



**IGAD
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The Political Economy of Pro-Poor Livestock Policy in Eritrea

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PREFACE

This paper is part of a series of political economy Working Papers prepared for the Inter-Governmental Authority on Development's Livestock Policy Initiative (IGAD LPI) and the Pro-Poor Livestock Policy Initiative (PPLPI) of the Food and Agriculture Organization (FAO) of the United Nations. The purpose of these papers is to explore strategic political economy issues that would facilitate or inhibit livestock policy reforms in the IGAD region that would benefit poor producers.

Specifically, this paper seeks to understand how the Inter-Governmental Authority on Development's Livestock Policy Initiative (IGAD LPI), a project jointly managed by IGAD and the Pro-Poor Livestock Policy Initiative of FAO (PPLPI), can assist the poor livestock producers in the greater Horn of Africa to improve their livelihoods through strategic policy or institutional interventions. Unlike many policy papers, however, this report specifically and explicitly examines the political context in which livestock are produced, and aims to identify entry points that are truly feasible given these political realities. The report identifies key national and international actors, institutions and processes that surround formal and informal policy-making relevant to livestock production, the institutional bases of existing policies, and finally, strategies and resources required to make the politically feasible changes and creations possible. The recommendations made in this paper are therefore based on strategic choices, and not the technical or economic merits of various policy options.

Livestock is vital to the economies of many developing countries, and especially those of the Horn of Africa. Animals are a source of protein for human diets and can serve to provide income, employment and foreign exchange within a country. For many low income producers, livestock also serves as a store of wealth, provides draught power and organic fertilizer for crop production, acts as a means of transport, and serves as a vital component of social functions and exchange. Consumption of livestock and livestock products in developing countries, though starting from a low base, is growing rapidly. This sector growth could provide opportunities for the livestock-dependent poor to improve their livelihood, and this report aims to recommend politically feasible policy and institutional changes that can allow this to happen.

To arrive at its recommendations, this report uses the analytic tools of political science to determine policies that will be truly feasible in a particular real-world political context. The author is neither an economist nor a specialist in livestock production and is not using the criteria of those disciplines in its suggestions. The report instead seeks to select on the grounds of political feasibility from among the recommendations that local and international experts have made on technical or economic grounds. Thus, the report identifies key national and international actors, institutions and processes and their role in policy-making relevant to livestock, the institutional bases of existing policies, and finally strategies and resources required to make selected changes and creations possible.

Methodologically, the paper is based on several weeks of field work in the area, supplemented with a thorough review of government documents, newspapers and recently published research. The author relied foremost upon the informed observer method of research, conducting interviews with individuals and groups of people in a position to understand the political economy of the livestock sector, including the processes that shape its policies and their reform. Thus interviews were held with those in the government, the donor community, non-governmental organizations, academia, and the leadership of relevant livestock and other civil society organizations. These interviews were not a 'random sample' nor even necessarily 'representative'; the author sought those who had knowledge drawn from their own work and experience.

Due to the sensitive political nature of this research, interviewees were offered anonymity and confidentiality for their statements, and very few people chose to waive this right. Even though this report cannot cite their names, the author subjected informants' statements to high standards of rigor. The author sought to be conscious of any partisan bias or rumour that informants might have had in their report and whether they were actually in a position to know on personal or very strong secondary authority what they reported. In most cases corroboration for key analytic points was sought as well, either from other informants or through quotable statements from academic literature. Where corroboration was impossible and the point was important the author generally has indicated the number of people who supported the point, so the reader can judge for him/herself the strength of the evidence. On occasion, the use of corroboration via academic literature may give the paper a 'desk study' veneer, but it is the understandings of the informants - analyzed with the theoretical tools of political science - that drive the conclusions.

We hope this paper will provide useful information to its readers and any feedback is welcome by the authors, IGAD LPI, FAO PPLPI and the Livestock Information, Sector Analysis and Policy Branch (AGAL) of the Food and Agriculture Organization (FAO).

Disclaimer

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of either the Food and Agriculture Organization of the United Nations or the Inter-Governmental Authority on Development concerning the legal status of any country, territory, city or area or its authorities concerning the delimitations of its frontiers or boundaries.

The opinions expressed in this paper are solely those of the author and do not constitute in any way the position of the FAO, IGAD, the Livestock Policy Initiative nor the governments studied.

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ABBREVIATIONS

EPLF	Eritrea Peoples Liberation Front
FAO	Food and Agriculture Organization of the United Nation
MoA	Ministry of Agriculture of the Government of Eritrea
NGO	Non-governmental Organization
PFDJ	People’s Front for Democracy and Justice
UNMEE	United Nations Mission in Ethiopia and Eritrea
USAID	United States Agency for the International Development
WFP	World Food Programme of the United Nations

EXECUTIVE SUMMARY

The growing demand for livestock and livestock products in Eritrea and the Middle East offers opportunities to improve the livelihoods of the livestock-dependent poor. However, current policies and structures in Eritrea disadvantage the livestock sector and discourage investment. Feasible interventions are suggested to facilitate the adoption and implementation of livestock policies that serve the interests of the poor.

The livestock sector has the potential to make a significant contribution to economic development, food security, and poverty reduction in Eritrea. Many Eritreans depend on livestock for draught power, food, income, fertilizer, fuel, transportation, asset accumulation, and investments in traditional social insurance systems. The export of animals and animal products used to provide significant earnings and could again in the future. Furthermore, in drought-prone Eritrea livestock offer the most common coping mechanism for staving off disaster. Although the potential for livestock is high, Eritrea must overcome significant constraints if it is to satisfy domestic needs and penetrate foreign markets. To date the livestock sector has received relatively little attention in national development policies and public and private investment in the livestock sector is quite low given the sector's potential.

The livestock sector is negatively affected by the same factors that depress investment in other sectors of the economy. For example, the border conflict with Ethiopia (1998-2000) killed over 70,000 people, displaced nearly a third of the population, destroyed assets including livestock, and ruined essential infrastructure. Ongoing tensions - as a result of Ethiopia's refusal to comply with the UN Eritrea-Ethiopia Boundary Commission ruling - continue to prevent traditional cross-border livestock migration and trade, divert resources from development to emergency provisions and security, delay implementation of decentralization and land reform policies, create labour shortages, and squash incentives for investment. The overvalued exchange rate and other government interventions in the economy reduce exports, exacerbate macroeconomic imbalances, crowd out private businesses, and create a labyrinth of regulations that slow economic activity and privilege the powerful. Current practices impede the flow of information, dampen civic organization, reduce stakeholder influence on policies, and lower civil service performance. Finally, deteriorating relations between Eritrea and the international community hinder the delivery of aid and emergency services to populations in need.

In addition to suffering from constraints that affect the whole economy, the livestock sector is especially disadvantaged relative to other economic sectors. The government has adopted policies that extract resources from the dispersed, impoverished, isolated and powerless livestock producers in favour of the relatively more concentrated, affluent, better-connected and powerful elites, urban consumers, and highland crop cultivators. The level of extraction from the livestock sector has increased since 1998 as a result of deteriorating economic conditions. The result has been both an absolute and relative decline in the welfare of the livestock sector.

There are strategic entry points that can advance the interests of the poor in Eritrea. In Chapter 10 of the Eritrean National Agricultural Development Strategy and Policy the Ministry of Agriculture provides a clear assessment of the main constraints to livestock development in Eritrea and makes a series of technical recommendations on how to alleviate these constraints. The recommendations are based on consultations with stakeholders and on the best available data. As such, the Eritrean National Agricultural Development Strategy and Policy should act as a blueprint for any action or investment by the government, non-governmental organizations, and the foreign aid community. Rather than replicate the Ministry of Agriculture recommendations, a different but complimentary approach is taken in this report. It suggests interventions that can enhance the likelihood that the Ministry of Agriculture recommendations will be successfully implemented. It proposes measures that are feasible given the current

conditions in Eritrea and that provide influential individuals and groups with greater incentives and the capabilities to execute the newly recommended pro-poor livestock policies. The proposed strategic entry points are the following.

Plan for eventualities and prioritize policies

In order to regain the reform momentum, The Ministry of Agriculture should be encouraged to plan for policy implementation under three different scenarios (the status quo, resumption of war with Ethiopia, and resolution of the crisis). In developing the three plans the Ministry of Agriculture and its partners should do a cost-benefit analysis of the recommendations from the Eritrean National Agricultural Development Strategy and Policy and prioritize activities accordingly. The recommendations that provide the most benefit to the poor should be identified and encouraged.

Cultivate allies and livestock advocates

Lack of attention to livestock issues is perhaps the most serious obstacle to implementation of the Ministry of Agriculture recommendations. There is a need to cultivate more powerful allies and advocates for the livestock sector in general and for poor producers in particular. Those who want to assist the livestock-dependent poor should seek to: 1) persuade influential individuals in government of the importance of livestock to their key policy goals of acquiring foreign currency, food security, poverty reduction, and national security; 2) create a separate Animal Production Department within the Ministry of Agriculture to advocate for livestock issues; 3) decentralize government decision-making and service delivery in a manner that enhances the influence of livestock producers and technical persons and minimizes the influence of centrally-appointed individuals; 4) work with existing local institutions at the village or community level to develop appropriate and responsive programs; 5) strengthen producer associations and help them maintain their independence; 6) encourage donors to target funding to livestock development; and 7) enlist Eritreans in the diaspora in livestock development activities.

Upgrade information quality and availability

Improving the amount and flow of reliable and timely information will help persuade potential allies of the value of investing in livestock processes and facilitate the implementation of chosen policies. The National Agricultural Research Institute and institutions of agricultural education in Eritrea should act to ensure that the connection between research and education and that the quality of these two spheres is not undermined by the closure of the University of Asmara. In addition, the Ministry of Agriculture or the Ministry of Foreign Trade should establish a livestock marketing information unit to provide timely data on domestic and foreign markets and to act as a liaison between Eritreans and foreign traders. Finally, there is a need for greater investment in monitoring and evaluation systems as well as for greater cooperation between the Eritrean government and international agencies in the collection, analysis, and dissemination of data.

Enact laws and systems for exports

Eritrea can achieve a comparative advantage in the export of livestock and livestock products only if it has a credible animal health certification regime. It is essential that the Ministry of Agriculture work with the Ministry of Justice to speed up the enactment of livestock legislation, so that Eritrea has an inspection and certification regime based on a solid legal foundation that is in harmony with international trade requirements. Such a regime also requires significant infrastructure and administrative investments. Export development would be greatly enhanced by institutional changes that consolidate livestock export marketing functions under a single ministry or agency.

Revise land policy

The Ministry of Land, Water, and Environment in cooperation with the Ministry of Agriculture should reconsider land policies with special attention to their effect on livestock production as well as pastoral and agro-pastoral lifestyles. Research is needed on the relative benefits for food security and poverty reduction of horticulture, commercial ranching, and traditional small-scale livestock production by pastoralists or agro-pastoralists. An informed re-evaluation of the government's official policy to "bring under cultivation vast tracts of fertile land" is urgent.

Reduce government involvement and control

The Eritrean National Agricultural Development Strategy and Policy recognizes that: "Government's role in livestock is regulatory and that production and processing should be in private hands". The Ministry of Agriculture should privatize veterinary care, artificial insemination services, importation and distribution and livestock medications, credit provision, feed importation and production, slaughterhouses, milk and meat processing facilities, and chick hatcheries. Currently, demand for government services far outstrips supply and the livestock-dependent poor are crowded out by those with more resources and influence. Importantly, however, privatization without lifting controls will not alleviate shortages, deliver the benefits of competition, or free up government manpower. The most fundamental first step in the process of reducing government distortions is to allow a market-valued exchange rate. The government should also avoid price fixing, rationing, and restrictive licensing. The state could subsidize private suppliers who deliver services and goods to remote areas rather than providing services themselves at below market prices.

