<td>176,000</td>
<td></td>
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<tr>
<td>Poultry</td>
<td>513,000</td>
<td>424,000</td>
<td>1.37 million</td>
</tr>
<tr>
<td>Veterinarians</td>
<td>2 (1)</td>
<td>3 (2)</td>
<td></td>
</tr>
<tr>
<td>Veterinary Assistants</td>
<td>5</td>
<td>7 (5)</td>
<td></td>
</tr>
<tr>
<td>Animal Health Technicians</td>
<td>0</td>
<td>11 (5)</td>
<td></td>
</tr>
<tr>
<td>Paravets</td>
<td>20 (0)</td>
<td>20 (2)</td>
<td></td>
</tr>
</tbody>
</table>

N/A: not available.
(Figures in brackets are of those still classified as “Active”)

The key target groups38 regarding livestock interventions are:

- Saho and Tigrinya host communities in Debub;

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35 Sources: Food and Agriculture Organisation/World Food Programme Assessment, 2002; Kayouli et al., 2002; Eritrean Ministry of Agriculture, 2003.
38 Agencies should not promote livestock (with possible exception of poultry) amongst IDPs until they return to areas of origin and only if those areas are suitable for livestock - to be determined on a case by case basis.
• Kunama and Nara host communities in Gash Barka;
• Returnees, resettled expellees if in final “home”.

2.10.1. Current Situation in Concern Areas

Large numbers of people displaced from the Temporary Security Zone (TSZ) and expellees from Ethiopia have settled in the agricultural and grazing areas of Gash Barka and Debub. Most internally displaced persons have either lost their livestock or left it with a few family members to graze in the TSZ; however, increasing pressure on the main natural resources (animal fodder, firewood and water) is leading to tension and occasional conflict. In view of current delays in the border demarcation process, it is unlikely that most internally displaced persons will return to their home areas for at least another year, and encouraging them to keep more livestock while still displaced will increase local conflict. It is therefore recommended that livestock interventions at this time only target host communities and selected expellee settlements.

2.10.2. Traditional Coping Mechanisms and their Sustainability

1.10.2.1. Migration

Migration into Ethiopia has now stopped completely. Even the use of valuable grazing areas close to the border is considered risky due to alleged looting and theft by the Ethiopians. Migration into Sudan is still possible for those families in Gash Barka who retain contacts or extended families in Sudan. Migration still takes place, but at significant cost.

Generally, the Kunama and Nara livestock in Gash Barka move south in the dry season and north in the wet season. Tigrinya and Saho stock move east in dry season.

“In extremely dry years we still move our animals into Sudan where we have to pay for grazing fees. But it is better to lose 50% of ones herd in taxes than to lose all to drought”

Livestock owner in Gerjaf

2.10.2.2. Crop residues

Crop residues have become an integral part of the diet of Eritrean livestock. The increase in cultivation has reduced the availability of natural fodder, but this is compensated for by crop residues, especially sorghum and millet stover in Gash-Barka, and teff, wheat and barley straw in Debub. However, it is important to note that crops fail 3 out of 10 years in the highlands, and 5 out of 10 years in the lowlands\(^{39}\). Even in normal years, livestock is nutritionally stressed for 1-2 months; the significant risk of drought, and a high dependency on crop residues makes the livestock sector highly vulnerable.

2.10.2.3. Increased livestock sales

As in most Horn of Africa countries, when food is in short supply people will sell livestock to buy cereals. In the conflict affected areas of Eritrea, livestock sales and prices fluctuate, but with some anomalies compared to neighbouring countries. For example, prices of thin oxen in Tokombia market at the end of the dry season in 2002 were higher than they were in October 2003 when the animals were in good condition. This was because the ploughing season in the highlands starts in

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\(^{39}\) CARE, World Food Programme (WFP), Eritrean Refugee and Relief Commission (ERREC), 2003.
November, and there was high demand for oxen for ploughing. As a result, prices rose, in spite of the poor condition of the animals.

Some livestock owners only sell animals when prices are good for the seller – aiming at holidays and religious festivals and months when the animals are in good condition. Some owners are forced to sell when food supplies are short, but often the animals are in poor condition, and cereal prices are high.

In shock years, because of drought or displacement, many animals end up in the market in poor condition and are not sold.

2.10.2.4. Reduced food intake
Families reduce their food intake. The number of meals per day drops from three to two, or even to one meal per day for certain age and sex categories when food is in short supply. Whilst this acts as a short to medium term coping strategy, in the long-term it can have detrimental effects on the individual.

