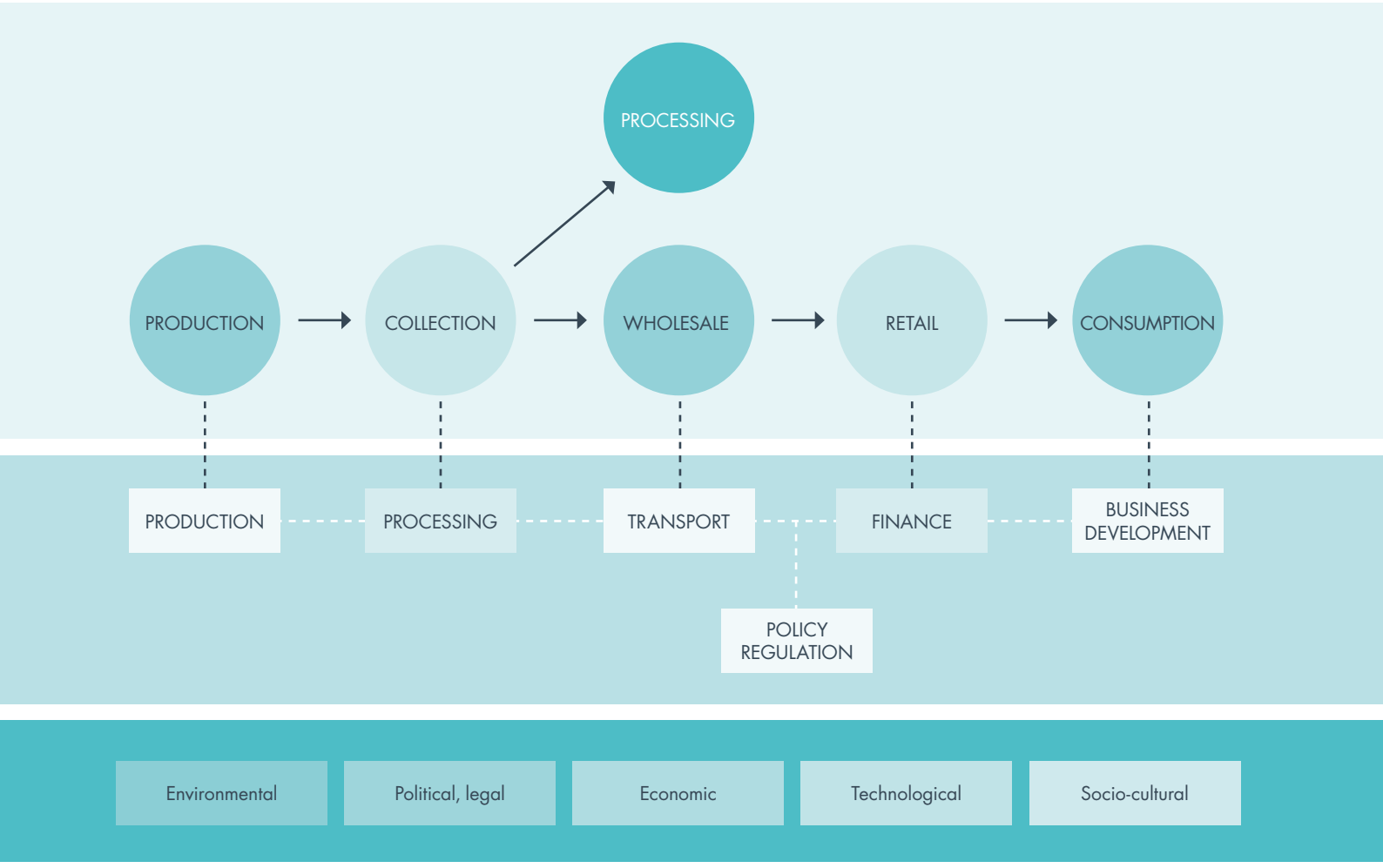
CTA Discussion Paper

Mapping Livestock Value Chains in the IGAD Region



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CTA operates under the framework of the Cotonou Agreement and is funded by the EU.

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CTA Discussion Paper

Mapping Livestock Value Chains in the IGAD Region

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Acronyms and abbreviations

ACP	African, Caribbean and Pacific
AGP-LMD	Agricultural Growth Programme-Livestock Market Development
ALREP	Northern Uganda Agricultural Livelihoods Recovery Programme
ASALs	Arid and semi-arid lands
AU-IBAR	African Union's Inter-African Bureau for Animal Resources
CAADP	Comprehensive African Agriculture Development Programme
CABE	Centre for Africa Bio-entrepreneurship
CAHWs	Community-based animal health workers
CIDA	Canadian International Development Agency
CNFA	Cultivating New Frontiers in Agriculture
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Centre for Agricultural and Rural Cooperation
EAC	East African Community
EADD	East Africa Dairy Development
EAFF	Eastern Africa Farmers Federation
EHBPEA	Ethiopian Honey and Beeswax Producers and Exporters Associations
ESADA	Eastern and Southern Africa Dairy Association
ESGPIP	Sheep and Goat Productivity Improvement Programme
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FBOs	Faith-based organisations
G&EB	Gender and Environment-Responsive Beekeeping
GDP	Gross Domestic Product
GEF	Global Environment Fund
GIZ	German Agency for International Cooperation
ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
ICT	Information and computer technology
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority for Development
ILRI	International Livestock Research Institute
KII	Key informant interview
KLDP	Karamoja Livestock Development Programme
KLMC	Kenya Livestock Marketing Council
KPIA	Key priority intervention area
LGP	Length of growing period
LIVES	Livestock and Irrigation Value Chains for Ethiopian Smallholders
NAIPs	National Agricultural Investment Plans
NEALCO	North East Africa Livestock Council
NGO	Non-governmental organisation
OIE	World Organisation for Animal Health
ORDA	Organization for Rehabilitation and Development in Amhara
PPP	Public-private partnerships
PVCD	Pilot value chain development
RAHS	Reinforcing Animal Health Services in Somalia
RBP	Regional business plan
RECs	Regional Economic Communities
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
REST	Relief Society of Tigray
RPLRP	Regional Pastoral Livelihoods Resilience Project
SDCP	Smallholder Dairy Commercialization Programme
SNNPR	Southern Nations, Nationalities and Peoples' Region (Ethiopia)
SNV	Netherlands Development Organisation
SPS-LMM	Ethiopia Sanitary & Phytosanitary Standards and Livestock & Meat Marketing Programme
USAID	United States Agency for International Development
UNDP	United Nations Development Programme
USDA	United States Department of Agriculture

Executive summary

The Technical Centre for Agricultural and Rural Cooperation (CTA) commissioned the Regional Strategic Analysis and Knowledge Support System for East and Central Africa (ReSAKSS-ECA) to undertake a study on the livestock value-chain initiatives in the Intergovernmental Authority for Development (IGAD) region. The study was commissioned as part of a series of mapping studies to assist CTA in fine-tuning its interventions on key issues and priority agricultural value chains for the next three years (2015–2017). The study was expected to provide CTA with recommendations on the types of value chains to be supported and information on particular nodes that CTA could be involved in. The study mapped the following aspects: current and recent livestock value development initiatives; key actors and institutions involved in selected value chains; an assessment on the extent to which various livestock value-chain initiatives are anchored in national Comprehensive African Agriculture Development Programme (CAADP) compacts and National Agricultural Investment Plans (NAIPs); an overview of the existing coordination structures and an overview of policy and regulatory challenges.

The study used a desk research approach and key informant interviews (KIIs) with selected livestock value-chain experts in the region. The desk research involved an extensive review of information and existing literature on livestock value-chain initiatives in the IGAD region. The AgInvest Africa Web Portal (http://www.aginvestafrica.org/) developed and maintained by ReSAKSS-ECA was the key source of information on livestock value-chain initiatives. Additional information was obtained from KIIs. Types of data gathered included: the project names, target value chains, objectives, budgets, time-frames, country and region of implementation.

Livestock value chains can be viewed as the full range of activities that are required to bring livestock products... to the final consumer.

The livestock sector is substantial in the IGAD region, both in terms of livestock population, livelihood support and its contribution to the economy. The region's population of cattle, sheep and goat account for more than 40% of the total population of these livestock categories in Africa. Overall, the livestock sector accounts for about 11% of the Gross Domestic Product (GDP) and more than 40% of the agricultural valued added in the region. However, the contribution of livestock varies substantially between countries for instance, the livestock sector accounts for about 40% of GDP in Somalia but only 3% in Djibouti.

Two main livestock production systems are predominant in the region i.e. pastoral/agropastoral systems and the settled mixed crop-livestock production system. The former is dominant in the arid and lower-rainfall semi-arid zones and involves seasonal or annual migration of livestock in search of pasture and water. In the agropastoral systems there is greater degree of settlement and more interactions with crop farming. The mixed production system is mainly found in the highlands and is crop dominated; however, it is very important for milk production. Actually, small-dairy production, a special feature of the Kenya highlands, accounts for 51% of cattle milk production in the region.

Select priority value chains were identified for discussion in the report, based on their size (livestock population), contribution to the economy and potential for growth. The selected value chains include: the dairy value chains in Ethiopia, Kenya and Sudan; beef value chains in Ethiopia, Kenya, Sudan and Uganda; small ruminant value chains in Ethiopia, Kenya and Somalia; poultry value chains in Ethiopia, Kenya, Sudan and Uganda; and apiculture in Ethiopia, Kenya and Uganda.

Livestock value chains can be viewed as the full range of activities that are required to bring livestock products such as milk, meat, eggs etc. to the final consumer through the different phases of production, processing, distribution, wholesaling/retailing and final consumption. The core value-chain processes are supported by a network of support service providers (value-chain enablers) as well as by a wide range of external factors (environmental, political, legal, economic, technological and socio-cultural). Value addition along the chain may arise from quality improvement of the product or through increased efficiency of its delivery to the final consumer. This study provided an overview of the various primary value-chain actors and their roles including: livestock producers (pastoralists, small-scale farmers, ranchers etc.); local input

suppliers (veterinary drug sellers, feed suppliers and other input sellers); livestock traders (trekkers, truckers, middlemen, transporters etc.); processors (slaughter house/slab operators, tannery operators, milk processors etc.); distributors, wholesalers and retailers (supermarkets, small shop operators etc.). A wide range of value-chain enablers at local, national and regional levels were also described including the national governments, local government authorities, national research organisations, non-governmental organisations (NGOs), development agencies, regional economic communities etc. The study provided details on the priority constraints that actors face at different levels. It was noted that constraints vary across space and scale; they are most severe at local producer level with pastoral systems facing more constraints than the mixed systems.

The study reviewed the integration of livestock value chains into the CAADP-based NAIPs among the IGAD countries. Overall, the role and importance of livestock in addressing poverty and growth is not given the prominence it deserves. The study noted that appreciation of the role and contribution of livestock in raising agricultural productivity and achieving agricultural growth target is minimal. Three IGAD countries (Ethiopia, Kenya and Uganda) had developed post-compact NAIPs. The investment plans broadly reflect the compacts but Uganda's NAIP better captures the livestock subsector than the rest. The study reviewed a wide range of livestock value-chain development initiatives in the region. Although most initiatives did not have a value-chain approach per se, they targeted various nodes of the value-chain. Analysis was based on about 100 recent and ongoing projects in the region. It was noted that the majority of projects targeted production levels of the value chain with less of them targeting marketing/trade aspects. This observation can be understood given that livestock producers are viewed as the most vulnerable among the value-chain actors. Furthermore, in the IGAD region, they are quite often faced with severe impacts of drought and often require emergency assistance during or after the drought periods. The projects varied widely in terms of their budget sizes; the highest noted was a US$122 million Regional Pastoral Livelihoods Resilience Project (RPLRP) with the smallest being worth a few thousand dollars for a local-based project. The average project cost was about US$14.3 million (not accounting for differences in time-frames). Majority of the projects were implemented in partnerships (about 3–4 partners) with several public-private partnerships (PPPs) noted.

Particular focus was also given to gender perspectives in livestock value-chain interventions. Research indicates that vulnerable population groups, and particularly women, account for almost two-thirds of low-income livestock keepers in different parts of Africa. However, the bulk of literature has suggested that these groups are often either placed at unfair disadvantage or completely excluded from value-chain development. The participation of women and other marginal groups in livestock value-chain activities is constrained by a number of factors including unequal sharing of unpaid work, limited opportunity to develop capabilities (e.g. literacy skills, education), mobility constrained by cultural practices and social norms, differential poor access to and control over productive resources, and limited access to markets. Analysis carried out in this study showed that at least 20 out of the 100 interventions were based on a value-chain approach and had provided some evidence of gender-based analysis (objectives with a strong focus on gender equality and empowerment, availability of sex-disaggregated data and gender mainstreaming in project cycles). But, overall, very few initiatives have considered gendered issues as an essential component in forging linkages between actors involved in the livestock value chains.

With regard to value-chain coordination, it is well documented in literature that weak value-chain coordination mechanisms are a key constraint to improved value-chain efficiency. The study focused on the multistakeholder platforms as one of the key coordination mechanisms. In particular, the study discussed different types of multistakeholder platforms with examples of livestock value chain. These include the value-chain-based innovation platforms and the commodity associations/platforms.

The general policy and regulatory environment challenges facing the IGAD region were

extensively described. They include policies aimed at improving production and productivity (pasture and forage); inputs (breeds and other production inputs); livestock diversification and animal health issues. The second set of policy constraints discussed were institutional issues (land tenure and livestock mobility; access to credit, and institutional capacity). The third set of policies and regulatory constraints discussed were on livestock marketing policies. The study also provides a number of recommendations on possible entry points for supporting value-chain development in the IGAD region. Given the focus of CTA on policy processes and knowledge management, the study recommends the following:

1. Provide support to strengthen existing value-chain coordination platforms.

   These platforms provide opportunities to bring together all value-chain actors to find solutions to challenges that affect the value chain as a whole. Quite often, there rarely exist forums that bring all actors together to address common challenges. At the regional level, recently formed organisations such as the North East Africa Livestock Council (NEALCO) might be possible candidates for such support. Our discussions with IGAD Centre for Pastoral Areas and Livestock Development (ICPALD) indicated that they are supporting NEALCO and CTA could explore possibilities of partnering with them.

2. Increase awareness on the need to adopt value-chain approaches among key stakeholders in the region.

   It is clear that very few project interventions are currently using the value-chain approach.

Introduction

Background

The Technical Centre for Agricultural and Rural Cooperation (CTA) is a joint international institution of the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU). Its mission is to advance food and nutritional security, increase prosperity and encourage sound natural resource management in ACP countries. Since 2000, it has operated within the framework of the ACP–EU Cotonou Agreement.

CTA focuses on broad areas of policy processes, value chains, information, communication and knowledge management. Its mandate is to strengthen policy, institutional and information and communication management capacities of agricultural and rural development organisations of ACP countries.

In its current strategic plan (2011–2015), CTA has identified three strategic focus areas:

1. Strengthening ACP agricultural and rural development policy processes and strategies
2. Enhancing priority agricultural value chains
3. Enhancing ACP capacities in information, communication and knowledge management for agricultural and rural development.

CTA considers commodity value chains as important for linking consumer demand back to the farmer and offering an opportunity for smallholder farmers to become integrated in modern markets. This view has informed the CTA's strategy in prioritising to improve agricultural value chains. CTA defines a value chain as a sequence marked by value growth and coordination at each stage of production, processing and distribution, driven by consumer demand. It encompasses a range of support functions, such as input supply, financial services, transport, packaging, market research and advertising (CTA, 2012). The nodes in an agricultural value chain consist of input providers, farmers, processors, packagers, distributors and retailers; in essence, all the links in between the genesis of a product and its journey to the consumer.

Objectives of the study

This assignment involved carrying out a meta-analysis and rapid assessment of the livestock value chains in the IGAD region in order to understand the current state of value-chain activities and provide CTA with recommendations about the types of value chains to be supported and the nodes in which CTA could possibly be involved.

More specifically, the study mapped out the following aspects:

- current and recent key livestock value-chain development initiatives in terms of their objectives; beneficiaries; type of activities; results; challenges, gaps at the country level, including gender perspectives; type and magnitude of support being provided by development partners
- key institutions/actors involved in selected value chains
- the extent to which livestock value-chain development initiatives are anchored in respective CAADP investment plans
- type and strength of coordination structures/ multistakeholder platforms established to facilitate livestock value-chain activities
- main policy and regulatory challenges affecting livestock value chains, and
- recommendations on possible CTA involvement in the livestock value chains including key entry points, strategic partners and type of support.

Scope of the study

The study focused on the IGAD region, which includes eight member states: Djibouti, Somalia, Eritrea, South Sudan, Sudan, Ethiopia, Uganda and Kenya.

The study focused on a select number of livestock commodity value chains. The criteria for selection and the priority value chains are further described in the subsection on the study methodology. The study obtained data and information from ongoing and recently completed programmes.

The terms of reference for the study are summarised in Annex 1.

The nodes in an agricultural value chain consist of input providers, farmers, processors, packagers, distributors and retailers.

Methodology

This study was carried out using desk research approach and a series of KIIs. The desk research involved extensive search and analysis of the existing body of knowledge on the livestock value chains in the IGAD region. KIIs were conducted as electronic surveys using an online survey, targeted email exchanges and phone discussions using a checklist (attached in Annex 2[a]). The list of key informants contacted is provided in Annex 2(b).

Several teleconferences/Skype calls were held between the ReSAKSS and CTA teams. Before the actual study was initiated, a face-to face meeting was held between the two teams to discuss and agree on the various aspects of the study. In addition, several telephone calls were made between them. At the beginning of the study, a kick-off meeting was held to discuss and agree on the method and a detailed work plan. In the course of study implementation, several review meetings have been held to provide an update on the study progress.

The ReSAKSS's AgInvest Africa web portal (http://www.aginvestafrica.org/) was the main source for livestock value-chain interventions in the IGAD region. The website is a repository of about 3,000 recent and ongoing agricultural interventions (programmes and projects) in Eastern and Central Africa. The information on the projects and programmes were obtained from project documents such as project proposals, implementation reports, evaluation reports etc. Additional information was obtained through KIIs (see Annex 1[b]). Data obtained on the interventions include: type of value chain targeted, geographical area of implementation, budget, objectives and time-frames. See Annex 2(a)–(i) for summary tables on the mapped interventions by country.

Livestock value chains in IGAD are very diverse; some are long, extending to export markets outside the region while others are cross-border within the region, and yet others serve the domestic market. It was therefore necessary to have criteria for selecting commodities for discussion in this study. The priority value chains were identified based on three key factors: livestock population, contribution to the overall economy, and the potential for growth. The final set of value chains were agreed upon with the CTA team. The selected value chains include: the dairy value chains in Ethiopia, Kenya and Sudan; beef value chains in Ethiopia, Kenya, Sudan and Uganda; small ruminant value chains in Ethiopia, Kenya and Somalia; poultry value chains in Ethiopia, Kenya, Sudan, and Uganda; and apiculture in Ethiopia, Kenya and Uganda. It is notable that none of the value chains were selected in Djibouti and South Sudan. The livestock sector in Djibouti is small in its relative contribution to the overall economy while unavailability of data was the major limitation for South Sudan. Data for Sudan actually is for the former unified Sudan. It is also important to note that although Somalia is a member of IGAD, the political and civil situation in the country could not allow for gathering of most of the relevant data and information.

Data on the selected value chains were obtained from the two main sources: FAOSTAT data on animal population, and production was used for ease of comparison across countries; and data on the contribution of the selected value chain to the economy, employment and related statistics were obtained from the national data sources. Information on value-chain actors and value-chain coordination structures, as well as policy and regulatory challenges, were obtained from the literature review and supplemented with KIIs.

Organisation of the report

The rest of the report is organised as follows: chapter two provides a synopsis of the livestock value chains in the IGAD region including the importance and role of livestock, production systems and structure of the value chains; chapter three provides an overview of actors and institutions; chapter four describes the extent to which livestock value chains are integrated into the CAADP NAIPs and the current value-chain development initiatives in the IGAD region; chapter five provides a description of the value-chain coordination structures; chapter six describes the policy and regulatory challenges; and chapter seven concludes and provides recommendations.

Synopsis of the livestock value chain

Role and importance of livestock in the IGAD region

IGAD comprises eight countries: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. About 170 million people live in the IGAD region, accounting for about a quarter of the total population of sub-Saharan Africa.

The IGAD region accounts for a large population of livestock in Africa; there are about 134 million cattle and 234 million sheep and goats in the IGAD region (FAOSTAT, 2013). This accounts for nearly a half (44%) of the total populations of these species in Africa (Table 2.1). The poultry population in the region is approximately 171 million birds, accounting for slightly over 9% of total poultry population in Africa.

Pigs are found mainly in Uganda and to a lesser extent in Kenya where a rapid growth in the number of pigs has occurred in the recent decades. In the rest of the IGAD region, pig rearing is not common due, in part, to the prevalence of Muslim populations.

The livestock sector in the IGAD region consists of several livestock types/value chains including dairy, beef, small ruminants (sheep and goats), poultry, camel, pigs, apiculture, rabbit and emerging livestock species. These livestock are produced under different production systems that are further described under the heading 'Livestock production systems in the IGAD region.' Also, the contribution of livestock to GDP varies across countries in the IGAD region; it is highest in Somalia and lowest in Djibouti (Table 2.2).