INTRODUCTION

This paper presents a case study of the political economy of livestock policies in Eritrea. The goal of the paper is to identify obstacles to the formulation and implementation of livestock policies that promote economic development, sustainable food security, and poverty reduction. The growing demand for livestock and livestock products offers opportunities to improve the livelihoods of the livestock-dependent poor. However, private and public investment in the livestock sector is lower than it should be. The paper exposes how current structures and practices in Eritrea disadvantage the livestock sector relative to other economic activities and government priorities. It suggests feasible interventions to facilitate the successful implementation of policies that serve the interests of the livestock-dependent poor.

The paper proceeds as follows. The first section provides an overview of the livestock sector, its importance, and the constraints to its development in Eritrea. The second section analyzes the economic and policy environment within which livestock processes take place. The third section looks more specifically at how the overall environment affects the livestock sector. The final section suggests changes that can support more productive and pro-poor livestock sector activities in Eritrea.

Livestock Production

The livestock sector in Eritrea is populated mainly by small-scale producers. Most livestock owners are poor, although individuals who are extremely poor often do not own livestock. Indigenous small ruminants are the most numerous types of livestock, and camels, cattle, and poultry are also prevalent in the country. Donkeys and horses are used for transportation, apiculture is practiced in some areas, and there is a small amount of swine production. Natural pasture is the main source of nutrition for livestock, supplemented by crop residues, industrial by-products, and commercial feeds. The quantity and quality of forage is determined primarily by the amount and distribution of rainfall and forage is often in short supply due to recurrent drought, overgrazing, and an acute shortage of grazing land (Government of Eritrea 2006; National Food Information System of Eritrea 2005). Most of the livestock production is in the arid and semi-arid lowland areas, but livestock ownership is also common in the more densely populated highland areas.

There are four key livestock production systems in Eritrea: pastoralism, agro-pastoralism, sedentary mixed farming, and urban or peri-urban production. True pastoralists are migratory and depend primarily or exclusively on animals for their livelihoods; they are increasingly rare in Eritrea. Pastoralists belong primarily to the Afar, Rashida, Hidareb, Saho, and Beni Amer ethnic groups located in arid northern Anseba, North Red Sea, and South Red Sea Zobas (FAO and WFP 2005; Government of Eritrea 2006). Camels and goats are the most numerous animals in their herds. Pastoralists rely heavily on the milk of cattle, goats, and camels for sustenance, and while some animals are slaughtered for meat, most are sold for cash income. Pastoralists typically do not use animals for crop production, to the extent that they engage in crop cultivation at all. They prepare the land by hand, do not use animal dung, and do not carry or store crop residues. Instead, they rely almost entirely on grazing and browsing in the rangelands to feed their livestock (FAO and WFP 2005; Government of Eritrea 2006).

Agro-pastoralists plant a larger area and wider variety of crops. Unlike pastoralists, they use oxen to prepare land for planting, sometimes fertilize their farms with manure, and collect and store crop residues for animals. In addition to cattle, agro-pastoralists keep donkeys, camels, sheep and goats. Most pastoralists and agro-pastoralists move their animals seasonally to make use of different climatic conditions and harvest periods, as well as to avoid pests and diseases. They also move animals in response to seasonal market demands. The largest numbers of agro-pastoralists belong to the Tigre or Tigrinya ethnic groups (Government of Eritrea 2006). A large share of the total livestock population of the country is kept by pastoralists and agro-pastoralists.

Sedentary mixed farmers have herd compositions that are similar to those of the agro-pastoralists, but they typically derive a smaller proportion of their income from livestock and are less mobile. Nonetheless, even some of the animals of the sedentary farmers migrate seasonally, especially in dry years. Thus, movement of herds is a characteristic of a large share of Eritrea's livestock production. Most sedentary mixed farmers belong to the Tigrinya ethnic group (Government of Eritrea 2006). Livestock is still an important asset for sedentary households in the rural areas, though not to the same extent as in the other systems. Oxen are particularly important for ploughing, thinning, and threshing cultivated crops and livestock and livestock products provide the most

important source of income after produce (National Food Information System of Eritrea 2005).

Urban and peri-urban farmers specialize in dairy production and, to a lesser extent, animal fattening and poultry. Most dairy farms are in and around Asmara, though there are also many in the areas of Decemhare, Mendefera, and Keren. Urban and peri-urban farmers are more dependent on purchased feed than rural producers, and poor nutrition is a significant constraint on dairy production and animal fattening (FAO and WFP 2005; Government of Eritrea 2006). Poultry production was on the increase until severe feed shortages led to a crisis in commercial production. The banning of imports due to the avian flu crisis further decimated the industry, though indigenous backyard poultry are still common in urban and rural areas.

Importance and Potential of Livestock

Livestock are critical to the subsistence and wellbeing of most Eritreans. Eritrea is predominantly an agricultural society, and approximately 80 percent of the population lives in rural areas (World Bank 2006). Over 98 percent of Eritrean farmers raise livestock of some form although the level of dependence on livestock varies considerably across populations and regions (Government of Eritrea 2006). For the 20 to 30 percent of the rural population that are pastoralists or agro-pastoralists, livestock provide the primary source of subsistence and economic wellbeing (African Development Fund 2006). However, livestock also contribute significantly to the livelihoods of sedentary mixed farmers and urban or peri-urban populations. Livestock provide:

1. Drought power for cultivation of crops.
2. Food in the form of animal fat and protein.
3. Income and employment through the sale or trade of live animals, animal products, and provision of transportation services.
4. Fertilizer and fuel from animal manure.
5. Transportation of goods and people.
6. Household supplies, such as hides.
7. Assets that can be accumulated to protect against risk in an environment where alternative savings vehicles and sources of credit are limited.
8. Investments in traditional social systems that provide insurance against disaster and help to equalize wealth.

For all of these reasons, poverty is associated with lower ownership and access to livestock among sedentary mixed farmers as well as among pastoralists and agro-pastoralists (Government of Eritrea 2004).

The importance of livestock to both household- and national-level food security in Eritrea deserves special emphasis. Livestock supply nutritional requirements in the form of milk, meat, and eggs; provide cash for purchasing grain and other essentials; and serve as the principle form of savings and insurance for rural populations. A 2003 assessment of rural livelihood security indicated that livestock are the main coping mechanism used by farmers and pastoralists to stave off disaster (Government of Eritrea 2004). Livestock are especially fundamental to food security in Eritrea due to difficult climatic and topographic conditions. As compared to rain fed crop farming, livestock herds are less susceptible to Eritrea's erratic rainfall and livestock can subsist on steep slopes and in arid areas where cultivation is more costly, risky and

damaging to the environment. Less than 5 percent of Eritrea's land is under cultivation, but approximately 56 percent is used for browsing and grazing (Kayouli, Tesfai, and Tewolde 2002; see also: FAO 2005).

In addition to enhancing food security, livestock are also an important part of the national economy, although the full economic potential of the livestock sector is not realized at present. Livestock contribute an estimated 63.1 percent of the agricultural GDP and 6.6 percent of total GDP (FAO 2005).¹ The export of live animals, skins, hides and leather products used to be a significant source of foreign currency for Eritrea. As recently as 1994, livestock exports accounted for 33 percent of official exports, and unofficial exports were also significant. However, exports of livestock and livestock products have declined dramatically since then, largely due to war, border closures, high transaction costs, and Saudi Arabia's trade ban on live animals due to the outbreak of Rift Valley Fever in East Africa.² Furthermore, the domestic demand for livestock products is growing faster than domestic production, and importation of livestock products is increasing to fill the gap (Government of Eritrea 2006).

Constraints on the Livestock Sector

The potential for increasing revenue from livestock is high, but Eritrea must improve the quality of its products, raise productivity, and expand access to markets if it is to satisfy domestic needs and penetrate foreign markets (Government of Eritrea 2004). The challenges to livestock development in Eritrea are large. Based on a participatory policy-making process, the Ministry of Agriculture (MoA) identified a list of the main constraints in the livestock sector. This list, from a draft of the Eritrean National Agricultural Development Strategy and Policy,³ has been reproduced in the appendix. The main constraints can be summarized as: feed, water, land, labour, credit, and foreign currency shortages; poor infrastructure particularly with regard to transporting, processing, and exporting livestock and livestock products; anaemic government services and regulatory framework; and a hostile or competitive regional market. Feed and water shortages are the most common and challenging constraints for most livestock owners, especially for the poor.

As the result of their consultations for the National Agricultural Strategy, the MoA concluded that "much remains to be done and investment in the livestock sector up to now is far below what its potential warrants" and "the livestock sector's potential is very high and it merits greater priority in national development policies" (Government of Eritrea 2006). Given the high potential of the livestock sector, what accounts for the current low levels of public and private investment? Additionally, what policy and institutional changes might facilitate more productive and pro-poor livestock sector activities?

The goal of this study is to understand why the current constraints on the livestock sector exist, and more importantly, to analyze the role of institutional structures in alleviating or aggravating these constraints. It also seeks to explain why livestock production is disadvantaged relative to other sectors of the economy. In order to do so it is first necessary to examine the current conditions in the country. The next

¹ Note that these figures are highly variable over time because the erratic weather conditions produce large fluctuations in agricultural production from year to year.

² Eritrea's small ruminants still supply hides for the export-oriented leather industries, but these industries also suffered considerably from border closures.

³ In the remainder of this paper the Eritrean National Agricultural Development Strategy and Policy is referred to simply as The National Agricultural Strategy.

section provides a general overview of the political economy of Eritrea, while the following sections look more specifically at how the overall environment affects the livestock sector.

Historical Overview

Eritrea's past and present development has been shaped as much by forces outside of the country as those within. Eritrea was an Italian colony that passed briefly to the British as a result of World War II. In 1952, the United Nations decided to link Eritrea to Ethiopia under a federal system of government. Ethiopia's forcible annexation of Eritrea a decade later sparked a 30-year struggle for independence. In 1991 the Eritrea Peoples Liberation Front (EPLF) defeated Ethiopian governmental forces and won independence, which the Eritrean people overwhelmingly approved in a 1993 referendum.

After a brief period of stability and development, a border conflict between Eritrea and Ethiopia erupted into open warfare in 1998. In December 2000 the UN brokered a peace treaty and both countries agreed to binding arbitration of the border. An international peace-keeping force, UNMEE, maintains troops and observers along the twenty-five-kilometre-wide Temporary Security Zone between the two countries. The UN Eritrea-Ethiopia Boundary Commission announced its decision on April 13, 2002, and initially both parties accepted the results. However, Ethiopia's subsequent refusal to accept the implementation of the commission's ruling prevented the peaceful resolution of the conflict and tensions between the two countries remain extremely high until now (The Economist Intelligence Unit 2006; World Bank 2006; African Development Fund 2006; CIA 2006; Government of Eritrea 2004; Amnesty International 2006). Eritrea has repeatedly urged the international community to place greater pressure on Ethiopia to comply with the ruling, but without success. The festering insecurity has dramatic negative consequences for both countries, but these consequences are more disastrous for Eritrea because of its small size and limited wealth. The conflict with Ethiopia dominates Eritrea's economic and political agenda.