2.10.2.5. Change in diet
As problems in food security develop, people change their feeding habits from expensive luxury foods like meat, pasta and rice to cheaper energy rich foods – cereals like maize and sorghum. This can be a long-term option with few dangerous side effects providing that nutritional balance is maintained.

2.10.2.6. Consumption of seed grains
Consumption of seed grain is a short-term emergency (or survival) strategy that depletes the household’s long-term ability to survive unless new seed can be obtained from other sources.

2.10.2.7. Increased sale of firewood
In times of food crisis (e.g. crop failure, livestock death, etc.), individuals will resort to alternative income generation. Women and men harvest natural resources such as firewood, charcoal, rushes and grasses for mat making. As the crisis continues, or affects more people, the collection of resources may become unsustainable and destructive.

2.10.2.8. Increased off-farm employment
Farming or livestock rearing families may look for employment outside their own farm or herd. They may work for neighbours, engaging in ploughing, weeding or herding.

2.10.2.9. Cash-for-work / food-for-work
In areas covered by Governmental or United Nations’ / non-governmental organisations’ support mechanisms, household members will join food-for-work or cash-for-work schemes. It is to be noted however that the Eritrean Government did not approve of food-for-work programmes at the time of writing.

2.10.2.10. Increased dependence on remittances
Begging or requesting remittances from friends and relatives both locally and in the diaspora is an important coping mechanism. Remittances from the more distant diaspora tend to be more reliable and sustainable: the “domestic shock” may not have affected relatives belonging to the diaspora abroad. Remittances and gifts from neighbours or local relatives may be less sustainable as they too may have been affected by the same shock.
2.10.2.11. Migration to towns
When rural livelihoods are no longer sustainable, whole households or individuals may migrate to urban centres to look for employment or other social safety nets such as famine relief distributions, food-for-work / cash-for-work, medical aid or therapeutic feeding centres.

2.10.2.12. Credit, borrowing and entering into debt
Many livestock owners rely on credit even in normal periods and as a short-term coping mechanism during difficult times. Credit can change to borrowing as conditions deteriorate, then a family or individual may enter into debt. Entering into debt may have a long-term effect on the family’s ability to re-establish itself. However lending, borrowing, loaning, gifting and other support mechanisms are widely established in pastoral systems, but their availability may drop as the crisis extends.

2.10.2.13. Wild fruits and plants
Consumption of wild fruits and plants is a common coping strategy, as are fishing and hunting in some communities. Access to, and availability of, these resources however may also be adversely affected by the same shock that is forcing individuals to resort to these coping mechanisms.

2.10.3. Community Resilience
The target group, beneficiary or community’s ability to respond to a shock depends on the physical and cultural availability of the above coping mechanisms. In Eritrea, livestock is generally considered as a sign of wealth. Although 80% of the population is reported to own livestock, this does not mean that everyone is wealthy. However, people in Eritrea who possess most of the livestock are indeed better-off (or considered to be wealthier) than the poor farmer who owns no livestock and relies entirely on cultivation; this does have implications as to how livestock issues should be tackled. If livestock owners are considered better-off, then issues such as cost sharing and paying for services should be considered, even in times of difficulty. This raises the issue of targeting: if only the most vulnerable are to be targeted, then not too much emphasis should be put on livestock interventions. However, livestock is extremely important to the agricultural sector as a whole and, if livestock disappears, then the whole agricultural system would collapse.

Many livestock owners can solve some of their own livestock problems, but targeting the poorer members of the livestock owning community in Eritrea with appropriate interventions (see Section 1.12. below) is still justified to some extent.

2.11. Current ICRC Involvement
2.11.1. Human Health
A 2003 survey of health services to 65,000 internally displaced persons (IDP) found available services to be reasonable, but identified increasing tension between host communities and the displaced. The IDPs came with some livestock, and increased tension by competing with host community livestock for limited grazing or fodder.

The only major health problem related to livestock is bovine tuberculosis (TB). To control bovine TB requires pasteurisation of milk or the forced slaughter of infected animals. However this is culturally unacceptable to most livestock owners, and thus unlikely to be adopted even if a major campaign was launched.

