

DFID Market Development (MADE) in Northern Ghana Programme



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SECTION 1. INTRODUCTION

Livestock¹ is a major resource, providing a source of livelihoods, food security, as well as a source of income and employment to poor rural people and many others in northern Ghana. Livestock rearing forms an integral part of the mixed farming systems of rural people, providing the main source of manure and draught power for crop production in Northern Ghana. Additionally, cattle, sheep and goats in particular serve as a store of wealth, a source of savings, and security against crop failures for the poor. With the increasing adverse effects of climate change on crop-based agriculture, livestock keeps establishing its place as an important alternative livelihood for the poor and vulnerable in Northern Ghana.

According to GLSS (2008), about 600,000 households in Northern Ghana keep livestock, with the Northern ecological zone contributing the highest populations of cattle (84%), sheep (60%) and goats (60%) of national production.² In fact, Northern Ghana has a huge comparative advantage in livestock production over the rest of the country, because of favourable climatic conditions, large grazing land with vast natural forage resources including residues from crop-dominated agriculture.

However, despite this huge production from the zone and favourable agro-climate conditions, the livestock sub-sector contributes only an estimated 8% to agricultural GDP³. The livestock are kept under extensive free-range grazing system where they feed on low nutritive forage, with little or no supplementary feeding, which, coupled with use of low productive breeds and poor disease control, are largely responsible for current low productivity and slow growth rates of cattle, sheep and goats in the north. For instance the average annual growth rates for cattle, sheep and goats from 2004-2012 were only 1.6%, 3.2% and 4.8% respectively.⁴

Livestock production, processing and marketing in Northern Ghana offers rapid growth opportunities. The domestic meat market is growing and there is large potential for increased production because improved feed and the technology for controlling diseases is available.

Overall, very few livestock farmers are commercially oriented in their production. It is therefore essential to change farmers' attitudes so they become more business-minded and ensure that health, feeding and breeding services work better for the poor.

The table below provides a summary diagnostic of the market for livestock. A narrative that addresses the key issues raised in the diagnostic follows.

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¹In this diagnostic, livestock refers to cattle and small ruminants (goats, sheep)

²AfDB Livestock Development Appraisal Report

³FAO

⁴FAOSTAT database.

Table 1. Livestock Market System Analysis

Mapping the poor and other actors	Market Growth and Segmentation Analysis	Value Chain Analysis	Analysis of support functions	Analysis of policies and institutions	Identification of Systemic Constraints
<p>The Poor</p> <ul style="list-style-type: none"> Over 600,000 households in north practice livestock rearing for a livelihood. The North produces 84% of cattle and 60% of goats & sheep populations. Livestock kept as store of wealth & protection against shocks by the poor. Only 27% of rural livestock farmers use rearing as an economic enterprise. Poor using traditional low-input husbandry practices Poor (and partly women) also selling animal feed in livestock markets. Women tending sheep & goats, cleaning pens & selling cow milk. <p>Other actors</p> <ul style="list-style-type: none"> Small and Large Traders (cattle, sheep, goats) Cattle importers from Sahelian nations Butchers Modern meat retailers in cities mostly fed by imports under cold chain system (eg Shoprite, Koala, Max Mart, Premier Meat) 	<ul style="list-style-type: none"> Meat consumption in Ghana is growing, particularly beef, goat & lamb, due to rising incomes But livestock production growing at a slower rate than demand Consumption per capita is low (9.2kg) compared with South Africa (39kg), hence potential for growth Estimates show that consumption is well below recommended dietary levels, so per capita market growth is inevitable. Domestic meat and milk production only meets 30% of national animal protein requirements. An estimated 70% of animals slaughtered in Ghana originate from outside the country particularly along the northern border Livestock prices increasing rapidly, indicating high demand Imports of meat and live 	<ul style="list-style-type: none"> 75% of cattle population is located in the three northern regions. Mixed farming account for 95% of production. Low growth of population and low off-take rates (cattle 11%, sheep & goats 30%) compared to Sahelian neighbours, because of high mortality and unwillingness to sell Carcass weight is much lower than Sahelian neighbours let alone international standards Sector predominantly based on low input low output extensive free-range grazing (no feed supplementation) Three categories of livestock farmer: smallholder, emerging and commercial Opportunities to increase incomes of emerging and commercial through vet and feed services Two main value chains: northern distribution and north-south distribution. 	<p>Research</p> <ul style="list-style-type: none"> Underfunded research on breeds, disease control and feeding Weak partnership between Animal Research Institute/ Universities and private sector resulting in low commercialization of research findings <p>Breeding</p> <ul style="list-style-type: none"> The Animal Production Directorate runs Ghana's seven breeding stations. Breeding stations have not achieved desired traits in animals or developed effective artificial insemination services. Northern emerging farmers smuggle breeding animals across the border from Burkina. <p>Veterinary Services</p> <ul style="list-style-type: none"> Limited availability and capacity of veterinary services & lack of motivation to use veterinary services and drugs resulting in lack of incentive for private feed and drug companies to 	<ul style="list-style-type: none"> Most livestock policy falls under general agricultural umbrella, but is neglected. Low priority and policy support by government Low attention in MoFA programmes No livestock census for over a decade and half to base policy decision and programme development and intervention Decreasing investment and funding for livestock breeding stations and veterinary colleges Past livestock programmes incoherent, not made the desired impact Weak Private sector ability to advocate for strong policies and institutions due to lack of advocacy bodies on livestock 	<ul style="list-style-type: none"> Smallholder households regard livestock as store of wealth, not an economic enterprise, so do not invest. Weak profit motive makes system unresponsive to market forces Government failure to commercialize research and disseminate appropriate low-cost feed technologies and invest in disease control Market power lies with wholesalers and retailers in the south Inefficiencies in marketing caused by transporting animals, not meat from North to South Insufficient incentive for capable private sector actors to invest to develop livestock processing in the North. Coordination failures at all stages of the value chain cause loss of efficiency.



Mapping the poor and other actors	Market Growth and Segmentation Analysis	Value Chain Analysis	Analysis of support functions	Analysis of policies and institutions	Identification of Systemic Constraints
<ul style="list-style-type: none"> • Trained veterinary and para-veterinary staff • Cattle farmers and traders associations, but not well coordinated 	<p>animals increasing indicating a growing local market.</p> <ul style="list-style-type: none"> • Market segmented between fresh and frozen meat, traditional and modern butchers& retailers • Meat is mainly sold fresh in traditional channel • Increasing frozen meat imports in modern channel. 	<ul style="list-style-type: none"> • Low value-added trade in north, price difference between field purchases and sales centres due only to transport cost • High value-added trade between north & south with high mark-ups in wholesale and retail • Value chain has weak links, with spot purchasing throughout the chain • Potential to retain more value in north through fattening & processing in the North 	<p>establish distribution networks.</p> <ul style="list-style-type: none"> • After the removal of subsidies on services, farmers are less willing to pay for services themselves. <p>Finance</p> <ul style="list-style-type: none"> • Key constraint for emerging and commercial farmers and other actors. • Livestock not accepted as collateral • Risks of animal mortality and theft make financial institutions reluctant to lend. • Introduction of livestock micro-insurance may help to monetize animals, and use as collateral assets but blocked by regulation 		



SECTION 2. MAPPING THE POOR AND OTHER ACTORS

2.1 THE POOR

Out of the 600,000 households in northern Ghana that rear livestock⁵, the bulk of them are rural small-scale farmers. For these, livestock is a store of wealth to be liquidated when needed to fund household expenditure, pay for cultural functions (e.g. deaths, marriage) and a security against crop failures. It is also a source of draught power, manure and cultural prestige. The fact that livestock is regarded as a safety net for providing quick incomes to meet financial needs (such as buying foodstuffs, farm inputs, hospital bills or school fees) means that investment in health, feed and breeding is very limited and this translates into very poor productivity levels. According to MOFA⁶, only 27 per cent of livestock farmers are commercially oriented in their production.