Table 2.1: Livestock population in IGAD (2013)

COUNTRY	CATTLE	SHEEP	GOATS	POULTRY	BEEHIVES
Djibouti	298,000	470,000	514,000	-	-
Eritrea	2,080,000	2,300,000	1,800,000	1,400,000	-
Ethiopia	54,000,000	26,500,000	25,000,000	51,000,000	5,250,000
Kenya	18,138,500	16,600,911	24,637,393	32,500,000	1,800,000
Somalia	4,870,000	12,300,000	11,550,000	3,500,000	-
Sudan (former)	41,917,000	52,500,000	44,000,000	45,550,000	76,000
Uganda	13,020,000	1,968,000	14,500,000	38,000,000	78,500
IGAD (total)	134,323,500	112,638,911	122,001,393	171,950,000	7,204,500
Africa (total)	304,746,910	328,450,262	347,957,726	1,872,065,800	16,686,058

Source: FAOSTAT (2013)

Overall, livestock accounts for over 40% of the agricultural value added and about 11% of GDP in the IGAD region (Pica-Ciamarra *et al.,* 2011). The multiple uses of livestock include household consumption (in the form of meat, milk and eggs), income generation, cash storage for those beyond the reach of the banking system, draught and pack services, and manure for fuel and fertiliser (GebreMariam *et al.*, 2013). In the IGAD region, export of live animals and livestock products are estimated at 395,747 and 63,500 (US$1,000) respectively (FAO, 2012). In addition, the livestock sector plays a critical role in achieving food and nutrition security for poor people and contributes to overall poverty reduction in the region.

With the exception of milk, livestock productivity in the IGAD region is low and has been largely stagnant over the last two decades. Despite the large number of livestock and huge comparative advantage in production, the region is yet to translate the comparative advantage to competitive advantage. The current levels of production are lower than the demand as demonstrated by substantial imports of livestock products into the region. It is also estimated that in the IGAD region, live animals and livestock products imports are valued at US$57 million and US$194 million, respectively (FAO, 2012)

Total demand has been increasing, mainly driven by increasing population rather than increase in consumption per person, which – in the IGAD region – still remains below the world average (Knips, 2004).[1] However, the total demand can well be met through production in the region. The high income elasticity of demand for livestock products recorded in the region; an indication of increasing income per person, will lead to strong growth in demand for livestock products.

Livestock production systems in the IGAD region

Two main livestock production systems are prevalent in the IGAD region: pastoral/agropastoral systems and settled mixed crop/livestock production system. Pastoral-based livestock production is the dominant land-use in the arid and lower-rainfall semi-arid zones which make up 60–70% of the overall land area in the IGAD region (IGAD, 2013). It involves seasonal

Table 2.2: Contribution of the livestock sector to the national GDP and agricultural GDP (%)

	CONTRIBUTION TO OVERALL GDP (%)	CONTRIBUTION TO AGRICULTURAL GDP
Djibouti	3.1	82.2
Eritrea	15–17	35–49
Ethiopia	16.5	35.6
Kenya	12	42
Sudan (former)	21	60
Somalia	40	88.2
Uganda	5.2	18
Source: Authors' construction based on data from various sources		

[1] In our literature search we found no recent literature that captured the current livestock statistics in the IGAD region in as comprehensive a manner as the FAO study by Knips (2004).

or annual migration of livestock in search of pasture over a large area of rangeland. In the semi-arid zones, there is a higher degree of settlement and more crop farming. In agropastoral systems, livestock are kept for subsistence (milk and milk products), transportation (camels, donkeys), land preparation (oxen, camels), sale or exchange, savings, bride price and insurance against crop failure. The population generally lives in permanent settlements, although part of their herds may continue to migrate seasonally. The main crops planted in agropastoral systems are millet, sorghum, maize and cowpeas.

The IGAD member states have significant pastoral and agropastoral populations with approximately 17% of the population residing in these systems. Djibouti and Somalia especially have the greatest proportion of their populations in pasture-based production systems (71% and 76% of the populations respectively) (Sandford and Ashley, 2008). It is estimated that the pastoral and agropastoral production systems in the IGAD region account for about 53% of total beef production, 70% of sheep meat (mutton), 68% of goat-meat production, and 33% of cattle milk production (Knips, 2004).

Mixed systems are found in the highlands, subhumid and humid zones and are predominantly subsistence oriented and crop dominated. They account for about 42%, 29% and 32% of IGAD's cattle, sheep and goats respectively (Knips, 2004). In general, mixed production systems in the IGAD region account for: 35% of total beef production, 29% of mutton production, 30% of goat-meat production, and 16% of cattle milk production. Smallholder dairy farmers, numbering about one million in Kenya, produce over 80% of the marketed milk (Farmer and Mbwika, 2012).

Structure of the livestock value chains in the IGAD region

A value chain links the steps a product takes from the producer to the final consumer. The livestock value chain can be defined as the full range of activities required to bring a product (e.g. live animals, meat, milk, eggs, leather, etc.) to final consumers passing through the different phases of production, processing and delivery (IDRC, 2000). The core processes of a value chain include production, processing, distribution, wholesaling/retailing and final consumption. Besides the core processes, the value chain is supported by a network of support service providers and is influenced by a myriad of external factors as shown in Figure 2.1.

Besides the core processes, the value chain is supported by a network of support service providers and is influenced by a myriad of external factors.

The support functions of a value chain include input supply, financial services, transport, packaging, market research and advertising. These support functions are provided by various actors in the value chain including input suppliers, producers, processors, packagers, distributors, wholesalers and retailers. The distinguishing feature of a value chain is that all the links are coordinated, with value added at each stage, and are all geared towards meeting the needs of the final market (CTA, 2012).

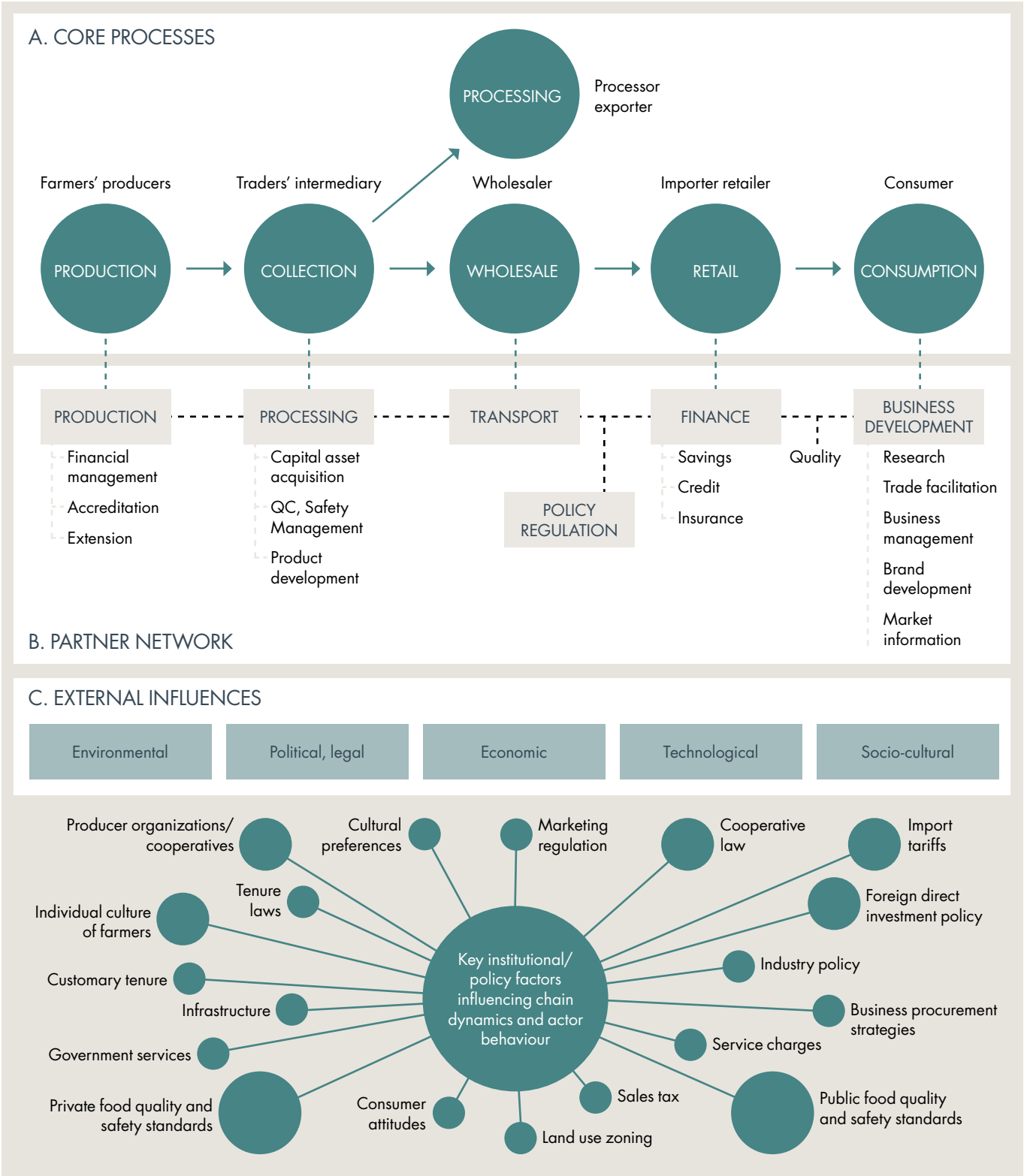
Value addition along the value chain may arise from improving the quality of the product and through increased efficiency of its delivery to the final consumer. At the production stage, value addition may arise through the use of better production technologies (breeds, forage, etc.), while at processing and packaging, value addition may arise from improving presentation and preparation, and introduction of grading system. Availing the final product to the consumer at the right place and time is a key value addition activity of the value chain.

In the subsequent subsection, we describe the selected priority value chains of dairy, beef, small ruminants (goats and sheep), poultry and apiculture.

Dairy value chains

The dairy sector in the IGAD region is large with different countries at different levels of value-chain development. Throughout the IGAD region, cattle are kept for dairy in both pastoral and mixed agricultural areas. More market-oriented smallholder dairy enterprises are however found in specific locations like the greater Nairobi milkshed in Kenya. Uganda has a growing dairy subsector while dairy production has grown in importance for areas surrounding the capital city in Ethiopia (Sandford and Ashley, 2008).

Figure 2.1: Model of an agricultural value chain



Source: Adapted from Cadilhon *et al.* (2014)

We selected three countries i.e. Kenya, Ethiopia and Sudan to bring out varied dynamics of the dairy sector development in the region based on volume of whole fresh milk production. While the sector is very dynamic in Kenya, Sudan still depends on imports to meet domestic demand for milk despite having twice as many cattle as Kenya. Ethiopia has the highest cattle population in the region (and in Africa) but the total milk production is about the same as in Kenya. In all the three countries, there are two distribution channels for milk leaving the farm: the formal and the informal channel. The formal distribution channel can be defined as the flow of milk that falls within the local business regulatory net including registered business, payment of taxes, etc. The informal sector is everything outside of the formal handling of milk. The main players in the informal sector are the 'milk traders' who buy directly from farmers and sell directly to the end-market including small milk bars, cafés and milk shops. In many cases the milk trader is the dairy farmer, particularly if the farm is urban or peri-urban.

The Kenyan dairy value chain is the most advanced in the region. It contributes 19% to the agricultural GDP and 4% to the overall national GDP. It is dominated by smallholders (about 1.8 million households) who produce over 80% of milk and it is growing at a rate of 3–4% annually. The sector was valued at KES 100 billion (US$1.3 million[2]) with annual milk consumption per person of 110 litres, which is projected to reach 220 litres by 2030. The current annual production is estimated at 4 billion litres with average national production of 5 litres/cow/day. Current estimates show that about 55% of milk produced in Kenya is marketed. However, only 20% is through formal channels (EADD, 2008). Milk processing in Kenya is dominated by two main processors (Brookside and New Kenya Cooperative Creameries), which are also responsible for chilling and distribution to wholesalers and often to retailers. Majority of farmers are organised into dairy cooperatives that provide support services such as input supply, financing and milk bulking. Box 2.1 below provides a summary of the dairy sector in Kenya.

The main players in the informal sector are the 'milk traders' who buy directly from farmers and sell directly to the end-market.

Table 2.3: Selected summary statistics of the dairy sectors in the IGAD region (2013)

	DJIBOUTI	SOMALIA	ERITREA	UGANDA	ETHIOPIA	SUDAN (FORMER)	KENYA
Milk, whole fresh cow in tonnes (t)	9,275	482,000	109,000	1,207,500	4,000,000	5,400,000	3,750,000
Butter, cow milk (t)	no data	no data	654	316.25	2,000	17,010	15,000
Milk, skimmed cow (t)	no data	184,291.64	27,958.50	6,008.75	342,000	35,320	616,075
Source: FAOSTAT (2013)							

[2] Exchange rate: USD 1= KES 78

Box 2.1

The dairy sector in Kenya

The dairy subsector is the single largest contributor to GDP in Kenya. This is substantiated by triangulating from the fact that Kenya has the largest dairy herd in Eastern or Southern Africa. Statistics by the Kenya Dairy Board indicate that total milk production in the country in 2010 stood at 4.6 billion litres exhibiting a 6.7% compounded annual growth rate between the years 2000 and 2010. The country has over 50 licensed milk processors with a processing capacity of more than 3 million litres per day. The average daily intake by processors in the country had grown from 417,530 litres per day in 2001 to 1.5 million litres in 2011.

While the dairy value chain is well commercialised and considered highly competitive, comprising of both formal and informal channels, the informal channel still dominates milk marketing by handling over 70% of milk sales.

Growth in the dairy sector has been attributed to the technical support and credit relationships existing among the value-chain actors. A study by the Kenya Market-Led Dairy Programme in Kenya highlights that licensed processors, with the involvement of donors and the farmer-owned Collection and Bulking Enterprises, offer a range of services along the value chain that include: training, chilling, animal feeds, artificial insemination services, milk transport, financial credit, supply contracts and animal health. The Government of Kenya too has strategically supported dairy through adequate infrastructure and strong concentration of dairy production, processing and continued development of financing strategies for dairy.

Diversification of value addition for the dairy value chain in the country is excellent and sophisticated at both cottage and industrialised levels. Pasteurised and flavoured milk, Ultra-high temperature (UHT) milk, powdered milk, fermented milk, yoghurt, ice cream, cheese and butter are produced and marketed. At cottage level, the additional return on value added provides incentives for higher volume of milk production.

There is emerging evidence that better-off households do better in dairy farming than poor ones. For example, milk productivity in the higher potential areas of Kenya was higher among higher income quintiles, suggesting that dairy farming could be a preserve of the relatively better-off households (Wambugu *et al.*, 2011).

Although, Ethiopia has the largest cattle population in Africa, the level of productivity and commercialisation is low, averaging at 1.54 litres/cow/day. Only 5% of milk is sold through commercial outlets. The annual growth rate in milk production is estimated at 1.2% with livestock and livestock-related products contributing 9.1% of Ethiopia's export earnings.

Sudan is ranked sixth in the world with 41.9 million heads of cattle producing 5.4 million litres annually. Cattle growth rate is estimated at 5.6% per annum. Local demand for milk is met largely through imports estimated at 43,000 t of powder and fresh milk valued at US$212 million. Table 2.3 provides summary statistics on the dairy sectors of all IGAD countries.

Beef value chains

The beef industry plays an important role in the economy of the countries located in the Horn of Africa region, constituting about 45% of total meat output and serving as an important source of income for many families in the lowest income groups. Both imports and exports of beef products from the countries in the Horn of Africa are marginal constituting less than half of 1% of global totals (Morgan and Gregoire, 2007).

In this subsection, we provide an overview of the beef value chains in Ethiopia, Sudan, Kenya and Uganda. Summary production and trade statistics are provided in Table 2.4.

In Kenya, cattle population is estimated at 18.1 million and cattle are mainly kept by pastoralists. Beef production contributes about 35% to Kenya's agricultural output (Otieno *et al.*, 2012). Kenyan pastoralists account for approximately 60–65% of Kenya's total meat supply. Of this, 20–25% comes from livestock raised in the neighbouring countries of Ethiopia, Somalia, Tanzania and Uganda. Overall, Kenya is a meat-deficit country (Farmer and Mbwika, 2012).

The main beef species reared in the country include East African Zebu, Boran, Sahiwal and cross-breeds and Somalia, Tanzania and the United Arab Emirates are the main export markets for Kenyan beef and beef products. In 2012, meat and live animal imports amounted to US$114,000 and US$12,000, respectively, while exports of meat and live animals in the same

period amounted to US$1,144,000 and US$2,642,000 respectively.

The livestock sector contributes 5.2% to Uganda's national GDP and about 18% of agricultural GDP (see Table 2.2). The total cattle population is estimated at 13 million, concentrated in Uganda's cattle corridor which extends from the South Western (16%), through Central (19%), Eastern (23%) and Karamoja (20%) regions. Slow-maturing indigenous breeds of Ankole and Zebu/Nganda origins account for 93.6% of Uganda's cattle herds. Meat consumption is about 6 kg per person per year compared with Kenya's 12 kg (Agriterra, 2012). There are about 165 large ranches accounting for around 2% of total cattle production (Agriterra, 2012). Beef is also derived from culled dairy cattle and their crosses. Total beef production stood at 199,008 t in 2013. The domestic beef market in Uganda is characterised by both the mainstream market, serviced by the wide network of roadside and market stall butcheries, and the premium market served by the modern butcheries and supermarket butcheries. Export is limited due to disease prevalence and lack of export-standard abattoirs. In 2012, imports of beef and beef products and live animals were valued at US$43,000 and US$475,000, respectively, while exports amounted to US$59,000 and US$798,000, respectively.

In Ethiopia it is estimated that livestock contributes 15–17% to national GDP, 35-40% of agricultural GDP and 37–87% of household incomes. About 70% of Ethiopians rely on livestock for their livelihood. In 2013, cattle meat production amounted to 340,750 t. The Middle East is the main destination for Ethiopia's formal and informal export of live animals and meat. About two-thirds of informal exports move from Eastern Ethiopia to Somalia with others being exported to Northeast Kenya and Sudan. In 2012, imports of beef and beef products and live animals amounted to US$89,000 and US$115,000 while exports amounted to US$1,322,000 and US$95,631,000 respectively. Domestic consumption is relatively low due to low incomes per person, high domestic meat prices and the prevalence of numerous fasting days among Orthodox Christians, who constitute about 40–45% of the population of the country.

The livestock sector accounts for more than 60% of Sudan's agricultural GDP and 21% of national GDP. The total population of cattle in 2013 was estimated at 41 million with beef accounting for approximately 65% of Sudan's total meat export.

Table 2.4: Beef production and trade statistics in IGAD countries

	POPULATION (2013)	MEAT PRODUCTION (T, 2013)	IMPORTS (US$, 2012)		EXPORTS (US$, 2012)	
			Meat	*Live animals*	*Meat*	*Live animals*
Ethiopia	54,000,000	340,750	89,000	115,000	1,322,000	95,631,000
Kenya	18,138,500	425,000	114,000	12,000	1,144,000	2,642,000
Uganda	13,020,000	199,008	43,000	475,000	54,000	798,000
Sudan(former)	41,917,000	358,000				
Eritrea	2,080,000	24,000				
Djibouti	298,000	6,050	3,708,000			
Somalia	4,870,000	60,500			86,000	

Source: FAOSTAT (2013)

Ninety percent of livestock in Sudan are owned by pastoralist communities. Total production of beef and beef products in 2013 was 358,000 t. The main export markets for Sudan's meat are Jordan and Egypt.

Small ruminant value chains

Generally, sheep and goats are an important alternative to cattle in pastoral areas because of their resilience to droughts, faster reproduction rates and easier sales for loss mitigation during severe droughts (Lebbie, 2004). A significant number of small ruminants are marketed domestically, generating employment for the local population especially women. Besides domestic trade, vibrant export markets are perceived to greatly benefit all actors in the small ruminant value chains in IGAD countries. For example, the principal source of small ruminants transported to Mecca for the Eid festival is the Horn of Africa (Sherman, 2011).

In this subsection, we provide an overview of small ruminant value chains in Somalia, Ethiopia and Kenya (Table 2.5 provides summary production and trade statistics).

Livestock contributes 40% to Somalia's national GDP. The country has a total population of about 23.8 million small ruminants. Meat production from small ruminants is estimated at 85,150 t. Major livestock export markets are Djibouti, Ethiopia, Kenya, Oman, Saudi Arabia, the United Arab Emirates and Yemen. Exports and imports of live animals and small ruminant meat amount to US$203,291,000 and US$2,075,000, respectively. Sale of sheep and goats in Somalia is widespread (>80% of households) and also regular across households standing at an average of about 10 animals per household per year (Wanyoike *et al.*, 2015).