Economic Context

The Eritrean Government's recent policies have had a large deleterious effect on economic fortunes and individual welfare, accentuating rather than mitigating severe environmental and external constraints. The 30-year war left newly independent Eritrea with a devastated infrastructure, inefficient industries, unproductive crop and livestock enterprises, negligent exports, an anaemic private sector, and widespread poverty. In the initial period after independence, the government focused on reconstruction of its economic and social infrastructure, and adopted a macro economic framework for advancing market-driven economic recovery and poverty alleviation. Significant progress was made and the country realized very strong economic growth with low inflation during this period. However, the border conflict with Ethiopia (1998-2000) and severe drought (2002-2003) precipitated economic collapse (Government of Eritrea 2004). The Eritrean economy, strangled by the unresolved tensions with Ethiopia and the invasive actions of the government, has not yet recovered from the overlapping manmade and natural crises.

Eritrea ranks among the world's poorest countries and it has extremely high levels of poverty. In 2005, Eritrea had a gross national income of US\$ 0.97 billion, and a per

capita income of US\$ 220 (World Bank 2006).⁴ In the same year, Eritrea was ranked 161 out of 177 countries based on the Human Development Index (CIA 2006). According to the Eritrean Living Standard Measurement Survey of 2003, 66 percent of the population is below the poverty line and 37 percent live under extreme poverty.⁵ 65 percent of the rural population is poor and 39 percent are extremely poor, while 70 percent of urban residents are poor and 33 percent are extremely poor. The greatest numbers of poor people live in the more densely populated highland regions, but poverty is more pervasive in arid lowland areas. The nomadic or semi-nomadic populations that dominate the arid lowlands suffer higher rates of maternal, infant, and child mortality, lower life expectancies, and lower literacy than the more settled population in the highlands. Poverty is also more pervasive among the 30 percent of households that are headed by women. Women-headed households have fewer assets, including livestock, and there are cultural prohibitions from engaging in certain activities, such as ploughing with oxen (Government of Eritrea 2004).

Eritrea also has some of the highest food insecurity and malnutrition rates in the world. On average, once every ten years the country is threatened with famine. Even during good years, the country can produce only 60 percent of its food requirements, and during bad years they produce 15 percent or below. In 2003 domestic food production was only 9 percent of what was required (African Development Fund 2006). Unfavourable soil and climatic conditions make it unlikely that Eritrea will ever be self-sufficient with respect to food, although some improvements in productivity are feasible. The government aims to make use of Eritrea's extensive coastline and strategic position to build a service and trade-based economy. However, acute foreign currency shortages currently make it difficult for Eritreans to purchase food from abroad in order to meet their food requirements; as a result they are highly dependent on donor food aid.

The incidence of food insecurity is related to, but still distinct from the incidence of poverty. Highland residents depend on rain-fed agriculture as their primary livelihood strategy, and although they tend to be wealthier on average, they are more food insecure because they depend on fewer livelihood activities and crop cultivation is more sensitive to weather conditions than livestock. Residents of the arid lowland zones appear to have a greater diversity of livelihood activities, which allows them to spread their risks. They depend on livestock as their main source of subsistence, income, and savings and they own animals that are more drought tolerant. As a result, their economic activities are less susceptible to climate variability (Government of Eritrea 2004).

The Ethiopian-Eritrean border war and its aftermath had a devastating effect on an already fragile economy. The war killed between 70,000 and 100,000 people and displaced nearly a third of the Eritrean population, which then had to be supported in camps.⁶ In addition, between 75,000 and 80,000 Eritreans and Ethiopians of Eritrean descent were deported from Ethiopia to Eritrea, most without their belongings (this is in addition to the approximately 104,000 Eritreans who were repatriated from Sudan since 2001). The war was primarily fought on Eritrean territory, and it destroyed whole villages, damaged schools and clinics, ruined water supply systems and roads, killed thousands of livestock, burned other productive assets, and left the area full of mines.⁷ The war was particularly damaging because the border area in the southwest

⁴ This compares with an average GNI of US\$552 million for Sub-Saharan Africa and US\$1,364 million for low income countries, and an average GNI per capita of US\$745 for Sub-Saharan Africa and US\$580 for low income countries. All figures are calculated using the Atlas method (World Bank 2006).

⁵ The survey was conducted during a period of extreme drought and analysis suggests that the overall poverty incidence would have been approximately 56 percent under normal weather conditions (Government of Eritrea 2004).

⁶ 50,000 internally displaced people were still living in camps in January 2006.

⁷ The May 2000 Ethiopian offensive into northern Eritrea reportedly caused \$600 million in property damage and loss (including losses of \$225 million in livestock and 55,000 homes) and led to a 62 percent drop in food production (CIA 2006).

is the most fertile region for agricultural production and because pastoralists depended on movement between the two countries to maintain their livestock and livelihoods (African Development Fund 2006; FAO and WFP 2005; Government of Eritrea 2004; Rena 2005; The Economist Intelligence Unit 2006). The government also had to redirect considerable funds from development to emergency relief. More significantly, defence expenses are estimated to have climbed from 13 percent of GDP in 1997 to around 37 percent during the conflict, and dropped only slightly to 24 and 23 percent in 2001 and 2002 respectively. Furthermore, much of the workforce is engaged in defence activities (The Economist Intelligence Unit 2006).⁸ The threat of a resumption of the war serves as a strong disincentive to foreign and domestic investment.

One of the most economically damaging results of the war has been the loss of Eritrea's main export market and trading partner. In 1997, prior to the border conflict, Ethiopia accounted for about 72 percent of the value of Eritrea's external trade. Official trade with Ethiopia dropped to zero after 1998 (African Development Fund 2006). Trade difficulties deepened when Eritrea and Sudan ended diplomatic relations and closed their common border in October 2002 (The Economist Intelligence Unit 2006).⁹ Eritrea's exports of goods and services declined dramatically from US\$200 million in 1997 to US\$80 million in 2003 (African Development Fund 2006).¹⁰ In addition to losing their main trading partner, Eritrea lost Ethiopian business at Assab port, which had accounted for 90 percent of the port's business (The Economist Intelligence Unit 2006). There is an urgent need to find new trading partners and new markets for exports in Africa, the Middle East, and Europe.

The economic effect of the war is evident in the decline of the growth rate (although the severe drought also contributed significantly to the decline). In the five year period from 1993 to 1997 Eritrea had an average growth rate of 7 percent, while in the five year period from 2000 to 2004 growth was only 1.5 percent. Following the start of war, the real GDP growth rate fell to zero in 1999 and negative 12.1 percent in 2000, even before the full impact of the drought was felt. Growth peaked again at 4.8 percent in 2005 due to exceptionally good rains after years of drought. However, GDP growth is projected to slow to only 1.5 percent and 1.3 percent in 2006 and 2007 respectively (African Development Fund 2006).

The shutdown of trade with Ethiopia, the dramatic increase of government spending on defence, emergency provisions, and oil products created dangerous macroeconomic imbalances. The internal and external imbalances are manifest in an acute shortage of foreign exchange, very low domestic saving and investment, large fiscal deficits, unsustainable domestic and external debt, and high inflation. At the end of 2003 international reserves amounted to only two weeks of imports and by the end of 2004 only 0.36 months of imports. Eritrea's budget deficit, which had been 19.4 percent of GDP (including grants) in 1996 and 4.2 percent in 1997, rose to 38 percent in 1998 and peaked at 54 percent in 1999 (The Economist Intelligence Unit 2006). The deficit was

⁸ Mass conscription following the outbreak of war swelled the size of the military to an estimated 250,000 soldiers in May 2000. Subsequent demobilization was slow and the armed forces still retained more than 200,000 troops and another 120,000 reservists in 2005 (The Economist Intelligence Unit 2006).

⁹ Border trade with Sudan was officially re-established at the end of 2006, but in all likelihood, official trade will continue to be subject to the waxing and waning of diplomatic relationships between the two countries. Mutual accusations of support for each other's opposition groups have led to several border closures since Eritrean independence. Eritrea accused Sudan of supporting attacks by Islamist groups in Eritrea, including an attempted assassination of Afewerki in 1997. Sudan accused Eritrea of supporting rebel groups in Southern Sudan, and more recently in the East and Darfur. In 2002, Sudan broke off relations and closed the border citing an increase in attacks from groups based in Eritrea. Following the Comprehensive Peace Agreement by the Sudanese government and the SPLM in January 2005, Sudan and Eritrea began a tentative rapprochement. The Eritrean-mediated peace between the Sudanese government and eastern rebels in October 2006 led to a full restoration of cross-border links between Sudan and Eritrea (The Economist Intelligence Unit 2006).

¹⁰ The main destinations for Eritrea's exports in 2002 were Sudan, Italy, Djibouti and Germany, so the loss of Sudan as a trading partner also contributed significantly to the overall decline in exports. The value of goods and services imported to Eritrea in 2005 (\$US 572 million) swamped the value of their exports (US\$64 million) (World Bank 2006).

reduced to 22 percent of GDP in 2005 (African Development Fund 2006).¹¹ Inflation reached 25 percent in 2000 but was reduced to approximately 10 percent in 2005 where it is projected to remain for several years (World Bank 2006; African Development Fund 2006). However, the drop in inflation resulted from large scale state importation of basic commodities, price controls for essential consumer goods, and setting the exchange rate at an overvalued level, interventions that have many undesirable consequences (World Bank 2006).

Maintaining an overvalued exchange rate induces additional government interventions and distorts economic incentives. An overvalued exchange rate subsidizes imports because fewer Nakfa are required to purchase goods abroad than under a market-based exchange rate. This generates excess demand for imported goods and foreign currency, which the government rations through import licenses and controls (African Development Fund 2006). It also drives down the value of domestically produced goods that compete with cheap imports. In addition, an overvalued exchange rate makes Eritrean exports more expensive, thus dampening foreign demand for goods produced in Eritrea. The results are increasing trade imbalances, shortages of foreign currency, and elaborate and easily corruptible rationing regimes (Bates 1981).

Shortages of foreign currency will continue to be a serious impediment to government and private sector development efforts, at least in the near future. Official trade with Ethiopia is unlikely to resume for some time and official trade with Sudan, although recently re-established, remains unpredictable. Other primary sources of foreign exchange are also at risk. Private transfers from Eritreans abroad, which were nearly a third of the GDP, are declining. Remittances were estimated at US\$400 million in 1999, US\$308 million in 2003, and US\$276 million by 2004. In addition, donor assistance may decline. Conversely, the Bisha gold-mining project is scheduled to begin production in 2008 and gold revenue could balance out some of the anticipated loss in foreign currency from trade, remittances, and aid (The Economist Intelligence Unit 2006).

Lack of access to foreign markets and macroeconomic imbalances are not the only problems plaguing the private sector in Eritrea. In recent years the government has tightened its grip on the economy and created an extremely unfavourable climate for private entrepreneurs, both large and small (CIA 2006). The government claims to embrace the tenants of neoliberal reform, and the liberal land and investment laws passed in 1994 are evidence of these formal commitments. However, in practice, many civil servants and top leaders appear to be sceptical of private sector led economic development. Privatization gained some momentum immediately after independence, but the ruling party and the government have since regained ownership control over many of the enterprises that they initially privatized, such as Asmara Milk Factory. Military and party-owned businesses have expanded into additional sectors, sometimes by taking over other private enterprises (The Economist Intelligence Unit 2006). Furthermore, the government employs cumbersome regulations to maintain control over many private businesses that they do not own. Faced with severe shortages of essential goods such as fuel, sugar, milk, and animal feed, the government has chosen to impose price controls and rationing mechanisms. Additionally, private businesses are faced with complicated and shifting administrative requirements and often have to wait for years to obtain permits and essential inputs such as land, credit, and imported machinery.