The average stock size of the poor is relatively small, about 4-15 sheep, 4-13 goats and 5-15 family-owned cattle⁷. They rely mainly on traditional low-input husbandry and feed management practices based on free-range and extensive grazing for their animals, with no or little supplementary feeding using low-nutritive crops residues. Cattle are often herded over long distances to feeding and water in the dry season when feed is limited, thus affecting their productivity.

The more rich livestock farmers that are commercially oriented may own cattle from 50 to 500 herds. In most cases, Fulani herdsmen tend to look after their large cattle herds in kraals outside settlements and derive food support, milk, manure and fees from the cattle owners. They do no intensive livestock farming.

Cattle are predominantly male owned and animal herding and trading is a male business. Women are involved in tending sheep and goats, and cleaning pens and conveying animal droppings to the farms in support of their husbands. They are also involved in processing and selling cow milk and dairy products, such as cottage cheese, which they sell to local consumers. In addition, women in the Northern and Upper East Regions make extra income from collecting and selling crop residues as fodder to livestock keepers and trader.

2.2 OTHER ACTORS

Apart from livestock producers, the livestock sector in northern Ghana also provides incomes and employment to people trading in livestock, transporters, butchers, local feed collectors, meat retailers, and veterinary care providers and drug dealers. A closer look at these other stakeholders shows that:

Veterinary and para-veterinary staff: they are key actors in the sector given the number of challenges and diseases faced by livestock. The current government veterinarian-to-farmer ratio is very low. Veterinary services are no longer subsidised and smallholder farmers are unwilling to pay their fees. As a result of low patronage, vets are concentrating their activities on commercial farmers and modern poultry farms, which are willing to pay their fees but constitute only a small fraction of livestock producers in the north. The North also has a large number of para-vets trained at the veterinary college at Pon-Tamale. Some of these have set up business operations in the three Northern Regions and are providing services to emergent farmers on a fee paying basis but a large number remain unemployed. MOFA and NGOs have also trained Community Livestock Workers (CLWs), who are farmers that provide more basic para-veterinary services to other farmers at a low cost. Veterinary services, however, are not well utilized by cattle and small ruminant owners and mortality rates increased in the late 2000s.⁸

⁵GSS, 2008

⁶ MOFA, 2004

⁷ MOFA 2004

⁸MOFA 2008

Livestock traders: There are large numbers of different categories of traders in livestock. *Small traders* buy small quantities of animals from farm gates or nearby village markets and sell in primary local markets to bigger traders or directly to local butchers. They tend to buy from the farmer on credit. *Big traders* collect from local markets in the northern towns, cull the poor quality animals for the local butchers and transport the better quality animals to terminal markets in the South (e.g. Techiman, Kumasi, Accra, Tema). These traders often also obtain their supplies from frontier markets at the border towns such as Paga, Bawku, Hamile or Bongo. In some cases these traders also buy on credit, which they only repay after the animals are sold. The third category is import traders who import directly from Burkina, Niger or Mali in long haul trucks to southern cities.⁹

Butchers: besides the formal butchers in urban areas, there are also a large number of informal butchers in rural areas whose activities are hardly supervised by veterinary and health inspection personnel, thus creating public health risk for their meat. Additionally, there are no modern abattoirs in the north of the country¹⁰, and the existing slaughter houses (they exist in every district) lack appropriate facilities and have poor sanitation conditions.

Modern meat retailers: they are mainly fed by meat imports, including beef under a cold chain system that is emerging in the cities of Kumasi, Accra and Tema. Some of these are Shoprite, Koala, Max Mart, Premier Meat, Spicy Food, and Milicat Meat and Achimota Packing House. Most of them are also processors who cut and package fresh local beef, poultry and pork, and making beef sausages for retail shops and consumers- individuals and hotels.

SECTION 3. MARKET GROWTH AND SEGMENTATION ANALYSIS

Annual meat consumption, particularly for beef, mutton and goat meat, has grown as a result of increasing incomes and expanding urban populations with changing consumption patterns in Ghana. Per capita consumption of meat in Ghana (9.2Kg) is still low when compared to other livestock producing African countries such as South Africa (39kg), Kenya (14kg), Ethiopia (12kg), and Niger (11Kg)¹¹.

Despite data limitations, a recent report by MOFA states that the livestock subsector has been growing at an average annual growth rate of 5% from 2007-2012¹². The same report states that Ghana is producing only 46% of total meat consumption, with additional annual imports of meat and livestock animals making up the shortfall¹³.

FAOStat data shows a similar picture. Between 2004 and 2012, livestock population of cattle, sheep and goats has been growing constantly, as shown in Table 2.

Table 2. Livestock Population ('000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	Avg annual growth rate
Cattle	1,359	1,373	1,392	1,407	1,422	1,438	1,454	1,498	1,543	1.6%
Sheep	3,112	3,211	3,314	3,420	3,529	3,642	3,759	3,887	4,019	3.2%
Goats	3,925	3,923	3,997	4,196	4,405	4,625	4,855	5,137	5,435	4.8%
Total	8,396	8,507	8,703	9,023	9,356	9,705	10,068	10,522	10,997	

Source: FAOStat Database

Similarly, a recent report from MOFA shows that from 2002 to 2012 the average annual domestic production of beef, sheep and goat meat has increased gradually every year.¹⁴ The same report states

⁹ Ghana Livestock Review report, 2010

¹⁰ The country has two modern abattoirs located at Tema and Kumasi

¹¹ FAOStat 2004

¹² MOFA Agricultural Facts and Figures, 2012

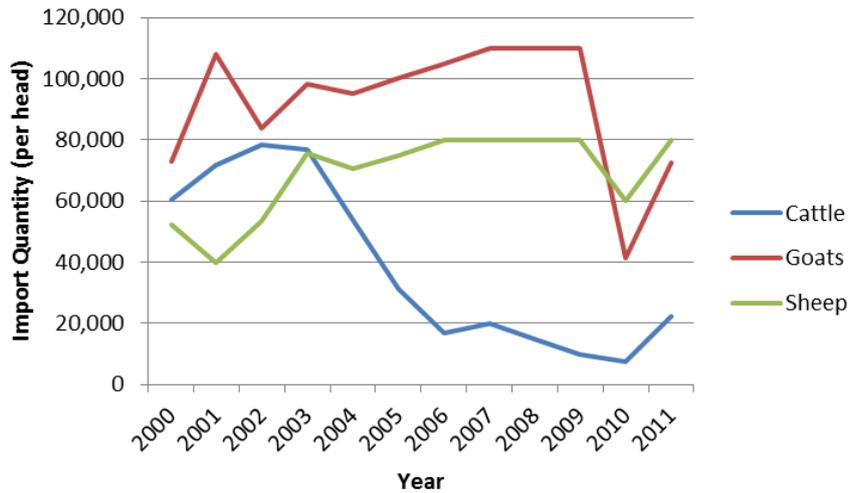
¹³ MOFA Agricultural Facts and Figures, 2012

¹⁴ MOFA Agricultural Facts and Figures 2012

that domestic livestock meat production amounted to 127,038 metric tons in 2012 of which goat meat and pig meat and cattle meat contributed about 16 per cent each, mutton about 14 per cent and poultry meat about 36 per cent.