Ethiopia has an estimated small ruminant population of 51.5 million, kept mostly by the rural poor and especially women. In crop-livestock production system, sheep contribute 63% of cash income derived from livestock sales. The annual meat production of small ruminants amounted to 161,450 t in 2013. Export demand from Ethiopia has been on the rise especially from the Gulf countries. The annual growth rate in sheep and goat-meat consumption per person from 2010 to 2020 is estimated at 3.4% and 1.3%, respectively. An overall change of 41% in sheep

Table 2.5: Small ruminant production and trade statistics for selected IGAD countries

	POPULATION (2013)	MEAT PRODUCTION (T IN 2013)	IMPORTS ('000 US$, (2012)		EXPORTS ('000 US$, 2012)	
			Meat	Live animals	Meat	Live animals
Somalia	23,850,000	85,150		2,075	105	203,186
Ethiopia	51,500,000	161,450	83	171	69,461	26,074
Kenya	41,238,304	84,000	0	41	4,153	234
Uganda	16,468,000	47,020	12	193	0	32
Sudan (former)	96,500,000	481,000				
Djibouti	984,000	4,663.10	37			
Eritrea	4,100,000	12,620		0		100

Source: FAOSTAT (2013)

meat consumption and 14% in goat-meat consumption is also expected over the 2010–2020 period. The consumption of sheep and goat meat is on the rise due to urbanisation and increased income. Also, the geographical proximity to Egypt and the Gulf region gives Ethiopia the comparative advantage in the Middle East livestock and meat markets. In 2012, approximately US$95.6 million and US$0.2 million of exports and imports, respectively, of small ruminant meat and live animals were traded (see Table 2.5). Ethiopia, however, faces stiff competition from Australia for the Middle East sheep export market.

Goats and sheep contribute about 30% of all red meat consumed in Kenya. In 2013, the population of small ruminants in the country was estimated at 48.5 million. In Kenya, there is increased preference for pure exotic/cross-bred dairy goats and associated technologies as a fast means of improving the animal production of smallholder farmers (Kosgey *et al.,* 2008). Meat production of small ruminants in 2013 was estimated at 84,000 t. Exports of sheep meat were valued at US$438,700 (see Table 2.5).

Poultry value chains

Among the IGAD countries, Ethiopia, Kenya, Sudan and Uganda have large poultry populations (see Table 2.6 on recent production statistics).

Ethiopia has a poultry population of about 51 million birds. Annual egg and meat production is estimated at 41,000 t and 61,840 t, respectively. The poultry sector supports over 70% of the population, mostly rural women. The national poultry meat and egg consumption is estimated at 77,000 and 69,000 t per year with a consumption of 57 eggs and 2.8 kg of meat per person. The unsatisfied demand for poultry meat and eggs is estimated at 7,750 t and 54,110 t, and is projected to reach 7,845 t and 11,238 t for eggs and meat, respectively, by 2020.

In Uganda, the poultry population is estimated at 38 million, supporting over 3.2 million (65.9%) households. The chicken population is increasing by 4% per annum, with a high meat consumption per person being realised in urban (1.89 kg) than rural (1.76 kg) areas. A meat consumption gap of 800,000 t exists, which is projected to increase by 4.87% per annum.

Table 2.6: Poultry production statistics for IGAD countries

	ERITREA	SOMALIA	DJIBOUTI	UGANDA	ETHIOPIA	SUDAN (FORMER)	KENYA
Chicken population ('000 heads)	1,400	3,500	no data	38,000	51,000	45,550	32,500
Meat, chicken (t)	1,742.50	3,600	no data	64,500	61,840	45,000	20,900
Eggs, hen in a shell (t)	2,300	2,400	no data	47,000	41,000	38,500	98,000
Source: FAOSTAT (2013)							

The Kenya poultry population is estimated at 32,500 million birds (FAOSTAT, 2013). The poultry subsector contributes 6.1% to the livestock GDP, 2.3% to agricultural GDP and 0.7% to the national GDP (Omiti and Okuthe, 2008). The sector generates income for 2–3 million people, mainly rural smallholders. Meat and egg consumption in Kenya is estimated at 24,000 t (0.6 kg per person) and 24,000 t (1.2 billion eggs), respectively, for the period 2005–08. Compared with overall African consumption of 4.5 kg per person, the consumption rate per person is low (USAID, 2010).

Apiculture value chains

Apiculture is a significant subsector in Ethiopia. In Kenya and Uganda it is small but with potential for growth (See Table 2.7 for summary statistics). Ethiopia is ranked 10th in the world and first in Africa in natural honey production out of which 99.2% is consumed locally. The total volume of production is estimated at 45,000 t of honey and 5,000 t of beeswax, accounting for about 26.6% and 2.7% of the total Africa and world honey production, respectively. However, its potential stands at 500,000 t of natural honey and 50,000 t of beeswax annually. The majority of honey produced (about 70% of 90–95% designated for sale) is sold to *tej* houses for brewing *tej* (mead or honey wine), while the rest is marketed as honey for general consumption. About 2 million people are involved in the bee value chain in Ethiopia.

In Kenya, there are about 180,000 beehives, producing 1,200 t (6.8% of the annual potential of 100,000 t per year) and 2,500 t of natural honey and beeswax, respectively, per year. About 144,000 people are involved (3% of Kenya's farm households) in apiculture. The annual yield per hive is 6.7 kg (including non-performing hives), compared with Africa's average of 10.1 kg and the world average of 20 kg. Net import is estimated at 50 t per year.

In Uganda, natural honey and beeswax production is estimated at 1,200 and 2,500 t per year, respectively, despite a production potential of more than 500,000 t. Although the country is allowed to export honey into European markets, only 36% of produced honey is of export quality. Apiculture directly supports over 1.2 million people from the 700,000 colonised beehives countrywide.

Table 2.7: Apiculture production statistics in selected IGAD countries

	SUDAN (FORMER)	ETHIOPIA	UGANDA	KENYA
Beeswax (t)	180	5,000	1,300	2,500
Honey, natural (t)	740	45,000	712	1,200
Beehives (number)	76,000	5,250,000	78,500	180,000
Source: FAOSTAT (2013)				

Institutions and actors in the value chains

This section presents the actors and institutions involved in the livestock value chain in the IGAD region and the key constraints that they face. It highlights existing gaps with a view to providing information useful for programmatic interventions aimed at tackling major issues that affect priority livestock value chains. The section is organised into two subsections: the first provides an overview of the value-chain actors while the second presents the constraints faced by each group of actors. This section is closely linked to chapter four, which presents the recent value-chain interventions and the type of constraints they address.

An overview of the value-chain institutions and actors in IGAD region

Livestock value chains in the IGAD region are comprised of many actors and value-chain enablers operating at different levels (local, national and regional/international levels). Table 3.1 presents an example of the primary actors and key enablers. The roles of different value-chain actors and enablers are summarised in Annex 4.

The primary actors form an important building block of the livestock value chain. They play various livestock-related roles such as: provision of inputs (e.g. feeds, semen, acaricides etc.), livestock production, trade and processing. Strengthening their capacities is essential for ensuring that stronger value chains are developed. Furthermore, ensuring that they get a fair and equitable share of the value generated by the chain is essential for creating incentives for increased and sustained production.

The livestock enablers play a very important role in the development of the livestock value chain. For instance, the national and subnational government authorities play a big role in creating conducive policy and regulatory environments that provide incentive for all other value-chain actors. Regional- and international-level institutions, communities and associations play the crucial role of supporting and complementing country-level livestock value-chain efforts within the IGAD member states. Examples of the regional and international actors include: IGAD, the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the African Union's Inter-African Bureau for Animal Resources (AU-IBAR), the African Livestock Platform (ALive), ICPALD, NEALCO, and the Eastern Africa Farmers Federation (EAFF), among others. These undertake multiple tasks such as harmonisation of policies and regulations to facilitate livestock trade, implementation of regional and continental projects, programmes and others. Research and learning institutions, knowledge hubs and policy think-tanks at country, regional and international levels generate knowledge to inform policy and decision-making and are also involved in the provision of technical support to the livestock value-chain initiatives. UN organisations such as the International Fund for Agricultural Development (IFAD), the Food and Agriculture Organization of the United Nations (FAO) and others undertake various activities e.g. provision of technical support, funding and implementation of projects and programmes. Other agencies (from both the public and the private sector) provide funding to projects and programmes in the livestock value chain. NGOs (such as Heifer International, Send a cow, TechnoServe etc.) and faith-based organisations (FBOs) also fund and implement livestock value-chain projects and programmes.

Constraints faced by livestock value-chain actors in the IGAD region

The previous subsection indicated that livestock value-chain actors in the IGAD region face a number of constraints that affect effective implementation of their roles. Table 3.2 summarises the priority constraints for different actors and institutions. We found that the constraints vary across space and scale. For instance, there are more constraints at the local level than at the national level. This is most likely because provincial and district authorities face more technical, organisational and financial challenges than national-level actors. Similarly, in comparison, small-scale farmers face more constraints than large-scale farmers. There is also

The livestock enablers play a very important role in the development of the livestock value chain.

variation in occurrence of constraints across livestock farming systems, with the pastoral livestock systems (mostly located in the arid and semi-arid lands [ASALs]) facing more severe livestock constraints than the agropastoral and mixed farming systems as a consequence of climatic, socio-economic, political and infrastructural challenges (Rakotoarisoa *et al.*, 2008; Sandford and Ashley, 2008; Little and McPeak, 2014). Addressing these constraints effectively requires paying attention to spatial variation in the nature and severity of the constraints. It is critical to have targeted and tailor-made solutions for different geographical areas and livestock farming systems.

Table 3.1: The various actors in livestock value chains

PRIMARY ACTORS	LEVEL/SCALE		
	Local	National	Regional/ international
Producers (e.g. pastoralists, small-scale producers and ranchers) and local producer organisations	x	x	
Local agro-dealers (e.g. veterinary drug outlets and input sellers)	x		
Livestock/livestock product processors (e.g. slaughterhouses, slab operators and local tannery operators)	x	x	
Livestock traders (e.g. trekkers, truckers, middlemen and transporters)	x	x	
Livestock products distributors/traders	x	x	x
Large wholesalers/retailers (e.g. supermarket chains)	x	x	
National livestock organisations (e.g. cooperatives, commodity associations and processing companies)	x	x	
Value-chain enablers			
Country-level government organisations and parastatals such as veterinary departments, livestock extension services, meat boards, dairy boards etc.	x	x	
Animal health workers	x	x	x
Government authorities including local and national government and parliamentarians	x	x	
Research institutions, policy think-tanks and learning institutions	x	x	x
NGOs, community-based organisations and FBOs	x	x	x
Multilateral organisations, bilateral organisations, UN agencies and private foundations	x	x	x
Continental and regional economic communities (e.g. the African Union [AU], AU-IBAR, IGAD, COMESA and EAC)		x	x
Financial institutions, microfinance institutions, insurance companies	x	x	x
International research organisations (e.g. ILRI)		x	x
Regional organisations, platforms, associations and specialised institutions (e.g. ICPALD, NEALCO, The Eastern and Southern Africa Dairy Association (ESADA), EAFF and others)		x	x

Table 3.2: Constraints faced by various institutions in the livestock value chain

ACTORS/ INSTITUTIONS	PRIORITY CONSTRAINTS
Individual livestock keepers Producers' associations Herders' associations	**Production**: lack of/limited access to credit by livestock keepers; limited access to animal genetic resources for quality breeding; limited access to feeds especially during dry seasons; inadequate access to water for livestock; limited access to livestock extension services; animal health challenges (limited capacity for disease prevention, surveillance and control); lack of dipping facilities; low adoption of improved technologies **Post-harvest handling and marketing**: inadequate business and entrepreneurial skills; ineffective marketing information systems; limited options for controlling post-harvest losses; poor milk collection facilities; poor hygiene and handling practices of milk at the farm level **Governance**: limited organisational capacity of producer groups; lack of market information
Local government authorities at national and local level	**Programming/planning and strategy design**: Inadequate funding; lack of livestock data; unreliable data on livestock indicators; low prioritisation of livestock in development programmes and strategies; limited capacity and commitment for evidence-based planning, and monitoring and evaluation **Implementation capacity of policies, projects and programmes**: limited capacity to institute effective project implementation; limited law enforcement capacity; inadequate institutional coordination mechanisms among actors; inadequate inter-agency and inter-sectoral cooperation; and inadequate coordination between national- and local-level actors
Local- and national-level livestock traders (including traders' groups, group ranches, livestock cooperatives, pastoralist associations and dairy cooperatives)	**Marketing**: poor livestock marketing infrastructure; poor market organisation; lack of quality livestock information systems; inadequate capacity to participate in regional and international trade in livestock and livestock products; inefficiency in the marketing chains; non-tariff barriers to livestock trade; lack of or poor quality infrastructure (e.g. watering facilities, holding grounds, roads, stock routes and export-level abattoirs); inadequate capacity to meet sanitary requirements related to the livestock and meat trade; international trading bans; high transaction costs in market systems **Capacity needs**: limited access to affordable credit facilities for traders and producers; weak institutional and organisational capacity for trader associations

ACTORS/ INSTITUTIONS	PRIORITY CONSTRAINTS
Livestock/livestock product processors (e.g. slaughterhouses, slab operators and local tannery operators)	Lack of or unreliable electricity in some areas; lack of quality slaughterhouse facilities; lack of or inadequate enforcement of standards and quality control by producers; high cost of support factors of production (e.g. water, power, diesel and packaging materials); seasonality of production – dry season versus wet season
The private sector (e.g. private veterinary health providers, drug dealers, feed suppliers, veterinary shops and livestock processors)	Lack of an enabling environment for private-sector investments in livestock interventions; limited access to credit; existence of tariff and non-tariff barriers; weak policy implementation; *ad hoc* policy interventions
Continental and regional bodies e.g. AU-IBAR, IGAD, COMESA, and EAC	Limited financial, technical and human resources capacity that limits Regional Economic Communities (RECs') ability to effectively implement their responsibilities; lack of a structured legal framework to coordinate the legal relations between AU, RECs and member states
National and international research organisations	Inadequate research on livestock and weak researcher–extension–farmer links; lack of livestock data; inconsistent/ unreliable data on national livestock indicators; low prioritisation of livestock in development programmes and strategies
Wholesalers/retailers	Low purchasing power of consumers; low per person consumption of livestock products

Source: Compiled by the authors based on stakeholder consultation and literature review (Aklilu, 2008; Sandford and Ashley, 2008; SNV, 2008; CNFA, 2013)

Current value-chain-development initiatives in the IGAD region

An overview of the value-chain approach in livestock-sector development

Domestic markets are increasingly becoming important in the region due to population increase and rapid urbanisation.

In agriculture and rural development circles, the value-chain approach is being viewed as an important avenue for improving market prospects for producers and scaling up returns. Increasing market access for producers is an important development goal; value chains that link the consumers back to the farmers offer an opportunity for integrating smallholder producers to modern markets, both domestic and international. Domestic markets are increasingly becoming important in the region due to population increase and rapid urbanisation. Specifically, with increasing incomes the demand for livestock products rises much faster than that of cereals due to higher income elasticity of demand.

Traditional marketing channels with *ad hoc* sales are being gradually replaced by coordinated links among farmers, processors, retailers and others. It is therefore imperative for development actors to think about how to integrate both competitiveness and equity issues. There are indications that although lower-income rural households generally receive smaller absolute gains from the livestock value chain than others do, the relative benefits to them are greater (IFAD, 2010a).

Integration of livestock value chains into the CAADP-based NAIPs

Although the initial CAADP document intended to cover all aspects of agriculture, only crop agriculture explicitly received attention. Livestock, fisheries and forestry were not mentioned. It is only in 2006 that the three sectors were expressly included in CAADP through the Companion Document. The AU-IBAR is mandated to support the implementation of the Livestock Component of the CAADP Companion Document at regional and country levels. Thus, in 2010, AU-IBAR released a framework for mainstreaming livestock in CAADP pillars and identifying livestock-related interventions for broad-based development of the sector (AU-IBAR, 2010). A recent review of CAADP compacts of IGAD member states (Nouala *et al.*, 2013), however, showed the following:

- recognition of the contribution of livestock to the CAADP target of raising agricultural productivity by at least 6% annually remains minimal
- role of livestock in enhancing food security and poverty alleviation is hardly recognised
- CAADP country teams had little or no consultation with livestock stakeholders, and
- developing the innovative livestock sector policies, strategies and programmes envisaged by CAADP is limited by the fact that the CAADP compacts borrow heavily from existing policy documents.

Results of a review of post-compact agricultural investment plans of three IGAD countries (Ethiopia, Kenya and Uganda) that have completed them mirror the trend in the compacts. Ethiopia's Policy and Investment Framework (PIF) 2010–2020 identifies pastoralists as beneficiaries of food security and natural resources management programmes. However, the document does not indicate the precise levels of support to the subsector. Given that about 65% of the country is dryland and pastoralism is a major source of livelihood, PIF seems to marginalise the pastoralists, in particular, and livestock development in general. Moreover, in the lowland areas where there is emphasis on irrigation development, trade-offs that will be imposed on the pastoralists are ignored. For example, access to water and grazing rights are critical for sustaining productivity and production of livestock systems. This may be compounded by the land certification programme, which apparently fails to provide options to secure land and water rights of pastoralists.

In Kenya, the Agriculture Sector Development Strategy and the Medium-Term Investment Plan (MTIP) (2010–2015) highlights areas of intervention in the livestock subsector, captured under two investment areas: Increasing Productivity, Commercialisation and

Competitiveness; and Promoting Sustainable Land and Natural Resource Management. For the high-rainfall areas, the target activities are two: intensifying livestock extension services and intensifying livestock disease and pest control. For the ASALs, a plethora of activities are planned: intensifying livestock extension services; developing livestock feed reserves; expanding vaccination, and animal disease prevention and control; restocking; developing disease-free zones; improving livestock marketing infrastructure; and promotion of livestock marketing groups. While the two investment areas will take 78% of the sector budget, it is not clear how much of that budget will be directed to livestock-specific activities. Thus, it is not possible to infer from the MTIP whether livestock have received adequate attention in the plan or not.

Compared with Ethiopia and Kenya, Uganda captures the livestock subsector better in the investment plan. The planned activities are fairly clear with clear budgets, and include: generation of appropriate livestock technologies; control of tsetse-fly- and tick-borne diseases; strengthening partnerships and international collaboration for pest and disease control; setting up traceability systems; supporting local governments on livestock issues; and putting up infrastructure such as quarantine stations, fumigation houses, holding grounds, animal night stops, dips and crushes, abattoirs and processing plants, and laboratories; and water infrastructure for livestock along cattle corridors and pastoral areas. Generation of appropriate livestock technologies has been allocated UGX 12.3 billion over the 5-year plan period. This constitutes 12% of the technology generation research budget. Water for livestock has been allocated UGX 69 billion over the 5-year period while the rest of the activities have been collectively allocated UGX 235.7 billion over the same period.

Although the NAIPs explicitly or implicitly recognise livestock as being important for food security and livelihood enhancement, livestock-specific interventions are limited. More important, no investment plan clearly identifies specific livestock value chains to be developed. At the minimum, the plans could have underscored the need for, and process of, identifying critical livestock value chains. They could have also set aside budgets for doing this.

An overview of current value-chain initiatives in the IGAD region

In this study, a wide range of livestock value-chain development initiatives were reviewed. It is important to note from the outset that all projects targeting different nodes of the value chain were assessed. About 100 development initiatives in the livestock sector were assessed and summarised in Annexes 2 (a)–(i). Annex 2 provides details of value-chain initiatives by country: project name, time frame, implementer, donor, geographical area of operation and the project budget. A separate document (in MS Excel) submitted together with this report, provides additional details about the project including the following: target beneficiaries, objectives, activities, achievements and notable challenges. In Table 4.1 we provide a summary of the reviewed livestock value-chain initiatives in terms of their area of intervention and the production system they were implemented in.

Interventions involving ICT

These exist mostly in mixed systems but have also been spreading to agropastoral and pastoral areas and include information on access to markets, monitoring drought, information on insurance and interventions on value-chain financing.