No other zoonotic diseases are considered a priority at present. The Eritrean Health Information System (HIS) does not include brucellosis as a major disease in the country.
Future links or collaboration between the livestock sector and human health should include:

- Environmental health (not just livestock) and human medical issues concerned with ventilation, latrines (where the link to livestock is provided by bovine measles or hydatidosis), dust and noise, town planning and traffic;
- Meat inspection by community animal health workers;
- Zoonotic diseases: of special interest are tuberculosis in camps for internally displaced persons and rabies in Debub;
- In the distant future, links between community animal and human health workers could be forged.

### 2.11.2 ICRC Assistance Programmes

The link between livestock and water is obvious\(^40\), as are the relations between animal and plant production\(^41\). Future links should include:

- The continuation and strengthening of the current approach to water development to benefit both humans and livestock, including the provision of drinking troughs for animals;
- Joint cash-for-work projects on pond or water pan development in selected areas of Gash Barka;
- Observing and advising on overgrazing, fodder production and irrigation where appropriate;
- Collection of information and analysis of data – particularly regarding livestock numbers and water requirements;
- A joint study into the need, environmental impact, sustainability, cost efficiency and management capability for cattle dips.

Future links with agriculture could include the following:

- The provision of ploughing oxen and tools to internally displaced persons;
- Investigating crop rotation and improving the use of the fallow period by growing leguminous fodder or food crops;
- Restocking herds belonging to host communities with ploughing oxen\(^42\) or donkeys that can be used all year round;
- Subsidies or vouchers for tractor ploughing in flatlands.

### 2.12. Recommended Interventions in the Eritrean livestock sector

The following is intended as a comprehensive list of possible interventions in Eritrea; obviously, their actual feasibility (fully or partly) remains contingent upon developments. Proposed interventions have been broken down into emergency (relief), chronic crisis (transition) and post-crisis interventions. All the possible interventions should be considered in order to:

- understand the implications and impact of emergency interventions on the longer-term development interventions in the sector;
- implement a complete “tracking strategy” of interventions.

A table of the recommended interventions is provided in Annex 9.2. of the Regional Livestock Report with a list of warning indicators, impact indicators and exit strategies to advise on when to intervene.

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\(^40\) Readers are referred to the Regional Livestock Report, section 8.5.
\(^41\) Readers are referred to the Regional Livestock Report, section 8.1.
\(^42\) The use of oxen is very seasonal and has a high turnover. Readers are referred to Box 9.7 in Chapter 9 of the Regional Livestock Report for an example of ox-plough restocking plans.
and when to stop. These indicators are preliminary, and require further development for each local context.

2.12.1. Short-Term Emergency (Relief) Interventions

2.12.1.1. Destocking or emergency marketing support

- Purchase of livestock for immediate slaughter and meat distribution. The intervention should be carried out in specific centres, and begin when crop residues and other feed sources are exhausted and people are starting to lop (cut) branches off trees. It can be carried out through support to a private sector trader, or directly by the implementing agency.
- For the few animals that are still in good condition at this stage, traders can be subsidised to buy the fat stock that can enter the commercial market.

Duration: 1-3 months (extendable).

2.12.1.2. Fodder or water supply

- Emergency trucking of fodder including prickly pear (beles) and crop residues from highlands to lowlands / livestock areas. Purchase of the prickly pear from the resident community may be necessary.
- 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 (if available) and distribution of urea/straw feed blocks to breeding stock and animals used for ploughing.

Duration: 1 week – 3 months (extendable).

2.12.1.3. Animal health

- Internal parasite control campaigns in displaced herds, or for all livestock in February, March or April in shock areas or years.
- The provision of emergency veterinary drug supply (mainly anthelmintics and acaracides) to Government clinics.
- The re-training of emergency vaccinators or parasite control personnel.

Duration: 1-3 months (extendable).

2.12.1.4. Cash-for-work

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

Duration: one week to one year (extendable).

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43 Using veterinary vouchers to target livestock belonging to especially vulnerable groups.

44 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 leucocephyla* and Pigeon Pea (*Cajanus cajan*) do well if rainfall is more than 400 mm, and *Atriplex nummularia* should be grown in areas with less than 200 mm rainfall.
2.12.1.5. General

- The distribution of modern beehives, and training of farmers in bee-keeping in selected areas of Debub and Gash Barka (minimum duration: 1 month).
- Livestock water needs must be incorporated into existing and future water development programmes.