The heavy government involvement in the economy, either through regulations or direct ownership has several deleterious effects. The benefits of privatization are not realized when the government maintains control over key management decisions such as pricing and distribution. Privatization without lifting controls merely shifts the risks

¹¹ Much of the government deficit was financed by bonds sold to Eritreans abroad and by borrowing from Eritrea's commercial banks, as well as some borrowing from abroad (The Economist Intelligence Unit 2006).

onto the individual owners. In addition, the heavy involvement of the government and the party in business activities has crowded out the private sector in areas such as access to credit, labour, foreign currency, and land (African Development Fund 2006; The Economist Intelligence Unit 2006). Well performing projects risk government or party takeover, further dampening incentives to innovate or invest in new areas. Finally, price controls and rationing also erode incentives for domestic or foreign investment that otherwise might increase the supply of scarce commodities. Although these non-market mechanisms are ostensibly being used to provide an affordable price for the poor, in reality they tend to favour those with access to money and power. Wealthy and connected individuals are able to obtain goods at the discounted official price, as well as through alternative means. When services and goods are provided at below market prices, power and influence determine access, and the poor are often made worse off than if price controls did not exist (Bates 1981).

In short, the climate for private business in Eritrea is grim and it is getting worse. The World Bank ranked Eritrea 137 out of 155 countries in terms of performance in doing business; the measure is based on issues including starting a business, dealing with licenses, hiring and firing, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing business (African Development Fund 2006). The war and government interventions have added new challenges to longstanding difficulties of doing business in Eritrea (such as erratic rainfall, environmental degradation, unreliable electricity supply, poor telecommunication, high costs of transportation, and a scarcity of well educated or skilled labour force). Eritrea's economic woes are intimately related to its government policies.

State Context

Currently, Eritrea has a unitary political system that is dominated by the only legal party, the People's Front for Democracy and Justice (PFDJ). Following independence in 1991, the EPLF transformed itself into the PFDJ under the chairmanship of Eritrea's President Isaias Afewerki. A constitution was completed in 1994 and was ratified by a constitutional assembly in May 1997, but has not been formally adopted by the Government. Although the Eritrean Constitution provides for a democratic system with a clear separation of powers between the executive and the PFDJ, this has not been the case in practice. The Cabinet does not meet regularly and the National Assembly only meets when called into session by the President. Laws concerning electoral system reform and the formation of political parties were drafted in 2000-2001 and the National Assembly approved an electoral law in early 2003, but national elections have been postponed indefinitely. (Elections have taken place at local and regional levels: elections for local administrators, village councillors, and regional assemblies were conducted in 2002 and 2005; and elections for village judges were held in 2004.) President Afewerki asserts that further democratic reforms are infeasible as long the conflict with Ethiopia remains unresolved (The Economist Intelligence Unit 2006; World Bank 2006; African Development Fund 2006; CIA 2006; Government of Eritrea 2004; Human Rights Watch 2006; Freedom House 2006).

There are currently six zobas, or regions, in Eritrea. In contrast with the ethnic based federal system in Ethiopia, zoba boundaries in Eritrea were drawn so that most zobas are ethnically, religiously, environmentally, and economically mixed. Comprehensive public-sector restructuring was initiated in 1996, including the adoption of decentralization aimed at increasing the effectiveness and responsiveness of public service provision. Under decentralization, zoba administrations are supposed to be responsible for development planning and implementation. In addition, local line ministry employees are to report directly to the zoba administration and receive technical assistance and oversight from respective line ministries. However, the

outbreak of war in 1998 disrupted implementation of decentralization and other reforms. Emergency services are being provided through centralized institutional structures, and there is some confusion about proper structures and responsibilities for other activities (International Fund for Agricultural Development 2002). In 2003, a World Bank study reported that Eritrea has “low overall levels of decentralization” and it was ranked 17th of the 30 African countries included in the study (Ndegwa 2003). Although there are official plans to proceed with administrative decentralization in the coming year or two, there is a strong centralizing tendency at work in the country as well. The centralized hierarchical structures and practices that the PFDJ inherited from the pre-independence Ethiopian regimes at independence have been strengthened by the current war with Ethiopia. It seems likely that pressures for greater centralization under the office of the President will overwhelm those for decentralization, so that reforms will not be implemented or effective.

The government also strictly controls citizen organizations of all kinds. With few exceptions, domestic associations are only allowed to function under the auspices of the government or the PFDJ (Human Rights Watch 2006). Proclamation No. 145/2005, issued in June 2005, imposed tight restrictions on non-governmental organizations (NGOs). They are required to register annually and are allowed to work only on approved projects in prescribed areas through government structures. They are obliged to pay taxes on imported items including food and relief materials. In addition, international NGOs have to deposit US\$2.0 million in a local bank and national NGOs have to deposit US\$1.0 million (UN Resident Humanitarian Coordinator Macleod Nyirongo 2005; The Economist Intelligence Unit 2006; African Development Fund 2006; Amnesty International 2006; Freedom House 2006; Human Rights Watch 2006). A number of applications for registration were rejected and NGOs were asked to shut down. 37 NGOs were working in Eritrea in June 2005 but only 13 were there in May 2006 (The Economist Intelligence Unit 2006). For those NGOs that continue to function, the threat of closure, high taxes, and requirements for travel permission make operations extremely difficult and costly.

In addition, many donor agencies have suspended or curtailed development aid programs in response to Eritrea’s democratization and human rights record, because of security concerns and logistical difficulties, or when the Eritrean government asked them to leave (as was the case with USAID).¹² Eritrea’s relations with donors and the UN have declined precipitously in recent years. The remaining foreign aid agencies work under increasingly difficult circumstances. For example, the government: impounded more than 100 vehicles; imposed increasing limits on travel; restricted the international community’s access to data on harvests, food availability, prices, and the government budget; reduced the distribution of free food aid; and declined to carry out the standard consolidated appeals process in 2006. Although the exact reasons for these actions are unclear, many speculated that the Eritrean government is trying to provoke the international community to enforce the decision of the UN Eritrea-Ethiopia Boundary Commission. The Eritrean government holds the international community (especially the United States and the UN) responsible for allowing Ethiopia to violate the terms of the agreement, and for the continued no-peace no-war situation that is eroding Eritrea’s finances and human capital. It is also plausible that these actions are motivated by the ruling regime’s desire to avoid dependency, and their dislike of the economic or political conditions that are often linked to aid. Regardless of the reasons, Eritrea’s deteriorating relations with the international community have serious negative consequences for the delivery of aid and services to populations in need (The Economist Intelligence Unit 2006).

In official documents and statements, the Government maintains a reasonably pro-poor and pro-development orientation as presented (For example see the Interim

¹² Over the last five years, the US, Italy, the Netherlands, Denmark and Norway were the highest bilateral aid donors, but this is expected to change in the future (The Economist Intelligence Unit 2006).

Poverty Reduction Strategy Paper, Government of Eritrea 2003). Officially, food security, economic growth, and social development are primary goals of policymakers, and prior to the conflict with Ethiopia the civil service made significant progress in achieving these goals, particularly in the area of primary health care. Top government officials have officially discarded the Marxist ideology of the pre-independence EPLF movement in favour of free market capitalism. However many seem to have maintained their primary concern for reducing poverty, and their faith in the benefits of government action in achieving these goals. Self sufficiency is also a stated priority for many top government officials.

Although the official policies of the Eritrean government are pro-poor, the practices of government increasingly favour those with influence and resources. Key decisions are made by a small group of individuals close to the President, often without sufficient regard to the pertinent policy plans, technical expertise, data, or consultations of stakeholders. This is especially true for topics the government deems politically sensitive, such as food security, defence, foreign exchange use, and the economy. Decision-making processes are shrouded in secrecy and outcomes are unpredictable. There are significant bottlenecks, especially in the law-making process. Many official development plans, such as decentralization and land reform, have stalled part way, obscuring the consistency and direction that such plans are supposed to create. The result is that key stakeholders are unable to influence decisions. Only those with resources and influence can navigate through cumbersome government processes and withstand the unpredictable and obtuse regulations that delay many dealings. These conditions have frustrated most private entrepreneurs, especially among the poor. Income inequality has increased to very high level in recent years (Eritrea's Gini Coefficient is 0.45); the wealth of a small minority of individuals has grown while the wealth of the majority of the population remained stagnant or declined (FAO and WFP 2005).

PART III: CHALLENGES TO LIVESTOCK SECTOR DEVELOPMENT

The environment described above has led to both public and private underinvestment in the livestock sector. First, the livestock sector is negatively affected by the same factors that depress investment in other sectors of the economy. Second, and perhaps more insidious, the livestock sector is disadvantaged relative to other economic sectors in the economy. This section reviews the way in which the challenges to all private and public economic activities also depress livestock development. It then provides an explanation for the relative neglect of the interests of livestock producers. The current regime adopted policies that extract resources from the dispersed, impoverished, isolated and powerless livestock producers in order to appease the relatively more concentrated, affluent, connected and powerful elites, urban consumers, and highland crop cultivators. As the regime has faced increasingly unfavourable conditions since 1998, the level of extraction from the livestock sector has increased. The result has been both an absolute and relative decline in the welfare of the livestock sector.

It is acknowledged that the constraints on livestock development in Eritrea are not solely the product of government action or subject to decisions by current actors in the country. Factors such as geography and international political market forces, over which Eritrea has little influence, are also influential. For example, Eritrea will suffer from erratic rains regardless of government policies, and Eritrea had little or no influence over Saudi Arabia's trade ban on live animals from East Africa, which followed the outbreak of Rift Valley Fever in other countries. However, it is argued that most of the natural or external constraints are exacerbated rather than reduced by the current policies and activities of Eritrean government.

Challenges to Private Livestock Activities

The livestock sector faces many of the challenges to private business that were discussed above. For instance, the most common and widespread constraint for livestock producers is insufficient fodder. Lack of fodder is partially a function of limited access to foreign currency, which constrains private businessmen from importing feed ingredients from abroad. Shortages could also be partially alleviated by expanding domestic green forage crop production, but the process for obtaining land and permits for feed production is extremely difficult and slow. Finally, in response to shortages, the government has set up restrictive controls, which further dampen incentives for individuals to invest in the production and provision of feed. Although feed plants are privately owned, the government regulates the supply of ingredients, the exact composition of the mixture, the quantity produced and sold, the price of the feed, and the approved buyers. Similarly, the government controls most of the inputs used by dairy farmers, such as feed and medicine, and then specifies for what price and to whom they are allowed to sell their milk.

Livestock producers who want to export face similar difficulties as exporters in other sectors of the economy. Transaction and information costs are extremely high because of the poor transportation and export infrastructure. Previously, most livestock passed through the border with Ethiopia, a route that is no longer open. There have also been some exports to Djibouti and Sudan, but future border trade with Sudan is somewhat uncertain and the difficulties of the trip to Djibouti are prohibitive for most. At least initially, the unit costs associated with shipping livestock or livestock goods to other areas such as the Middle East are high. More seriously, sanitation and health inspection and certification procedures are not yet adequately developed. There are significant bottlenecks in the legislative process,

which seem to have indefinitely delayed the passage of draft legislation in this area. The MoA Regulatory Services Department is in the process of developing a regulatory framework for livestock export, but it is unclear whether the regulations are based on an adequate legal foundation. Most markets in Europe and the Middle East will be difficult for Eritrea to penetrate without a well developed regulatory framework. Given that Eritrea's neighbours have larger populations of small ruminants and cheaper sources of feed, Eritrea's comparative advantage seems to be in specialized products such as organic or high quality deli meats (Government of Eritrea 2006). Eritrea could also have a comparative advantage in providing live animals that meet the regulatory standards of Middle Eastern countries, especially with the current development of Massawa port underway.¹³ However a trustworthy inspection and certification procedure is necessary for Eritrea's more expensive specialty products and live animals to attract buyers. This will be difficult to achieve without greater transparency and reliability in government procedures.

Finally, government and party-owned businesses have crowded out private endeavours in the livestock sector, as in other sectors of the economy. The following examples demonstrate the crowding out effect. First, large state-owned plantations have been established in areas that had previously been valuable rangelands and watering points for privately-owned livestock herds, thus disrupting regular migration patterns. Second, state-owned dairy and meat processing plants or chick hatching facilities seem to have better access to credit, imported machinery, and supplies than their private counterparts. Third, private enterprises have trouble hiring people with expertise since most graduates with agricultural training are required to work for the government. Finally, unskilled labour is also unavailable because a large segment of the working age population is serving in the military or national service. This is true even for family enterprises which are missing the labour of young adult relatives.

Challenges to Public Livestock Activities

Just as the livestock sector suffers from some problems that plague all private businesses in Eritrea, it also suffers from the same deficiencies that afflict all government services. The MoA has a miniscule budget given its responsibilities. It has few resources to invest in crucial infrastructure, such as livestock transportation, watering points, quarantine stations, and laboratory facilities. It also has very limited extension services, in part because of a shortage of vehicles and fuel (Government of Eritrea 2006). Service delivery is further compromised because ministry workers are poorly compensated for their efforts and because basic supplies, such as medicines, are often unavailable.

The shortage of resources in the MoA is quite damaging to livestock production because the ministry is responsible many activities that are often the domain of the private sector in other countries. The government is the sole provider of a number of services (such as artificial insemination, veterinary medicines and care, and slaughterhouses) often at subsidized rates. It is also heavily invested in production and processing enterprises such as feed formulation plants, milk and meat processing factories, and chick hatching and distributing centres. Finally the government is an important source of credit for livestock activities. Given the very limited human and fiscal resources at the disposal of the MoA and related government units, they are unable to meet demand for services, especially in remote areas. Rather than providing quality low cost services that benefit poor producers, the MoA ends up

¹³ Somali ports lack an internationally-recognized state to certify their inspections and they lack a strong enough government to enforce acceptable quarantines and regulations at the ports.

subsidizing inputs primarily for wealthier enterprises that can more easily access these government services (Dinucci and Fre 2003).

The livestock sector is also damaged by the government's lack of clear decision-making procedures and weak institutionalization. There is confusion over which ministry is responsible for matters concerning livestock export: Agriculture, Industry or Foreign Trade (Government of Eritrea 2006). There is also some confusion over responsibilities between the new Ministry of National Development and the Ministry of Agriculture. MoA employees also are not always clear about which unit within the MoA is in charge of which function, especially since the reorganization of the ministry. Finally the stalled decentralization process has left civil servants and the general public without a clear idea about how responsibilities and oversight are divided at the regional level between the local administrations and the MoA. Nonetheless, the MoA seems to be more transparent and well organized than many other government ministries and agencies. In contrast, the process for obtaining land is bewildering to most individuals and many have been waiting years without response after requesting land for cattle or poultry. The same can be said for the procedures to obtain foreign currency, for purchasing materials and machinery from abroad, and for business permits.

Livestock development and food security also suffer considerably from the lack of available and relevant information on livestock production, markets, and diseases. Information problems seem to be getting worse rather than better. Government institutions have limited capacity for conducting policy relevant research. The government's decision to close down the University of Asmara and to transfer the Department of Agriculture faculty to Hamelmalo College of Agriculture will impede livestock research, at least in the short term, by limiting the number of institutions engaged in research on livestock issues. Furthermore, the change is likely to create a deep division between agricultural training (which will be done primarily at Hamelmalo) and research (which will now be done almost exclusively at the National Agricultural Research Institute, NARI). The physical distance between the two centres hinders contact. Even more critically, independent sources of information about the livestock sector have all but disappeared since there is no private press and NGO and aid personnel have limited ability to travel. The lack of non-governmental monitors can have grave consequences for food security as impending crises are more likely to go undetected, especially in remote areas. In addition, there is an increasing culture of secrecy within the government that prevents information flow amongst government agencies and between the government and the population or aid community. For example, the government did not release data on food availability in 2005. The lack of official information and dialogue between donors and the government complicates the provision of speedy and appropriate responses to livestock crises (The Economist Intelligence Unit 2006). In short, most policy-makers, private producers, and aid organizations are operating in a complete information vacuum with respect to the livestock sector.¹⁴

Eritrea's deteriorating relationship with foreign donors is detrimental to livestock development in other ways as well. For example, the pull out of Danish International Development Assistance (DANIDA) was a major blow to dairy development; DANIDA had been the primary developer of cooling and pasteurizing facilities. The government's increasing restrictions on NGOs and foreign aid are particularly harmful for largely poor beneficiaries of these services. For instance, some of the NGOs that had been involved in providing chicks and ruminants to women-headed households and war-affected populations are no longer able to do so. The Eritrean government has also

¹⁴ For example, the Eritrean Government initiated a program to provide beehives and apiculture equipment to anyone who wanted them, without first determining the availability of pollen and nectar and the appropriate carrying capacity of the environment. Overstocking of bee colonies not only lowers production but can also lead colonies to migrate to other areas, thus defeating the purpose of the program (Government of Eritrea 2006).

made it virtually impossible for UN organizations to monitor and provide early warnings about declining food access, including those that would affect the livestock sector.

Anti-Livestock Bias

The challenges to livestock development discussed above are ones that afflict all sectors of the economy and government. However, as noted earlier, the livestock sector is particularly disadvantaged vis-à-vis other sectors. Although well recognized by many, the bias is persistent and pernicious. The bias has four different aspects: 1) favouritism of urban residents over rural residents; 2) favouritism of consumers over producers; 3) favouritism of highland residents over lowland residents; and 4) favouritism of sedentary mixed farming over pastoralism or agro-pastoralism. What explains the bias against rural lowland livestock producers in favour of highland sedentary mixed farmers and urban consumers? Why would officials pursue policies that are harmful to the overall economic fortunes of Eritrea and to the welfare of livestock producers?

The current regime has a firm grip on power, but it has lost much of the public support that it once had. In an effort to placate those closest to the seat of power, the government has shifted resources from the more distant, uneducated, poor and unorganized pastoralists and agro-pastoralists of the lowland areas in favour of culturally similar highland residents, especially those in and around the capital city as well as elites in the military or PFDJ party. These tendencies are reinforced and justified by the official's assessments of how best to achieve social and economic development as well as food security and national security (Bates 1981).

Eritrea does not have national elections so the national leaders are less interested in gaining the support of the majority of the population than they are in winning the support of a minority of more powerful individuals or groups. The current regime is inclined to try to appease those who are more concentrated, organized, wealthy, educated, and close to the President, military, and ruling party elites, because those individuals have the biggest potential impact on the regime's survival. This results in an urban bias to government policies in Eritrea, as it does in many other countries (Bates 1981). The government has adopted policies (such as over-valuation of Eritrea's currency and price controls) and that keep the price of food and other essential item low for urban consumers, at the expense of rural producers. In doing so, it helps buy the allegiance, or at least the acquiescence, of elites and civil servants who live in the capital, and the urban masses who have a greater potential to organize or riot against the government than their rural cousins.

In Eritrea, the urban bias overlaps a regional and lifestyle bias. Asmara, the centre of government, is located in the densely-populated highlands where sedentary mixed farmers predominate. Highland residents tend to be more educated, wealthier, connected to people in power, and better organized than the agro-pastoralists and pastoralists who live in the sparsely populated lowland areas that are far from the capital. Therefore, among the rural population, the highland residents are better able to make claims on the government than the lowland population. The centralized structure of the government makes it difficult for distant and minority populations to influence government decision-makers. Furthermore, there are no opposition political parties or associations capable of organizing the more remote and dispersed lowland populations and no independent media to articulate their interests and communicate their needs to the leaders. Differences in ethnicity and language also hinder organization among agro-pastoralists and pastoralists as does their seasonal mobility. Livestock production is overwhelmingly done by small-scale producers who face a

collective action problem when it comes to achieving public goods like higher prices. Therefore, the pastoralists and agro-pastoralists, who are responsible for the bulk of livestock production in Eritrea, tend to be “out of sight and out of mind” for most policy-makers and influential leaders.

Government bias against livestock producers is not solely a function of socio-economic and geographic disadvantages of lowland populations, but also a legacy of historical divisions. The majority of government officials are Tigrinya speakers from the highland areas with sedentary farming family backgrounds. Tigrinyans are the most numerous in government partly because they acquired more education, wealth, and influence under previous Ethiopian and Italian regimes and partly because they belong to the largest ethnic group in the country. In addition, Asmara is in the Tigrinya heartland. Finally, Tigrinyans were also prevalent in the rebel army that won independence. The EPLF, the predecessor of the PFDJ, was adamantly non-sectarian in its official orientation. Nonetheless, the EPLF was formed by a breakaway group from the largely pastoral Muslim lowland ELF movement and drew more heavily from Asmara and its environs. Whereas the ELF supported the nomadic lifestyle, the EPLF encouraged nomads to settle in return for services (Dinucci and Fre 2003). The final EPLF military victory over the ELF in 1981 (in a civil war within the war for independence) resulted in a highland domination of the Eritrean movement for independence. To a large extent, the ruling elite and civil servants today were drawn from the ranks of former EPLF fighters, so historical imbalances in the movement were reproduced in the current government.

The dominance of political elites from sedentary farming backgrounds has engendered a policy orientation that favours crop over livestock production and sedentary over nomadic lifestyles (Dinucci and Fre 2003). The bias is most evident in the government’s four top priority issues: food security, export promotion, socio-economic development, and national security. First, food security has been defined as boosting crop production while the contribution of livestock to nutrition and survival is minimized. Second, the government has focused on horticulture as the most promising source of rural export earnings even though livestock used to play a larger role historically in the export sector. Third, the pastoral lifestyle is seen as a hindrance to social and economic development because officials claim that it is harder to provide educational, health, extension and other services to mobile populations. The government has adopted a policy of settling the nomad population, although there has not yet been a strong effort to implement the policy (Dinucci and Fre 2003). Fourth, the regime views Islamist organizations as a major threat to national security and has accused Sudan and Ethiopia of supporting Islamist terrorist groups operating within Eritrea. The regime is also wary of a resurgence of the ELF. Pastoral and agro-pastoral livestock producers are largely Muslim, and their historical migration routes cross national borders, so they are potentially suspect in the eyes of the current leadership. In short, national priorities have been defined in ways that privilege crop-focused solutions over livestock focused solutions. The chosen solutions seem to be more based on cultural orientations of decision-makers than on well-informed assessments of reality.¹⁵

The bias against livestock occurs not only in the realm of policy-making, but also in policy implementation. Most civil servants, at all levels of government, are from sedentary farming backgrounds where livestock are viewed as secondary to crop cultivation. Therefore, funds and energies tend to flow to projects to improve crop production and away from projects to improve livestock production, although precise data on the extent of resource imbalances are not available. The current institutional structure facilitates this siphoning off of resources from livestock activities.

¹⁵ Such state biases are by no means limited to Eritrea (Dinucci and Fre 2003).

Decentralization has not been fully implemented so decisions about resource allocation and personnel management are still done primarily from Asmara (where sedentary farmers predominate) rather than at the zoba level.¹⁶ In addition, the latest reorganization of the MoA removed divisions based on sectors in favour of divisions based on functions. As a result, there is no longer a department specifically designated to oversee livestock production. Instead, each department incorporates both crop and livestock activities. The MoA policy draft noted the deleterious effect of this structure on livestock activities: "Although the present institutional structures have been designed to maximize interaction among crop specialists and livestock experts, it needs to be acknowledged that in practice such interaction is not occurring, and livestock activities are suffering from being relegated to a secondary priority" (Government of Eritrea 2006). Under the current MoA structure, it is more difficult to monitor the actual amount of resources devoted to livestock as opposed to crop activities, and there is no clear advocate for the livestock sector.

Finally, the scarcity of research and data on agricultural outcomes means that incorrect assumptions or harmful biases are not exposed and corrected. For example, the Ministry of Land, Water, and Environment has allocated large concessions of land for horticulture development in the riverine areas of the lowlands, thus depriving pastoralists and agro-pastoralists of traditional grazing pastures. However, they have not carried out research on the relative advantage of horticulture versus commercial ranching or traditional pastoral practices in this area. It could be that the government is lowering export earnings and food production by allocating the land and other resources to horticultural development instead of commercial livestock production, or the status quo of small-scale pastoral and agro-pastoral production.

Socio-economic disadvantages, geographic location and distribution, the backgrounds and biases of government officials, and the lack of corrective mechanisms lead to a clear hierarchy of government policy beneficiaries: 1) military and party elites, 2) urban consumers, 3) primarily Christian Tigrinyan highland sedentary mixed farmers; and at the bottom 4) primarily Muslim non-Tigrinyan lowland pastoralists and agro-pastoralists. Resources tend to flow from livestock production to elite and urban consumption and crop production. As a result, government actions exacerbate many of the constraints on livestock production identified by the National Agricultural Strategy. For example, the government tends to award scarce foreign currency to military weapons, machines for government factories, and food and goods for urban consumers rather than for animal feed, veterinary medicines, vehicles for livestock transportation, laboratory facilities for animal diseases, or other livestock related investments. Wells and dams are built in highland areas to service crop cultivation when the money might be better spent on constructing livestock watering points in lowland areas. The allocation of territory in lowland riverine areas to horticulture farms compounds the encroachment of sedentary mixed farmers on rangelands. NARI focuses its research on improving crop production at the expense of research on livestock production and MoA extension services are more developed in highland areas than lowland areas. These are just a few examples of the underinvestment in livestock processes relative to other types of economic activity.

¹⁶ Pastoralists or agro-pastoralists form an overwhelming majority of the inhabitants in three zobas: Red Sea North, Red Sea South and Gash-Barka.

Urban and Peri-Urban Dairy Farmers

There is one class of livestock producers that have had some success in organizing to defend against extractive policies: urban and peri-urban dairy producers. The dairy associations and the government recently negotiated higher prices for dairy products in some zobas and negotiations are ongoing in other regions. However, these achievements were largely the result of defensive rather than offensive organizing. More importantly, recent government activities to co-opt and control the dairy associations threaten to erode the power of the organizations as well as the minor price concessions they recently won.

Dairy producers in or near urban areas tend to have some education and wealth, and they are closer to government officials than rural producers. MoA staff played a large role in initiating or facilitating the establishment of regional dairy associations, thereby overcoming collective action problems for these small-scale producers. These dairy associations are organized at the zoba level and are managed democratically by members: regular elections are held to elect member representatives and larger decisions are approved by mass meetings. Members pay fees and in return get access to goods and services such as fodder, medicine, transportation, and cooling or pasteurizing facilities. There are also some small informal associations or groups that were started independently by members for mutual assistance in the provisioning of animal feed and other inputs.

Urban and peri-urban producers have more influence by virtue of their educational and fiscal resources, proximity to government, and organizational capacity. They also derived power by virtue of their ability to exit government controls. Dairy activities are usually secondary sources of income so most producers are not dependent on their livestock for survival. In addition, there is a domestic informal market for raw milk. The power of dairy farmers allowed them to resist, to a limited degree, government attempts to extract wealth for the benefit of urban consumers. However, their ability to “exit” as individuals can also hinder attempts to organize collectively.

Demand for milk (raw or pasteurized) far exceeds the supply and it increased considerably when the urban population swelled with returned refugees from Sudan, expellees from Ethiopia, people displaced by the war, and economic migrants. Rather than let the price of milk escalate beyond the reach of most urban consumers, the government decided to set a price ceiling. The price that factories paid to farmers was far below the informal market price for raw milk, and even below the production cost for many farmers. In response, dairy farmers retreated to subsistence production or sold their milk directly to restaurants, cafes, and households. For example, by 2002 the milk collected by Asmara Dairy Factory had declined to one third of the 1999 level.

Faced with declining milk supplies and ever increasing demand, the government developed a multi-pronged response. First, it agreed to negotiate with the officially sanctioned dairy associations to determine new prices. The associations researched the production price and the government conceded to higher “temporary” prices in several regions.¹⁷ Second, the government stipulated that the officially recognized associations or factories were the sole legal buyers of milk in the main cities. Those who sell milk outside official channels are to be penalized. Third, where feasible, the government insists that animal feed will only be provided in return for, and in proportion to, the milk that farmers sell to the official buyers. Nearly all urban and peri-urban dairy farmers must purchase animal feed to sustain their animals. The

¹⁷ Bargaining between the government and the dairy association occurred independently in each region. It seems that the government has discouraged the formation of a single cross-regional association.

government can easily insure a steady supply of milk by maintaining strict control over feed and linking the provision of feed to milk collection. This relieves it of the difficult task of monitoring the production of each farmer or patrolling illegal sales. Finally, the government now insists that independent associations or groups be incorporated into the larger official organizations. The government wants to ensure that only those organizations that are dependent on government provision of feed and other inputs will continue to exist.

The government claims that its new policy is to prevent disease by ensuring that milk is properly pasteurized or cooled, and that it is handled in a sanitary fashion.¹⁸ While this goal is admirable, there are several potential disadvantages of the government's new approach. The government is destroying the ability of dairy farmers to organize independently and to protect their interests or provide for their own survival. In the event that the government provision and collection system does not function correctly, the entire dairy industry will suffer. The weakened and dependent associations will also find it difficult to protect the prices that they secured through negotiations. The government has already stated that the negotiated prices are temporary and subject to change once the new system is in place. There is a strong temptation for government to reduce the price paid to dairy farmers in order to help urban consumers. If this happens, the incentives for dairy production and the domestic supply will once again decline. Dairy production may also decline if farmers decide to reduce the amount of feed that they give their animals so that they can sell their milk illegally at a higher price. Poor nutrition leads to low milk production and poor reproduction. Finally, the government now has an interest in controlling the supply of animal feed rather than expanding it. Since the scarcity of animal feed is the basis by which they ensure the supply of milk, government officials are likely to resist measures that allow private individuals independent access, whether through importation or green feed production.¹⁹ By depressing government incentives to alleviate feed shortages, the new approach may exacerbate the most serious constraint on livestock production in Eritrea.

Benefits for Livestock Sector

Although the general economic environment in Eritrea is unfavourable to livestock production, there are some factors that provide some cause for optimism. First, patron-client ties do not dominate economic and political behaviour in Eritrea as they do in many other African countries. It may be easier to organize poor producers in horizontal groupings that represent their interests if they are not already embedded in vertical structures that demand their loyalty. For now, however, the lack of a patron-client system means that most livestock producers are completely devoid of political influence. Second, corruption has not yet permeated the norms and expectations of most Eritreans, even though it is on the rise. As a result, behaviours are probably very susceptible to favourable changes in institutional and incentive structures. Third, the government officially maintains a pro-poor policy orientation. Individual and security concerns seem to have overcome this public purpose in many spheres, but the positive orientation may still exist for most officials and institutions and could possibly be harnessed to motivate changes. Officially, rural development is recognized as being crucial for poverty alleviation and it has been named as a high priority for the government. Finally, the government has engaged in several participatory policy

¹⁸ Notably, the government is implementing these new policies even where pasteurizing and cooling facilities can not accommodate the supply of milk.

¹⁹ The government recently allocated land to the dairy association in Dekemhare to produce green feed on a provisional basis, but they have not provided land for individuals in the same area who applied earlier. Presumably the association will only provide the feed it produces to those members who sell their milk through the association.

processes that garnered considerable support from participants, including the constitution-making process, the Interim Poverty Reduction Strategy Paper, and the recent National Agricultural Strategy. These processes can serve as a blueprint for more democratic and responsive policymaking procedures in the future. In addition, they yielded important suggestions for beneficial policies. In particular, the National Agricultural Strategy represents the first important step in the creation of a pro-poor livestock environment. The key goal should thus be to bring actual practice in line with official pro-poor goals and policy statements.

PART IV: STRATEGIC ENTRY POINTS

Chapter 10 of the Eritrean National Agricultural Development Strategy and Policy provides a clear assessment of the main constraints to pro-poor livestock development in Eritrea and suggestions for how to alleviate these constraints (Government of Eritrea 2006).²⁰ The recommendations are based on workshop consultations with stakeholders from key ministries, banks, NGOs, producer associations, and Zoba governments.²¹ The National Agricultural Strategy is the most representative and comprehensive analysis of livestock policy in Eritrea to date and it provides a valuable blueprint that can guide interventions or investments by the government, non-governmental organizations, and the foreign aid community.

Individuals consulted remarked about the high quality of the process used to generate the National Agricultural Strategy and the importance of the recommendations. However, many also expressed serious scepticism that the suggested remedies would actually be realized due to lack of resources and political will. This section proposes possible interventions that can remove or reduce obstacles to the successful implementation of the National Agricultural Strategy and further the development of pro-poor livestock policies. Practical strategies are suggested for bending the political incentives of influential individuals and groups towards the interests of the livestock-dependent poor.

Plan for Eventualities and Prioritize Policies

The continued tensions with Ethiopia were the most often cited obstacle to the execution of the policy suggestions in the National Agricultural Strategy. International pressure should be brought to bear on Ethiopia to speed the implementation of the border agreement. However, such international pressure does not seem to be forthcoming and it could be a long time before the crisis is resolved. Rather than delaying all actions indefinitely, provisions need to be made for the continuation or worsening of the border situation. It is therefore suggested that the MoA develop three different implementation strategies: 1) a plan that would be feasible under the current conditions of continued tensions without open warfare; 2) a plan that would be feasible in the event that fighting resumes; and 3) a plan of action for if and when the crisis is resolved. Plans one and two will, by necessity, be extremely limited in their scope, but some of the recommendations are feasible even under these difficult conditions. It is in the interest of the MoA to plan and budget for such eventualities and to regain the reform momentum rather than waiting for a change that may not happen for some time.

Another obstacle to implementation of the National Agricultural Strategy is the lack of government resources. The resource issue is related to the first obstacle; the conflict with Ethiopia is a major drain on government resources, private investment, and donor activity. However, some of the suggested interventions in the National Agricultural Strategy are less costly than others. In developing the three plans suggested above, the MoA should do a cost-benefit analysis of the interventions and prioritize activities

²⁰ The table "Main Constraints and Recommendations for Livestock Policy" from Chapter 10 of the Draft of the Eritrean National Agricultural Development Strategy and Policy has been reproduced here in the appendix.

²¹ The participatory process and the drafting of the policy were led by a team at the Ministry of Agriculture with assistance from FAO and Roger Norton, an external consultant. Stakeholders were consulted about the creation and revision of terms of references, as well as the development of policies based on those terms.

accordingly. In fact, many of the suggestions could even increase the amount of resources available to the government. For example, the suggested tax on heads of livestock (recommendation 1 in appendix) would provide an incentive for owners to reduce herds to more sustainable levels, while also raising revenue that could be invested in infrastructure development that benefits the tax payers. In addition, the suggested privatization of services such as artificial insemination and veterinary services (recommendation 9 in appendix) would free up government manpower and financial resources which could better be spent on subsidizing the costs of access for poor producers. Access is often more important to the poor than low priced or free services.

Finally, the recommended policies in the National Agricultural Strategy should be evaluated with respect to their effect on the most poor and disadvantaged populations in Eritrea. The effect on these populations should be given special consideration in prioritizing policies. The international community can play a valuable role in assisting the MoA in conducting cost-benefit calculations, and predicting the influence of the proposed policies on the poor.

Cultivate Allies and Livestock Advocates

Lack of political attention is another serious obstacle to implementation of the suggestions in the National Agricultural Strategy and to pro-poor livestock development. The many political and institutional reasons for the lack of interest and investment in livestock production have been detailed above. Livestock producers in Eritrea tend to be small-scale, poor, dispersed, unorganized, and powerless. Most mechanisms of citizen influence are unavailable or ineffective in present day Eritrea. There is a need to find alternative mechanisms to alter political incentives so that the government leaders are more likely to act on the National Agricultural Strategy recommendations. The most feasible way to do so is to cultivate more powerful allies and advocates for the livestock sector in general and for poor producers in particular. This can be done by:

1. persuading influential individuals in government of the importance of livestock to their key policy goals;
2. creating a separate Animal Production Department within the MoA;
3. decentralizing government decision-making and service delivery;
4. working with existing local institutions at the village or community level;
5. strengthening producer associations;
6. encouraging donors to target aid funding to livestock development; and
7. enlisting Eritreans abroad in livestock development activities.

The central policy goals of top decision-makers in Eritrea are acquiring more foreign currency; food security; poverty reduction and socio-economic development; and national security. It is both necessary and possible for the MoA, producer associations, and livestock advocates to convince key elites that investments in livestock can make an important contribution to their key policy priorities. Livestock and livestock products were important export commodities in the past and they could be again in the future. Livestock are also essential to food security because they provide sustenance and savings that are less susceptible to the erratic rainfall than crops. In addition, the poorest areas of Eritrea are most dependent on livestock and so any solution to poverty must improve the conditions for livestock. Furthermore, livestock ownership provides a key means for individuals to accumulate wealth move to a more affluent and secure existence. Finally, Muslim residents are only likely to support

Islamist terrorist groups if they feel that their lifestyles and livelihoods are under threat. Programs that support pastoralists and agro-pastoralists, rather than marginalizing them, are important steps towards improving national security. In the future, pleas for greater government investment in livestock should be couched in these terms to enhance the chances that influential elites will support them.

It is also possible that the MoA can locate elite allies who have personal stakes in livestock because of their own investments or that of their family and friends. Large scale ranching is very uncommon in Eritrea so there is not a clear wealthy constituency invested in livestock as in some other countries. Nonetheless, it is possible that there are sympathetic elites from pastoral or agro-pastoral backgrounds who can be persuaded to influence policy in favour of their groups. Additionally, there are a few larger-scale dairy farmers or meat, milk, shoe, leather, and feed factories that have some common interests with small-scale livestock producers and users. The MoA should make attempts to involve the owners, managers, and workers in these larger scale enterprises in advocacy for livestock issues.

Second, there is an urgent need to create a special unit within the MoA that can act as an advocate for livestock producers. The National Agricultural Strategy suggests creating a separate Animal Production Department similar to the one in Botswana (recommendation 15 in appendix) (Government of Eritrea 2006). The recent reorganization in the MoA makes it more likely that livestock activities will be subordinated to programs aimed at crop production. A new unit devoted to livestock could monitor allocation of resources within the MoA and push elites and government agencies to pay greater attention to livestock issues. Despite the anti-livestock bias, the MoA, as a whole, is a strong potential ally because of the pro-poor and technical orientation of most of the civil servants at the MoA. The creation of the National Agricultural Strategy itself is evidence of the MoA potential.

Third, decentralization can help create and empower livestock advocates at the zoba level. The MoA should make an effort to ensure that current plans for decentralization are implemented in a way that enhances local influence over decision-makers. Whereas pastoralists and agro-pastoralists are a minority population at the national level, they form a majority in several zobas.²² In regions where livestock producers are sufficiently concentrated, government officials at the zoba and sub-zoba level may be more interested in and sympathetic to livestock issues than officials at the national level. In addition, it will be much easier for pastoralists and agro-pastoralists to reach government officials and services at the zoba capitals than in Asmara. Finally, the convoluted central government bureaucracy has become a major impediment to all kinds of private sector activity. It is more likely, though by no means guaranteed, that decentralization will reduce many of the transaction costs involved in obtaining government licenses and services.

A note of caution is warranted with regards to decentralization. The centrally appointed governors currently enjoy significant influence in the zoba administrations, although their power varies considerably across regions. Rather than empowering technical persons or elected officials located at the zoba level, decentralization may further boost the influence of political appointees whose allegiance is to the top national leadership not to the inhabitants of their assigned territories. Following decentralization zoba administrations will be responsible for development planning and implementation, as well for the performance of local line-ministry employees, functions that are currently carried out by technical persons at the central MoA

²² Although there is a mix of production types (and ethnicities) in each zoba, there are greater concentrations of pastoralists and agro-pastoralists in Gash-Barka, North Red Sea, and South Red Sea.

offices. If centrally-appointed politicians control zoba and local administrations, then decentralization can actually make government less, not more, responsive to the concerns of the livestock-dependent poor. Furthermore, in a decentralized system, it may be harder to address the needs of transient livestock producers who move seasonally from one zoba to the next. Finally, administrative capacity is much lower at the regional and local level than at the national level. The MoA or the Ministry of National Development should conduct more analysis on the likely political impact of decentralization in order to identify strategies for empowering the livestock-dependent poor within the future structures.

Fourth, the MoA, NGOs, and aid organizations can find potential advocates for livestock producers in sub-zoba, kebabi (village clusters), and village-level political structures. Local and traditional institutions such as the baitos and megebaayas (village assemblies) command significant respect and allegiance in Eritrea. These local structures provide social safety nets and mechanisms for the equitable allocation of common resources such as land, water, food, and grazing area. Local leaders are usually well aware of the needs and interests of their village mates and thus can potentially act as effective representatives between villagers and government, NGO, or aid personnel. However, mobilizing village or community institutions to act as advocates may be difficult. Prior attempts were met with some resistance. Local leaders are accustomed to addressing internal village affairs or to implementing top down government directives. They are less accustomed and willing to make claims on government in a bottom up fashion. In addition, higher government officials are especially weary of attempts to empower and independently mobilize local populations; if they feel threatened, they can use appointed local administrators to disrupt the more democratic village and community decision-making structures (Favali and Pateman 2003).

Fifth, producer associations are weak by international standards, but they are currently the strongest advocates for small-scale livestock producers in Eritrea.²³ Some dairy associations were already successful in bargaining for higher prices for their members and fattening, poultry, beekeeping, and herding associations could also be influential in similar ways. The MoA and the aid community should invest in efforts to strengthen producer associations by providing training and resources to leaders, education on government structures and modern production techniques, and information about national and international markets. It is equally important to help ensure that these organizations have legal standing so that they can engage with foreign businesses and NGOs independently from the government. Facilitating cooperation at the national level of what have hitherto been only regional associations would also strengthen their power considerably. Furthermore, study tours abroad for association members have proved very valuable educational and networking opportunities in the past.

Importantly, the independence and power of the producer associations are extremely fragile; the government has undertaken activities aimed at co-opting the larger organizations and abolishing autonomous groups. It is possible that stronger associations will help the government to better control the distribution of livestock and livestock products and thereby extract even greater resources from producers. Therefore, it is important for donors and aid organizations to monitor the relationship between of government and the associations to determine whether such investments continue to be beneficial to the poor producers. In addition, the MoA or the Ministry

²³ For example, in Zoba Maekel (which includes the capital Asmara) there are four livestock associations and one horticulture association: 1) the association of cattle fattening with 87 members; 2) the association of poultry producers with 140 members; 3) the association of beekeepers with 126 members; 4) the association of dairy producers consisting of 430 members; and 5) the association of vegetable and fruit producers with 343 farmers (National Food Information System of Eritrea 2005). The Ansoba Dairy Association has 200 members.

of National Development should search for mechanisms other than price controls to alleviate the eventual effects of higher livestock producer prices on the urban poor.

Sixth, international organizations, aid agencies, and NGOs can promote pro-poor livestock policies by targeting their funds towards the livestock sector. Foreigners must proceed with extreme caution; they have little influence over decision-making elites these days and they are in a precarious position. If actions are interpreted as interference in domestic affairs, efforts could backfire in greater resistance from officials or expulsion.²⁴ Instead of trying to influence policies, foreign aid organizations and NGOs may have greater success by targeting their funds at government selected and approved policies that benefit the livestock-dependent poor. Programs to provide livestock to internally displaced peoples, refugees, and women-headed households have had success in the past, precisely because they respond to government requests and priorities. The National Agricultural Strategy contains many other such approved policies that are deserving of support.

Seventh, Eritreans living abroad can be important allies in the struggle to improve livestock development in Eritrea. The diaspora have considerably more disposable income than most residents in Eritrea and some are from the lowland areas. Eritreans living abroad have often been successful in securing land and permits for businesses because the government is interested in the foreign currency that they bring to the country. The MoA and aid organizations should encourage the diaspora to invest in livestock or feed production as private businesses. Furthermore, it is possible that the considerable remittances that the diaspora send each year could be pooled to support livestock development projects that will benefit their families in Eritrea.

Locating and strengthening allies within the powerful elites, MoA, zoba administrations, village and community structures, producer associations, foreign aid organizations, and the Eritrean diaspora can help the alter the political calculations of leaders and civil servants so that the livestock sector receives the investment that its potential warrants.

Upgrading Information Quality and Availability

Improving the amount and flow of reliable and timely information will also help create political interest in productive livestock activities and facilitate the achievement of the stated policies. Without data showing the contribution of livestock, it will be difficult to counter the current anti-livestock biases and persuade potential allies of the value of investing in livestock processes. Important topics for research include (but are not limited to) the following:

1. the relative costs and benefits of horticulture versus commercial ranching or traditional livestock production in the riverine lowland territories;
2. the effects of expanding land under cultivation on livestock and pastoral lifestyles; 3) the prevalence and distribution of livestock diseases;
3. the effects of decentralization on livestock policy-making and implementation;
4. the impact on the poor of new policies to that require pasteurization and collection of milk at cooling facilities in urban areas;²⁵

²⁴ The relationship between the FAO and the MoA in Eritrea is particularly problematic. Bad feelings and suspicions on both sides constitute serious impediments to cooperation in the promotion of pro-poor livestock policies.

²⁵ In addition to assessing the impact of higher priced pasteurized milk on the consumption of the poor, a study should be done on how the urban poor prepare and consume unpasteurized milk. Data on the frequency with which Eritreans boil their milk before consuming it is needed to determine the actual health benefits of pasteurization.

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5. the market demands and requirements in the region for the export of livestock and livestock products;
 6. strategies to stabilize livestock markets in times of crisis; and 8) the implications of trekking compared to trucking of livestock to markets.

Once researchers in the MoA, educational facilities, or aid organizations gather and analyze the data, these institutions should provide resources and pressure to ensure the distribution of that information. The current custom of treating information as sensitive material that needs to be closely guarded is a serious constraint on development.

Large changes are underway in the educational structure as a result of the closing of University of Asmara. NARI and the educational institutions in Eritrea should act at this early stage to ensure that the connection between research and education and the quality of these two spheres are not undermined by the new developments. One possible intervention to increase the spread of information is to encourage a closer relationship between NARI and agricultural training facilities such as Hamelmalo College of Agriculture, and between both of these institutions and centres of agricultural research abroad. If students and teachers are involved in research, and if they have access to recent data, then they are more likely to appreciate and use such information throughout their professional careers. For example, regular exchange or internship programs that cycle students, researchers, and lecturers in and out of the different agricultural institutions will help strengthen connections. In addition, research collaborations should be encouraged across institutions. Finally, the MoA should work with educational facilities and donors to establish a united system for sharing information, both within Eritrea (particularly between government agencies) and between Eritrea and the international community.

Another institutional intervention would be for the MoA or Ministry of Foreign Trade to establish a livestock marketing information unit as suggested in the National Agricultural Strategy (Government of Eritrea 2006). This unit could gather and analyze information on current prices, future demand and supply, importers' rules and requirements, and transportation options and costs. Producer organizations, government departments, private entrepreneurs, and export agents would then have access to up-to-date information on export markets and requirements. The unit could also act as a liaison between Eritreans and foreign organizations on export issues.

Finally, there is a need for greater investment in monitoring and evaluation systems as well as for greater cooperation between the government and international agencies in the collection, analysis, and dissemination of data on program outcomes. Livestock policies and programs should be accompanied by plans and resources for tracking implementation and assessing outcomes. Special attention should be paid to developing and collecting measurable indicators of how livestock policies affect the poorest Eritreans. In addition, there should be predetermined mechanisms for revising policies based on evaluation results. Much of the monitoring and evaluation of livestock programs can be carried out by the MoA, but the department of Monitoring and Evaluation at the Ministry of National Development and the National Statistics and Evaluation Office also have an important role to play. It is crucial that these agencies are alert to the significance of collecting data on livestock production, prices, and consumption on an equal basis with crop statistics, and that the attention they give to lowland residents and pastoralists or agro-pastoralists is commensurate with what they give to highland residents and sedentary farmers.

Enact Laws and Systems for Exports

The Ministry of Agriculture should aggressively examine possibilities for exportation of livestock and livestock products. Several legal and institutional recommendations from the National Agricultural Strategy warrant special attention here. It is essential that the MoA to work with the Ministry of Justice to speed up the enactment of livestock legislation (recommendation 8 in appendix). Consultations for the development of the National Agricultural Strategy revealed that the needed legislation for sanitary inspection and certification procedures was already drafted some time ago (Government of Eritrea 2006). However, the draft statutes have gotten tied up in the abstruse legislative process (seemingly at the Ministry of Justice) so that they have not yet been proclaimed and enacted. This legislative bottleneck is hindering the development of a regulatory system that complies with international trade requirements. Eritrea's best prospects for livestock exports lie in high quality, specialty, or organic foods that can command higher prices in East African, Middle Eastern, and possibly European markets. Eritrea could also achieve a comparative advantage in exporting live animals that meet the regulatory standards of Middle Eastern countries such as Egypt, Libya, Jordan; unlike many Red Sea ports, Eritrea has an internationally-recognized and capacious state that can certify inspections. However, without a regulatory system based on a solid legal foundation that is in harmony with international trade requirements, Eritrea will not be able to provide adequate quality assurance and thus will not be able to compete with the lower quality but cheaper goods and animals produced by its neighbours.

Meeting requirements for regional exportation of livestock requires not only formal laws but also significant investments in veterinary services, transportation, shipping, and institutional capacity for monitoring and containing diseases. These activities would be greatly facilitated by institutional changes that consolidate livestock export marketing functions under a single ministry or agency rather than the current situation where the Ministries of Agriculture, Industry, and Foreign Trade are all involved (Government of Eritrea 2006). This agency could be responsible for: 1) establishing the essential infrastructure such as marshalling facilities, quarantine stations, staging points, laboratory and inspection facilities; 2) training more personnel in veterinary care and acceptable disease control and verification mechanisms; 3) providing appropriate marketing information; and 4) ensuring that private individuals or entities interested in livestock exports have access to credit, feed, and profitable unit transportation and shipping costs (recommendations 7, 9, 11, 13, 14, 21 in appendix).

Revise Land Policy

The Ministry of Land, Water, and Environment should reconsider land policies with special attention to their effect on livestock production as well as pastoral and agro-pastoral lifestyles (recommendation 5 in appendix). In theory the Land Reform Proclamation of 1994 is beneficial to poverty reduction and development because it creates more secure tenure rights, provides land to women, and equalizes land holdings between villages. However, the implementation of the law was stalled by the conflict with Ethiopia. In practice, the partial implementation has created even greater uncertainty in land access and tenure than under the traditional system. The process for acquiring land for commercial or subsistence purposes is obtuse and slow, and subject to bias and political influence. Those who have access under traditional systems are uncertain about how long their tenure will last. Furthermore, the current system speeds rather than halts damaging encroachment on traditional pasturelands. The government's official policy goal is to "bring under cultivation vast tracts of fertile land" (Government of Eritrea 2004). This policy seems to have been adopted

without sufficient analysis on how it might impact traditional herding practices. In addition research is needed on the relative benefits for food security and poverty reduction of horticulture, commercial ranching, and traditional small-scale livestock production by pastoralists or agro-pastoralists. A re-evaluation of the land policy, based on sound research and in consultation with the MoA, is urgent.

Reduce Government Involvement and Control

Lastly, livestock producers and their allies should pressure the political regime to abide by its officially stated policy of promoting “private sector development by creating conducive and business friendly environment that fosters competition” (Government of Eritrea 2004). The National Agricultural Strategy properly recognizes that “Government’s role in livestock is regulatory and that production and processing should be in private hands, and strengthen that regulatory role” (Government of Eritrea 2006), yet the current trend has been in the opposite direction; the government has been playing a larger role in livestock production and processing over time. The core regulatory functions of the MoA and the business environment have suffered as a result. The MoA should privatize: veterinary care, artificial insemination services, importation and distribution and livestock medications, credit provision, feed importation and production, slaughterhouses, milk and meat processing facilities, and chick hatcheries (recommendations 4, 6, 9, 17, and 21 in appendix). Currently, demand for these government services far outstrips supply and the livestock-dependent poor are often crowded out by those with more resources and influence.

Importantly, however, privatization without lifting controls will not alleviate shortages, provide incentives, deliver the benefits of competition, or free up government manpower. The government should also avoid price fixing, rationing controls, and restrictive licensing. For example, in order to reduce the main constraint on the livestock sector, the shortage of feed, the government should ease or abolish: 1) restrictions on opening feed plants; 2) requirements for importing feed ingredients; 3) quantity constraints on feed production; 4) feed price controls, and 5) rules about only selling to government approved buyers (recommendations 4 and 6 in appendix). Instead of fixing prices for scarce commodities like milk, the MoA might consider taxing these goods and using the tax revenue to subsidize consumption for the poor. Similarly, the state should subsidize private suppliers who deliver services and goods to remote areas rather than trying to provide services themselves at below market prices. Subsidizing access for the poor is cheaper and more beneficial than setting prices. Greater reliance on markets will also be less exacting on government and provide better incentives for private investment.

Perhaps the most fundamental first step in this process of reducing government interventions and distortions is to allow a market-valued exchange rate. Deflating the Nakfa to its correct value will reduce the need for artificial restrictions on imports such as feed, and it will make the export of Eritrean livestock and livestock products more competitive abroad. A market-driven exchange rate may only be politically feasible if paired with more explicit taxes on remittances, such as a financial services tax.

APPENDIX

Main Constraints and Recommendations for Livestock Policy From Draft of Eritrean National Agricultural Development Strategy and Policy

Constraints/Issues	Recommendations
1) Degradation of rangeland from overgrazing.	More watering points; over-sowing natural pastures; paddocks around watering points; reduction of herd sizes through higher taxes on livestock (with revenues going for local purposes).
2) Insufficient livestock watering points.	Develop more livestock water points, including on trekking routes to markets.
3) Shortage of supplementary feed in dry season.	Utilize more industrial by-products and domestic oilseeds; train farmers in conserving hay and crop residues and in cut and carry systems for crop residues.
4) Lack of foreign exchange to import feed.	Give priority to feed in foreign exchange allocations.
5) Encroachment of crop cultivation on rangelands.	Better land use planning in areas of potential conflict over use.
6) Restrictive regulations on opening private feed plants.	Remove the unnecessary restrictions for building feed plants; remove the requirement that such plants can sell only to approved buyers.
7) Weak systems for disease control, insufficient institutional capacity in SPS and TBT issues.	Install efficient laboratory support and infrastructure such as quarantine stations, check points along livestock routes, and livestock holding areas. Train more manpower with adequate skills in this area. Include draft animals in sanitary inspection programs.
8) Lack of legislative framework for sanitary inspection and certification.	Refine and approve the draft legislation in this area.
9) Insufficient veterinary care.	Train more veterinarians; privatize veterinary services.
10) Poultry sector that is not fulfilling its potential	Assign priority to importing feed for poultry; improve disease control systems (especially inoculations) for poultry, with emphasis on Newcastle disease. Establish poultry breeders association.
11) Underdeveloped export marketing.	Develop systems of sanitary inspection and certification, and support for exports in early stages when unit shipping costs are high; send livestock experts to visit successful exporting countries such as Botswana.
12) Competition in exports from neighboring countries with much larger national herds.	Emphasize quality in live and processed animals, including organic meat and other specialty cuts.
13) Insufficient vehicular transport to markets.	Develop truck transport system for livestock sector.

14) Insufficient market demand to absorb appropriate levels of herd off-take.	Develop canning industries to take surplus animals and to provide consumers with lower-cost sources of meat; develop livestock marketing infrastructure.
15) Virtually non-existent livestock extension service; insufficient attention in general to livestock issues.	Set up a separate Animal Production Department, as some other African countries have done; increase expenditures on livestock extension.
16) Lack of breeding policy and support.	Establish national livestock breeding station, train staff in goals of breeding, emphasize artificial insemination.
17) Antiquated, unhygienic slaughterhouses.	In addition to municipal slaughterhouses, allow private ones.
18) Insufficient milk pasteurization facilities.	Construct more milk pasteurization facilities.
19) Lack of sufficient cooling and transport facilities for raw milk.	Construct milk cooling and transport systems; train farmers in hygienic handling of raw milk.
20) Outdated technology in tanning facilities.	Provide training and financing for new technologies in tanning.
21) Lack of sufficient credit for livestock. Development	Better monitoring of loans to livestock sector; including financing for livestock in the ambit of the proposed second-storey rediscount line.
22) Poor collection network and poor handling of raw of material (hides and skins).	Establish wider collection network for hides; give farmers at least two or three options regarding hide buyers.
23) Low quality of domestic leather for footwear and lack of sufficient skilled labour.	Train herders and tanners to improve quality; meanwhile, allow more imports of leather; bring in outside expertise for footwear design and development.
24) Low honey yields in beekeeping.	Reduce tendency to over-supply beehives in areas where there are modern ones; determine honeybee carrying capacity of each area; establish queen bee rearing centres; cultivate and conserve bee forage.

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