Information on access to markets

These are interventions that enhance access to information about the markets and price of crops and livestock through the use of mobile phones or web-based price and market information. Examples include the following:

- Agents of the Rwanda Ministry of Agriculture and Animal Resources are using an Android application to collect market and price data (www.esoko.gov.rw/);
- Kenya's SMS Sokoni project provides agricultural information through short text messaging for fee. The project is run by the Kenya Agricultural Commodities Exchange (KACE), a private firm, in partnership with

Table 4.1: Characterisation of recent interventions in the IGAD region

AREA OF INTERVENTION	PASTORAL *(low LGP)*	AGROPASTORAL *(medium LGP)*	MIXED SYSTEM *(high LGP)*
Access to credit/livestock financing (savings and credit cooperative societies [SACCOs], village community banks [VICOBAs])	X	X	X
Public animal health care, disease surveillance, disease control	X	X	X
Community animal health interventions/local animal health extension, NGO work on extension	X	X	
Breed improvement/improved genotypes (disease tolerant, high yielding), artificial insemination	X	X	X
Improved fodder, commercial feed production	X	X	X
Interventions incorporating information and computer technology (ICT)	X	X	X
Forage conservation/construction of fodder stores	X	X	X
Promoting improved dairy husbandry		X	X
Range management, and pasture development and management	X	X	
Agroforestry interventions to support livestock (e.g. through planting of fodder trees and shrubs)		X	X
Beekeeping and production of honey and beeswax	X	X	X
Increasing water access for livestock (e.g. through development/ rehabilitation of water systems such as dams, boreholes, wells and water harvesting)	X	X	
Building/rehabilitation of livestock infrastructure (livestock markets, abattoirs, animal dips)	X	X	X
Index-based livestock insurance	X		
Support to the private sector in the ASALs (veterinary health providers, veterinary drug suppliers, agro-vet)	X	X	X
Peace-building and conflict resolution among pastoralists	X		
Restocking	X		
Support to pastoral groups and herders' associations	X	X	
Support to dairy cooperatives			X

AREA OF INTERVENTION	PASTORAL *(low LGP)*	AGROPASTORAL *(medium LGP)*	MIXED SYSTEM *(high LGP)*
Dairy production and marketing (improved dairy production, milk marketing and transportation, institutional and food safety dimensions)		X	X
Improved beef production, livestock fattening and marketing	X	X	
Capacity building (pastoral field schools, pastoral associations, farmer field schools)	X	X	X
Construction of dairy infrastructure (cooling plants, milk processing plants)		X	X
Value addition (hides and skin)	X	X	
Poultry farming	X	X	X
Value-chain financing	X	X	X
During emergencies: destocking, emergency slaughter, supplementary animal feeding, transport subsidies to the market, purchase for slaughter, emergency Animal Health, emergency slaughter	X	X	

Notes: Livestock production systems classification by Thornton *et al.* (2002) and Cecchi *et al.* (2010).
LGP stands for 'length of growing period', a measure that compares predicted rainfall with the expected evapotranspiration rate to indicate when through the year annual crops will grow.

African mobile service provider Safaricom Limited;

- Dairy farmers in various districts of Uganda use mobile phones to directly deal with buyers, to negotiate prices and organise delivery. This intervention was introduced by the Farmers Information Communication Management project funded by Syngenta Foundation for Sustainable Agriculture and implemented by Information Communication Technologies for Africa Rural Development under the auspices of the Uganda National Farmers Federation.

Monitoring drought

There are interventions to support pastoralists to use mobile phones to send early warnings on drought. For example Oxfam is implementing a project on the use of mobile phones to send early warning on drought in drought-prone areas of Northern Kenya and Southern Ethiopia.

Information on insurance

ICT is also used to share information on weather for insurance purposes. This is being done alongside interventions on index-based crop and livestock insurance. A point in case is the Kilimo Salama, an innovative programme operated by Safaricom, Syngenta Foundation and UAP Insurance in Kenya. The initiative seeks to expand crop insurance to smallholder farmers in rural Kenya through the use of mobile phones (https://kilimosalama.wordpress.com/about/).

Table 4.2: An overview of interventions along the value-chain nodes

VALUE-CHAIN NODE	TYPE OF INTERVENTIONS
Input supply	• Training on breeding strategies • Introduction of cross-bred/improved genotypes e.g. through artificial insemination • Support to local agricultural input distribution (e.g. agro-vet services) • Access to agricultural finance • Improved fodder and commercial feed production
Production	• Capacity building on climate change adaptability for livestock farmers • Construction of fodder stores • Destocking, transport subsidies to the market, purchase for slaughter • Development/rehabilitation of water systems (e.g. dams, boreholes, wells, ponds and water points; water harvesting) • Emergency water supply systems • Formation/strengthening of pastoral and livestock keepers' associations • Facilitating information flow between researchers, extension workers and farmers • Capacity building and technical support for improved animal husbandry practices; livestock fattening • In emergency situations/post-crisis situation: restocking, supplementary feeding of vulnerable groups, emergency seed distribution, emergency provision of livestock feeds, delivery of water for animals • Participatory land-use planning • Promotion and support to adoption of natural resource management techniques such as improved range management • Promotion of improved animal husbandry and productivity-enhancing technologies • Support for improved animal health/disease control: veterinary laboratory services, disease surveillance • Training community-based animal health workers (CBAHWs)
Processing and post-production handling	• Construction of abattoirs • Value addition of livestock products (e.g. cheese making) • Emergency destocking • Formation of community-based organisation processing plants • Provision of post-harvest handling equipment • Promoting PPPs • Provision of milking equipment and milk storage containers • Facilitate availability of milk processing plants

VALUE-CHAIN NODE	TYPE OF INTERVENTIONS
Marketing (wholesale or retail)	• Capacity building for farmers, institutions and other actors in livestock trade and commercial operations • Development of sustainable market systems • Development of business-to-business linkages • Export market development • Key market infrastructure construction and operation • Livestock trade and marketing (including their products) in local, national, regional and international markets • Promotion of value-chain competitiveness • Strengthening business support services and enterprise development • Support in drafting and updating health regulations, procedures and systems to comply with international standards • Supporting reduced transaction costs in the livestock market chain • Supportive policies and institutional mechanisms to promote efficient livestock trade
Source: Authors' construction	

Interventions on value-chain financing

Agricultural Value-Chain Finance (AVCF) is the flow of funds to and among the various links within the agriculture value chain in terms of financial products, services and support services. AVCF interventions are being promoted in the IGAD region to enhance trade competitiveness. Examples of value-chain financing interventions include: input-supplier financing (e.g. agro-dealers and agro-vets), warehouse receipt systems and financing for marketing companies and traders. The interventions are implemented in all farming systems. In the past there was a complete lack of formal financial services for pastoralists, traders and livestock cooperatives, but this situation is now changing. Some organisations, for example Netherlands Development Organisation (SNV) are supporting value-chain financing in the pastoral and agropastoral systems.

Additional projects targeting value-chain financing and ICT are summarised in Annex 5.

Target value-chain nodes

The bulk of the initiatives were either at the production level or at the marketing level, which is understandable given that most development interventions tend to target small-scale producers who are the most vulnerable among the value-chain actors. In Table 4.2 we provide a summary of the different value chains nodes that were targeted and the type of interventions employed.

Characteristics of projects and programmes and implementation arrangements

Project characteristics

The majority of projects mapped addressed the production level of the value chain with funding from donors and are implemented mainly by government institutions or NGOs. The average project cost was about US$14.3 million. The project budgets varied from as high as US$122 million for the RPLRP to as low as several thousand dollars for a local project. The dairy goat project in Kitui, Kenya was the project with the lowest budget. Most of the projects with budgets less than US$1 million were targeted to interventions in the pastoral areas or to women and youth groups across the livestock farming systems (see Table 4.3).

The average project cost was about US$14.3 million.

Implementation arrangements

This study found out that partnership arrangements are very common in the livestock value-chain initiatives within the IGAD region. Most of the reviewed interventions involve 3–4 partners, while others constitute five (or even more) partners (see selected examples in Table 4.4). Use of PPP implementation arrangements is apparent.

This study found out that partnership arrangements are very common in the livestock value-chain initiatives within the IGAD region.

We present below selected examples to illustrate project implementation arrangements of ongoing or recently completed livestock value-chain projects in different parts of the IGAD region[3].

Our first example is the East Africa Dairy Development project (EADD) phase 1 which was implemented by a number of partners. The goal of the project was help dairy farmers in Eastern Africa double their dairy-related incomes by increasing their ownership of cross-bred cows, increasing the amount of milk their cows produce, and strengthening their relationship to formal markets so they can sell more milk. It was funded by the Bill & Melinda Gates Foundation, while Heifer International served the role of a lead implementer working closely with TechnoServe. National governments in the implementing countries (Kenya, Uganda and Rwanda) were involved. In addition, two CGIAR centres were involved: the International Livestock Research Institute (ILRI) for its work in livestock in the developing countries and the World Agroforestry Centre (ICRAF) that has done a lot of work in development of technologies for animal feeds. It also involved African Breeders' Services Total Cattle Management (ABS-TCM) in Eastern Africa.

The second example is the Ethiopia Sanitary & Phytosanitary Standards and Livestock & Meat Marketing Programme (SPS-LMM). The project has two major objectives: (i) upgrading SPS-related activities and veterinary services to support Ethiopia's meat and livestock exports; and (ii) improving Ethiopia's competitive advantage for meat and livestock exports. It is implemented through collaboration between the Ethiopian Ministry of Agriculture and Rural Development, ILRI, the Ethiopian Institute for Agricultural Research (EIAR) and the World Food Logistics Organization.

The third example is the 'Food security through effective animal disease control and fisheries production' project aimed at increasing access of agropastoralists in South Sudan to animal health services and to fishing equipment. The project is implemented through collaboration between the Government Ministry of Animal Resources and Fisheries, the State Ministry of Animal Resources and Fisheries, NGOs, FBOs and community-based animal health workers (CAHWs), who provide training and improved livestock owners' access to vaccines and veterinary services.

Table 4.3: An overview of project budget for livestock interventions in the IGAD region

PROJECT BUDGET INDICATOR	MEASURE	KINDS OF PROJECTS UNDER THIS CATEGORY
Minimum US$	10,000	Dairy goat project in Kitui
Maximum US$	122,000,000	RPLRP in Kenya, funded by the World Bank
Mean	14,390,436	
Median	4,330,000	
Number of projects with budgets less than US$1 million	24	Mostly in the pastoral areas, for livestock support, beekeeping, emergency interventions, water availability, support to women and youth groups (not just in pastoral areas)
Number of projects with budgets more than US$100 million	2	RPLRP in Kenya

Source: Authors' construction, 2015
Notes: The table includes only projects that were available for this study

[3] Information presented here is only brief for the purpose of highlighting project implementation arrangements. More information on each of the projects is available in Annex 3.

A fourth example is the 'Improving the Productivity and Market Success of Ethiopian Farmers (IPMS)' project, which ended in April 2013. The project aimed at strengthening the effectiveness of the government's effort to transform agricultural productivity and production, and rural development in Ethiopia. It was funded by the Canadian International Development Agency (CIDA) and implemented by the ILRI on behalf of the Ethiopian Ministry of Agriculture.

A fifth example is the implementation of the Apiculture Scaling-up Programme for Income and Rural Employment (ASPIRE) project that has been under implementation in Ethiopia since 2013. This project is financed by the Netherlands government, the Ethiopian Government's Sustainable Land Management programme and the German Agency for International Cooperation (GIZ). It is aimed at maturing the value chain through business-to-business development and sector/institutional strengthening. The project is implemented through a partnership between the funding agency, government ministries and private partnerships that include: SNV, a Dutch, non-profit, international development organisation, the Ethiopian Apiculture Board, Triodos Facet, a Netherland's private consultancy company that specialises in promotion and development of sustainable micro, small and medium-sized enterprises, and ProFound, a private company dealing with sustainable economic development and trade promotion in developing countries and which assisted with access to domestic and export markets.

A sixth example is Kenya's 'Poultry project in Busia county', which is working to link poultry producers and intermediaries to markets. It is implemented by a local NGO, the Centre for Africa Bio-entrepreneurship (CABE), which operates within Busia county. CABE is knowledge- and learning-based, aimed at building the capacity of small-scale farmers and youth in agri-food activities. CABE is funded by the World Bank through the Kenya Agricultural Productivity and Agribusiness Programme, implemented by Kenya's Ministry of Agriculture.

RPLRP is a seventh example. This project is funded by the World Bank and is implemented in Kenya, Uganda and Ethiopia. Its objectives are to enhance livelihood resilience of pastoral and agropastoral communities in cross-border drought-prone areas of selected countries and improve the capacity of the selected countries' governments to respond promptly and effectively to an eligible crisis or emergency. The project has the following components: i) natural resources management that focuses on enhancing the sustainable management and secure access of pastoral and agropastoral communities to natural resources (water and pasture) with trans-boundary significance; ii) market access and trade, which aims at improving the market access of the agropastoralists and pastoralists to the intraregional and international markets of livestock and livestock products; iii) livelihood support which aims at enhancing the livelihoods of pastoralist and agropastoralist communities; iv) pastoral risk management, which aims at enhancing drought-related hazard preparedness, prevention and response at the national and regional levels and v) project management and institutional support.

Our eighth example of a project implementation arrangement is the 'Smallholder Dairy Commercialization Programme' (SDCP), funded by IFAD. The objective of the project is to increase the productivity of the dairy industry, at the farm and market level; increase the volume of milk marketed while ensuring adequate milk is available for the farm household; and increase dairy incomes to programme beneficiaries by improving their production practices. The project is working with poor smallholder dairy producers and traders to strengthen their capacity to respond to market opportunities. It builds understanding of the market and technical knowledge of production processes, and improves organisational and enterprise skills. The project is implemented in collaboration with the Ministry of Agriculture, Livestock and Fisheries (State Department for Livestock).The programme has established good working relations with other key development players (Kenya National Federation of Agricultural Producers, EADD, GIZ, etc.) in the region and public institutions (Kenya Dairy Board, Dairy Training Institute) for synergies, complementarities and sustainability of programme interventions (IFAD, 2012).

The ninth example is the 'Agricultural Growth Program–Livestock Market Development' (AGP-LMD) in Ethiopia, funded by the U.S. Government's Feed the Future Initiative. The project supports three value chains: meat and live animals; hides, skins and leather; and dairy products. This project is implemented by a consortium of local and international NGOs in partnership with private organisations led by Cultivating New Frontiers in Agriculture (CNFA) a non-profit international development organisation. Partners include: SNV; J.E. Austin & Associates (JAA), leading the value-chain analytics; the Institute for International Education, contributing its approach to gender equity; International Institute for Communication and Development, responsible for integrating technology solutions into all programme activities; regional partners/NGOs: Relief Society of Tigray (REST), the Oromo Grassroots Development Initiative (HUNDEE), the Organization for Rehabilitation and Development in Amhara, and Self Help Africa; TREG, BCaD, Precise Consult and Digital Opportunity Trust Ethiopia, all local consulting firms, assisted the programme's studies and analyses.

The tenth example, Reinforcing Animal Health Services in Somalia (RAHS), is funded by the EU. Aimed at enhancing the quality, access and sustainability of animal health services in Somalia, this project will sustain the existing private-sector-led economic growth in the livestock sector by strengthening capacities and PPPs between the Somali public veterinary authorities and private livestock professional associations in animal health services delivery. Pastoralists and agropastoralists are set to benefit from improved access to animal health services and enhanced participation in the design and implementation of livestock disease surveillance and control programmes for the protection of their livestock. Interventions are coordinated by AU-IBAR in close partnership with Somali Veterinary Authorities, Somali Livestock Professional Associations and two international NGOs working in the Somali livestock sector namely Cooperazione Internazionale (COOPI) and Terra Nuova.

Karamoja Livestock Development Programme (KLDP) phase II is our eleventh example. This project is implemented by VSF-Belgium and funded by the Belgium Government and the European Commission/European Civil protection and Humanitarian Aid Operations. The main objective of the programme is to improve the well-being of pastoralists in Moroto district by reducing their vulnerability to disease and drought. It is based in Matheniko county (Moroto district). Activities centre on improving access to natural resources such as pasture and water; improving animal health by implementing a community-based animal health service delivery system; and improving marketing of livestock and livestock products.

The Northern Uganda Agricultural Livelihoods Recovery Programme (ALREP) is the twelfth example. The project took place from 2010 to 2015. The goal of this €20 million project was to ensure that the war-affected population of northern Uganda engages in productive and profitable agricultural and agribusiness activities that ensure food security and increase household income. The project was funded by the EU and government of Uganda. It was implemented in Acholi, Lango and parts of Teso. Beneficiaries received improved seeds, oxen ploughs, agro-processing machines, cattle, poultry and beehives, among others. The contracting authority of ALREP was the Ministry of Finance, Planning and Economic Development while the implementing agency was the Office of the Prime Minister.

Another example is the Karamoja Livelihoods Programme (KALIP) a €15 million project funded by the EU and the Government of Uganda, which took place from 2010 to 2015. It aimed at achieving the following results: i) productive assets built through labour-intensive works and capital injected in the local economy; ii) agropastoral production and animal health services improved and alternative means of livelihoods promoted; iii) local government strengthened and iv) peace-building activities supported. The contracting authority of ALREP was the Ministry of Finance, Planning and Economic Development while the implementing agency was the Office of the Prime Minister.

Gender and youth perspectives

The need for more inclusive value chains to benefit small agropastoralists, women and youths

as priority groups is increasingly being recognised at different levels (Haggblade *et al.*, 2012). These groups are primarily engaged in mixed crop-livestock farming systems in most rural settings and thus contribute immensely to the livestock sector (FAO, 2009). Research has shown that in Africa, the livestock sector is characterised by a significant number of rural households being heavily involved in locally-based and small-scale activities. These groups depend either directly or indirectly on these activities for sustenance (milk and meat), crop production (animal traction and manure), asset building and income generation (FAO, 2012; Neely *et al.*, 2009). However, these groups also experience high poverty levels, with at least 75% of livestock producers living in severe poverty despite their substantial contribution in livestock systems (FAO, 2012). Additionally, recent estimates have suggested that rural women account for almost two-thirds of the low-income livestock producers in different parts of Africa (Njuki and Sanginga, 2013; Behnke and Muthami, 2011; Thornton *et al.*, 2002). On another note, available statistics on youth involvement in the sector remain scarce as many contributions are often accounted as unpaid work, thus rendering invisible the potential of the youth (FAO, 2014). However, projections suggest that agriculture and related sectors – including livestock, agro-industry, forestry, etc. – are likely to provide increased employment opportunities for the youthful population (Filmer *et al.*, 2014; FAO, 2014). For the livestock sector in particular, it is projected that increased demand for animal-source foods will boost the number of value-chain operations along which (self and wage) employment opportunities should be created for young women and men in rural areas. Examples in the dairy sector (e.g. the EADD project) have illustrated the importance of livestock initiatives in promoting and facilitating youth employment in the sector (EADD, 2011). However, it is also clear that there are several key prerequisites for continued harnessing of youth potential through their involvement and participation in livestock value chains. These include, but are not limited to, increased access to land, technologies, credit and other financial facilities, technical know-how, education and skill development (e.g. training sessions and apprenticeships) as well as policy and financial mechanisms to support micro-enterprise development and other market-oriented opportunities that will contribute towards a smoother transition into employment for young women and men through livestock value-chain initiatives (FAO, 2014).

Key aspects of gender in livestock-based development and markets

Recent estimates have suggested that rural women account for almost two-thirds of the low-income livestock producers in different parts of Africa.

These recent figures and prospects clearly established the fact that successful livestock value-chain development may also be largely determined by the continued and active participation of smallholders: agropastoralists, women and youth in the sector. However, for this involvement to be constantly promoted and actively sustained, there is need to understand the social dynamics likely to play a determining role not only in value-chain participation but also with respect to the extent to which all actors benefit effectively from participating in the chain (Jeckoniah *et al.*, 2013; Coles and Mitchell, 2011; Laven *et al.*, 2009). One critical determinant is the impact of power differentials reflected in the relations between actors operating at different chain nodes. The nature and extent of such relations can potentially affect the chain of results connecting activities to outcomes and thus, to the final socio-economic impacts. This last point may be particularly relevant for the priority groups who even when considered in value-chain development, may not necessarily participate in very advantageous conditions or benefit from the various development interventions being implemented (FAO, 2011; Kristjanson *et al.*, 2010; Gammage *et al.*, 2009; Bolwig *et al.*, 2010, 2008).

Extensive literature has pointed to potential gender-related differences in the level of interaction between and benefits accrued by chain actors. Particularly, it has been argued that despite the shared responsibility in livestock systems, some functions are much more associated with men than women (and vice versa) and this, depending on the nature of the value chain (from the very simple micro- to the highly complex value chains involving several actors, large-scale production and commercial systems); the type and scale of livestock rearing; the location (e.g. community, region or country); and the different socio-economic and cultural concerns arising from the various social interactions, may affect development of the entire value chain (FAO, 2013; IFAD, 2010b;

Table 4.4: Illustration of partnerships in selected livestock value-chain projects and programmes

PROJECT NAME	INTERNATIONAL RESEARCH	LOCAL RESEARCH	UNIVERSITIES	GOVERNMENT MINISTRIES	NGOS/CONTRACTORS	DONORS	UN AGENCIES	PRIVATE SECTOR	COMMUNITY/FARMER GROUPS/PRODUCERS	TRADERS	FBOS	RECS/AFRICAN UNION
AGP-LMD-Ethiopia			1	1	2				M	M		
ALREP-Uganda				1		1						
ASPIRE-Ethiopia				1	1	2		1	1	M		
Busia poultry-Kenya				1	1	1			1	M		
EADD 1-Kenya, Uganda, Rwanda	2			3	2	1		M	M	M		
KALIP-Uganda				2	M	1	1		M			
KDSC-Kenya				1	1	1			M	M		
KLDP II-Uganda					1	1						
Kotido-Uganda				1	1	M			M	M	1	
K-SALES-Kenya					1	1			M	M		
IPMS-Ethiopia	1	1	1	1		1			M	M		
RPLRP-Kenya, Uganda, Ethiopia				3		1	1		M	M		1
RAHS-Somalia				1			1		M	M		1
SPS-LMM-Ethiopia	1	1		1	1					M		
SDCP-Kenya			1	1	2		1		M	M		

Source: Authors' construction
Notes: The numbers indicates the number of partners, the letter M indicates that the project involves multiple stakeholders in this category. This table is not exhaustive of all projects in the region, it is only indicative of the different partnership arrangements. Full names of the projects are found in Annex 3.

Kristjanson *et al.*, 2010). In many African countries, research continues to show the predominance of women in small-scale livestock farming, although some of the highly income-generating activities often end up being controlled by men (Kristjanson *et al.*, 2010; IFAD, 2010b). Besides, men are more likely to dominate large livestock production activities and be heavily involved in the most lucrative nodes of the value chain (FAO, 2011). These dynamics also include the fact that women in particular, are either unfairly disadvantaged or completely excluded from value-chain development (FAO 2013; 2011).

Several factors have been identified as gender-based constraints to an increased level of involvement of women and other disadvantaged groups in livestock production and marketing systems. These constraints can be summarised in the main empowerment dimensions, which comprise of resources, abilities and achievements (Kabeer, 1999). For the case of poor rural households and particularly women and youth, literature has documented that they are likely to face greater challenges than other chain actors with respect to their limited access to *resources* (e.g. productive resources such as livestock assets, inputs and financial capital); *capabilities* (e.g. skills acquired through education and extension services but also mobility-related issues) and *achievements* viewed in terms of increased access to opportunities and benefits accrued through their participation in value-chain initiatives (FAO, 2013; Njuki and Sanginga, 2013). These and other socio-cultural challenges not only impede the full participation of, but also compromise opportunities for gain in the different value-chain operations (Njuki and Miller, 2013).

To remedy this prevalent situation, research suggested maximising positive socio-economic impacts by promoting increased involvement of men, women and other groups as well as improving benefits derived from livestock systems through secured livestock asset ownership; sustained livestock productivity; and increased access to markets (Torero, 2011; Kristjanson *et al.*, 2010). It is in this context that several value-chain interventions/development initiatives have been formulated and implemented with the aim of improving equitable participation but also access to opportunities and benefits in livestock development systems. However, significant efforts towards ensuring successful implementation of such initiatives have not always resulted in positive outcomes for the most vulnerable actors in the value chains and for effective evidence-based policy-making (DANIDA, 2010). This, therefore, calls for critical assessment of recent livestock development interventions aimed at addressing the constraints, priorities and needs of the small livestock keepers, women and young people, as well as enhancing varied functions at the production and post-production (processing, trade, etc.) levels.

Assessing gender inclusiveness and responsiveness in selected livestock value-chain interventions

This section analyses how gender *inclusiveness* (the conditions of participation of targeted groups) and *responsiveness* (actions undertaken to ensure effective participation and benefits) have been achieved in selected livestock value-chain interventions within the IGAD region. To perform this analysis, the 100 projects assessed under 'An overview of current value-chain initiatives in the IGAD region' were further examined based on their focus on a value-chain approach (production, processing and/or marketing oriented) and key livestock value chains in the region (beef, dairy, small ruminants, poultry and apiculture); the coverage (e.g. interventions targeting only specific groups but also other livestock initiatives aimed at integrating and addressing some gender issues in particular activities) and the availability of project/programme documentation. Based on the above inclusion and exclusion criteria, 20 projects and programmes were selected to further assess the gender inclusiveness and responsiveness in livestock value-chain initiatives (see Table 4.5).

The extent to which selected livestock interventions had integrated gender-related goals and supported action towards improving the participation of and access to benefits by the target groups was assessed using five criteria of the *Gender Action's Essential Gender Analysis Checklist*[4], a qualitative tool devoted for this purpose. These criteria include:

1. *gender objectives* targeted as primary (if gender considerations were a fundamental underpinning of all project activities) or secondary (if gender was an explicit objective for specific activities)

2. *gender-relevant data* available to inform the formulation, implementation and effective monitoring and evaluation processes
3. *gender inputs* (information on the effective participation/activities of the targeted groups throughout the project cycle)
4. *gender outputs/outcomes* (information related to the extent to which beneficiaries gained from their participation), and
5. *gender impacts* (information on the differential impacts for the targeted population groups).

Key findings

IGAD countries need more efforts to promote and support gender inclusiveness and responsiveness in livestock value-chain initiatives.

The analysis shows that most IGAD countries need more efforts to promote and support gender inclusiveness and responsiveness in livestock value-chain initiatives. The analysis indicated that at least 20 out of 100 interventions have used a value-chain approach and provided some evidence for a comprehensive assessment of gender considerations. But, overall, very few initiatives have considered gender-related issues as essential to forge linkages between actor categories involved in the livestock value chains. Table 4.6 provides a summary of the key findings for the IGAD region.

- On the *project focus on gender (gender-related goals)*, out of the 20 selected interventions, five projects had explicitly focused on gender as a primary objective. In Ethiopia, two livestock initiatives defined specific gender objectives to be achieved as the projects are implemented. The Gender and Environment-Responsive Beekeeping (G&EB) project engaged male and female farmers in different beekeeping activities for improved livelihoods and environmental rehabilitation. The Livestock and Irrigation Value Chains for Ethiopian Smallholders (LIVES) had specifically based its activities on promoting 'income and gender equitable wealth creation' through increased market opportunities for livestock and irrigated crop commodities. In the case of South Sudan, the women-only project (Dairy Farming by Women in Wau) emphasised on training female-headed households on how to engage

Table 4.5: Selection of livestock value-chain initiatives with a gender perspective

	TOTAL *(AgInvest Africa Web portal)*	**PROJECT/ PROGRAMME** *(with a gender lens)*	**PROJECT/ PROGRAMME** *(using a value added approach)*	**PROJECT/ PROGRAMME** *(documented)*
Djibouti	4	2	1	0
Eritrea	4	2	1	1
Ethiopia	17	8	6	5
Kenya	29	11	7	7
Somalia	10	3	1	1
Sudan	2	2	1	2
South Sudan	10	2	2	2
Uganda	12	4	3	1
Initiatives at the regional level	12	3	1	1
Total	100	37	23	20

Source: Compiled by the authors from AgInvest Africa Web Portal and various project documents

[2] For more information, see Gender Action publication available at http://www.genderaction.org/publications/11/checklist.pdf

in more productive and income-generating activities in dairy farming systems. The other projects (15) only made reference to gender without providing details on the contribution of interventions to improving livelihoods of the targeted groups. Furthermore, most projects were designed for the promotion of sustained livestock productivity and increased access to markets, although focus on livestock asset ownership was still missing in the majority of projects and programmes.

- On the *availability of gender-relevant information*, the analysis showed that 11 projects contained gender-sensitive indicators and data variables but in most cases, this data was mainly available on the number of beneficiaries from the livestock interventions. For some projects like LIVES in Ethiopia, project implementers mentioned one baseline study on 5,000 rural farmers, which is not publicly accessible. The G&EB project in Ethiopia had some data disaggregated by sex collected at different stages of the project, including data on the committees formed to lead the project implementation, the number of beneficiaries by gender, and trainees on business skills and basic beekeeping. The Kenya Dairy Sector Competitiveness Programme (KDSCP) had also included a data collection programme stemming from a rapid gender assessment undertaken at the project inception phase and impact evaluations at the end of the project. At the regional level, it is worth mentioning the EADD project (Phase I) for which, data collection covered not only a baseline survey but also the mid-term and final impact evaluations conducted to gauge effective project implementation and intended impact on the targeted groups.
- On the *participation of targeted groups* (gender inputs) throughout the project/programme cycle, the analysis indicated at least eight projects describing specific activities targeted beneficiaries were involved in and effectiveness of their participation. In Eritrea, women played an instrumental role in several activities under the Gash Barka Livestock and Agriculture Development project including, participation in committees set up by project implementers, in training sessions and in developing irrigation schemes. The Ethiopia Sheep and Goat Productivity Improvement Programme (ESGPIP), for instance, described different capacity-building and experience-sharing activities among farmers. In the KDSCP dairy value-chain intervention in Kenya, targeted groups (women, youth and HIV/AIDS-affected households) were particularly involved in the development of dairy cooperatives and capacity-building activities on artificial insemination. In the Pilot Value-Chain Development (PVCD) and EADD projects, it was documented that women participated actively in setting up a revolving fund linked to village banks. For other projects, operating modalities to support participation of women, men and for some cases, the youth, were mentioned without explicitly describing the specific activities in which they were involved. In overall, it seemed challenging to determine the extent to which targeted groups were actually engaged in the various interventions.
- Regarding the *potential benefits derived from project participation* (gender outcomes/outputs), six projects and programmes had explicitly documented benefits received by targeted groups from their involvement in different project activities. This is illustrated by the LIVES project, which defined gendered outcomes at least at the *immediate level* with outcomes relating to improved capacity, increased access to knowledge and project activities of value-chain actors (men and women); and *intermediate level*, with outcomes relating to an increased use of improved knowledge and capacity by chain actors, and increased adoption of best practices for environmentally-sustainable value-chain initiatives.
- Finally, it was also quite arduous to determine *project differential impacts* (key achievements) on men and women for most country-specific projects although six had documented broad socio-economic impacts in terms of increased income and improved nutrition without specific gender indicators. For the LIVES project, increased welfare for male and female smallholder producers was identified as one indicator to measure project impacts in various regions. The regional project (EADD) highlighted some performance indicators for measuring women and youth contributions to leadership groups, shareholding, training and membership to dairy farming organisations in the different project areas.

Table 4.6: Project/programme assessment from a gender perspective

COUNTRY/REGION	PROJECT NAME	TIME FRAME	GENDER OBJECTIVES	GENDER DATA	GENDER INPUTS	GENDER OUTPUTS	GENDER IMPACTS
Eritrea	Gash Barka Livestock and Agricultural Development	2003–2009					
Ethiopia	Apiculture Scaling-up Programme for Income and Rural Employment (ASPIRE)	2013–2017					
	Enhancing Dairy Sector Growth in Ethiopia (EDGET) project	2012–2017					•
	Ethiopia Sheep and Goat Productivity Improvement Program (ESGPIP)	2005–2010					
	Gender- and Environment-Responsive Beekeeping (G&EB)	2013–2015		•		•	
	Livestock and Irrigation Value Chains for Ethiopian Smallholders (LIVES)	2012–2017				•	•
Kenya	Dairy Goat Dispersal Project	2013–2014		•			
	Indigenous Chicken Dispersal Project	2012–2013		•			
	Kenya Dairy Sector Competitiveness Program	2008–2013		•		•	•
	Partnership for Safe Poultry in Kenya (PSPK) Program	2009–2017		•			
	Pilot Value-Chain Development Project	2012–2013		•		•	
	Resilience and Economic Growth in the Arid Lands-Accelerated Growth (REGAL-AG)	2013–2017					
	Smallholder Dairy Commercialization Programme	2006–2015		•			

COUNTRY/REGION	PROJECT NAME	TIME FRAME	GENDER OBJECTIVES	GENDER DATA	GENDER INPUTS	GENDER OUTPUTS	GENDER IMPACTS
Sudan	Improving Livestock Production and Marketing Project	2007–2013		•			•
	Livestock Marketing and Resilience Programme	2014–2021		•			
Somalia	Support to Pastoral Livelihood Development-Promoting an internationally competitive Somali meat industry (Phase II)	2010–2013					
South Sudan	Dairy Farming by women in Wau	2014–2015		•		•	•
	Livestock and Fisheries Development Project (LFDP)	2007–2011					
Uganda	National Livestock Productivity Improvement Project (NLPI)	2004–2010					
Eastern Africa	East Africa Dairy Development (EADD) Project	2008–2012 (Phase I) 2014–2018 (Phase II)		•		•	•

- Project/programme focused on gender as a primary objective
- Project/programme focused on gender as a secondary objective
- Gender inputs (participation of targeted groups in project activities)
- Gender inputs not clearly specified

Value-chain coordination structures

Introduction

Weak value-chain coordination mechanisms are identified as a key constraint to improved value-chain efficiency.

Every value chain has a system of coordination that includes formal and informal arrangements between participants. Coordination structures may range from loosely coordinated, market-based trading structures, to intensely coordinated, vertically integrated production systems. Weak value-chain coordination mechanisms are identified as a key constraint to improved value-chain efficiency. Coordination involves managing relationships between actors in the implementation of specific value-chain activities. From a value-chain perspective, coordination can be viewed as the ability to provide direction and enforce rules among the actors in the value-chain. Various reasons are provided on the need for value-chain coordination:

- Since value chains involve interdependencies among many actors, there is need to coordinate them.
- There is increasing complexity of the end-market requirements, for instance product differentiation and unique market requirements that necessitate coordination among actors.
- The need to manage risks associated with performance shortfalls.

Value chains can be viewed through three key interdependency relationships (Steins and Edwards, 1998), as described below:

1. Pooled interdependency: each actor renders a discrete contribution to the whole and each is supported by the whole. The coordination mechanism involves development and implementation of standards of production, distribution and product quality.
2. Sequential interdependency: the output of one is the input to another part of the value chain. The coordination mechanism is by managerial discretion by plan or command by leading value-chain actors.
3. Reciprocal interdependency: output of each part is an input for every other part. Change in one part affects all other parts of the value chain. Example of a coordination mechanism under reciprocal interdependency is ***multistakeholder platforms*** where mutually agreed changes to one partner can impact the contribution of all other members. The coordination mechanism is through joint decision-making and problem-solving to coordinate individual activities.

In this report, we focus on coordination mechanisms falling under the reciprocal interdependency. This kind of coordination mechanism would be most applicable for multistakeholder value-chain platforms, which is the subject of this chapter.

Multistakeholder platforms

A multistakeholder platform is defined as 'a decision-making body (voluntary or statutory) comprising different stakeholders who perceive the same problem, realise their interdependence for solving it, and come together to agree on actions for solving the problem' (Adapted from Steins and Edwards, 1998). Several examples are discussed in the next subsection.

Value-chain-based innovation platforms

An innovation platform is a space for learning and change (Birachi *et al.*, 2013). It brings together a group of individuals (often representing different organisations) with different backgrounds and interests: farmers, traders, processors, researchers, policy-makers, etc. The purpose of coming together is to diagnose problems, identify opportunities and find ways to achieve their goals. They may design and implement activities jointly as a platform or individually.

Innovation platforms can be a useful vehicle for market development. The value-chain approach emphasises the link between producers and final consumers through an intermediary of nodes. For small producers to access the market they have to contend with a number of challenges such as bulking to get a negotiated price, establishing links with potential buyers, obtaining information on prices and standards, accessing financial services etc. Innovation platforms offer an opportunity to deal with these complex issues among multiple stakeholders in the value chains. By bringing together various stakeholders, the platform offers an opportunity for them to discuss and design solutions along the value chain.

However, it is important to note that innovation platforms may also involve competing interests among stakeholders. To succeed, skilful facilitation by a neutral actor is necessary. The end goal is to enable the actors appreciate that a more efficient value chain benefits all actors by providing greater volumes, better standards, higher efficiency, lower costs and less waste (Birachi *et al.,* 2013).

An example of a successful innovation platform in livestock is the case of poor goat keepers in Mozambique who established a platform to link them to the market under the LiLi-Market project implemented by Institute of Agriculture Research in Mozambique, ILRI and ICRISAT (Duncan *et al.,* 2013). The innovation platform members expressed the dire need for an abattoir and the establishment of basic market infrastructure in their region. They presented their issues to potential donors and development agencies and as a result FAO provided US$35,000 to construct an abattoir while the Ministry of Agriculture contributed US$70,000 to build a new market. As a result, sale of goats by poor livestock farmers has now become an established market channel with direct livelihood benefits to farmers.

While there may be some value chains in Africa where multistakeholder and innovations platforms in particular are valuable, sceptics argue that there are some doubts on their ability to deliver solutions. First, there is no widespread evidence that they have had a positive impact on poor farmers. Secondly, given that the value chain is an arena of competition, it is doubtful that consensus is easily achievable; the platforms might exclude important players and transaction costs might be too high. In addition, innovation platforms tend to be informal and in many countries the legal framework for registering them is not present.

Commodity associations/platforms

Commodity associations are organisations that bring together a wide spectrum of interest groups related to a particular commodity or sector in a particular country, whether the commodity is for export, for the domestic market or for both. Such associations can draw membership from individual farmers or their associations, from crop buyers, processors, distributors and exporters, suppliers of support services and even government agencies (Shepherd *et al.,* 2009).

A commodity association can play an important role as a focal point for policy dialogue with government but they also have many other functions, including arbitration and regulation, setting or advising on grades and standards, promotion of trademarks or quality signs, support to research, export and domestic market promotion, and provision of information and statistics. Commodity associations are increasingly gaining recognition in value-chain practice (Were *et al.,* 2010)

In Table 5.1 we provide examples of commodity associations that are active in the livestock value chains in the IGAD region.

The commodity-based associations described in Table 5.1 below have achieved various levels of success in meeting their objectives. In order to achieve their objectives, these commodities need to mobilise a wide range of members and create strong structures to pursue their goals. Some of the organisations have a rather thin membership; for instance, EAFIA has only 25 active members. Similarly, EHBPEA has only 20 members. Others however, have strong memberships that spread across several countries; for instance ESADA has a membership in eight countries (Kenya, Malawi, Mauritius, Rwanda, Uganda, Tanzania, Zambia and South Africa). The association has an active website that is linked to a knowledge portal on dairy technologies. Most of these organisations have been formed in the last decade and are therefore relatively young.

The associations have a strong focus on advocating for better market access in both domestic and international markets by providing market information.

Table 5.1: Description of selected commodity associations in livestock value chains in the IGAD region

COMMODITY ORGANISATION	ORGANISATION/ OPERATIONAL STRUCTURE	ACTIVITIES
1. Eastern and Southern Africa Dairy Association (ESADA)	• ESADA is a non-political membership organisation established in 2004 • Has the overall mandate of increasing trade in African dairy products	• Organises the annual African Dairy Conference and Exhibition event that brings to life discussions on critical issues in the dairy industry across the value chain • Operates a knowledge and information portal (African Dairy Portal) • Maintains a directory of dairy suppliers
2. North East Africa Livestock Council (NEALCO)	• NEALCO is a regional livestock association established by national livestock associations from the north-east Africa region. Members include: Burundi, Democratic Republic of Congo, Djibouti, Ethiopia, Eritrea, Egypt, Kenya, Rwanda, Somalia, Sudan, South Sudan, Tanzania and Uganda	• Its mandate is to promote, coordinate, share information and advocate for enhanced trade in livestock and livestock products within and outside the region
3. Kenya Livestock Marketing Council (KLMC)	• It is a private-sector non-profit making membership organisation formed in the year 2000 • Membership is open to all livestock traders upon payment of a small annual membership fees • A board and an executive committee run the Council • The structure of the Council begins at community levels reporting to the district councils and finally to the national council	• Advocacy for the rights of traders • Promoting livestock and livestock products while marketing from pastoral areas • Identifying market gaps locally, regionally and internationally • Enhancing the dissemination of market information to both producers and traders • Liaison with pastoralists at grassroots level • Support the exportation of live animals to alleviate poverty • Support entrepreneurs investing in slaughterhouses, cold storages and other premises for improved livestock marketing • Undertake extension services in liaison with the government • Fund solicitation for credit facilities and offer group guarantees

COMMODITY ORGANISATION	ORGANISATION/ OPERATIONAL STRUCTURE	ACTIVITIES
4. Ethiopian Animal Feed Industry Association (EAFIA)	• The Ethiopian Animal Feed Industry Association was established in 2007 • The association is a non- profit, non-political, democratic, voluntary, secular organisation established with the objective of transforming the Ethiopian animal feed industry	• To engage in activities designed to enhance understanding and cooperation between members and the public sector • To organise and provide members with technical assistance • Improve the quality and availability of necessary production inputs • Enhance the availability of credit and insurance to members • Improve members' business management, record-keeping and business operation skills
5. Ethiopian Honey and Beeswax Producers and Exporters Associations (EHBPEA)	• Draws members from the honey and beeswax processing industry and bee product development and marketing companies	• Aim to develop an informational and transactional web portal that enables market searches, information sharing and easy communication to stakeholders/customers/users – both domestic and international

Policy and regulatory challenges

Policies that interact with and shape the livestock subsector in the region are many, operating at macro-level (e.g. monetary and fiscal policies), meso-level (e.g. water and transport policies) and micro-level (e.g. credit and extension service policies). Thus, it is not possible to review all the policies that shape the subsector to identify and discuss the challenges that characterise them and limit their ability to catalyse the subsector development. Our objective in this section, therefore, is not to review every single subsector policy but to examine the overall policy and institutional framework within which livestock farmers operate. In all, the policies are premised on the development narrative of 'increased production, productivity and market access.' We will, thus, explore three key policy areas that could be instrumental in pursuit of the narrative: production- and productivity-enhancing policies, livestock marketing policies and institutional factors that straddle across the various nodes of the livestock value chain.

Production- and productivity-enhancing policies

Livestock production and productivity may be enhanced through improved feeding, adoption of improved breeds, diversification of livestock kept and improved animal health. All these are possible through pasture and forage production, improved access to veterinary services and research.

Pasture and forage

With increasing population pressure and the accompanying need to extend cropland, pasture resources are fast getting depleted. Thus, there is urgent need for interventions in pasture production. The interventions could include introduction of planted feeds and/or rehabilitation of the rangelands that provide the bulk of the feeds across the region.

Water is fundamental to pasture development yet most rangelands are water-deficient.

To develop pasture requires water, research, pasture seed development and adoption and rangeland rehabilitation. Water is fundamental to pasture development yet most rangelands are water-deficient. IGAD countries have trans-boundary water resources. Most IGAD countries have lately been reforming their water sectors to improve efficiency, attract private investments and promote participation of citizens. However, no country has formulated and implemented deliberate policies targeting water provision in the rangelands for livestock production. Research in the area of forage and pastoral seed production in the region is lacking or underdeveloped. This is partly due to insufficient funds allocated to research and limited specialists. Moreover, for many IGAD countries, there is no certification legislation for forage and pasture species. Where such legislation exists, adequate implementation has not been undertaken. Where improved forage varieties have been developed, adoption remains low due to low promotion and ineffective extension.

High-input, high-output breeds

While indigenous breeds may be more adapted to the pastoral environments and also justifiable for maintaining biodiversity, improved breeds are important for increasing productivity and enhancing food security as long as market infrastructure is reliable and prices of inputs are predictable. While this may be appreciated across the region, there are challenges at policy level with regards to animal genetic resources and they include:

- development of livestock biodiversity strategies that are in line with regional policies
- development of frameworks for implementation of biodiversity strategies based on scientific evidence
- mobilisation of adequate resources to support the policies and strategies, ensure compliance by all stakeholders, and
- development of sufficient institutional capacity to undertake the above.

Diversification of livestock kept

Livestock keepers have stuck to traditional livestock, paying little attention to the more valuable, and perhaps better adapted, emerging livestock like ostrich, guinea fowls, donkeys, crocodiles and snakes. Such animals have not received much attention in terms of research and development. However, ostrich and crocodile farming, and to some extent snake farming, has taken root in the region, especially for tourist attraction. Largely, farming of emerging livestock is in the hands of private individuals except in Ethiopia where Arba Minch crocodile ranch is government-owned. Development of the

subsector, however, faces a number of policy challenges:

- existing policies focus on the traditional livestock types; thus, emerging livestock remain as private investments, making sourcing of funds for its development difficult; and
- licensing procedures for investment in emerging livestock are long and complicated.

Animal health

Animal mortality rate in the IGAD region is estimated at 10–20% (Aklilu *et al.*, 2013). Periodic vaccinations, provision of drugs for timely treatment, and laboratory services are not adequately supported in terms of budgetary allocations (Aklilu *et al.*, 2013). Thus, livestock keepers in the region are vulnerable to both anticipated and unexpected livestock disease outbreaks. Our key informants working in Somaliland indicated that the animal health system in the country is dysfunctional, leading to widespread animal diseases and pests.

Institutional issues

The main institutional issues that interact with livestock production include livestock mobility and land tenure, and credit access. Others may include financial and human resource capacity.

Land tenure and livestock mobility

Livestock production, especially pastoralism, is largely affected by the use of natural resources. It is only through appropriate land-use and land-tenure policies that the system may be protected. For example, appropriate policies would protect dry season grazing reserves of communally-owned lands and provide infrastructure and security to access the insecure rangelands. Availability of water and pasture is important but accessing them is more crucial. Such access requires mobility within and, sometimes, across political boundaries. While countries in the region recognise different land-tenure systems, they lack local and regional policies to guarantee safe mobility of pastoralists and their livestock. What would be required at local levels would be to empower local authorities to protect the designated grazing reserves and livestock mobility corridors, and ensure safe passage of various pastoral communities. At national level, dry season grazing reserves and mobility corridors should be demarcated and protected while at regional levels there should be regional agreements to allow safe passage to pastoral communities across borders for grazing. For settled livestock production, clear land tenure is important for investment in requisite infrastructure and high-quality breeds.

Nomadic pastoralism is an age-old strategy for dealing with the vagaries of weather variability in the ASALs. Sedentarisation of pastoralists is a widely pursued policy by several countries in the IGAD region. These policies are driven by an underlying belief that pastoralism is not a viable livelihood strategy (Anbessa, 2015). But there is barely a consensus on the question of sedentarisation; its advocates view it as a solution to the challenges facing nomadic pastoralism. These challenges include loss of grazing land to modern developments like urbanisation, establishment/expansion of protected areas (national parks and game reserves), environmental stress due to recurrent droughts, intensified inter-ethnic conflicts arising from cattle rustling and conflict over resources. However, the outcomes have not been positively uniform. For instance, a study conducted in the Gode region of Ethiopia showed that the marginal benefits of sedentarisation are too small to pass as an alternative to pastoralism (Maputseni and Ncube, 2014). Furthermore sedentarisation policies pursued should put into consideration the fragile nature of the arid ecosystems that could be put at risk.

Credit access

When livestock keepers suffer livestock deaths due to vagaries of weather or diseases, the poorer ones may require credit support to restock. Traditionally, livestock have not been used as collateral for accessing agricultural inputs. Apart from livestock keepers, service providers such as vets and other players in the livestock value chain may require credit services to improve their activities. Mainstream credit finance providers have been reluctant to lend to the subsector. NGOs are stepping in, especially in Ethiopia, to bridge the gap. In Kenya, KLMC is helping livestock traders secure credit.

Institutional issues that interact with livestock production include livestock mobility and land tenure, and credit access.

Institutional capacity

Most institutions planning and implementing livestock policies are under-staffed and poorly resourced. In some cases, staff lack the right qualifications and cultural and ecological orientation to work especially for the drylands, which are the main livestock production areas (Aklilu *et al.*, 2013).

Livestock marketing policies

Effective livestock marketing is a key driver to sustainable livestock production. The IGAD region, however, has degraded livestock marketing infrastructure (e.g. quarantine stations, veterinary check points, stock routes, and holding grounds) and poor livestock information system (AfDB, 2010). Livestock markets can be external (governed by stringent World Organisation for Animal Health (OIE) rules and bilateral agreements), regional (where countries can negotiate and agree on standards) and internal (governed by a country's own rules and regulations).

All the IGAD countries are signatories to OIE, which deals with trade aspects of international animal health. Only Djibouti and Somalia are not signatories to Codex Alimentarius, which sets international food safety standards, while only Djibouti, Kenya and Uganda are members of the World Trade Organization, which governs international trade. Countries that are not signatories to the above international regulatory institutions may not participate in international trade in livestock and livestock products.

At the IGAD level, there is no common policy and legal framework for trade in livestock and livestock products. Individual member states are free to pursue own policies individually or in cooperation with other members. This has led to a fragmented regulatory approach to similar, or closely related, policy challenges. Moreover, countries have been pursuing multiple, and in some cases overlapping bilateral and/or regional initiatives.

The national legal systems of member states, especially of Ethiopia, Kenya and Sudan, are significantly different. The internal regulatory challenges of member states are similar and include the following:

- incomplete, dated and incoherent sanitary and food safety regulations
- multiple and over-taxation of livestock exports
- lack of established communication channels among livestock stakeholders
- lack of capacity to implement policy decisions and
- lack of coordination among different levels of government in enforcement of laws (AfDB, 2010).

Marketing infrastructures such as roads to the export port and other livestock markets are underdeveloped. For example, our key informants indicated that in Somaliland the roads to Barbera, the main export port, were in very poor condition. There is also lack of appropriate slaughtering, cold chain storage and transportation facilities to promote frozen beef exports to either other African countries or elsewhere in the world. Due to lack of fully integrated export facilities, IGAD countries are forced to export live animals instead. For example, export abattoirs in Somalia, Sudan and Ethiopia are small and mainly process goat and sheep carcasses. Kenya Meat Commission, which is the largest in the region, is operating below its capacity due to financial and management problems.

Conclusions and recommendations

Conclusions

This study provided an overview of the livestock value chains in the IGAD region. Livestock value chains are an important livelihood source for the majority of people living in pastoral and agropastoral areas. In addition, the livestock sector contributes significantly to the overall economy and has the potential to contribute even further to economic development and poverty alleviation.

The study highlighted different value-chain actors and the constraints they face. A review of current and ongoing interventions indicated that efforts are being made to address these constraints but many gaps still exist. Literature indicates that despite the efforts in the past decade, there are many gaps that are more pronounced among the livestock keepers in the pastoral systems. For instance, there is evidence to show that interventions to improve livestock productivity in the recent past have resulted into better progress in the mixed systems than in the other systems (see Wambugu *et al.,* 2011; Ekou, 2014). There is also evidence that productivity gains have not been achieved by all livestock keepers within the mixed systems.

The study also found that majority of interventions do not explicitly address gender imbalances and inequities in livestock value chains. Thus, significant efforts are still required to promote gender responsiveness of livestock value-chain initiatives. Statistics on youth involvement in the livestock sector are scarce because most contributions are often accounted as unpaid work, thus rendering youth potential invisible. However, projections suggest that the sector has the potential to provide increased employment opportunities for the youthful population. The projected rise in demand for animal-source foods will boost the number of value-chain operations along which (self and wage) employment opportunities should be created for young women and men in rural areas. But for youth to be able to effectively take advantage of these opportunities there is need to increase their access to land, technologies, credit and other financial facilities, technical know-how, education and skill development

Based on the existing evidence, it is clear that more efforts are required to address the challenges among the poor smallholder livestock keepers in the pastoral and agropastoral systems. However, several success stories from livestock interventions have been reported within the IGAD region. Lessons learnt from these interventions would be useful for replication in other areas or upscaling for wider impacts. There is however, evidence to show that sustaining positive gains from livestock interventions once projects end continues to be a challenge. There is need for the development actors to continue making effort in appropriate prioritisation and targeting of interventions while paying greater attention to having in place quality exit strategies to enhance sustainability of the interventions.

Analysis in this study also revealed that most initiatives do not have a value-chain approach; they are focused on specific nodes of the value-chain. This approach is driven by the need to address the most pressing challenges. Furthermore, majority of interventions are meant to address livelihood challenges rather than value-chain challenges per se. It is, however, important to realise that the two goals are not mutually exclusive. In fact, by supporting value-chain development and helping small producers to integrate into the market system, the livelihood objectives would also be met. It is also notable that there is very little coordination between different initiatives. This is a serious gap that often leads to duplication of efforts and loss of opportunity to create synergistic relationships.

Projections suggest that the sector has the potential to provide increased employment opportunities for the youth population.

Recommendations

The study makes the following recommendations:

- In order for the livestock value chains to fully develop, there is need to address the over-arching policy and regulatory constraints that hinder their growth. Although there are many efforts being undertaken, further policy interventions are needed to address the issue of production and productivity, particularly in the pastoral and agropastoral systems.
  - The contribution of livestock to the economy is quite often underestimated and even when recognised; it is given less weight than the crop sector. Our analysis of the CAADP compacts and NAIPs showed this clearly. There is need to

improve on existing modelling tools to better capture the contribution of livestock to the economy but also disseminate information more extensively among relevant stakeholders.
  - Range management policies especially those relating to forage/feeds and water management are required. Investments in research, dissemination of technologies and knowledge is required. The pastoral and agropastoral system faces great threat from extension of crop farming into the fragile land systems especially through use of irrigation. If not well managed, this extensification of agriculture has the potential to increase conflicts and threaten livelihoods of pastoral communities.
  - Animal health remains a big issue in the region particularly the high mortality rates arising from diseases. Regional policy approaches need to be intensified for surveillance, control and treatment of animal diseases.
  - Other policy interventions required include increasing access to financial services among pastoralists; improving the livestock marketing infrastructure; and establishment of a common livestock trade policy for the IGAD region.

- There is need to support livestock data management systems and capacity for monitoring and evaluation, and knowledge management. There is notable weakness in the technical, human and institutional capacity to undertake data management at the subnational, national and even more at the regional level. Such data, and the associated knowledge, are key for informing stakeholder investment decisions in various livestock value chains.
- The value-chain approach to livestock development is not very common in the region. There is need to promote and encourage its use among development players. Similarly, there is need to improve coordination among them to ensure less duplication of efforts and more synergies among them. This can be done by creating awareness among key stakeholders.
- A lot of efforts are still required to promote gender responsiveness of livestock value-chain initiatives. Very clear metrics of gender responsiveness should be incorporated into livestock value-chain projects.
- A lot of interventions in pastoral areas have an emergency perspective; they are implemented during emergency or post-emergency. While this is important, it is important to have long-term approaches that increase the resilience of communities in a sustainable way.
- For CTA, given its focus on facilitating policy processes, supporting livestock value-chain initiatives and promoting effective knowledge management and development communication, we recommend the following as possible intervention areas:

  - Provide support to strengthen existing value-chain coordination platforms. These platforms provide opportunities to bring together all value-chain actors to find solutions to challenges that affect the value chain as a whole. Quite often, there rarely exist forums that bring all actors together to address common challenges. At the regional level recently formed organisations such as NEALCO might be possible candidates for such support. Our discussions with ICPALD indicated that they are supporting NEALCO, and CTA could explore possibilities of partnering with them. Based on the findings of our study, the organisation is the only IGAD-level association with a focus on sharing information and advocating for enhanced trade in livestock. It has been in existence for a relatively short time and possibilities exist for strengthening it further.
  - Support mandated institutions in the development and upgrading of livestock value chains especially in pastoral areas where both the need and the opportunities for such undertakings are the greatest. Given CTA's current engagement with the promotion of ICTs for agriculture, and in view of the region's leadership in the use of a range of mobile applications for the agricultural sector, it would be prudent for CTA to consider partnering with development/research organisations and private-sector entities in the region to provide support packages for such initiatives, especially in pastoralist areas.

- Support systems for collection, management and reporting of livestock data and information. Availability of reliable data on livestock indicators such as those measuring aspects like livestock production; livestock marketing and trade; and the contribution of livestock to food security, employment, income generation and poverty reduction is necessary for the effective development of vibrant livestock value chains in the region. This is an initiative that can best be coordinated by IGAD through its member countries through an agreement that they would oblige the countries to supply the relevant data and information to IGAD for compilation and dissemination through their website.
- There is an opportunity for CTA to engage with stakeholders and support emerging platforms for value-chain methodology development/impact evaluation in the region through the recently initiated project on the value-chain hub coordinated by ILRI at its centre in Addis Ababa.

References

AfDB (African Development Bank Group). 2010. *Regional Study on the Sustainable Livestock Development in the Greater Horn of Africa*. AfDB, Abidjan. Available at: http://bit.ly/2na3Jw6 [Accessed 27 July 2016].

Agriterra. 2012. *Identification of Livestock Investment Opportunities in Uganda.* Agriterra, Arnhem, Netherlands. Available at: http://bit.ly/2mXt2AF [Accessed 10 June 2015].

Aklilu, Y., Little, P.D., Mahmoud, H. and McPeak, J. 2013. *Market Access and Trade Issues Affecting the Drylands in the Horn of Africa.* Technical Consortium Brief 2 prepared by a Technical Consortium hosted by CGIAR in partnership with the FAO Investment Centre. Technical Consortium Brief 2. International Livestock Research Institute, Nairobi.

Anbessa, l.D. 2015. 'Ethiopian pastoralist policy at the crossroads: Further marginalization or revitalization?' *In* Aberra, Y. and Abdulahi, M. *The Intricate Road to Development: Government Development Strategies in the Pastoral Areas of the Horn of Africa*. Institute for Peace and Security Studies, Addis Ababa University, Addis Ababa, Ethiopia.

AU-IBAR (African Union–Inter African Bureau for Animal Resources), 2010. Framework for Mainstreaming Livestock in the CAADP Pillars. Nairobi.

Behnke, R., and Muthami, D. 2011. *The Contribution of Livestock to the Kenyan Economy.* IGAD LPI Working Paper: 03–11. Intergovernmental Authority for Development in Eastern Africa, Addis Ababa.

Birachi, E., van Rooyen, A., Some, H., Maute, F., Cadilhon, J-J., Adekunle, A. and Swaans, K. 2013. *Innovation Platforms for Agricultural Value Chain Development*. Innovation Platforms Practice Brief 6. International Livestock Research Institute, Nairobi.

Bolwig, S., Ponte, S., Du Toit, A., Riisgaard, L. and Halberg, N. 2008. *Integrating Poverty, Gender and Environmental Concerns into Value Chain Analysis: A Conceptual Framework and Lessons for Action Research*. DIIS working paper. Danish Institute for International Studies, Copenhagen.

Bolwig, S., Ponte, S., Du Toit, A., Riisgaard, L. and Halberg, N. 2010. 'Integrating poverty and environmental concerns into value-chain analysis: A conceptual framework.' *Development Policy Review* 28 (2): 173–194.

Cadilhon, J-J., Lundy, M. and Amrein, A. 2014. 'Model of an agricultural and food value chain.' Poster prepared for the African Dairy Value Chain Seminar, 22–23 September 2014, International Livestock Research Institute, Nairobi, Kenya. Available at: http://bit.ly/2naa4rv [Accessed 27 July 2016].

Cecchi, G., Wint, W., Shaw, A., Marletta, A., Mattioli, R. and Robinson, T., 2010. 'Geographic distribution and environmental characterization of livestock production systems in Eastern Africa.' *Agriculture, Ecosystems & Environment* 135(1): 98–110.

CNFA (Cultivating New Frontiers in Agriculture). 2013. Dairy Value Chain Assessment Final Report for the Agribusiness Project. USAID Agribusiness Project, Washington, DC.

Coles, C. and Mitchell, J. 2011. *Gender and Agricultural Value Chains. A Review of Current Knowledge.* ESA Working Paper 11–05, Agricultural Development Economics Division. Food and Agriculture Organization of the United Nations, Rome.

CTA (Technical Centre for Agricultural and Rural Cooperation). 2012. 'Making the Connection: The Rise of Agricultural Value Chains.' *Spore Magazine, Special Edition July 2012.* CTA, Wagenigen, the Netherlands. Available at: http://bit.ly/2nLCpHR [Accessed 27 July 2016].

Danida. 2010. *Gender and Value Chain Development.* Evaluation Study 2010/2, International Development Cooperation, Ministry of Foreign Affairs of Denmark, Copenhagen.

Duncan, A.J., Le Borgne, E., Maute, F. and Tucker, J. 2013. *Impact of Innovation Platforms.* Innovation Platforms Practice Brief 12. International Livestock Research Institute, Nairobi.

EADD (East Africa Dairy Development program). 2009. *The Dairy Value Chain in Kenya*. A report by TechnoServe Kenya for the EADD. Nairobi. Available at: http://bit.ly/2nFNrxL [Accessed 22 March 2017].

EADD (East Africa Dairy Development program). 2011. *Milking for profit – Mid Term Report 2008–2010*. Nairobi. Available at: http://bit.ly/2nqo6Hz [Accessed 27 July 2016].

Ekou, J., 2014. 'Dairy production and marketing in Uganda: Current status, constraints and way forward.' *African Journal of Agricultural Research* 9(10): 881–888.

Filmer, D. and Fox, L. 2014. *Youth Employment in Sub-Saharan Africa.* The World Bank, Washington, DC. Available at: http://bit.ly/2df6SGV [Accessed 27 July 2016].

FAO (Food and Agriculture Organization of the United Nations). 2009. *The State of Food and Agriculture 2009. Livestock in the Balance*. Rome.

FAO (Food and Agriculture Organization of the United Nations). 2011. *The State of Food and Agriculture 2010–2011: Women in Agriculture - Closing the Gender Gap for Development*. Rome.

FAO (Food and Agriculture Organization of the United Nations). 2012. *Livestock Sector Development for Poverty Reduction: An Economic and Policy Perspective - Livestock's Many Virtues*. Rome.

FAO (Food and Agriculture Organization of the United Nations). 2013. *Understanding and Integrating Gender Issues into Livestock Projects and Programmes: A Checklist for Practitioners*. Rome.

FAO (Food and Agriculture Organization of the United Nations). 2014. *Youth and Development of Aquaculture and Livestock in Africa*. FAO Regional Conference for Africa, 24–28 March 2014, Tunis, Tunisia. Rome. Available at: http://bit.ly/2o7KjHl [Accessed 27 July 2016].

FAOSTAT (Food and Agriculture Organization of the United Nations Statistics Division), 2013. *Production Indicators*. Retrieved June 2015 from http://faostat3.fao.org/download/Q/*/E

Farmer, E. and Mbwika, J., 2012. *End Market Analysis of Kenyan Livestock and Meat: A Desk Study*. MicroREPORT #184. United States Agency for International Development (USAID), Washington, DC. Available at: http://bit.ly/2nfJXAU [Accessed 22 March 2017].

Gammage, S., Manfre, C. and Cook, K. 2009. *Gender and Pro-Poor Value Chain Analysis: Insights from the Gate Project Methodology and Case Studies*. United States Agency for International Development (USAID), Washington, DC. Available at: http://bit.ly/2nUBjGv [Accessed 27 July 2016].

GebreMariam, S., Amare, S., Baker, D., Solomon, A. and Davies, R. 2013. *Study of the Ethiopian Live Cattle and Beef Value Chain*. ILRI Discussion Paper 23. International Livestock Research Institute, Nairobi.

Haggblade, S., Theriault, V., Staatz, J., Dembele, N. and Diallo, B. 2012. *A Conceptual Framework for Promoting Inclusive Agricultural Value Chains*. Michigan State University, East Lansing, Michigan, USA.

IDRC (International Development Research Centre). 2000. *A Handbook for Value Chain Research*. Ottawa.

IFAD (International Fund for Agricultural Development). 2010a. *IFAD's Livestock Position Paper: Livestock Planning, Challenges and Strategies for Livestock Development in IFAD*. Rome. Available at: http://bit.ly/2naiPSf [Accessed 27 July 2016].

IFAD (International Fund for Agricultural Development). 2010b. *Gender and Livestock: Tools for Design.* Livestock Thematic Papers. Rome. Available at: http://bit.ly/2o7KyCf [Accessed 27 July 2016].

IFAD (International Fund for Agricultural Development).2012. *Smallholder Dairy Commercialization Programme. Republic of Kenya*. Rome. Available at: http://bit.ly/2o80Wme [Accessed 3 August 2016].

IGAD (Intergovernmental Authority on Development). 2013. *IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI). The IDDRSI Strategy*. Djibouti. Available at http://bit.ly/2nFzUWQ (Accessed 4 May 2015)

Jeckoniah, J., Mdoe, N. and Nombo, C. 2013. 'Mapping of gender roles and relations along onion value chain in northern Tanzania.' *International Journal of Asian Social Science* 3(2): 523–541.

Kabeer, N. 1999. 'Resources, agency, achievements: Reflections on the measurement of women's empowerment.' *Development and change* 30(3): 435–464.

Kaplinsky, R. and Morris, M. 2000. *A Handbook for Value Chain Research*. Available at: http://bit.ly/2mXox9m [Accessed 27 July 2016].

Knips, V. 2004. *Review of the Livestock Sector in the Horn Of Africa (IGAD Countries)*. Livestock Sector Report, Livestock Information, Sector Analysis and Policy Branch (AGAL). Food and Agriculture Organization of the United Nations, Rome. Available at: http://bit.ly/2nfUOL9 [Accessed 27 July 2016].

Kosgey, I.S., Rowlands, G.J., Van Arendonk, J.A.M. and Baker, R.L. 2008. 'Small ruminant production in smallholder and pastoral/extensive farming systems in Kenya.' *Small Ruminant Research* 77(1):11–24.

Kristjanson, P., Waters-Bayer, A., Johnson, N., Tipilda, A., Njuki, J., Baltenweck, I., Grace, D. and MacMillan, S. 2010. *Livestock and Women's Livelihoods: A Review of the Recent Evidence.* ILRI Discussion Paper No. 20. International Livestock Research Institute, Nairobi.

Laven, A., van Eerdewijk, A., Senders, A., van Wees, C. and Snelder, R. 2009. *Gender in Value Chains. Emerging Lessons and Questions.* Agri-Pro Focus Learning Group, Arnhem, the Netherlands.

Lebbie, S.H.B. 2004. 'Goats under household conditions.' *Small Ruminant Research* 51(2): 131–136.

Little, P.D. and McPeak, J.G., 2014. *Pastoralism and Resilience South of the Sahara*. 2020 Conference Brief 9. International Food Policy Research Institute (IFPRI), Washington, DC. Available at: http://bit.ly/2nfELgG [Accessed 23 March 2017].

Maputseni, C. and Ncube, A. 2014. 'Social vulnerability and sedentarisation of pastoralists in Gode Zone, Ethiopia.' *Disaster Advances* 7:76–82.

Morgan,N. and Tallard,G. 2007. 'Cattle and beef international commodity profile.' Background paper for the competitive commercial agriculture in sub-Saharan Africa study. Food and Agriculture Organization of the United Nations, Rome.

Neely, C., Bunning, S. and Wilkes, A. 2009. *Review of Evidence on Drylands Pastoral Systems and Climate Change: Implications and Opportunities for Mitigation and Adaptation.* Land and Water Discussion Paper, 8. Food and Agriculture Organization of the United Nations, Rome.

Njuki, J. and Miller, B. 2013. *Gender Responsive Livestock Research*. Research Brief. International Livestock Research Institute, Nairobi.

Njuki, J. and Sanginga, P. 2013. *Gender and Livestock: Issues, Challenges and Opportunities. Bridging the Gender Gap: Women, Livestock Ownership and Markets in Eastern and Southern Africa*. International Livestock Research Institute, Nairobi.

Nouala, S., Irungu, P. and Salla, A. 2013. *Integration of Livestock Issues in CAADP Documents of Selected African Countries*. African Union Inter-African Bureau for Animal Resources, Nairobi.

Omiti, J.O. and Okuthe, S.O. 2008. *An Overview of the Poultry Sector and Status of Highly Pathogenic Avian Influenza (HPAI) in Kenya.* Background Paper. Pro-poor HPAI Risk Reduction, Africa/Indonesia Team Working Paper No. 4. International Food Policy Research Institute, Washington, DC, International Livestock Research Institute, Nairobi, and Royal Veterinary College, London. Available at: http://bit.ly/2mThQEi [Accessed 26 July 2016].

Otieno, D.J., Hubbard, L. and Ruto, E. 2012. 'Determinants of technical efficiency in beef cattle production in Kenya.' Selected paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, 18–24 August 2012, Foz do Iguacu, Brazil.

Pica-Ciamarra, U., Nouala, S. and Kim, S. 2011. *Livestock and Livelihoods in the IGAD Region: A Policy and Institutional Analysis.* IGAD LPI Working Paper 01–11. Intergovernmental Authority on Development, Djibouti. Available at: http://bit.ly/2naegHK [Accessed 26 July 2016].

Rakotoarisoa, M., Massawe, S., Mude, A., Ouma, R., Freeman, A., Bahiigwa, G. and Karugia, J. 2008. *Investment Opportunities for Livestock in the North Eastern Province of Kenya: A Synthesis of Existing Knowledge.* ReSAKSS Working Paper 12. International Food Policy Research Institute, Washington, DC.

Sandford, J. and Ashley, S. 2008. *Livestock Livelihoods and Institutions in the IGAD Region*. Food and Agriculture Organization of the United Nations (FAO) and the Intergovernmental Authority on Development, Livestock Policy Initiative, Addis Ababa. Available at: http://bit.ly/2nFLSA1 [Accessed 26 July 2016].

Shepherd, A.W., Cadilhon, J-J. and Gálvez, E. 2009. *Commodity Associations: A Tool for Supply Chain Development?* Occasional Paper. Food and Agriculture Organization of the United Nations, Rome.

Sherman, D.M. 2011. 'The spread of pathogens through trade in small ruminants and their products.' *Revue Scientifique et Technique-OIE* 30(1): 207.

SNV. 2008. *Comprehensive study of the livestock marketing system in Samburu district, Kenya*. Nairobi. Available at: http://bit.ly/2o7EPN9 [Accessed 22 March 2017].

Steins, N. and Edwards, V.M. 1998. 'Platforms for collective action in multiple-use CRPs.' A conference paper presented at the 7th Annual Conference of the International Association for the Study of Common Property, Vancouver, Canada.

Thornton, P.K., Kruska, R.L., Henninger, N., Kristjanson, P.M., Reid, R.S., Atieno, F., Odero, A.N. and Ndegwa, T. 2002. *Mapping Poverty and Livestock in the Developing World.* International Livestock Research Institute, Nairobi.

Torero, M. 2011. 'A framework for linking small farmers to markets.' Paper presented at the IFAD Conference on New Directions for Smallholder Agriculture, 24–25 January 2011, Rome.

USAID (United States Agency for International Development). 2010. *Partnership for Safe Poultry in Kenya (PSPK) Program: Regional Poultry Value Chain Analysis.* (USAID), Washington, DC. Available at: http://bit.ly/2mTsnPZ [Accessed 26 July 2016].

Wambugu, S., Kirimi, L. and Opiyo, J., 2011. *Productivity trends and performance of dairy farming in Kenya*. Tegemeo Institute of Agricultural Policy and Development, Nairobi.

Wanyoike, F., Mtimet, N., Godiah, L., Ndiwa, N., Warsame, A. and Marshall, K., 2015. *Knowledge of Animal Grading and Market Participation Among Sheep and Goats Producers* in Somaliland. International Livestock Research Institute, Nairobi.

Were, T., Muyanja, A. and Tumuhimbise, I. 2010. *Commodity Associations and Their Role in Building Effective Agriculture Value Chains in East Africa: A Technical Paper Based on the K.L.M.C. Livestock Value Chain Commodity Association in Kenya.* Prepared for SNV, ESA and KLMC. Available at: http://bit.ly/2naqss4 [Accessed 22 March 2017].

Annexes

Annex 1. Terms of reference

Background

CTA's 2011–2015 Strategic Plan (SP) identified three strategic goals for contributing to food security, prosperity and sound natural resources management, namely: (i) strengthening ACP agricultural and rural development policy processes and strategies, (ii) enhancing priority agricultural value chains, and (iii) enhancing ACP capacities in information, communication and knowledge management (ICKM) for agricultural and rural development. As part of refining the operationalisation of its SP, CTA has recently developed a series of six Regional Business Plans (RBPs) that specify the key priority intervention areas (KPIAs) and the priority value chains for the Centre for the next three years (2015–2017).

For Eastern Africa, the objectives of CTA's three-year revolving business plans are as follows:

- enable CTA to achieve targeted outcomes that are consistent with its strategic directions and regionally-defined agricultural and rural development goals
- help better identify target clients and outline market segments and opportunities
- enable CTA resources to be utilised optimally by avoiding overlaps and creating synergistic effects, and
- provide a medium for interaction with partners, including potential funding agencies.

The Eastern Africa RBP has two specific KPIAs and related objectives:

KPIA 1: Supporting policy practice and strengthening institutional capacity for policy analysis and advocacy in key thematic focus areas of CTA

Main objective: to strengthen the analytical and outreach/advocacy capacity of Eastern African institutions engaged with the mainstreaming of nutrition into agriculture, the promotion of climate-smart agriculture, and the facilitation of intra- and interregional trade.

KPIA 2: Support inclusive and sustainable value chains in selected strategic food commodities

Main objective: to enhance the capacity of governments, non-state actors and other key stakeholders to design and implement agricultural value chain programmes and thereby ensure effective engagement of smallholder agricultural producers in efficient domestic and regional agricultural markets.

In its work in the Eastern Africa region, CTA will focus on food grains (maize, millet, rice and sorghum), fisheries and livestock.

Key objectives and scope of work

It is against this background that CTA is now commissioning a series of mapping studies with a view to fine-tuning its interventions on key issues and priority agricultural value chains for the next three years (2015–2017).

This assignment consists of carrying out a meta-analysis and rapid assessment of the livestock value chain in the IGAD region with a view to providing CTA with recommendations about the types of value chains to be supported and the nodes in which CTA could possibly be involved. The scope of work outlined below is expected to have a regional (i.e., IGAD-wide) focus. In other words, the information on the different livestock value chains has to be collected and synthesised from all the IGAD member states. However, in some cases, the analysis could be done only for one country for a particular chain, provided that a substantive argument for doing so can be advanced and mutually agreed upon by the two parties.

More specifically, the study will map out the following aspects:

- current key livestock value chain development initiatives (objectives, beneficiaries, type of activities, results, challenges, gaps) at the country level, including type and magnitude of support being provided by development partners, if any
- an overview of gender relations in the livestock value chains (possibly highlighted in connection with the discussion on item 'i' above)

- key institutions/actors involved
- the extent to which the livestock value-chain development initiatives are anchored in respective CAADP investment plans
- type and strength of coordination structures/multistakeholder platforms established to facilitate value-chain activities (who are the members? how do these structures operate? what have been the results so far including key challenges and gaps if known/identified? The gaps should include ICTs in the livestock value chain; issues around policy analysis and advocacy; capacity strengthening of livestock platforms; issues around ICKM)
- main policy and regulatory challenges, including trade policy issues
- suggestions/pointers on possible CTA involvement – key entry points, strategic partners, type of support.

Approach and methodology

While the assignment will mainly be a desk research study (i.e. a meta-analysis of an existing body of knowledge on the subject matter), it is expected to conduct a series of interviews with key actors in the field. Various methods will be used (electronic survey, targeted email exchanges and phone discussions).

Interactions between CTA and the consultant will include three teleconferences/Skype calls (i.e. a kick-off meeting to agree on method development and undertake detailed work planning; to review progress with the write-up process; and to discuss the draft report).

Expected outputs

It is expected that this assignment will provide CTA with a clear understanding of the state of livestock value chains in IGAD countries, intervention options with respect to CTA's possible support to the livestock value chain in Eastern Africa for the period 2015–2017 (i.e. baseline information on livestock value-chain initiatives, including operational modalities, beneficiaries and actors and partners involved; policy and programmatic challenges; and possible entry points and specific activities for enhancing the livestock value-chain.). The substantive part of the report should be no more than 30 pages.

Annex 2a. Key informant interview (KII) checklist

Mapping study on the livestock value chain in Eastern Africa (IGAD countries)

Key informant checklist

Name of the respondent:

Organisation:

Contact details:

Introduction

The Technical Centre for Agricultural and Rural Cooperation (CTA) has commissioned ReSAKSS to undertake a mapping study on the livestock value chains in Eastern Africa (IGAD countries). CTA intends to use the findings of the study to inform its future interventions/support in the livestock value chains in the region.

ReSAKSS has identified you and your organisation as a key informant for this study. **Your response to these questions will be treated in confidence and used only for purpose of the study.** However, we kindly request that we include your name in the general list of key informants that will form part of the final report. We thank you for agreeing to respond to the following questions.

Questions

1. What kind of work is your organisation doing as far as livestock value chains are concerned?

2. In your view, what are the key challenges that these value chains face?

3. Please give details of any ongoing initiatives as per the table below:

Initiative	Objective	Location	Time frame	Budget

4. What are the key institutions/actors involved in the livestock value chains you support?

5. What coordination structures/multistakeholder platforms[5] exist in the value chains you support?

[5] Here we are referring to platforms that bring together all actors (or most of them) in a common forum to address issues that affect the value chain. For instance, ESADA etc.

6. How do these coordination structures operate, who are the members, what are the key challenges/ gaps affecting the operation of these structures?

Name of the structure	Operation modality	Membership	Key challenges/gap	Suggested solution

7. Is gender considered in the value chains initiatives you undertake? If yes, how?

8. How did your organisation identify the value chain you focus on as a priority?

9. What are the main policies and regulatory challenges (at national and local level) affecting livestock value chains?

10. What recommendations would you give for increasing the efficiency of the livestock value chains you/your organisation works on?

Annex 2b. List of key informants

NAME	DESIGNATION	INSTITUTION
Ameha Sesibe	Head, Livestock and Fisheries	IGAD Centre for Pastoral Areas and Livestock Development (ICPALD)
Jo Cadilhon	Agricultural economist	International Livestock Research Institute (ILRI)
Nadhem Mtimet	Agricultural economist	ILRI
Francis Chabari	Independent rural development consultant and a former Chief of Party of a United States Agency for International Development (USAID) livestock project	Independent consultant
Ben Lukuyu	Feed specialist	ILRI
James Kariuki	Kenya Semi-Arid Livestock Enhancement Support (K-SALES)	Land O'Lakes International
Tadesse Assefa	Livestock value-chain expert	SNV Ethiopia
Emily Ouma	Agricultural economist	ILRI
Tesfaye Beshah		IGAD/FAO

Annex 3. Current livestock initiatives in IGAD region

Annex Table 3a. Livestock initiatives in Djibouti

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
1. Coping with water scarcity: Increasing water access for pastoralist and agropastoral communities	January 2013– December 2013	Ministry of Agriculture NGOs Agropastoralist cooperatives	FAO Central Emergency Response Fund (CERF)		US$0.60 million
2. Developing Agro-Pastoral Shade Gardens as an Adaptation Strategy for Poor Rural Communities	September 2012– August 2017	Djibouti Ministry of Environment	United Nations Development Programme (UNDP)	Ali Sabieh district	US$4.66 million
3. Development Project of Traditional Beekeeping	December 2009– December 2010		EU		€0.08 million
4. Emergency Assistance in Pastoral Areas of Djibouti	March 2012– February 2013	FAO	Japan	Nationwide	US$1.91 million

Annex Table 3b. Livestock Initiatives in Eritrea

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
5. Climate Change Adaptation Programme In Water and Agriculture In Anseba Region	January 2013– December 2017	Ministry of Agriculture	United Nations Development Programme (UNDP)	Anseba Region, Habero and Hamelmalo subregions	US$6.52 million
6. Fisheries Development Project	2010–2016	Government of Eritrea	International Fund for Agricultural Development (IFAD)	Northern Red Sea and Southern Red Sea regions	US$18.14 million
7. Gash Barka Livestock and Agricultural Development	February 2003– September 2009	Zoba Gash Barka Administration	IFAD Belgian Survival Fund (BSF)	Gash Barka Zoba region	US$16.10 million
8. Post-Crisis Rural Recovery and Development Programme	October 2007– December 2013	IFAD Government of the State of Eritrea	IFAD David Scaife foundation (DSF) Global Environment Facility (GEF) EU	Zoba Debub and Zoba Gash Barka	US$43.7 million

Annex Table 3c. Livestock initiatives in Ethiopia

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
9. Agricultural Growth Program– Livestock Market Development	2012–2017	Cultivating New Frontiers in Agriculture (CNFA), Organization for Rehabilitation and Development in Amhara (ORDA), Relief Society of Tigray (REST), HUNDEE. Self Help Africa– Ethiopia	USAID	Oromia, Amhara, Tigray and in the Southern, Nations, Nationalities and People's Region.	US$35.00 million
10. Apiculture Scaling-up Programme for Income and Rural Employment (ASPIRE)	2013–2017	SNV Ethiopia Apiculture Board Enclude ProFound	Embassy of the Kingdom of Netherlands Ethiopian Government GIZ	Amhara, Oromia, Southern Nations, Nationalities and Peoples' region (SNNPR) and Tigray	€6.9 million
11. Design of Breeding Strategies for Indigenous Goat Breeds in Ethiopia	December 2010 – November 2013	Amhara Region Agricultural Research Institute	Austrian Development Agency (ADA)	Metema, Sekota of the Amhara National Regional State	
12. Emergency Support to Drought Affected Pastoral and Agro-Pastoral Communities in Borena zone, Oromia region Ethiopia	November 2011 – June 2012	CERF	UNDP FAO	Borena Zone In Oromia Region	US$0.80 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
13. Enhancing Dairy Sector Growth in Ethiopia (EDGET) project	2012–2017	SNV Ethiopia Wageningen University and Research Centre	Embassy of the Kingdom of Netherlands	Amhara, Oromia and SNNPR	
14. Ethiopia Livestock Feed project	February 2012 – June 2012	ILRI	Australian Centre for International Agricultural Research	Nationwide	
15. Ethiopia Sanitary & Phytosanitary Standards and Livestock & Meat Marketing Program (SPS-LMM)	2005–2011	Ethiopian Ministry of Agriculture and Rural Development ILRI EIAR World Food Logistics Organization	USAID	Nationwide	US$9.29 million
16. Ethiopia Sheep and Goat Productivity Improvement Program (ESGPIP)	2005–2010	Prairie View Research Foundation of Prairie View A&M University	USAID	Afar, Amhara, Oromia, SNNPRS, Somali, Tigray	US$5.50 million
17. Feed Enhancement for Ethiopian Development (FEED) II	2014–2017	ACDI/VOCA	United States Department of Agriculture (USDA)	Amhara, Oromia, SNNPR and Tigray	US$14.00 million
18. Gender and Environment-Responsive Beekeeping (G-&EB)	2013–2015	ANCEDA, AgriService Ethiopia Vision of Community Development Association (VoCDA)	Horn of Africa Regional Environment Centre and Network (HoAREC/N)	Central Rift Valley and Gambella	

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
19. Improved Animal Health Service Delivery-Pursuing Pastoral Resilience (PPR)	2014–2017	Ethiopian Ministry of Agriculture	EU	Nationwide	€9.30M
20. Livestock and Irrigation Value Chains for Ethiopian Smallholders	March 2012 – June 2017	ILRI	CIDA	Amhara, Oromia, Tigray and the Southern Nations and Nationalities and Peoples Region	US$19.86 million
21. Livestock Growth Programme	2013–2015	CNFA, Self Help Africa	USAID	Oromia and SNNP regions	€0.43 million
22. Market-linked Innovation for Dairy Development programme	May 2011 – June 2016	Centre for Development Innovation (CDI)	DGIS-Netherlands		
23. Pastoralist Areas Resilience Improvement and Market Expansion (PRIME)	2013–2018	Mercy Corps, CARE International, Kimetrica Haramaya University, Pastoralist Concern, Aged and Children Pastoralists Association, SOS Sahel, Afar Integrated Sustainable Development Association	USAID	Somali, Afar and Oromia regions	US$57 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
24. Rural Resilience Enhancement Project (RREP)	April 2012–February 2015	Ministry of Agriculture Natural Resource Management Directorate	JICA	Oromia and Somali region	
25. Safe Water for Communities and their Livestock	2012–2015	American Relief Agency for the Horn of Africa (ARAHA)	Private donations	Oromia	US$0.04 million

Annex Table 3d. Livestock initiatives in Kenya

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
26. Agro-Pastoral Production Systems of Kenya Project	2011–2015	UNDP	GEF	Mbeere North, Kyuso, Narok North and Dadaab	US$11.69 million
27. Centre for Africa Bio-entrepreneurship (CABE) Poultry Project in Busia	2012–2017	CABE	World Bank	Busia county	Ksh2.25 million
28. Dairy Goat Project	September – June 2014		*Apostle Harold Eckhardt of Germany*	Kitui county	US$0.01 million
29. Dominion Farms Limited; Aquaculture programme	2011–2014	Dominion Farms Limited	SIDA/African challenge enterprise fund (AECF)	Siaya county	US$0.98 million
30. Eastern Kenya Integrated Livestock Umbrella Project (EKILUP)	October 2010 – June 2016	Heifer international	Private donations	Makueni district	
31. Emergency Animal Health, Commercial and Slaughter Destocking in Kenya	July 2011 – March 2012	National Veterinary Authorities, NGOs, Royal Veterinary College, London	US	Northern, upper eastern and north-western Kenya	US$1.20 million
32. Enhancing Community Resilience to Drought through Innovative Market-Based Systems		SNV, ILRI, Kenya Livestock Marketing Council (KLMC)	EU	Marsabit, Isiolo, Samburu, Baringo, Tana River, Wajir, Kajiado, Narok and West Pokot	
33. Farm Africa, Sidai Livestock Service Centres, Kenya Project	2011-2015	Farm Africa		North-East, the Rift Valley and east of Mt Kenya	US$65 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
34. Farm Africa's Aqua Shops Project	July 2011 – December 2014	Farm Africa	Farm Africa	Western Region	
35. Garbatula Pastoralist Livelihoods Programme (GAPLIP)	2013–2015	World Vision Kenya Farm Concern International	World Vision Canada	Isiolo county	
36. Indigenous Chicken Dispersal Project	2012–2013	*Kujenga Maisha* East Africa (KUMEA) Local NGO	Nakk Karitativ	Kisumu, Vihiga, Embu Counties	
37. Kenya Agricultural Value Chain Enterprises Project (KAVES)	July 2013 – July 2014	FINTRAC	USAID	Uasin Gishu, Nandi, Trans Nzoia and Elgeyo Marakwet	US$40 million
38. Kenya Dairy Sector Competitiveness Program	2008–2013	Land 'O' Lakes International Development	USAID	Embu, Gatanga, Kabete, Kapsabet, Kinangop, Lessos, Meru, Nakuru, Nyeri, Ol Kalou, Sotik, Timau and Trans Nzoia	US$9 million
39. Kenya Drylands Livestock Development Program	2010–2013	Cultivating New Frontiers in Agriculture (CNFA)	USAID	Mandera, Wajir, Garissa and Tana River districts	US$10 million
40. Kenya Semi-Arid Livestock Enhancement Support (K-SALES) Project	September 2013 – September 2016	Land O'Lakes International Development	USDA	Meru, Tharaka-Nithi, Kitui, Machakos, Makueni and Taita Taveta	US$20 million
41. Local Poultry Production and Marketing project	2011–2012	CABE	World Bank	Busia	Ksh2.25 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
42. Market Assistance Programme (MAP II)	2011–2016	Adam Smith International (ASI) Kenya Markets Trust SNV Kenya TechnoServe and Agri-Experience	DFID Embassy of the Kingdom of Netherlands Gatsby Charitable Foundation	Nationwide	£15.9 million
43. North Eastern Pastoral Development Programme	2005–2008	AU-IBAR	USAID	Mandera, Wajir, Garissa, Isiolo, Tana River	US$2 million
44. Partnership for Safe Poultry in Kenya (PSPK) Program	2009–2017	Winrock International	USAID	Kiambu, Kisumu, Kitui, Likoni, Makunei, Vihiga, Siaya	
45. Pastoralists Integrated Livestock Project (PILP)	2010–2015	Heifer Kenya	Private donations	Rift Valley	
46. Pilot Value-Chain Development project (PVCD)	March 2012 – February 2013		Ford Foundation	Nakuru County, Naivasha district	US$0.03 million
47. Promote and Strengthen Enterprises and Market Systems in Drought-Prone ASAL Area	March 2013 – December 2015	Welthungerhilfe (German Agro Action)	EU	Marsabit, Isiolo, Samburu, Baringo, Tana River, Wajir, Kajiado, Narok and West Pokot	€1.2 million
48. Purchasing (LIP) Fund Project	2004–2009	CARE	CIDA	Garissa	

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
49. Resilience and Economic Growth in the Arid Lands-Accelerated Growth (REGAL-AG)	August 2013 – August 2017	ACDI/VOCA	USAID	Marsabit and Isiolo	US$20 million
50. Ringo project, beekeeping and apiculture project	May 2013	Green Belt Movement (GBM)	USAID	Nyeri	
51. Smallholder Dairy Commercialization Programme (SDCP)	2006–2015	Kenya's Ministry of Livestock Development	IFAD	Nakuru, Trans Nzoia, Uasin Gishu, Bomet and Nandi North districts in the Rift Valley province; Bungoma, and Lugari districts in Western Province; and Nyamira and Kisii Central districts in Nyanza Province	US$19.8 million
52. Smallholder Poultry Agribusiness Development Programme (SPADE)	2012–2015	TechnoServe	USDA	Siaya, Kisumu, Homa Bay, Kakamega and Bungoma	
53. The Dairy Goat Dispersal project	November 2013 – November 2015	*Kujenga Maisha* East Africa (KUMEA) Local NGO	New Apostolic Church of East Africa	Igembe	Ksh3.73 million

Annex Table 3e. Livestock initiatives in Sudan

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
54. Improving Livestock Production and Marketing Project	2007–2013	Ministry of Animal Resources and Fisheries	Multi-Donor Trust Funds for the Republic of the Sudan (MDTF-NS)	Central and Eastern Sudan	US$12.01 million
55. Livestock Marketing and Resilience Programme	2014–2021	Ministry of Livestock, Fisheries and Rangelands	LDCF-GEF Central Bank of Sudan Local banks PPPs	Blue Nile, North Kordofan, Sennar, West Kordofan and White Nile	US$119.1 million
56. Sustainable Management of Marine Fisheries in Sudan's Red Sea	2015–2018	UNIDO Norwegian Institute for Marine Research Sudan's Ministry of Agriculture, Animal Resources and Fisheries	Norway	Red Sea State	US$5.08 million

Annex Table 3f. Livestock initiatives in Somalia

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
57. Building Resilience to Enhance Adaptable Development in Somaliland (BREADS)	2013–2016	World Concern	Private Donations	Saaxil, Togdheer, Sool and Sanaag regions of Eastern Somaliland	US$0.26 million
58. Consumption Smoothing and Enhancing Livestock-based Livelihoods (CSELL)	2014–2017	World Concern	WCDO	Garadag and Eil-afweyn districts	
59. Distribution of Productive Animals in Nugal and Bari Regions of Puntland	June 2014 – October 2014	Kaalo Aid and Development Puntland Livestock Professional Association (PULPA) Ministry of Livestock and Animal Husbandry (MoLAH) *Shakir* Company	FAO	Nugal and Bari regions	
60. Livelihood Support to Pastoral Agro-pastoral and Riverine Households in Southern Somalia	2011–2014	Village committees Local authorities Local, national and international NGOs	US	Bakool, Bari, Bay, Galgaduud, Gedo, Hiran, Lower Juba, Lower Shebelle, Middle Juba, Middle Shebelle, Mudug, Nugaal, Sanaag, Sool and Togdheer Divisions	US$49.97 million
61. Puntland Livelihood Support Programme	October 2010 – September 2011	VSF Germany	SDC	Puntland	US$0.84 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
62. Reinforcing Animal Health Services in Somalia (RAHS)	2014–	AU-IBAR	EU	Nationwide	US$5.4 million
63. Safe Water for Communities and their Livestock	2012–2015	American Relief Agency for the Horn of Africa (ARAHA)	Private donations	Oromia State	US$0.05 million
64. Somali Pastoral Dairy Development Project II	July 2010 – January 2014	VSF Germany	EU	W. Galdeed, Togdheer, Sool, Sanag, Bari, Nugal and Mudug regions, Somaliland and Puntland	US$2 million
65. Support to Pastoral Livelihood Development (Phase II). Promoting an Internationally Competitive Somali meat Industry	August 2010 – July 2013	FAO VSF Germany	EU	North and central Somalia	US$2.42 million
66. Sustainable Peri-Urban Milk Value-Chain Development in Somaliland	June2013 – June2016	ICIPE	EU	Hargeisa, Gabiley and Tog Wajaale, Somaliland	US$4 million

Annex Table 3g. Livestock initiatives in South Sudan

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
67. Creating Opportunities Through Livestock and Dairy Development (COLDD)	2009–2010	Vetwork Services Trust Land O'Lakes	USAID	Kapoeta, Torit and Budi counties	
68. Dairy Farming by Women in Wau	October 2014 – December 2015	Episcopal Church Sudan-Christian Action (ECS-CARD)	Cordaid	Wau Region	€0.27 million
69. Emergency Veterinary Support Programme (EVSP) IV	July 2012 – June 2013	VSF Germany	SDC		US$0.58 million
70. Fisheries Pump Project in South Sudan	2012 –	SNV Central Equatoria State Ministry of Animal Resources and Fisheries Compass	EU	Juba and Terekeka counties	€1.30 million
71. Food Security Through Effective Animal Disease Control and Fisheries Production	January 2011 – April 2012	Government Ministry of Animal Resources and Fisheries State Ministry of Animal Resources and Fisheries NGOs and faith-based organisations Community animal health workers (CAHWs)	Pooled fund	Central Equatoria, Eastern Equatoria, Jonglei, Lakes, Northern Bahr el Ghazal, Unity, Upper Nile, Warrap and Western Equatoria States	US$1.45 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
72. Improve Farmers and Fishermen Production	2013–2014	Child Hope Restoration Mission (CHORM)	Cordaid Dutch Ministry of Foreign Affairs	Kodok, Upper Nile State	€0.04 million
73. Improving Food and Livelihood Security of Vulnerable Host Community, Returnee, IDP, Refugee and Pastoral Households in South Sudan	2013–2014		Pooled fund	Nationwide	US$3.00 million
74. Integrated and Environmentally Sound Livestock-Crops Production and Marketing	August 2009–February 2014	VSF-Suisse	Vétérinaires Sans Frontières Suisse (VSF-Suisse)	Northern Bahr El Ghazal / Aweil West County	CHF1.35 million
75. Livestock and Fisheries Development Project (LFDP)	2007–	Ministry of livestock and Fisheries	MDTF Government of Southern Sudan	Upper Nile, Leich, Jonglei, East and Central Equatoria States	US$42.00 million
76. Producing for Urban Markets Project (EC/ PUMP)	2011–	State Ministry of Animal Resources and Fisheries Compass (national NGO)	EU	Terekeka county, Central Equatoria State; Juba State	

Annex Table 3h. Livestock initiatives in Uganda

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
77. Climate Change and Beekeeping	2012–2015	The Uganda National Apiculture Development Organization, Local governments	Self Help Africa	Kayunga, Kumi-Bukedea and Ngora districts	€0.60 million
78. Harnessing Crop-Livestock Integration to Enhance Food Security and Livelihoods Resilience to Effects of Climate Change in Eastern and Central Africa	2011–2013	ASARECA National Livestock Resources Research Institute (NaLIRRI)		Masaka and Ngora districts	
79. Improved Livelihoods and Food Security in Northern Uganda	2011–2014	Send a Cow Uganda	Self Help Africa	Amuru District	€0.20 million
80. Improving Household Food Security in Amuria and Katakwi District	2011–2015	Pentecostal Assemblies of God (PAG)	Foods Resource Bank (FRB)	Katakwi, Amuria District	US$0.20 million
81. Karamoja Livelihoods Programme (KALIP)	2009–2015	Government of Uganda	EU	Northern Uganda	€15.00 million
82. Pilot Goat Breeding and Production Scheme for Export	2005–2010	MAAIF	Government of Uganda	Nationwide	UGSH 6,750 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
83. National Livestock Productivity Improvement Project (NLPI)	2004–2010	MAAIF Ministry of Water and Environment Uganda Bureau of Statistics, National Forestry Authority, National Animal Genetic Resources Centre	Government of Uganda Local governments Beneficiaries	Apac, Katakwi, Kaberamaido, Kamuli, Kamwenge, Kayunga, Kibaale, Kiboga, Kitgum, Kotido, Kumi, Kyenjojo, Lira, Luwero, Masindi, Mbarara, Moroto, Mpigi, Mubende, Nakapiripirit, Nakasongola, Nt, Pader, Pallisa, Rakai, Soroti, Sironko and Sembabule districts	US$29.60 million
84. Northern Uganda Agricultural Livelihoods Recovery Programme (ALREP)	2010–2014	FAO NGOs Private sector	EU	Acholi, Lango and Teso districts	€20.00 million
85. Opportunities for Dairy and Apiary Farmers	April 2012 – March 2015	*Soroti* Catholic Diocese Integrated Development Organization (SOCADIDO)	Cordaid	Teso District	€0.43 million
86. Support to Quality Assurance for Fish Marketing Project	2009–2014	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) Icelandic International Development Agency	Icelandic International Development Agency	Nationwide	US$3.93 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
87. Uganda Honey Trade Project	2010–2014	Bees for Development Trust The Uganda National Apiculture Development Organisation Kamwenge Beekeepers Cooperative Society ApiTrade Africa	Comic Relief, UK	Nationwide	
88. Uganda Meat Export Development Project (UMEDP)	2009–2014	Notura B.A Ministry of Agriculture Animal Industry and Fisheries	Norwegian government	Luwero, Nakaseke, Nakasongola, Mubende, Kiboga, Mpigi, Masaka, Lyantonde, Kiruhura, Sembabule and Kayunga districts	

Annex Table 3i. Regional livestock initiatives

PROJECT NAME	TIMEFRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
89. Animal Genetics Resources (AnGR)	2013–2018	AU-IBAR	EU	Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda	
90. East Africa Dairy Development (EADD) Project Phase 1	2008–2011	Heifer International ILRI TechnoServe ICRAF African Breeders Service Total Cattle Management	Bill & Melinda Gates Foundation	Kenya, Uganda and Rwanda	US$42.85 million
91. EADD Project Phase 2	2014–2018	ICRAF Heifer international TechnoServe African Breeders Service Total Cattle Management	Bill & Melinda Gates Foundation	Uganda, Kenya and Tanzania	US$25.50 million
92. Improving Animal Disease Surveillance in Support of Trade in IGAD MS (STSD) Project	2013–2016	AU-IBAR IGAD Secretariats	EU	Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda	€6.00 million
93. Pan African Forum of Livestock Exporting Countries (PAFLEC)	2010–	AU-IBAR	AU EU Spanish Cooperation	Africa wide	

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
94. Providing Livestock for Families in the Horn of Africa (2015)	January 2015–December 2015	Wako Gutu Foundation	American Relief Agency for the Horn of Africa (ARAHA)	Kenya, Ethiopia, Somalia, Sudan	US$0.06 million
95. Regional Initiative in Support of Vulnerable Pastoralists and Agro-Pastoralists in the Horn of Africa	2010–2014	FAO	EU	Djibouti, Ethiopia, Kenya, Somalia, South Sudan and Uganda	US$5.90 million
96. Regional Pastoral Livelihoods Resilience Project(RPL-Resilience)	2014–2019	Ministry of Agriculture, Livestock and Fisheries (MALF) State Department of Livestock	World Bank, International Development Association (Ida)	Kenya, Uganda and Ethiopia	US$122 million
97. Standard Methods and Procedures in Animal Health (SMP-AH) Project	March 2012–September 2016	AU-IBAR IGAD Centre for Pastoral Areas and Livestock Development (ICPALD/ IGAD)	USAID	Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda	
98. Support to Capacity Building to Promote Formal Marketing and Trade of Fish and Fish Products From and Within the Horn of Africa	2011–2013	FAO IGAD	FAO	Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda	US$0.50 million

PROJECT NAME	TIME FRAME	IMPLEMENTER	DONOR	GEOGRAPHICAL AREAS	PROJECT BUDGET
99. Syndromic Surveillance for Livestock Health	2014–2018	USAID	AU-IBAR Volunteers for Economic Growth Alliance (VEGA)	Uganda and Ethiopia	US$1.39 million
100. VET-GOV Programme	2012–2016	AU-IBAR FAO World Organization for Animal Health (OIE)	EU AUC	Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda	US$31.20 million

Annex 4. Roles of various value-chain actors/enablers

PRIMARY ACTORS	ROLES
Producers (pastoralists, small-scale producers, ranchers) and local producer organisation	Involved in primary stages of livestock production. Often they are organised into local producer-based organisation such as local chapters of dairy cooperatives that might be linked to national-level producer organisations.
Local agro-dealers (veterinary drug outlets. input sellers etc.)	Local business-people who supply inputs such as veterinary drugs, animal feeds and production equipment.
Local livestock traders (milk collectors, trekkers, truckers, middlemen, transporters, international meat traders etc.)	Buy livestock and livestock products from producers and sell them locally or to other markets.
Local Livestock/livestock product processors (e.g. slaughterhouses, slab operators, local tannery operators etc.)	Involved in primary-level processing of livestock and livestock products.
Livestock products processors/ distributors/traders	Responsible for bulking, processing and distributing products such as milk at the national level. They are also often involved in international trade of livestock and livestock products.
Large wholesalers/retailers (e.g. supermarket chains)	Provide final the link to consumers in the value chains.
National livestock organisations (cooperatives, commodity associations)	Provide an avenue for value-chain actors to come together: either as homogenous, multistakeholder groups that address issues affecting specific nodes; or collectively as value-chain actors.
Value-chain enablers	
The government veterinary departments and livestock extension services	Government departments involved in providing veterinary services and extension to local producers.
Community-based animal health workers (CAHWs)	Operate particularly in remote areas that are rarely reached by formal veterinary officers. Provide 'veterinary' services based on local indigenous knowledge to livestock producers.
Local government authorities	Enforce regulatory requirements in production and trade, and provide basic services such as maintaining local markets. They also collect local taxes (cess), especially from traders.
Local NGOs	Provide funding to local-level actors.

PRIMARY ACTORS	ROLES
National governments	National governments and the ministries responsible for livestock set the overall legal, policy and regulatory framework for the development of value chains. In addition they make public good investments and create a stable macro-economic environment necessary for other actors to operate.
National research institutions and policy think-tanks	National research institutions are responsible for providing research solutions for problems in livestock value chains. Policy think-tanks are responsible for providing policy solutions to livestock sector challenges.
Development partners	Supplement national government funding in meeting investment needs. In some instances, development partner funding provides the only significant financing for value-chain development.
Regional economic communities (IGAD, EAC)	Responsible for setting the integrated regional development agenda including livestock value chains – most of which are trans-boundary.
Specialised regional institutions (e.g. ICPALD)	Specialised agencies of the RECs responsible for specific issues of interest in the region. For instance, the IGAD Centre for Pastoral Areas and Livestock Development (ICPALD) is responsible for issues of pastoralism and livestock in the IGAD region.
International research organisations (e.g. ILRI)	International research institutes have a regional or global mandate to address issues that are relevant to the region.
Regional development partner organisations	Some development partner organisations operate at the regional level and provide support for the regional development agenda.

Annex 5. Initiatives incorporating ICT and value-chain financing

PROJECT	LOCATION	DONOR	OBJECTIVE	TIMELINE	CATEGORY
Kenya Drylands Livestock Development Program	Kenya Garissa, Wajir, Mandera, Ijara and Tana River	USAID	To increase income and food security for pastoralist households in the districts of Garissa, Wajir, Mandera, Ijara and Tana River.	2010–2013	Value-chain financing
Livestock Early Warning System (LEWS)-Tanzania	Tanzania	FAO	To build the capacity to implement and sustain a livestock early warning system in the country.	2001–2002	ICT
Development of National Early Warning System	Uganda	Government of Uganda	To provide timely information on crop production, livestock, fisheries and national food security to policy-makers, farmers and other stakeholders for appropriate action.	2005–2010	ICT
The Global Rinderpest Eradication Programme (GREP)	Regional	FAO	To eliminate rinderpest from the world by the year 2010. Strategies have been devised and programmes implemented to reduce the clinical incidence of rinderpest to zero. Elimination of disease and infection will be confirmed by statistically-valid active disease surveillance programmes.		ICT

PROJECT	LOCATION	DONOR	OBJECTIVE	TIMELINE	CATEGORY
M-Kilimo	Kenya	Rockefeller Foundation	This is a unique and innovative service aimed at providing agricultural information, advice and support over the phone to smallholder farmers. The Kenya Farmers' Helpline was launched in October 2009 by KenCall, with the objective of providing high-quality and reliable information to farmers to enable them to make more informed decisions regarding land preparation, planting, pest management, harvesting, post-harvest and marketing of agriculture produce, including climate and weather information.	2009–	ICT
Improving the Productivity and Market Success of Ethiopian Farmers (IPMS)	Ethiopia	CIDA	The project, with its aim of developing a sustainable knowledge management system that makes use of advanced technologies to capture, synthesise, store and share knowledge in the public extension system, tested different tools and processes in support of market-oriented agricultural development in 10 pilot districts.	2005–2013	ICT
Turkana Pastoralist Development Organization cooperative agreement additional financing	Kenya	USADF	To provide grants to four smaller, lower capacity, livestock marketing associations enabling them to build their capacity to manage business activities. Grant funds will be used to help groups improve marketing infrastructure, and acquire training and technical assistance to improve business management, financial management, and animal husbandry skills.	2011–2014	Value-chain financing

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