So far, the gap in local production has been met by the import of live animals and the import of meat (mostly frozen). The import of live animals (especially ruminants) is primarily cross-border from neighbouring Sahelian countries (Burkina Faso, Mali and Niger). Figure 1 gives an indication of the different import patterns of cattle, goats and sheep. It is important to note that official statistics underestimate real trade levels as many imports are not recorded as they consist of animals crossing the border informally.

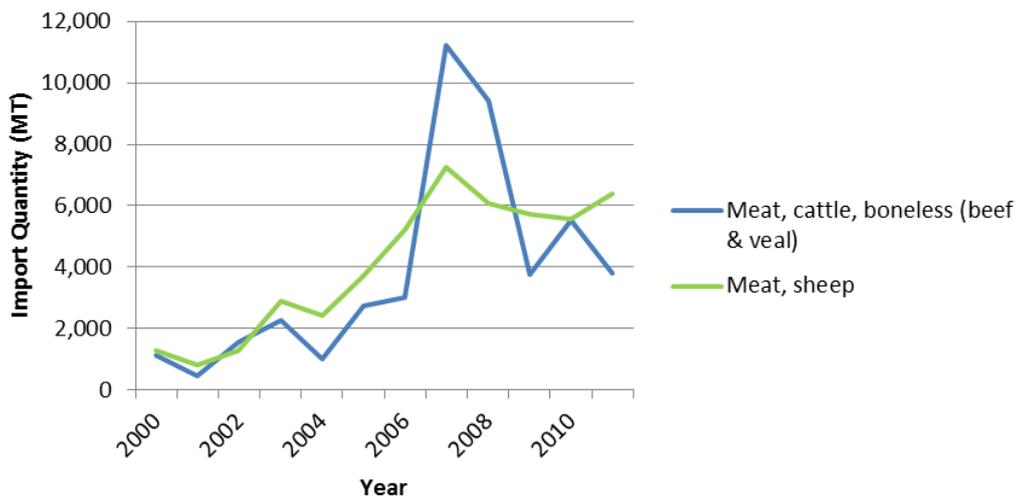
Figure 1. Import quantity of live animals



Source: FAOStat Database

Table 3 shows how mutton and beef imports (goat meat imports are non-existent) have been increasing constantly in the past few years. Imports of lamb and mutton have more than tripled in the last decade. Beef prices have nearly doubled since 2000 from US\$1,232/MT to US\$2,208/MT in 2011, while mutton prices have increased from US\$1,132/MT in 2000 to US\$1,358/MT in 2011.

Table 3. Quantity of meat imports



Source: FAOStat Database

Meat imports are primarily frozen and are destined to stock the larger supermarket chains and a few modern butchers in Ghana. High-income consumers have a preference for such meat because of

presentation and quality issues, but low to middle income consumers continue to buy fresh meat from butchers because of taste.

SECTION 4. VALUE CHAIN ANALYSIS

Productivity in the livestock sector is low by international standards. Despite production being widespread, output of livestock is only about 8% of agricultural GDP compared to 75% in many countries.¹⁵ The meat or carcass yield of local breeds of livestock is estimated at about 20% of that of exotic breed.¹⁶ It is also estimated that the average production of milk from a cow in Ghana is 4 litres a day compared to a possible 30 litres a day internationally.¹⁷ Low productivity is also shown by the low, off take for small ruminants (about 30%) and for cattle (only 11%).¹⁸

The reasons for the low productivity of livestock in northern Ghana include:

- the use of low performing breeds: for example, for cattle, the West Africa Shorthorn (WASH) accounts for about half of the population and is low performing if compared to the Zebu (which is a fast grower) and Sanga (the crossed variety).
- poor feeding techniques: cattle production is based on extensive grazing with open access to crop residue grazing after harvesting while small ruminants are often left to roam.
- poor health of animals given that many smallholder farmers fail to vaccinate their animals and because they consider the cost to para veterinary and veterinary services to be excessive.
- poor housing and husbandry management.

Overall, there are two main livestock production systems in northern Ghana.

- mixed farming system is the dominant source of production, accounting for 95% of production, and is more prevalent among small holder farmers.
- pure livestock farming system is geared towards beef production, predominates in the three northern regions.

The livestock marketing system involves itinerant traders, middlemen (such as livestock agents, transporters and aggregators) and butchers. There are two main marketing channels:

- **Within the local northern market**, traders or cattle dealers source from farm gates and village markets, sell at primary markets in towns or urban areas to big dealers, who aggregate for southern markets and local butchers. Weaker and low quality stocks are delivered to local butchers, while quality ones retained for the southern markets. In some cases butchers may also source directly from farm gates and village markets for slaughter. From the butchers, meat retailers and vendors ensure that meat gets to individual consumers and hotels/restaurants.
- **In the North-South marketing system**, the general flow of cattle, sheep and goats comes from the major livestock producing regions to the urban centres in the south of the country. Northern Ghana supplies over 80% of fresh meat from ruminants to southern Ghana, with additional sources of cattle imported from Burkina, Niger and Mali. In this marketing system, livestock traders and dealers source their stocks from primary markets and frontier markets at border towns, or culled from their own cattle kraals, which are then transported in haulage trucks to the southern and coastal cattle/livestock markets such as Techiman, Kumasi, Accra, Tema. Here the animals are sold to butchers from where meat gets to consumers through meat vendors or retailers. There are also traders in the south buying from the big cattle markets and selling in other urban towns.

¹⁵IMF, Ghana Poverty Reduction Strategy Paper. 2003

¹⁶IMF, Ghana Poverty Reduction Strategy Paper. 2003

¹⁷ IMF, Ghana Poverty Reduction Strategy Paper. 2003.

¹⁸ ITC Ghana Livestock Platform. Accessed on January 2014.

Prices of livestock fluctuate seasonally and prices, especially sheep and goats, increase during festival seasons of Christmas, Easter and Ramadan. Prices in these festive times could be as much as 20% higher than in non-festive times. Overall however, prices have increased more than two-fold since 2009¹⁹ indicating the increasing demand for livestock.

Livestock processing that occurs in the North stays within the local market, and all processing of livestock for Southern market is done in the South.²⁰ This is inefficient. Live animals are more costly to transport than meat and the animals lose condition and weight during the journey reducing their carcass weight and hence economic value.

The value addition in the trade between farm gate (field purchases) and local markets (sales centre) in the north is very low compared to trade between northern and southern markets (and within the south markets). A very small percentage of animals are fattened before sale missing out on a major opportunity to add value. Transport costs account for the majority of the difference in farm gate and local market prices in the north. In contrast, there is a large mark-up in sales prices for consumers in southern cities, where the price differential is not transmitted upstream to actors in northern market.

Price data helps illustrate these trends. The current average price of a big cow bought at a village market or from a farmer is GHC1,300 (including the transport cost GhC20.00 to the local market or slaughter house). The same cow sells for GHC2,500-GHC3,000 in Kumasi or Accra. Per cow, the cost of transport and other minor fees to the south is only around 80 GHC. Further down the value chain, the current price of beef in Kumasi (8.00/kg) is twice that of Tamale (4.00/kg), while price discrepancies for mutton are even higher since fewer sheep are transported south. Market power clearly lies with Southern wholesalers and butchers.

Table 4. 2009 MoFA Farm gate prices for 2009 (GHS)

Type	Guinea Savannah	Sudan Savannah
Cattle	742	330
Sheep	62	53
Goats	40	43

Source: Livestock Review Field data (2010)

Table 5. Prices from personal interviews

	Tamale Price		Kumasi Price
	2009	2014	2014
Cattle	600	1,300	2,500
Sheep	80	200	300
Goats	50	120	150

Source: Key informant interview, 2014

Table 6 illustrates the relative patterns of slaughter across Ghana's regions which are a good proxy for meat consumption. The Northern Region and Ashanti region make up the vast majority of slaughtering for the north and south respectively.

Table 6. Quantity of slaughtered animals (head), by region 2012

	Northern	Upper East	Upper West	Ashanti	Greater Accra	Total
Cattle	31,631	35,796	9,645	90,603	44,199	211,874
% National	14%	25%	4%	41%	20%	96%
Sheep	17,081	7,454	3,581	37,058	3,639	68,813

¹⁹Based on comparisons between 2009 MoFA farm gate prices and prices obtained from recent field interviews

²⁰This section draws from "Ghana – Livestock Development Project. Appraisal Report. AfDB, 2001".

% National	19%	8%	4%	40%	4%	75%
Goat	35,796	9,128	6,852	41,535	7,449	100,760
% National	25%	6%	5%	29%	5%	70%

Source: CountryStat Database

SECTION 5. ANALYSIS OF SUPPORT FUNCTIONS

5.1 RESEARCH

The Animal Research Institute (ARI) of the Council for Scientific and Industrial Research (CSIR) and the Faculties of Agricultures of public Universities are the main providers of research to producers and other actors on breeding, nutrition, feed improvement and diseases.

ARI is mandated to develop and transfer technologies related to livestock and poultry production in Ghana towards accelerated production and consumption of animal protein. A large number of its projects include poultry and pigs, but they also produce research focused on small ruminants and cattle, including the development of improved feed and break leaks. However ARI is under-funded and their partnership with the private sector to commercialize their technologies and research outcomes/findings to benefit actors in the industry is very weak.

5.2 BREEDING

The Animal Production Directorate (APD) runs Ghana's seven breeding stations, of which three are in Northern Ghana: Pong Tamale (Northern Region); Babile (Upper West Region); and Kintampo Goat Breeding Station (Brong Ahafo). These breeding stations, which breed beef cattle, goats, sheep, and pigs, benefitted from funds from the Livestock Development Programme, which aimed to revitalise them, but since the end of the programme in 2010 their activities have scaled down. For example, Pong-Tamale, a multi-species breeding station with a carrying capacity to stock 1,000 breeder cows, has currently 250 heads of cattle (see Figure 2).

Despite efforts to improve animal breeds by the setting up of animal breeding stations, most of the local animal breeds have low prolificacy and poor feed conversion efficiency.

Figure 2. Animal production in Pong-Tamale breeding station

Species	CATTLE		SHEEP		GOATS		PIGS
	Zebu	WASH	Sahelian	Djallonke	Sahelian	Djallonke	
BREEDING MALES	12	3	5	2			3
YOUNG MALES	45	9	15	24			23
CASTRATES							7
BREEDING FEMALES	89	35	180	28			7
YOUNG FEMALES	74	21	158	71			44
SUCKLING MALES	14	30	49	12			-
SUCKLING FEMALES	11	25	57	12			-
TOTAL	250	123	544	154			84

STOCK AS AT... DECEMBER 2013

5.3 FEEDING

Sustenance for cattle, and to lesser extent small ruminants, is almost entirely dependent on grazing on natural pastures, with its extreme seasonal variation in quantity and quality. Most farmers practice supplementary feeding, using crop residues, in the dry season. Those who fatten cattle and back-yard sheep and goat farmers in the cities and towns practise stall-feeding. The animals are fed on both crop residues in the form of groundnut tops, maize cobs, by-products from grain winnowing, cowpea pods, and peels of plantain and cassava. These are often supplemented with cut grass and browse as well as leaves from fodder plants.

Feed based on crop residues is mostly sold by women in the Upper East Region and men in the Northern Region. Its price increases significantly in the dry season. Commercial farmers are able to

store some of the feed, although they face the challenge that there is limited availability of straw bailers in Northern Ghana. Anecdotal evidence collected during the field trips suggests that there is only one functioning mechanical straw bailer in the Northern Region, limiting the ability of farmers to store large quantities of feed.

Commercial animal feed is mainly for poultry, which is manufactured by a few large-scale commercial feed mills (for example, GAFCO and AGRICARE). To our knowledge, there is no commercial animal feed being produced for cattle, goats or sheep. However, these companies produce supplementary feeds (salt licks, bricks) that are useful to maintain animal condition during the dry season when the nutritional value of fodder drops dramatically. The companies have had little success in commercialising their feed supplements. The market is small and they are not able to invest the time and money needed to change farmers' attitudes.

5.4 VETERINARY SERVICES

Animal health has been identified as one of the major constraints to increased livestock productivity in Ghana as the northern region alone has experienced more than 50 different health outbreak points in the last ten years.

A number of infectious and parasitic diseases pose danger to the livestock industry in Ghana.²¹ In cattle, rinderpest has been eradicated since the late eighties, but the remaining dangerous diseases include: Contagious Bovine Pleuro-pneumonia (CBPP), which affects mainly cattle for which data from abattoirs in the country indicates it is also on the rise; Tuberculosis, which is also on rise as seen in most slaughter house reports; Brucellosis, which has not been prominent but remains endemic affecting cattle and their herdsman; Foot and Mouth Disease, which has equally affected a lot of cattle kraals in the northern region resulting in culling and lost of weight. Additionally, Trypanosomosis has been reported mainly along the riverbanks and tick borne diseases such as Dermatophilosis, Babesiosis, Anaplasmosis and Heartwater are seasonal with high incidence during the rainy season. In small ruminants, "Peste des petits ruminant" (PPR) which is a preventable disease through vaccinations has become endemic. Mange and internal parasites are also the major diseases that affects small ruminant all year round.

Despite the very high health risks, the services of vets and para-vets are severely underutilised. Farmers are still reticent to pay for their services as they were provided for free by the Government of Ghana until the 1990s. Smallholder farmers with limited financial resources use the services of Community Livestock Workers (CLWs); emerging farmers also use CLWs as well as the services of paravets and vets, mostly on a reactive basis rather than on a preventive one; commercial farmers do invest in animal healthcare and have established relationships with paravets and vets.

Since the privatisation of veterinary services, a network of para vets has emerged that provides paid services to livestock farmers. Most of these paravets are located in urban areas and travel to peri-urban and rural areas when called to provide veterinary services. They source their drugs from retailers in the North given that drug wholesalers such as Frankatson and Medivet are not present in Northern Ghana. Another issue is there are fake drugs circulating in this market.

5.5 ACCESS TO FINANCE

Financial services are inadequate to farmers and other actors in the sector. The high risk associated with livestock (mortalities, theft) also tends to discourage lending by financial institutions. Hence, both small and commercial farmers and traders cannot easily access loans, thus seriously limiting expansion and sustenance of their production activities and businesses.

²¹ Information on diseases has been obtained from meetings with key informants.

SECTION 6. ANALYSIS OF POLICIES AND INSTITUTIONS

The livestock sub-sector has not received adequate programme and policy support by the government. MoFA has not conducted a livestock census for more than a decade, which has resulted in incoherent and ineffective policies and interventions. Livestock breeding stations and veterinary colleges have suffered from low levels of investment and funding in recent years. The government has failed to combat challenges posed by climate change, with several livestock water sources drying out. Furthermore, MoFA's agricultural extension programme has shifted policy focus away from livestock towards other agricultural sub-sectors. Lastly, the lack of strong advocacy bodies on livestock has seriously weakened private sector's ability to advocate for strong policies and institutions for the livestock sector.

The 2007 Food and Agriculture Sector Development Policy (FASDEP II) included a long list of targets for the livestock sector (e.g. improving animal health during raising, transport and marketing; improving access to feed and water; promoting advanced breeds; developing commercial poultry; developing better statistical monitoring systems for livestock; and other more general measures such as access to finance and machinery) which were further refined in Ghana's 2009 Medium Term Agriculture Sector Investment Plan (METASIP). The METASIP was the investment plan to implement the medium term (2011-2015) programmes of the policy, but lack of funds from both national and international sources has meant that nothing has happened in the sector since the end of the Livestock Development Programme in 2010.

The Livestock Development Project (LDP) ran from 2003-2010 in twenty-five districts located in the Upper East, Upper West, Northern, Ashanti, Brong Ahafo, Greater Accra, and Volta Regions of Ghana. The achieved deliverables²² included the restocking of breeding stations, training of 1,400 breeders, establishment of fodder banks, vaccination of nearly half a million cattle and sheep, the provision of GHS1.9 of credit to farmers and the training of 185,339 farmers. The programme achieved roughly half its expected outputs. On the ground, it appears that the lack of sustained activity since then may have undone much of what was achieved.

The main institution responsible for the livestock sub-sector is the **Ministry of Food and Agriculture (MOFA)**. However, MOFA's main activities are focused on the country's main crops. It has been observed that the decentralization of MoFA services in 1998 has led to a reduction in the supervision of veterinary field staff and a lowering in the coverage and quality of their services to smallholder farming communities. Also, it has led to the progressive disappearance of livestock-specialised General Extension Officers and their role being adopted by Crop Livestock Extension Officers.

Other relevant institutions are:

- **The Animal Production Directorate (APD)** manages the country's breeding stations and is responsible for ruminant and non-ruminant production, as well as range and forage management and production.
- **The Veterinary Services Directorate (VSD)** is responsible for Disease and Tsetse Control and Animal Health. The Directorate has a central veterinary laboratory located at Pong-Tamale in the Northern Region, as well as one laboratory in each of the ten regions. However, personnel and financial constraints limit their ability to provide services.
- **Food and Drugs Authority:** The Food and Drugs Authority is responsible for ensuring that imported livestock products and those produced locally meet the requirements specified under the relevant Ghana Standard for Meat and Meat Products. They are also responsible for ensuring that meat processing and handling conform to the basic health and environmental standards. However, the Authority is underresourced and there is a serious problem of enforcement of existing rules and regulations.

²² African Development Bank, Ghana Livestock Development Project- Completion Report

SECTION 7. IDENTIFICATION OF SYSTEMIC CONSTRAINTS

From the above analysis of the livestock market sector, the following are systemic constraints, caused by several market failures coming together. They explain why the livestock market in the North of Ghana is not fulfilling its potential:

- Livestock farmers regard animals as a store of wealth, not an economic enterprise towards: in the North of Ghana, livestock is viewed as a store of wealth, not as a productive asset. As a result, there is little incentive to invest in it. This is reinforced by the failure of the financial system to monetize the value of their assets by using them as collateral or insuring them.
- Weak profit motive makes system unresponsive to market forces: As farmers are not seeking to maximise the income earned from their animals, they have not responded to rising prices by increasing off-take or improving carcass weight. Moreover, the lack of standards and weights means that the incentive to invest in fattening and conditioning is weak. For example, animals are not sold by an objective measure (i.e. weight) but by an assessment made by buyers based on the characteristics of the animals, including the general look. That means that farmers do not have a measurable objective to aim at to maximise the value of what they sell.
- Undersupply of public goods such as information, research and veterinary services: MOFA has not undertaken a livestock census for over a decade and so the information/data on the basis of which to formulate policy and interventions in this sector is very poor; the Animal Research Institute (ARI) is underfunded and its partnership with private sector to commercialize its technologies and research outcomes/findings to benefit actors in the industry is very weak; there is very limited investment in disease prevention as well as significant issues in controlling borders, which is bringing into Ghana livestock diseases that were thought to have been eradicated.
- Market power lies with wholesalers and retailers in the South: the supply-driven nature of the market (because households typically sell livestock in situations of distress in order to meet emergency needs) means that the primary market usually takes on the character of a “buyers market,” with buyers able to dictate the price at the local markets. This means that the power of the market remains with the traders and price transmission to farmers is weak. Transport costs account for the majority of the difference in farm gate and local market prices in the north. But there is a large mark-up in sales prices by wholesalers and retailers in southern cities suggesting that the market power in the value chain lies with those who control access to marketing channels.
- Inefficiencies in value chain: most animals from Northern Ghana are transported live to the South where they are butchered. The fact that there are no modern abattoirs in the north and that there is no cold chain to transport meat means that transport costs are unnecessarily high and animals lose weight and condition resulting in loss of value. Modern processing facilities in the North that serve the South through a cold chain would be more efficient all round and ensure a higher proportion of value added remains in the North.
- Insufficient incentive for capable private sector actors to invest in livestock processing in the North: Whilst it makes economic sense to invest in livestock rearing, fattening and processing in the North, the scale of investment needed is large as the investor needs to establish modern processing facilities and a cold chain from scratch. The poor investment climate in the North, the attitudes of farmers and the lack of public goods, especially disease prevention, makes this a high-risk proposition.
- Coordination failures throughout the value chain: There are bottlenecks at every step of the value chains caused by a lack of coordination. So, it is difficult to get a coordinated response to improving productivity by ensuring that diseases are prevented, veterinary services are provided, animal feed is supplied and animals are fattened. The fragmented nature of the value chain, with few large, capable actors and weak market signals, are the cause.



SECTION 8. CONCLUSION

Livestock has a great potential in northern Ghana to become a source of income for the poor and contribute to economic growth in the North. Demand for livestock and livestock products has been growing constantly in the last years and despite the North's low productivity, it is still the main supplier of live animals for the South. Also, value addition is not captured in the north because of low investment in value-added service by farmers and market power lies with Southern wholesalers and retailers.

MADE could address these systemic constraints through a combination of influencing, facilitation and co-investment interventions with the public and private sectors to overcome these constraints. Interventions could include:

1. Change the attitudes of smallholder traditional farmers towards livestock so that they become more commercially-oriented by running a media campaign and demonstration activities on nutrition, disease control and breed improvement.
2. Support commercial farmers to develop a more commercial approach to their businesses through the provision of business development services. This would include:
 - Providing business development services to commercial farmers to support the expansion of their businesses.
 - Facilitating access to finance for livestock commercial farmers.
 - Providing leasing services for equipment (e.g. bailers, tractors) that allow commercial farmers to process and store supplementary feeding and engage in fattening during the dry season.
3. Facilitate the provision of public goods through establishing a network of para-veterinary practitioners (i.e. para-vet bundled services model) as suppliers of veterinary drugs, feed supplements, improved breeds and general husbandry services to emerging farmers. This would include:
 - Linking para-vets with drug distributors to serve as their distribution agents in communities.
 - Establishing model demonstration farms (run by para-vets) for fattening and breeding.
 - Providing business development services to para-vets to improve access to finance.
 - Facilitating access to low-cost disease control solutions, including vaccinations and ARI action research innovations. This activity would also target commercial farmers.
4. Assess the feasibility of providing micro-insurance to commercial livestock farmers by undertaking a pre-feasibility study on introducing micro-insurance for commercial livestock farmers in northern Ghana and removing the regulatory constraint imposed by the Ghana Agricultural Insurance Pool which only allows agricultural insurance to be provided through the pool.
5. Facilitate the establishment of capable private sector livestock processors from the south to the north by:
 - Promoting private sector investment in a modern meat processing plant in the North to process high quality meat for the local northern market and super markets in the South.
 - Promoting private sector investment in a fattening venture (e.g. Master Meat)
6. Support stakeholders to improve the policy framework for the livestock sector.

MADE Gender Market Screening Form

ANNEX A: GENDERANALYSIS

Market name	LIVESTOCK	Assessment Colour Code
1. Description	<p>In northern Ghana, livestock production assumes greater importance as a major source of livelihood, income and food security for over 600,000 households. Livestock is kept as a store of wealth and protection against crop failures for the poor. Of the national livestock population, the North produces 84% cattle, and 60% each of sheep and goats. However, only 27% of livestock farmers are commercial-oriented in their production. Ghana produces only 30% of its meat requirement, necessitating 70% import from neighbouring and other countries.</p> <p>Northern Ghana has a huge comparative advantage in livestock production due to favourable climatic conditions, large grazing land with vast natural forage resources including crop residues. The North therefore has a huge potential of producing livestock to meet the national meat requirement.</p>	
2. Gender sensitivity (How gender sensitive is this market?)	<p>Women are involved in tending sheep and goats, and cleaning pens and conveying animal droppings to the farms in support of their husbands without any fee. They are also involved in processing and selling cow milk and dairy products, such as cottage cheese which they sell to local consumers. An estimated 70% of women in northern Ghana own livestock or poultry which serve as a safety net for providing quick incomes to meet financial needs such as foodstuff, farm inputs, hospital bills, school fees and other personal needs. Pig rearing is also common among women in the Upper East and West Regions and provides them good income. In addition, women in the Northern and Upper East Regions make extra income from collecting and selling crop residues as fodder to livestock keepers and traders.</p>	
3. Contribution to negative gender effects	<p>The traditional notion of cattle rearing being the preserve of men in northern Ghana has kept out women from the sector, to the extent that even commercial cattle traders are all men. This has the potential of denying women the opportunity of earning huge incomes that could accrue from cattle production and trade. Even women engaged in small ruminants and poultry production, particularly in the Upper East and West Regions, are denied the freedom to sell them directly to buyers. This could reduce their incomes as sale amount could be under declared by husbands, sons or other male relations who do the sales. Where women owned their livestock, the manure from these is owned by the men.</p>	
4. Opportunities to adapt to or mitigate these negative effects	<p>Improving fodder availability during the dry season could have wider benefits for income generation, especially where market demands for livestock products are high. This could create opportunities of income generation for women who dominate the market in local feed trade, particularly in the Upper East Region. Promoting dairy cattle production and small-scale dairy could also create further income generation opportunities for women.</p> <p>Furthermore, creating awareness among community men and women particularly in the Northern and Upper West Regions, on the need for women's participation in livestock</p>	

	sales could give most women the opportunity to sell their own and also participate in livestock trade. This has the potential of increasing women's income in the sector.	
5. Gender promoting measures	<p>Considering the general involvement of women in the livestock sector, promoting the following measures could provide income earning opportunities for women in sectors:</p> <ul style="list-style-type: none"> • Awareness creation on women's participation in livestock production and trade as economic enterprises • Facilitating women's access to finance for livestock production and markets • Facilitate establishment of small scale dairies for women dairy processors <p>Facilitating establishment of industry for livestock feed production in northern Ghana could provide higher income opportunities for local feed gatherers who are mostly women</p>	
6. Obligatory gender mitigating measures	MADE's interventions in this sector should ensure that women engaged in small ruminant production are not displaced; by applying women sensitive measures to production and market/trade.	
7. How will gender promotion measures be monitored?	MADE's interventions in this sector should ensure that women engaged in small ruminant production are not displaced; by applying women sensitive measures to production and market/trade.	
Risk colour coding	 Low  Medium  High	

ANNEX B: ENVIRONMENT AND CLIMATE CHANGE ANALYSIS

MADE Environment/CC Market Screening Form			
Market name	LIVESTOCK – cattle, sheep and goats		
1. Description	<p>The details of the intervention have not yet been decided. It may involve improvements to livestock market chains as well as input supply chains and animal health services etc. increasing production and decreasing mortality. The net effect should be increased animal numbers and/or increased productivity per animal (and incomes for farmers and other market players).</p> <p>In the North many crop farmers keep livestock as a secondary enterprise to crops. There are also some larger herds owned by (town based) big cattle farmers which are independent of crop farming and thus more mobile, often managed by Fulani herders – conflict between these and crop farmers is an issue.</p>	Risk	
Risk from Climate Change	2. Sensitivity of the intervention to risks from CC	<p>Livestock tend to be more resilient to climate variation than crops – and therefore expanding livestock is likely to be a good adaptation to climate change and a good diversification strategy. However livestock are still dependent on adequate pasture, crop residue and water – which are climate dependent. Some pests and diseases are climate linked.</p> <p>Livestock also act as savings – and may therefore be a contributor to resilience. However these savings can be put at risk by climate extremes.</p> <p>A particular complication is that in periods of drought, although the local livestock may be relatively resilient, there is likely to be additional pressure from livestock keepers from even more drought prone areas further north (including neighbouring countries) – increasing pressure on resources and increasing the risk of conflict – with consequent effect on productivity.</p>	Without adapt.
	3. Opportunities to adapt to these CC risks	<p>Traditional livestock systems have evolved in the face of climate variability and therefore need to be tinkered with cautiously. Additional market opportunities are likely to be in animal health inputs and supplementary feeding – such as baling and selling crop residues.</p> <p>Livestock can have a beneficial impact on the adaptation of crop farming through the provision of manure. However they can have a negative impact on some crop adaptation approaches such as using mulches, cover crops and integrating trees into crop farming.</p>	With Adapt.
CO₂/GHG emissions	4. Contribution of the intervention to CO₂/GHG risks	<p>Ruminants are contributors to global warming through methane production in the gut.</p> <p>Livestock can make a positive or negative change to carbon storage in vegetation and the soil depending on how grazing is managed.</p>	Without Mit.

	5. Opportunities to mitigate the CO₂/GHG risks	<p>There is some evidence from more intensive livestock systems that pasture fed livestock produce less methane than those fed on concentrates.</p> <p>Issues of carbon storage in range management are closely correlated with environmental management dealt with below, There may be opportunities for carbon funds for improved range management – but this is a highly specialised area, probably beyond the scope of MADE.</p> <p>Overall the opportunities for mitigation are relatively small.</p>	With Mit.
Environment risks	6. Risks to the environment from intervention	<p>Poorly managed grazing is a serious environmental risk. The existing situation in Northern Ghana is varied – with some areas of over-grazing and degradation and other areas of lower pressure and limited degradation. The situation is exacerbated by limited management of communal grazing areas and uncontrolled burning. In the worst cases this leads to vegetation loss, erosion, flash flooding, less infiltration and an overall downward spiral. Water sources meant for domestic and other purposes can get destroyed.</p> <p>Grazing and water disputes can lead to conflict.</p>	Without Mit.
	7. Opportunities to mitigate the environment risks	<p>Improved range management is a complex business involving land tenure, governance, ethnic rivalries and pasture science. It is unclear whether there is robust evidence of good practice in Northern Ghana to follow or strong partners available with existing experience. In the absence of these it would seem to be outside the scope of MADE.</p>	With Mit.
8. Summary		<p>This is a sector with significant and complex environment and climate change issues. There is a question about the degree of impact MADE, as primarily a market development programme, will have on these. Mitigation measures are difficult and outside MADE's core competence.</p>	
9. Obligatory mitigation or adaptation measures		<p>MADE livestock interventions should comply with at least one of the following:</p> <ol style="list-style-type: none"> 1. Add value without resulting in increased grazing pressure (directly or indirectly); 2. Be restricted to areas with sufficient surplus grazing (and this should be subject to continuous monitoring); 3. Be integrated by an improved range management process that offsets and damage due to the increased grazing pressure (e.g. less burning, managed grazing pressure, managed access to water, work on micro-water catchments etc.) 	
10. Overall Risk assessment after mitigation		<p>Medium. Climate risks are relatively low but still significant. Environmental risks from livestock grazing in the absence of grazing management may be high, depending on the final design of the component. With appropriate mitigation this can be brought down to medium.</p>	
11. How will the mitigation/adaptation be monitored?		<p>This depends on which option (1-3 above) is chosen. There will be a yearly assessment by the component lead, endorsed by the climate change adviser, that the chosen mitigation method is being adhered to and is being effective.</p>	
Risk colour coding			

ANNEX C: POLITICAL ECONOMY ANALYSIS

MADE Political Economy Market Assessment	
Market name	LIVESTOCK – cattle, sheep and goats
<i>Stakeholder mapping</i>	
1. Who are the “most influential” stakeholders or stakeholder groups in the market?	<p>Producers and buyers. Production is dominated by smallholder households, who typically keep livestock as an important part of their portfolio of assets. Commercial ranchers are an insignificant number.</p> <p>Despite high demand for livestock products there is very low market participation by smallholder farmers, with less than 30% commercialization. Livestock, especially small ruminants, are kept for multiple purposes, including stock of capital, insurance, and for meat to celebrate religious festivals. However, the principal purpose is that smallholders rely on their herd during ‘critical times’, such as to fill food security gaps during household food shortages, or for unforeseen circumstances. The roots of low commercialization or market participation are thus culturally embedded.</p> <p>The supply-driven nature of the market (because households typically sell livestock in situations of distress in order to meet emergency needs) means that the primary market usually takes on the character of a “buyers market,” with buyers able to dictate the price at the local markets.</p> <p>Small itinerant traders buy small quantities of animals from farm gates or nearby village markets and sell in primary (nearby) local markets to bigger traders or directly to local butchers. Big traders collect from local market markets in the northern towns and transport to terminal markets in south such as Techiman, Kumasi, Accra, Tema. Other traders import their stock directly from Burkina, Niger or Mali, transporting them in long haulage trucks to southern cities.</p> <p>Some key informants believe that local buyers who constitute the primary-level market constitute themselves informally into an effective price-setting cartel dictating prices to smallholder sellers.</p> <p>Butchers and retailers. Nationwide there are two modern abattoirs (Tema and Kumasi), 63 slaughterhouses and 65 registered slaughter labs where butchers operate. There are also a large number of informal and un-identified butchers in rural areas whose activities are hardly supervised by veterinary and health inspection personnel.</p> <p>Modern meat retailers, supplied largely from imported sources (beef mainly), can be found in large cities like Kumasi, Accra and Tema. Some of these are Shoprite, Koala, Max Mart, Premier Meat, Spicy Food, and Milicat Meat and Achimota Packing House. Most of them are also processors who cut and package fresh local beef, poultry and pork.</p> <p>Veterinary and Para-veterinary staff are also important actors in the sector. Overall, however, vet-to-farmer ratio and farmer utilization of public veterinary services are extremely low. One view blames this on ineffective organization of veterinary services.</p> <p>More or less regular use of vets and veterinary services is limited largely to the small number of commercial farmers and modern poultry farms that operate in</p>



	the North.
2. Is there a presence of legitimate and credible stakeholders?	Commercial ranchers and major meat retailers would appear, relatively speaking, to have sufficient influence with policy makers to be able to raise issues concerning the industry.
3. Is there a 'champions' of change?	No known industry champion.
4. Are there vested interests?	Not clear what vested interests would resist MADE intervention in this subsector.
5. Are farmers in the market organized collectively?	There are no known organized FBOs. This is due largely to the low market participation of smallholder livestock farmers and to the fact that farmer-households selling decisions are often idiosyncratic and episodic.
<i>Institutional assessment</i>	
6. Are there any policies/regulations/norms in the market that could limit or facilitate MADE's interventions?	<p>MOFA has not undertaken a livestock census for over a decade. As such the information/data on the basis of which to formulate policy and interventions in this sector is paltry. Government has also substantially underinvested in this sector, leading to deterioration of livestock breeding stations and loss of existing water bodies.</p> <p>It has been observed that since the decentralization of MoFA services in 1998, the control of resources for the delivery of animal production and health services has been shifted from the district animal production and veterinary officers to the district director. The consequences include a reduction in the supervision of veterinary field staff and a lowering in the coverage and quality of their services to smallholder farming communities.</p> <p>Bureaucratic inefficiencies are also blamed for poor veterinary service delivery to farmers, resulting in high livestock mortality. For example, one credible source reports that, during the 2011 cropping season (June–August) when the animals were tethered and therefore most farmers could assemble their small ruminants for vaccination, there was no vaccine available for “Peste Des Petits Ruminants” (PPR) in Ghana. The stock of PPR vaccines expired in June 2011 and apparently no provision was made by the Veterinary Services Directorate of MoFA for restocking. In August 2011, the Daily Graphic reported that imported PPR vaccines, worth thousands of euros, had expired in August 2008 and 2009 and MoFA was summoned to explain the circumstances to a Parliamentary Committee. Meanwhile, the farmers interviewed in a study indicated that the over 50% mortality rate amongst their small ruminants in 2009 and 2010 resulted from pneumonia and diarrhoea (i.e., symptoms that suggest that PPR vaccination had not been carried out).</p>
7. Which are the key public sector institutions, agencies and offices (national, regional, or local) relevant to the market?	MOFA, especially the veterinary services, has a major role to play in preventing/containing outbreak of livestock diseases. The CSIR Animal Research Institute (ARI)/SARI and the country's Faculties of Agriculture undertake research on breeding, nutrition, feed improvement and diseases etc. However they are under-funded and their partnership with private sector to commercialize their technologies and research outcomes findings to benefit actors in the industry is very weak.
8. Are there any platforms for dialogue?	There is no known platform for such encounters.
9. Do any customary institutions play any role in the market?	Traditional authorities have no role as such, although the grazing activities of Fulani pastoralists have occasionally led to disputes over land/water use with local farmers and customary land authorities.

10. Are there capable private market participants in the market?	Some organized ranchers who raise livestock primarily for commerce and profit operate in the market, though they are believed to be very few. The field research yielded no information on their names or business locations.
<i>Summary</i>	
11. Overall assessment	The risk to MADE of a market-development intervention in this sector is rated medium. Past projects and initiatives aimed at market-oriented growth in production have generally been a failure. Regular commercialisation faces strong cultural forces. MADE's success in this area also depends highly on the public veterinary services and, thus, on the effective service delivery of an agency within a generally poorly resourced and often unreliable bureaucracy. An intervention that initially identifies and targets existing commercial operators (already better served by vet services) with market-development assistance, including linking them to smallholder farmers, could avoid some of the difficulties.

ANNEX D: LIST OF RECENT AND ONGOING LIVESTOCK-RELATED PROGRAMMES

Name of project	Organisation	Areas of intervention	Start and end year	General Description
Livestock Development Project	AfDB / Government of Ghana	25 districts 7 regions including the 3 regions of Northern Ghana	2003-2010	The Project was instituted to address unavailability of improved breeding stock, poor nutrition of livestock, disease control and lack of adequate water during the dry season The main objectives of the project was to: achieve food security; improve livestock production in the project districts and country at large; improve standard of living of farmers; improve animal protein in-take in the country. Intervention focus: improve breeding stock; expanding disease control & resourcing Vet Service Dept; provide credit for production, processing & marketing; training of staff, farmers and entrepreneurs to improve production & incomes from livestock + CLWs training.
Integrated Crop and Livestock Production in Northern Ghana	CIDA/Agricultural Institute of Canada	Northern Ghana	2006-2011	In partnership with government and other non-governmental agencies, the project will encourage viable women's groups for shea nut picking, processing and marketing, and livestock rearing for increased income. Also, through the introduction of forage legumes and inclusion of shea nut cake in ruminant diets, farmer-based technology to improve the nutritive quality of grazed natural pastures will be advanced.
Upper West Agricultural Development Project (UWADEP)	IFAD/Gov't of Ghana	Upper West region of Northern Ghana	1995-2004	UWADEP was intended to improve food security and increase the income of smallholders, Its intervention strategies included improving small ruminants by crossing local Djallonke females with Sahelian males for higher productivity & incomes. The project distributed 242 improved rams and 90 bucks to farmers in the five districts, but high levels of mortality led to concerns over the approach and the programme was suspended for two years. It was restarted in 2002, with a refocus on beneficiaries with sufficient resources to be able to afford improved housing, feed and recommended health measures. Some 219 (50%) offspring of the improved rams and 123 offspring of improved bucks were recovered for redistribution. The CLW scheme recruited and trained 150 volunteers and provided them with basic livestock kits to help improve livestock health and nutrition within project groups and in time, within their whole community. Groups report significant reductions in mortality rates with the instigation of recommended management and health care.



Millennium Development Villages Project	DFID/SADA/Millennium Promise Alliance/ Earth Institute of Columbia University	West Mamprusi, Mamprugu-Moaduri and Builsa-South Districts of Northern Ghana	2011-2016	This project includes promotion of livestock as an alternative livelihood for resiliency and incomes for households. Poor & vulnerable households are supported with small ruminants through a revolving credit scheme, with husbandry training to increase their assets. CLWs are also trained and established to provide more accessible basic animal healthcare to the beneficiary farmers/households
Collaborative Action for establishing Lasting Livelihoods (CALL)	Heifer International Ghana/Development Solutions Centre/ Ministry of Local Government & Rural Development-Ghana	Bole and Tuna-Sawla-Kalba districts of Northern Ghana	2011-2014	<p>Project goal is to enable vulnerable rural farm families enhance their livelihood security through the adoption of integrated environmentally sound agriculture production practices, enterprise development and expansive value addition initiatives</p> <p>Some of the specific challenges being addressed:</p> <ul style="list-style-type: none"> Low livestock productivity; Limited ability of resource-poor families to own productive capital Reduced capacity of local extension and veterinary services to engage in outreach; Poor nutrition in children; Limited access to markets <p>Livestock Component:</p> <p>Through 'passing-on-the-gift' (POG) multiplier model, communities will organize themselves to receive 'living loans' of livestock by preparing agro-ecological farm management, improved animal husbandry. 1,200 small ruminants will be placed with 240 smallholder households who have been selected on the basis of gender and vulnerability considerations. Through these initial placements of 1,200 animals, the original gift will be multiplied over 3 years, generating 3,600 additional animals without additional funding.</p> <p>In order to address the challenges of animal health service delivery confronting rural farmers, this sub-project will mainstream a Community Livestock Worker scheme (CLW), with embedded ethno veterinary practice, in the targeted project communities. Under this Scheme, two people from each project community will be trained, certified and equipped to become a Community Livestock Worker.</p> <p>A drug revolving fund will be set up to ensure an uninterrupted and sustainable supply of drugs and vaccines. The guiding principle in the management and sustainability of the drug scheme revolves around the empowerment of the CLW, who charges a cost recovery fee for the drugs and services delivered.</p>