2.12.2. Medium Term Chronic Crisis (Transition) Interventions

2.12.2.1. Animal survival and production

**Improved nutrition**

- The development, or support to development, of fodder crops and innovative feed sources.
- The manufacture, training of farmers in, or distribution of urea / straw feed blocks.
- Temporary enclosures and reseeding or planting fodder using micro-catchments through cash-for-work.
- The investigation of fodder supply possibilities from Seawater farms and the fodder supply factories in Asmara, including the use of waste paper, wood shavings, seaweed, Neem seed cake, fish-meal, and cactus.
- The establishment of lowland cactus plantations.
- The investigation of under-sowing cereals in highlands with Rhodes grass and legumes.
- Strategic water development in Gash Barka: digging ponds or wells through cash-for-work.

**Improved animal health**

- Preventive pneumonia and mineral/vitamin injections for all breeding stock at the end of the dry season, drought, or nutritional stress period.
- Training, or support to others to train, emergency vaccinators to community animal health worker level.

**Dialogue, diversification and dissemination**

- Providing internally displaced and resettled persons with the means to plough, but only in conjunction with participatory land use planning (PLUP) that includes access routes to water and pastures.
- Supporting the Government and non-governmental organisations to develop a strategy on emergency livestock interventions through meetings, workshops and tours to neighbouring countries.
- Identifying methods of reducing livestock losses to predation – for example, suitable night enclosures made from renewable materials (dry stone walling).
- Investigating the feasibility of cultivating 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 can be fed to livestock in emergencies.
- Attending food security and livestock sector meetings in Asmara.
- Dissemination with livestock owners, presenting the advantages of commercial livestock keeping aimed at local and export markets vs. traditional systems.
- Ensuring that agricultural and water development schemes take livestock access and mobility issues into due consideration.
- Preserving migration routes to Bahari (Red Sea Zone).
- Dialogue with the Government should include the issue of sustainable community animal health services.
2.12.3. Long-Term Post-Crisis Interventions

2.12.3.1. Strengthening Livelihoods

- Restocking: the provision of improved goats and poultry to selected expellees and returnees, in conjunction with a community animal health worker training programme to ensure compliance with health requirements.
- Restocking the poultry belonging to internally displaced persons and residents, but only if follow-up can be guaranteed.
- Establishing micro-credit / micro-finance systems at village level and in camps for internally displaced persons.
- Cash-for-work bonus system based on areas protected and tree survival rate\textsuperscript{45}.
- Problem analysis in each region / village.

2.12.3.2. Diversification, information, networking & dialogue

- Link to Helhale research station and forestry research centres for improved fodder.
- Investigating the possibilities for improved beekeeping and honey production, and sea-fishing.
- Link exchange rates for destocking to the terms of trade for cereals.
- Cost vs. benefit study into the 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 to operate “animal holidays” or “animal asylums”, offering adequate fodder supply without 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.
- Collaborating with Sectoral Working Groups (SWG) and promoting 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.

2.12.4. Other Important Activities to Benefit the Livestock System

- Mine clearance and land preparation by the army.
- Conflict resolution and peace building.

2.13. Constraints

- The lack of information on herd sizes, resource access and migration routes.
- The critical long dry season which puts stress on stock and pressure on resources is May / June. Agencies must be prepared to intervene during this period accordingly.
- Cash-for-work can affect the community spirit, and undermine self-help, community coping and recovery mechanisms.
- Water point development can cause settlement, excessive livestock densities and overgrazing.
- Massive population growth in camps for internally-displaced persons.
- Herds belonging to internally-displaced persons should not be restocked until they return to home areas or are settled permanently, and then only if the residents in the settlement area anticipate no problems regarding competition from more livestock.

\textsuperscript{45} 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.
• Herds belonging to host communities can be restocked with breeding sheep and goats or donkeys and camels for ploughing provided the environment is not already overgrazed and new resources are available.
• The practicalities of cross-border consultation and experience-sharing.

“I plough for myself for five days, on the sixth day I plough for others”.
Haji Idris Ibrahim, a wealthier Saho livestock owner in Digim Village, Debub.

2.14. Conclusion
Livestock is irrevocably linked to the entire agricultural and economic sectors of Eritrea. Stress to livestock resulting from conflict seriously weakens the whole livelihood system in Eritrea.

Specific livestock interventions may not be a priority but, in view of the above, may be necessary on occasion as livestock represents important capital reserves for food or cash in emergencies.

The key livestock need is fodder production and modern or “commercial” thinking on the part of owners. Interventions to support agricultural crop production and the consequent increase in crop residues for livestock and/or livelihood diversification should be the priority.
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Mission

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance.

It directs and coordinates the international relief activities conducted by the Movement in situations of conflict. It also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement.