

# Initial assessment report of the Gambian livestock sector

A report to the Small Ruminant Production Enhancement Project (SRPEP) by the International Livestock Research Institute in support of The Gambia's livestock master plan

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# 1. Introduction and overview

## 1.1 Study context

The Gambia is the smallest country in West Africa, spanning just 11,300 square kilometres, with a high population density (176 people per square kilometre). It shares a single 749-kilometre overland border with Senegal. About 57% of its population is reported to live in urban areas. The total population in The Gambia is expected to gradually rise in the next three decades to approximately 4.3 million people, requiring anticipative policies concerning both infrastructure development and food supply improvement (Nyoni et al. 2019).

The Gambia's economy relies heavily on the tourism and agriculture sectors. The gross domestic product (GDP) grew by 6% in 2019 against a 6.5% growth in 2018, predominantly with an increase of 10% of services supported by wholesale and retail trade while the agriculture sector contracted by 10% (World Bank 2020). The agriculture sector remains too dependent on weather conditions, predominantly traditional and is characterized by low input extensive system of husbandry. Moreover, the Gambian agricultural sector struggles to overcome its key long-term development challenges related to the country's undiversified economy, small internal market, limited access to resources, lack of skills necessary to build effective institutions, high population growth, lack of private-sector job creation and high rate of outmigration. More specifically, the agricultural sector suffers from a structural inability to produce more and better, respond to increasing demand for livestock products and sustain a better life from livestock. Agricultural productivity in The Gambia remains quite low and, in turn, has significant adverse implications for the economy.

In terms of human development, The Gambia achieved impressive progress towards the Sustainable Development Goals (SDGs), notably concerning primary education. Between 1990 and 2018, The Gambia's Human Development Index (HDI) value increased from 0.328 to 0.466, an increase of 41.9%; life expectancy at birth increased by 9.5 years; mean years of schooling increased by 2.4 years and expected years of schooling increased by 4.4 years. The Gross National Income (GNI) per capita increased by about 12.1% between 1990 and 2018. However, The Gambia is still blighted by multifaceted issues related to poverty, food insecurity and malnutrition. About 48.6% of Gambians live on less than USD1.25 per day, and 8% are considered food insecure. However, discounted for inequality, the HDI has still declined by 37.2% due to an uneven distribution of the HDI dimension indices.

In addition to the low productivity observed in all sectors of the economy and the weak integration of domestic markets, The Gambia's trade competitiveness is affected by the overvaluation of the national currency, the Dalasi (GMD), by about 5.5% against the US dollar (Cham 2017). This makes the country's exports relatively expensive and illustrates the external vulnerability of The Gambia. The inflation rate is expected to hover around 8% through to 2026 (Nyoni and Mutongi 2019), potentially resulting in deterioration of the trade balance and adverse effects on the social activity and a decline in purchasing power.

The primary agricultural sector remains an essential sector of the Gambian economy, contributing 32% of the GDP, providing employment and income for 80% of the population and accounting for 70% of the country's foreign exchange earnings. In this context of challenges and opportunities, the livestock production system and value chain



play a key role, and notwithstanding these challenges, the livestock sector has the potential to drive transformational and inclusive growth in The Gambia, though the current COVID-19 situation will undoubtedly complicate and possibly slow down this process.

## 1.2 Importance of the livestock sector in The Gambia

The livestock sector plays an important role in creating livelihoods opportunities and income in The Gambia, comprising about 8% of its GDP (ISDB-SRPEP 2018). Citing official figures from the National Agricultural Sample Survey, the Food and Agriculture Organization of the United Nations (FAO) states that livestock contributed nearly 31% of the country's agricultural GDP in 2010 (FAO 2016). Nearly 75% of the population rely on the agricultural sector for employment, with the majority engaged in mixed crop-livestock systems. Livestock play a role in both income generation and savings for rural inhabitants. The Gambia relies predominately on traditional breeds of cattle for beef and milk production as well as small ruminants, both produced through extensive, free-range systems. Local production is currently insufficient to meet demand, with production constrained by the low productivity of traditional breeds, poor feeding resources, limited processing infrastructure, limited capacity of and access to veterinary resources and a lack of coordinated value chains.

Within this context, The Gambia Small Ruminant Production Enhancement Project (SRPEP) has been conceived. SRPEP aims to improve the livelihoods of over 30,000 livestock producing households by improving productivity of local breeds through better feeding and husbandry practices, fostering greater access to veterinary services and production infrastructure such as boreholes, increasing the availability of mutton at good prices, and enhancing market capacity from both technical and institutional standpoints across different livestock value chains. An important element of this project is the development of a livestock master plan (LMP) aimed at transforming the sector to improve livelihoods, employment (particularly for youth) and national income.

## 1.3 Rationale for a livestock master plan and livestock sector analysis

The purpose of producing an investment road map or LMP is to attract more substantial and better targeted livestock sector investments from finance ministries, development partners, and private sector investors. The LMP process enables livestock ministries to accomplish this by first identifying needed investments and policies to develop the livestock sector. It then carries out foresight or ex ante investment analysis to document and demonstrate the potential returns on investment (ROI) of combined livestock technologies and policies that increase the livestock sector's contribution to poverty reduction, employment (particularly of women and youth), national income, and which take environmental considerations into account.

LMPs in other countries have proved successful in helping to generate greater investments in livestock research and development. In Ethiopia, the government, donors and development partners (so far, the Bill & Melinda Gates Foundation (BMGF), the European Union (EU), the Netherlands, New Zealand, the United States Agency for International Development (USAID) and World Bank) are investing in the implementation of the LMP and preparing programs or projects to help fund future sector investment programs. For instance, the Ethiopian government is investing its own budget resources to improve primary production through improved animal genetics and vaccination programs to lower ruminant morbidity and mortality. It is also supporting efforts to add value to processed livestock products by setting up four agro-industrial parks (with the support of the EU and FAO). Furthermore, private investment of more than USD250 million in the processing sector has taken place, including a USD145 million investment in two abattoirs by two meat export companies with large feedlots. The Government of Ethiopia and the World Bank have also just launched a USD170 million livestock sector program based on the LMP.

In Tanzania, planning for the implementation of the LMP as part of the national Agricultural Sector Development Plan II (ASDP II) is still ongoing by a newly created Ministry of Livestock and Fisheries (MLF). In both Tanzania and Ethiopia, BMGF is currently funding USD50+ million in genetics research and development programs for the poultry and dairy subsectors, with ILRI implementing the research program. In addition, in Rwanda the government is now planning its next national economic development plan using insights from its LMP, while in Uzbekistan, the government and the World Bank have developed a USD150 million sector investment plan informed by its Livestock Sector Analysis.

The process for developing the LMP for The Gambia comprises the following seven stages:

- 1) Kick-off activities: inception workshop, literature review, work plan finalization and initial stakeholder assessment. This report is part of these kick-off activities.
- 2) Baseline analysis of targeted livestock systems, based on the initial stakeholder assessment, literature review, rapid assessment of selected systems and development of indicators for the mid-term review.
- 3) Detailed assessment of the prospective competitiveness of three specific livestock value chains (dairy, poultry, slaughtering of small ruminants/beef) informed by quantitative value chain and investment analyses.
- 4) Consolidation of stages (2) and (3) into a livestock sector analysis (LSA) that summarizes the baseline, past and present trends, and identification of key factors that affect the evolution of the sector.
- 5) Development of a livestock sector strategy: (the way forward – where to go): Development of scenarios and policy options at national and value chain levels to analyse impacts, benefits, costs, and trade-offs associated with jointly defined objectives and identify future orientations for livestock development at national level and for targeted value chains.
- 6) Five-year livestock master plan (LMP): an investment plan with commodity value chain 'road maps' in conjunction with promotion and advocacy building efforts to organize the implementation of the LMP and generate momentum for future post-LMP support.
- 7) A mid-term review of the SRPEP program to assess progress towards targets and extract lessons for the way forward.

The Gambia LMP will address the following issues:

- Provide evidence on priority areas for which it is essential to secure necessary investments and detailed information which will spell out executable projects for each value chain in meat, milk and poultry by providing detailed design and project costs. The LMP will provide guidance for long-term planning in the livestock sector in The Gambia.
- Assess the key livestock value chains for their potential and challenges for an effective contribution to the Gambian economy at this critical moment and take stock of the broader Gambian livestock sector and highlight the key lessons learned. Areas of concentration of the study will include the modernization of the dairy sector, poultry development avenues and processing of animal product.
- Examine the status of the meat processing industry, assess the economic and financial viability of the initiative and propose feasible strategies, activities, appropriate technologies as well as best management practices along with an implementation and procurement plan for the meat plant. In particular, the assessment of existing conditions to support the establishment of a state-of-the-art halal slaughterhouse in The Gambia for both domestic and export markets is a priority considering the possible construction of a modern halal meat processing plant through financing by the Islamic Development Bank (IsDB).
- Conduct the baseline studies for the SRPEP immediately without any major interference in the implementation of the project to enable it to weigh achievements against the targets set and also conduct its mid-term review.

## 2. Livestock in The Gambia: an overview of trends and target subsectors

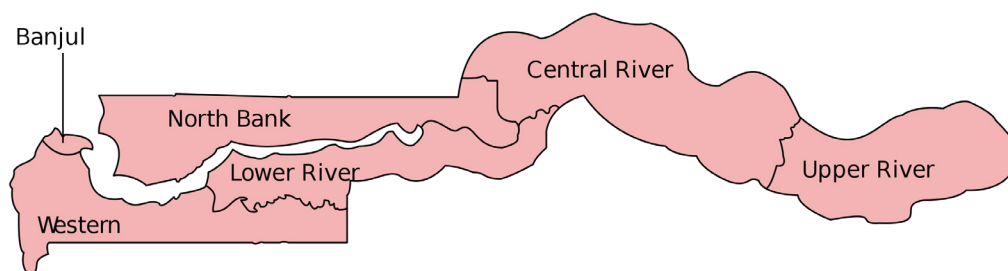
### 2.1 Overview of main livestock systems and value chains

#### Cattle

The cattle sector in The Gambia is predominately smallholder based. Loum (2019) identifies three types of production systems for cattle: (1) extensive, the main system using traditional N'Dama breeds that are part of mixed systems and where transhumance is practiced seasonally; (2) semi-intensive, whereby selected animals are provided supplementary feeding; and (3) intensive, which utilizes improved breeds (European and crosses) and artificial insemination techniques and is found in urban/peri-urban areas around Banjul. Specific proportions of cattle belonging to each system are not reported. However, according to the 2016 Livestock Census, nearly 98% of cattle breeds are of the N'Dama variety, which are prized for their resistance against diseases, but which are smaller and less productive from the standpoint of meat yield (approximately 100–110 kg carcass weight) as compared to Zebu breeds (Loum 2019). This suggests that a vast majority of animals would fall into the first production system (extensive). Finishing of cattle on feed is fairly uncommon – work from the Regional Project for Sustainable Management of Globally Significant Endemic Ruminant Livestock (French acronym, PROGEBE) found only 20% of farmers (mainly larger producers) finished on feed, though there were positive associations found in doing so on prices (IDELE-CIRAD-CA17 2012). At the same time, the same PROGEBE study also found important challenges in ruminant value chains concerning the competition between N'Dama and larger Sahelian animals in commercial markets.

According to the Livestock Census, there were 292,837 head of cattle and 32,209 oxen (draught cattle) in The Gambia in 2016, of which 56% are found in the central river and upper river zones of the country (see Figure 1 for an administrative map of The Gambia and Table 1 for the 2016 Livestock Census). Animal traction is used in over 73% of agricultural production, while the use of cattle primarily for manure was reported by over 22% of farmers in the 2016 Livestock Census (Loum 2019).

Figure 1: Administrative divisions of The Gambia



Source: [https://en.wikipedia.org/wiki/Subdivisions\\_of\\_the\\_Gambia#/media/File:Gambia\\_Divisions.svg](https://en.wikipedia.org/wiki/Subdivisions_of_the_Gambia#/media/File:Gambia_Divisions.svg)

Table 1: Livestock population figures from the 2016 Livestock Census by administrative division

Species	Administrative division								Total
	Banjul City Council (BCC)	Banjul Kanifing City Council (KMC)	West Coast Region (WCR)	North Bank Region (NCR)	Lower River Region (LRR)	Central River Region/North (CRR/N)	Central River Region/South (CRR/S)	Upper River Region (URR)	
Cattle	0	5	37,643	64,483	26,371	44,541	44,211	75,583	292,837
Sheep	409	3,485	22,429	21,073	11,699	17,751	28,872	60,927	172,662
Goats	166	3,920	66,667	60,306	26,462	46,588	38,294	85,933	328,336
Draught cattle	0	0	3,895	11,538	1,735	5,372	9,088	3,581	32,209
Poultry	1,543	48,974	331,416	169,387	60,535	76,319	107,247	142,530	937,951

Source: Loum (2019).

Data from the earlier 2011/12 Agricultural Census reported by Touray (2016) estimated the number of households with cattle at 30,928, of which 13% were owned by women. Based on the 2016 Livestock Census, Loum (2019) reports, average cattle herd sizes range from 40–63 heads per household, although figures from the 2011/2012 on livestock ownership suggest considerable variance across cattle owners, ranging from those owning one or two oxen for draught labour to those that rely more on cattle for their main livelihood (Table 2).

Table 2: Cattle ownership by region in The Gambia, 2011/2012

Region	Cattle population	Number of households that own cattle	Herd size per household
West Coast Region	39,935	4,490	8.89
Lower River Region	39,613	3,431	11.55
North Bank Region	75,867	7,775	9.76
Central River Region	172,672	10,582	16.32
Upper River Region	70,385	4,670	15.07

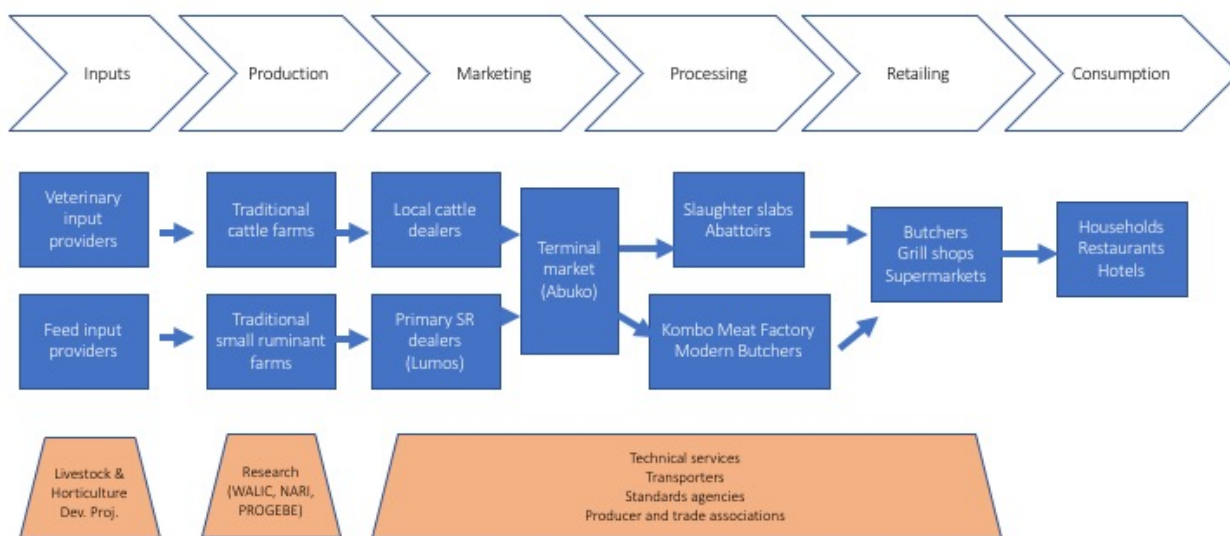
Source: Touray (2016).

Cattle (and small ruminant) value chains tend to be fairly short, as illustrated in Figure 2. Production overwhelmingly comes from smallholder producers who sell animals to local traders. Analysis from the PROGEPE project noted that 80% of sales are made on the basis of farmers requiring urgent cash and not based on relative price movements. Approximately 2/3 of sales are made during the wintering period. At the same time, immediate cash payment is not typically made, with traders providing a deposit and paying the remainder some weeks or months later. This practice was reported to be variable by site – in the Nianija site, some 75% of sales involved traders making a deposit for less than half the purchase price, while in East Niamina, most sales were made in cash, though even in these transactions, payment delays occurred at the end of the dry season and rainy season (IDELE-CIRAD-CA17 2012).

From local traders, live animals are aggregated for sale to main terminal markets such as Abuko. Touray (2016) reports a total of 27 live animal markets (Table 3) which operate on a weekly basis, with the exception of the markets

in Abuko, Brikama and Banjul which operate daily. From these terminal markets, animals are then sold for processing to abattoirs and those availing slaughter slabs (Figure 2). The largest abattoir is the Abuko Central Abattoir, while a second large abattoir is found in Banjul. The Kombo Meat Factory processes a number of value-added meat products that are sold to higher-end clients (hotels, restaurants) (Touray 2016). From processors, meat is then distributed amongst butchers, supermarkets, and grill shops to different consumers, including households, restaurants and hotels. Most meat is sold ‘hot,’ with little in the way of proper cold chains or sanitation at various nodes in the value chain (Touray 2016).

Figure 2: An illustration of the ruminant value chain in The Gambia



Source: Derived from Touray (2016)

Table 3: Regional distribution of livestock markets

Central River Region	Upper River Region	North Bank Region	Lower River Region	West Coast Region	Banjul City Council
Brikamaba	Gambisara Lamoi	Ndungu Kebeh	Bureng	Brikama	Banjul
Fula Bantang	Dingiri	Fass Njaga Choi	Kwinella		
Wassu	Sabi	Jamagen			
Nyanga Bantang	Farato	Kerr Jain			
Sami Karantaba	Sare Mansali	Kerr Pateh			
Sami Tenda	Sare Bojo	Farafenni			
Kaur	Gambisara	Ngain Sanjal			
Mamut Fana	Sare Ngai				
Jareng					
Kudang					

Source: Touray 2016

Pricing for animals is typically made on a visual inspection of the animal’s weight and condition, with no formal grading system in place. In 2013, Touray (2016) reported a live animal price for animals purchased by The Gambia Livestock Marketing Agency of GMD55/kg (about USD1.50 at the prevailing exchange rate at the time). Prices for beef have been rising in nominal terms. Prices reported by Touray (2016) for 2013 were GMD98/kg for meat and bone and GMD114/kg for steak, with notable regional differences. In particular, prices in Banjul and the West Coast Region for meat and bone were GMD20–25 /kg higher than the national average, while steak prices were GMD25–35/kg higher (Touray 2016). Recent media clips report the price of beef rising significantly in recent months, from GMD225/kg in the second half of 2019 to GMD260/kg at the start of 2020.<sup>1</sup>

<sup>1</sup> See <https://allafrica.com/stories/202001090230.html>

The marketing of beef (and meat more generally) is not differentiated by cut or quality. N'Dama animals are prized for perceived better quality and tenderness of their meat, and their smaller size makes sales easier compared to Sahelian breeds. However, there are little efforts to sell differentiated cuts or improve standards of the meat that is sold (IDELE-CIRAD-CA17 2012).

Table 4 reveals the geographic and numerical distribution of value chain actors in the ruminant value chains of The Gambia. With the exception of producers, little information is available on the location of traders and other intermediaries. It is worth noting that there is approximately 1 trader per 100 farmers, suggesting a modicum of competition among traders (and thus a prospective absence of overt market power), though given the local nature of trade, it is possible that there are local monopolies that distort markets and prices for consumers. However, as farmers typically sell on an 'as-needed' basis, it is unlikely that any market power that exists in the market directly influences marketing decisions.

Table 4: Geographic location of value chain actors in the ruminant value chains of The Gambia, 2011/12

Actor	Region						
	Kanifing	West Coast	North Bank	Lower River	Central River	Upper River	Total
<b>Primary production</b>							
Cattle (meat + milk)	N/A	4,490	7,775	3,431	10,587	4,670	30,987
Sheep	N/A	5,773	5,872	3,141	9,687	5,524	29,997
Goats	N/A	13,388	11,990	6,209	12,705	7,441	50,923
<b>Input suppliers</b>							
Veterinary products	2	0	0	0	1	0	3
Feeds	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Traders and retailers</b>							
Traders	N/A	N/A	N/A	N/A	N/A	N/A	302
Butchers	N/A	N/A	N/A	N/A	N/A	N/A	264
Food vendors	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Processors</b>							
Meat processors	1	0	0	0	0	0	1
Milk processors	1	0	0	1	1	1	4

Source: Touray (2016).

As noted in the PROGEBE study, cash flow is a major problem in the value chain, with farmers selling when monetary emergencies arise, while downstream actors are themselves often cash constrained in making prompt payment to previous nodes in the chain (IDELE-CIRAD-CA17 2012). As noted by Touray (2016), transactions along the value chain are often made on a credit basis between different nodes, particularly as delays in the value chain are often transmitted across different nodes. Access to credit is generally uneven, with village savings and credit associations comprising the main source of credit (Table 5). However, the high rates of interest charged by microfinance institutions discourage formal credit usage (Touray 2016).

Table 5: Distribution of formal credit providers by region in The Gambia, 2011/12

Region	Village savings and credit associations	Credit unions	Both	Others
West Coast Region	41.9	41.9	4.5	9.7
Lower River Region	81.6	0	6.5	18.2
North Bank Region	30.8	15.4	0	46.1
Central River Region – North	62.5	12.5	7.7	25
Central River Region – South	92.9	7.1	0	0
Upper River Region	36.4	27.3	9.1	27.3

Source: Touray (2016) from the 2011/12 Agricultural Census.

## Sheep and goats

As with the cattle sector, the sheep and goat sectors are overwhelmingly extensive and smallholder based. Touray (2016) distinguishes between two production systems in the sector: (i) production under a traditional mixed farming system and (ii) a market-oriented system (mainly for sheep). In the former system, smallholders keep dwarf goats and other local breeds in communal flocks, where they graze on grasses found in the village. Some supplemental feeding exists, but mainly for lactating ewes and fattened stock. Sheep and goats in this system are sold primarily to meet family nutritional needs as well as other financial or cultural obligations (Loum 2019).

In the latter, farmers fatten sheep procured from local markets and/or neighbouring countries (primarily Senegal, as well as from Mali or Mauritania) over a three-month period (generally before Tabaski) using a variety of by-products. This system tends to exclude smallholders, as it requires greater capital for inputs. Touray (2016) notes some interference by government on sheep pricing in markets as well.

Traditional breeds predominate in the sheep and goat sector. Based on the 2016 National Livestock Census, Loum (2019) reports that over 96% of sheep belong to the Djallonke breed, while over 99% of goats are West African Dwarf breeds. Small ruminant population by region and household is summarized in Table 6 and highlights higher flock sizes in the Central and Upper River Regions.

Table 6: Small ruminant ownership by region in The Gambia, 2011/2012

Region	Sheep population	Number of households that own sheep	Flock size per household	Goat population	Number of households that own goats	Flock size per household
West Coast Region	27,517	5,773	4.77	70,381	13,378	5.26
Lower River Region	12,324	3,141	3.92	33,589	6,209	5.41
North Bank Region	24,217	5,872	4.12	65,082	11,190	5.82
Central River Region	53,289	9,687	5.50	78,160	12,705	6.15
Upper River Region	26,591	5,524	4.81	55,666	7,441	7.48

Source: Touray (2016).

Marketing patterns follow the value chain map shown in Figure 2. In the case of sheep, most commercial sales are geared towards Tabaski, with a large portion of animals coming from Senegal. In Table 7, we cite figures from the 2017 National Livestock Show which show that 48% of sheep were sourced from Senegal (Loum 2019). According to Touray (2016), sales of goats tend to be highest in the dry season (January–June). Prices for mutton in 2013 tracked those of steak, while live animal prices in the same year for sheep were GMD2,042 (USD55) and goats were GMD1,367 (USD37).

Table 7: Volume and origin of rams sold at the National Livestock Show in 2017

Animal origin	Number sold
Kanifing Municipal Council	4,293
Central River Region – North	2,534
Central River Region – South	2,095
North Bank Region	2,433
Upper River Region	1,511
West Coast Region	3,432
Lower River Region	130
Senegal	15,862
Mauritania	379
Mali	421
Total	33,090

Source: Loum (2019).

## Poultry

ActionAid and Oxfam International (2004) characterized poultry production in the country into three types of systems. First, the main system (about 90% of poultry populations as estimated by ActionAid and Oxfam International 2004) is comprised of communal/backyard production where chickens rely on scavenging for feeding and where marketing is predominantly for immediate cash needs. Flock sizes tend to range between 10–15 birds (Loum 2019). Animal health status and productivity tend to be relatively limited.

The second system is comprised of small-to-medium-scale poultry producers, which predominate in urban and peri-urban areas. Flock sizes range from 50–500 birds (ActionAid and Oxfam International 2004). Production in these systems is typically of broilers and eggs (Loum 2019). This system has been supported by a range of development and government programs, and increasingly a range of commercial incubation programs<sup>2</sup> aimed at youth and women in particular have been started. A major constraint in this system is the high price of day-old chicks and feed, which make products from this system unable to compete against cheaper imported products (ActionAid and Oxfam International 2004; Loum 2019).

The third system is commercial farm production, which is primarily found around Banjul and serves high-end markets such as restaurants and hotels. Production in this system is highly commercialized and at scale, with flock sizes up to 10,000 birds and uses modern production practices and inputs (ActionAid and Oxfam International 2004). As with the semi-commercial system, competitiveness with foreign imports, particularly frozen products, which comprise the bulk of consumption, is limited.

A recent study by the International Trade Centre looked at the competitiveness of different types of poultry operations in The Gambia. They found that small-scale broiler farming (with a minimum of 500 birds) without brooding operations was potentially attractive and profitable for beginning farmers, while a brooding operation would need a minimum of 3,000 birds. Large-scale layer operations (with more than 10,000 birds) are also profitable; small-scale broiler farming is more attractive than small-scale layer farming. Prices for live birds are higher than those in other overseas markets, but live bird exports from competitors are not allowed and thus do not directly compete. Critical success factors include proper training and access to credit for farmers (Van Lieshout and Touray 2017).

## Dairy

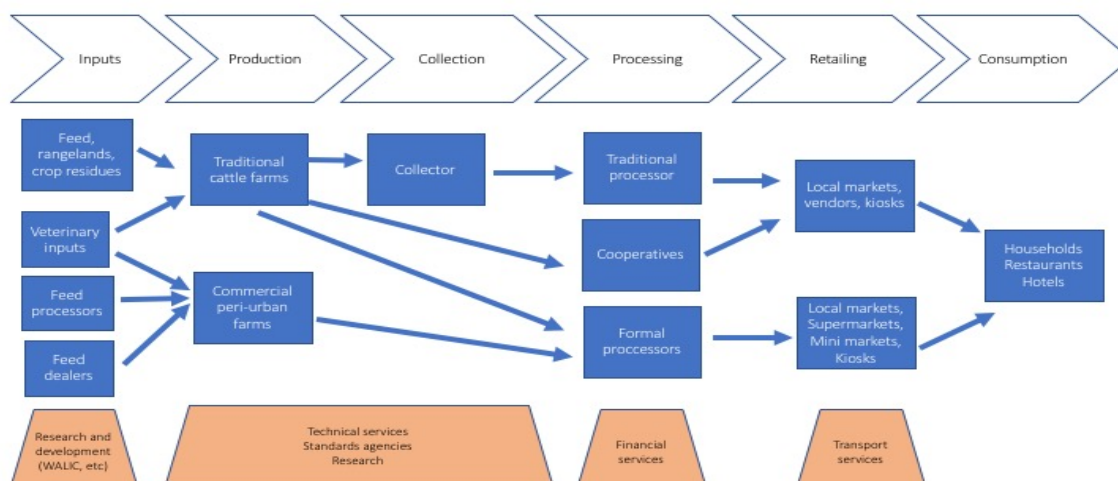
Touray (2016) defines two production systems within the dairy sector. The predominant system is smallholder based, using pasture feeding and oriented towards own consumption or informal markets. As noted in Figure 3, the traditional system value chain is fairly simple, with surplus milk passing through local collectors and processors before sale to local, informal markets. Productivity is fairly low (Loum 2019). Commercial, semi-intensive, peri-urban production constitutes the other type of production system. In this system, found primarily in the western part of the country near Banjul, cross-bred animals are used and fed through a mix of pasture and commercial feed. Daily production of milk was estimated by Touray (2016) at 5.5 litres per cow. A couple of farms using exotic breeds are found around Banjul (Kombo Dairy Farm and MACE).

Trade in milk products goes through family-based collectors (in the case of informal production, which is then processed into products such as fermented milk) or directly to cooperatives or medium-scale processors (Figure 3). There are eight dairy cooperatives in The Gambia, six in Central River Region and two in Lower River Region. Women play an important part in these cooperatives in the production of yoghurt and ghee (Touray 2016). There is one medium-scale milk processor, Kombo Dairy Farm, which according to Touray (2016) has a capacity of 500 litres per hour and packages milk and yoghurt for sale through supermarkets and mini-markets.

<sup>2</sup> See <https://www.startupincubator.gm/client/muhammed> and <https://www.chronicle.gm/gambias-appetite-for-chicken-inspires-rise-in-poultry-farming/>



Figure 3: An illustration of the dairy value chain in The Gambia



Source: Derived from Touray (2016).

Sales of milk post-processor go to both formal and informal markets. In informal markets, raw and sour milk is sold by vendors. In formal market channels, a variety of milk products, including fermented milk, yoghurt and pasteurized milk are sold from local sources. Most yoghurt, however, is made from imported milk powder (Touray 2016).

A number of constraints exist in the milk sector, including low productivity, high levels of post-harvest loss (up to 60% according to Touray 2016), poor sanitation in packaging and storage and limited use of proper cold chains in marketing.

## 2.2 Trends in the livestock sector

As a whole, the livestock sector in The Gambia has been growing albeit at an uneven rate, while data inconsistencies make analysis of trends difficult. In Table 8, we present data on stocks of live animals as reported by FAOSTAT from 2010–2018. The poultry sector has been growing rapidly, with growth of over 60% in the number of birds during 2010–2018. Growth in the cattle and shoats (sheep and goats) sectors has been more erratic, with a slight decline in stocks from their reported 2015 peak.

Table 8: Stocks of cattle, chickens, and sheep and goats in The Gambia, 2010–2018

Year	Cattle	Chickens (*000 head)	Sheep and goats
2010	425,000	850	603,000
2011	398,472	1,000	483,878
2012	372,801	1,274	424,294
2013	436,054	1,300	377,435
2014	479,183	1,300	413,019
2015	498,004	1,321	429,829
2016	454,970	1,343	407,840
2017	460,580	1,360	407,685
2018	464,283	1,387	415,378

Source: FAOSTAT.

The stock figures reported by FAOSTAT are somewhat at odds with those reported in the 2016 Livestock Census and summarized by Loum (2019). The Livestock Census reports cattle stocks at over 160,000 head less than FAO

estimates, while for sheep and goats, the Livestock Census figures are around 92,000 head more than FAOSTAT (Table 9). For chickens, FAOSTAT data reports 400,000 more chickens than the Livestock Census. From Livestock Census figures, Loum (2019) estimates egg production of just over 30 million in 2016, based on a productivity rate of 80% of layers and that each hen lays 40 eggs per year.

Loum (2019) speculates that the difference between the 2014 figures (from official Gambian sources) and the 2016 Livestock Census in cattle could be due to the outbreak of contagious bovine pleuropneumonia (CBPP) in 2012–2013, though Africa-wide data from FAO (2016) notes cattle losses of just over 31,000 head in 2012–2013. It is possible, however, that the prevalence of CBPP caused a liquidation of herd sizes as a risk mitigation measure by smallholder farmers.

Table 9: Stocks, offtakes, and carcass weight for selected livestock products from the 2016 Livestock Census

Species	Population	Offtake rate (%)	Number of animals sold	Average carcass weight (kg/animal)	Estimated meat produced (tons)
Cattle	292,837	11.9	34,848	110	3,833
Sheep	172,662	22.3	38,504	14	539
Goats	328,336	25.1	82,412	14	1,154
Chicken	937,951	40	375,180	1	375

Source: Loum (2019)

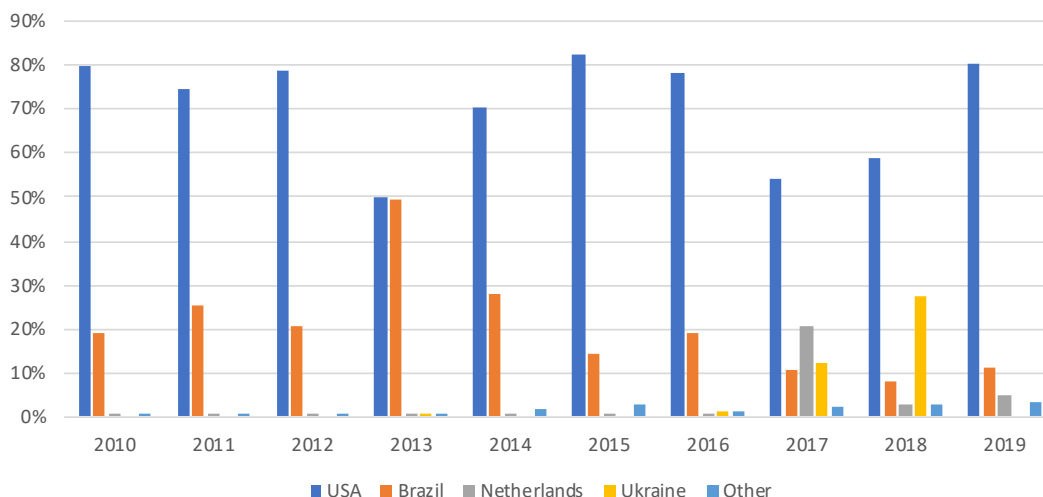
Data on international trade as reported by The Gambia are rather problematic. Import figures reported by UN Comtrade (and reported in FAOSTAT) suggest import unit values for beef and poultry products that are not realistic (typically between USD0.15–USD0.40/kg) for either product, suggesting some coding error of official data or underinvoicing of imports. For the purposes of this section, we will use instead export data of partners that sell products to The Gambia in our analysis of import trends.

The Gambia relies significantly on international trade for certain livestock products, particularly poultry and, increasingly, beef. The overwhelming majority of poultry imports come from overseas markets, particularly the USA and Brazil, with growing shares of exports coming from the Netherlands and Ukraine. Table 10 summarizes poultry imports from 2010–2019, while Figure 4 illustrates the share of product derived from different partners. Imports comprise the vast majority of available poultry meat as compared to domestic production in Tables 8 and 9. If we consider the figures from the 2016 Livestock Census and a domestic offtake rate of 40%, domestic production comprised about 2.5% of total availability. The FAOSTAT figures (Figure 5) suggest a higher domestic market share, but trends clearly show a declining trend since 2013.

Table 10: Imports of poultry to The Gambia, 2010–2019

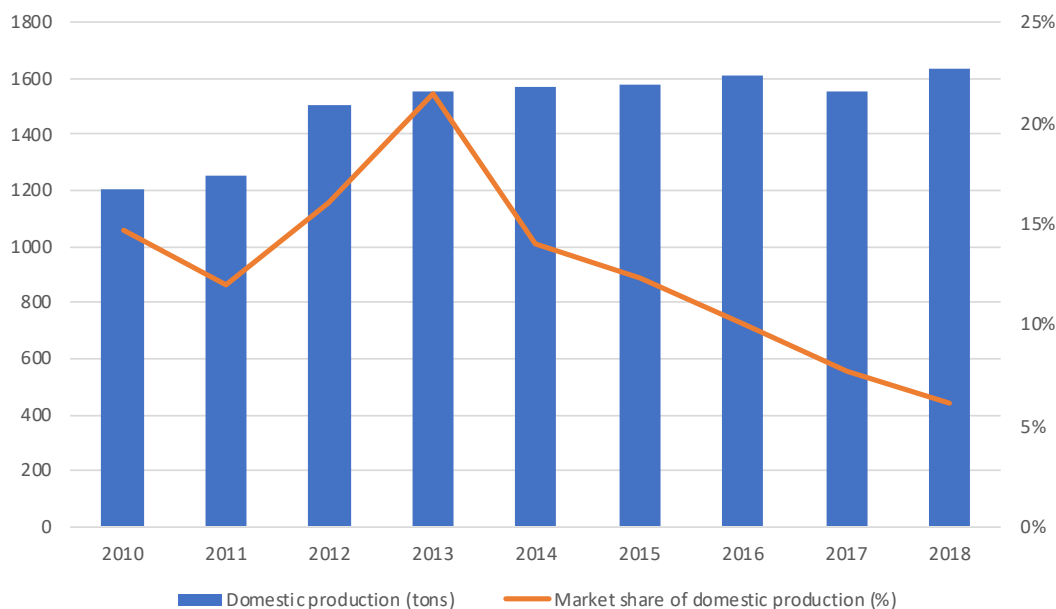
Year	Volume (kg)	Value (USD)	Unit value (USD/kg)
2010	6,972,356	6,409,395	0.92
2011	9,141,031	10,859,353	1.19
2012	7,874,668	10,186,745	1.29
2013	5,660,091	8,150,613	1.44
2014	9,667,664	11,485,873	1.19
2015	11,248,935	9,016,426	0.80
2016	14,431,708	13,287,410	0.92
2017	18,546,299	17,402,880	0.94
2018	24,946,188	21,083,998	0.85
2019	20,523,931	17,759,466	0.87

Figure 4: Trends in market share (on a volume basis) of poultry imports to The Gambia, 2010–2019



Source: UN Comtrade.

Figure 5: Domestic production and market share of poultry meat in The Gambia, 2010–2018



Source: FAOSTAT and UN Comtrade

In the beef sector, there have been sharply rising imports of offal since 2012, increasing from 30,578 kg in 2012 to over 778,000 kg in 2019 (Table 11). Fresh beef cuts are imported irregularly, while there has been steady growth in frozen beef imports, with volumes increasing six-fold from their nadir in 2015.

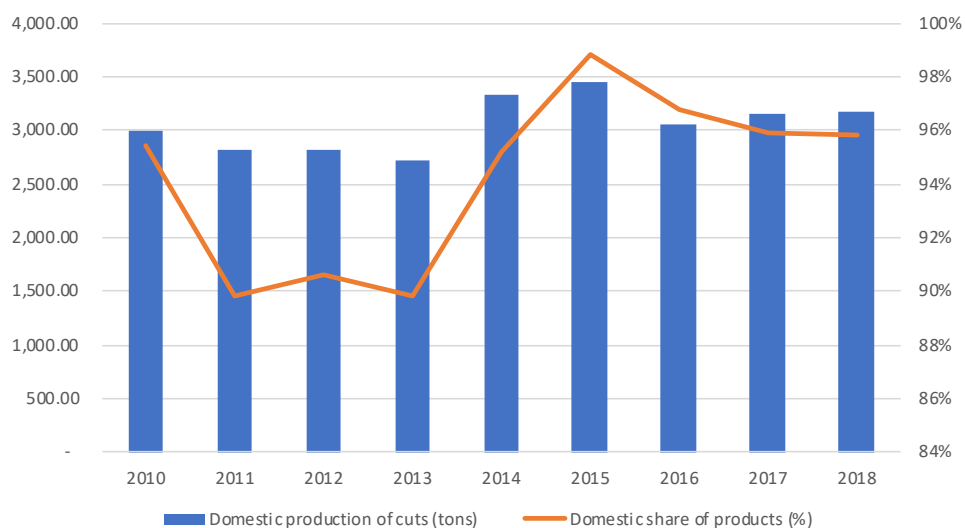
Table 11: Imports of beef products to The Gambia, 2010–2019

<i>Traded volumes (kg)</i>										
Product	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fresh beef	-	-	-	-	101,000	-	-	24,992	-	-
Frozen beef	142,837	319,516	291,707	308,161	68,009	40,987	102,733	135,207	138,292	243,042
Offals	206,550	156	30,578	94,493	189,457	151,409	258,359	345,957	905,083	778,959
<i>Value of imports (USD)</i>										
Product	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fresh beef	-	-	-	-	80,043	3	-	26,186	-	-
Frozen beef	627,773	756,622	858,695	768,289	248,499	156,231	264,873	369,314	545,949	522,746
Offals	208,861	255	42,116	146,941	242,376	185,983	232,537	289,023	806,902	647,517
<i>Unit value (USD/kg)</i>										
Product	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fresh beef	-	-	-	-	0.79	-	-	1.05	-	-
Frozen beef	4.40	2.37	2.94	2.49	3.65	3.81	2.58	2.73	3.95	2.15
Offals	1.01	1.63	1.38	1.56	1.28	1.23	0.90	0.84	0.89	0.83

Source: UN Comtrade for HS 0201, 0202, and 0206 using export data to The Gambia as reported by partners.

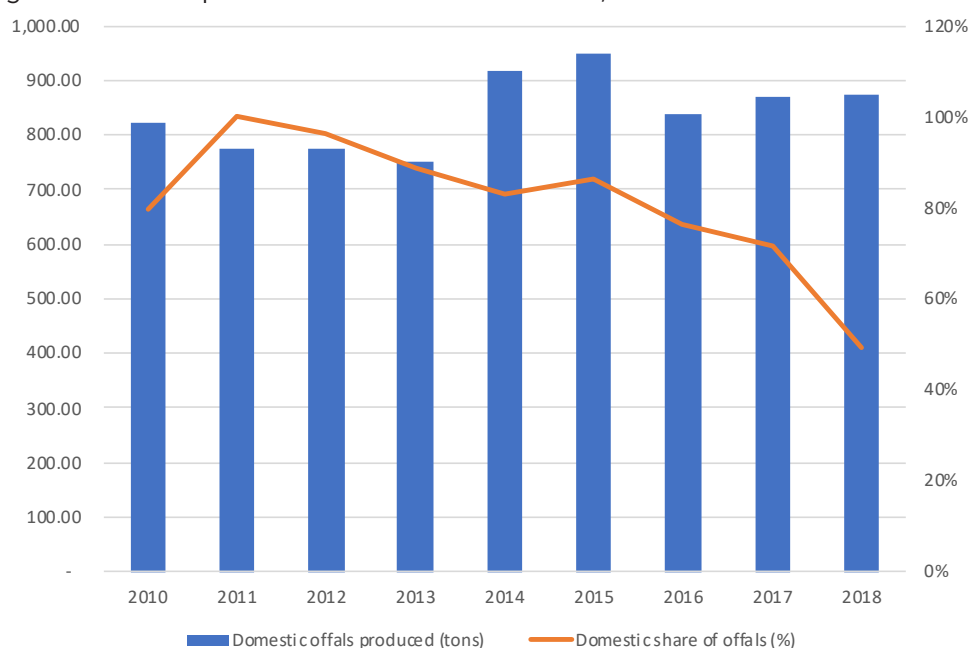
Domestic beef production largely satisfies local consumption of cuts, with the share of domestically sourced beef cuts rising based on FAO data (see Figure 6). Figure 6 adjusts carcass weight figures into usable meat cuts (about 40% of liveweight) in order to compare with imports. On the other hand, imports of offals are gaining market share, with 2019 imports comprising nearly half of Gambian consumption (Figure 7).

Figure 6: Domestic production of beef cuts and market share in The Gambia, 2010–2018



Source: FAOSTAT. Estimates of beef cuts are based on live animal numbers and weights, adjusted by the percentage (40%) of the live weight devoted to cuts.

Figure 7: Domestic production of offal and market share, 2010–2018



Source: FAOSTAT. Estimates of offal production are based on live animal numbers and weights, adjusted by the percentage (11%) of the live weight devoted to offal.

Data on sheep and goat meat is limited. FAOSTAT does not report meat data beyond 2013, with offtake rates ranging between 23–29% for goats over 2010–2013 and 24–36% for sheep over the same period. In Table 12, we apply the offtake rates and carcass yields for sheep and goats reported by Loum (2019) in Table 9 from the 2016 Livestock Census to derive domestic sheep and goat meat estimates for 2014–2018. Table 13 summarizes imports of sheep and goat meat, which are fairly modest, and include (from 2015–2017 where data were available) about 45,000 kg of meat from Saudi Arabia at concessional (less than USD1/kg) prices.

Table 12: Estimates of domestically produced sheep and goat meat in The Gambia, 2014–2018

Year	Sheep meat (kg)	Goat meat (kg)	Total (kg)
2014	166,040	1,264,460	1,430,501
2015	171,710	1,317,149	1,488,859
2016	187,320	1,222,310	1,409,630
2017	202,930	1,204,195	1,407,125
2018	226,692	1,204,483	1,431,175

Source: FAOSTAT.

Table 13: Imports of sheep and goat meat to The Gambia, 2015–2019

Year	Volume (kg)	Value (USD)	Unit value (USD/kg)
2015	48,759	55,715	1.14
2016	54,819	98,107	1.79
2017	54,678	98,763	1.81
2018	16,614	124,051	7.47
2019	28,241	222,285	7.87

Source: UN Comtrade for HS 0204 using export data to The Gambia as reported by partners.

Consumption figures for meat products are inconsistently available. The PROGEBE project summarized per capita demand for certain livestock products (beef, sheep and goat meat, and dairy products) for select periods in the 1980s, 1990s and 2000s (Table 14). The 2015 integrated household survey (IHS) provides some insights on consumption that are summarized in Table 15. According to the IHS (2015), monthly household expenditure on food was GMD6,870 in 2015, of which over 12% were spent on livestock products. Based on a rough calculation of derived unit values from reported purchases, we estimate per capita consumption of red meat at 5.1 kg and poultry at 5.8 kg. The poultry figures reasonably approximate availability while the red meat consumption figures are nearly some 75% higher than derived availability.

One possible explanation for this could be the absence of live animal imports in our calculations given a lack of data, whether cattle or sheep. Loum (2019) notes that some 40% of animals slaughtered in The Gambia originate from outside the country. Ouattara (2013) estimated exports, of live animals from Senegal (of Senegalese and other origins) to The Gambia, of 210,600 animals in 2012. If we extrapolate the percentage of imported animals to total derived stocks (36%) based on this figure and the data in Table 1, it would suggest 2015 imports of cattle of just over 281,000 head. At an offtake rate of 11.9%, that implies 33,439 additional heads available for slaughter, or roughly 3,344 tons more meat than reported at standard Gambian live/carcass weights. This figure may yet be an underestimate if larger Sahelian breeds of animals are the ones that are imported, which have a higher meat yield. Alternatively, it is possible that imports of Senegalese and other Sahelian sheep for Tabaski are not reported and thus underestimate small ruminant meat availability as well.

Table 14: Historical trends in consumption and availability of beef, sheep and goat meat, and milk

Product	Average 1987–89	Average 1997–99	Average 2007–09
Beef	4.7	3.0	2.6
Sheep and goat meat	1.3	0.6	1.0
Dairy products	24.2	21.1	30.0

Source: IDELE-CIRAD-CA17 (2012)

Table 15: Per capita consumption and availability of selected livestock products based on the 2015 IHS, production, and trade figures

Product	% of food expenditure	Monthly HH expenditure (Dalasi)	Per capita monthly expenditure (Dalasi)	Weighted unit value of consumption (Dalasi/kg)	Implied annual HH consumption (kg)	Annual per capita consumption (kg)	National consumption (tons)	Derived availability (tons)
Red meat	4.9	337	65	153	26.5	5.1	10,716	6,126
Poultry	3.4	234	45	94	29.9	5.8	12,091	12,824

Source: Derived from IHS (2015) and FAOSTAT/UN Comtrade figures

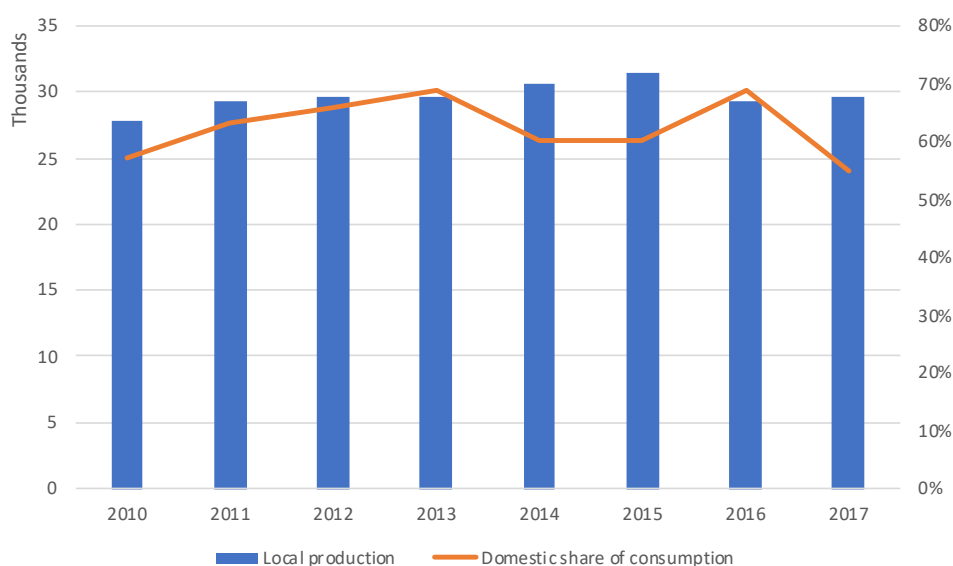
Available data on the number of milking animals and the amount of milk production is highly inconsistent. The FAO data shows that The Gambia had a total of about 54,000 lactating cattle that produced 75,869 tons of milk in 2018 (Table 16). In contrast, results from the 2016 national livestock census indicate that the country has a total of 44,385 lactating N'Dama cows producing a total of 20.3 million litres of milk annually valued at GMD1.02 million, 52% of which is consumed at home while the rest is sold (Loum 2019). Even if the number of milking cows during the census may have been lower due to death and sale of animals during the 2012–2013 CBPP outbreak, still FAO data seems to assume a higher level of productivity (3.8 litres of milk per cow per day compared to the 1.5 litres used in the census data) compared to the documented level in literature including Jaitner et al. (2003) and Touray (2016). Figure 8 shows the re-estimated milk production level in The Gambia using FAO data for the number of milking cows but assuming an average milk yield of 1.5 litres per cow per day, as was the case during the census. Local production accounts for 55–70% of the milk consumed in the country, with imports filling in the gap between domestic demand and supply.

Table 16: Number of milking cows and quantity of milk produced (tons/annum) in The Gambia

Year	Milk animals	Annual growth rate	Milk quantity produced	Annual growth rate
2010	50,871		70,586	
2011	53,500	5.2	74,250	5.19
2012	54,000	0.9	74,956	0.95
2013	54,000	0.0	74,968	0.02
2014	55,792	3.3	77,625	3.54
2015	57,503	3.1	80,051	3.13
2016	53,642	-6.7	74,598	-6.81
2017	54,175	1.0	75,356	1.02
2018	54,534	0.7	75,869	0.68

Source: FAOSTAT.

Figure 8: Domestic production of milk and market share



Source: FAOSTAT.

## 2.3 Livestock in agricultural GDP

Livestock is a key part of the agriculture sector. Table 17 presents a time series of the values of livestock GDP at current prices together with other agriculture subsectors from 2004 to 2016, as reported by The Gambia Bureau of Statistics (GBOS). The information was obtained from The Gambia data portal by the African Development Bank (AfDB) based on GBOS data. Livestock has served as an important source of growth for the agricultural sector, with the value of livestock GDP rising steadily from GMD1.44 million to GMD4.07 million, representing an average annual growth rate of 9%. This growth corresponds to a rise in the share of livestock in agriculture GDP from about 30% to 48%. The growth in value of livestock production is only matched by that in the relatively small fishing subsector, which rose from GMD0.3 million to GMD0.86 million during the period. Moreover, it has been observed that the real contribution of the livestock subsector to the GDP is underestimated due to non-inclusion of values of animal traction, draught power and manure in the calculations (Loum 2019).

Table 17: Contribution of livestock and other subsectors to agriculture GDP ('000 GMD)

Year	Livestock	Crops	Forestry	Fishing	Agriculture
2004	1,439,041	2,820,497	105,450	301,585	4,666,573
2005	1,464,112	2,952,186	110,575	300,597	4,827,471
2006	1,570,340	2,004,211	112,705	323,618	4,010,874
2007	1,848,072	1,703,464	113,745	400,611	4,065,892
2008	1,952,007	2,904,518	115,349	429,002	5,400,875
2009	1,973,037	3,755,007	113,735	449,933	6,291,713
2010	2,126,772	5,000,241	122,340	470,138	7,719,491
2011	2,262,623	3,036,319	126,585	516,030	5,941,558
2012	2,425,499	3,434,397	130,446	542,837	6,533,180
2013	2,783,805	3,425,842	137,630	591,533	6,938,809
2014	3,151,453	2,889,449	141,086	667,702	6,849,689
2015	3,600,999	3,135,638	153,505	756,471	7,646,613
2016	4,066,650	3,337,651	161,510	863,262	8,429,074
Average annual growth rate	9%	1%	4%	9%	5%

Source: African Development Bank based on GBOS data.

The agricultural sector in general is an important source of employment in The Gambia. Separate data for livestock are not available, but data from the GBOS indicated that overall, over 46% of the working population was engaged in agriculture in the most recent year available (2015/16). The 2018 Labour Force Survey further indicates that just over 9% of youth were engaged in agriculture in 2018, which includes 7% of the male workforce and just over 13% of the female workforce.

## 2.4 Gender

Like in other low- and middle-income countries (LMICs), most of the data on the livestock sector for The Gambia are gender blind, with limited data and analysis of the distinct roles and contribution of women and men. The few papers with gender disaggregated data show that, as in other sub-Saharan Africa (SSA) countries, women tend to own and manage poultry and small ruminants, while men are in charge of cattle, with only 13% of the cattle heads owned by women (Touray 2016). Distefano (2013 cited in FAO 2020) reports that women manage 52% of the sheep and 67% of the goats in the country. For the three species (poultry, sheep and goats), any intervention and policies should therefore prioritize women and address their constraints, needs, capabilities and aspirations for success. In terms of milk production, and while cattle are owned and managed mainly by men, milk is processed and sold by women, including through women's groups to achieve economy of scales. Unlike in other SSA countries, Touray (2016) reports that most milk traders in The Gambia are women, who collect milk from producers and collectors. While no study was conducted in The Gambia on this topic, the experiences of other countries show that as value chains get more organized and profitable, men become more active and, due to social norms, may start controlling income from milk sales, with possible negative effects on women's progress toward economic empowerment. Women are also active in the fattening of sheep and goats for the Tabaski festival (as reported in Saikou et al. 2017), another possible area for intervention. Women's active contribution and their ability to earn and control income from sale of livestock and livestock products is mentioned several times in the literature as a key contributor to households' food and nutrition security. Interventions in the livestock sector should therefore include a gender analysis, to ensure that the gains and costs are distributed between women and men, for equity and also effectiveness.



## 2.5 Impacts of COVID-19 on the livestock sector

COVID-19 represents an existential threat to the agricultural and livestock sectors of The Gambia. The country declared a state of emergency on 27 March 2020 in response to COVID-19 that was lifted 24 July 2020. The state of emergency closed land and air borders, imposed movement restrictions, restricted gatherings and mandated public mask wearing.<sup>3</sup>

The impacts of COVID-19 on the livestock sector are still emerging, but two particular impacts can be highlighted. First, movement restrictions and border closures led to a surge in the price of livestock, particularly sheep for the Tabaski festival that was held at the end of July 2020. Recent media reports highlight a 20–30% rise in the price of live animals originating from Senegal, which has put pressure on traders selling rams in the local markets.<sup>4</sup>

Second, and perhaps most critical from a macroeconomic standpoint, has been the drastic loss in tourism receipts on account of COVID-19, which has exacerbated earlier tourism-related shocks, in 2019–2020, caused by the bankruptcy of Thomas Cook.<sup>5</sup> Tourism represents over 20% of The Gambia's GDP. Some 150,000 Gambians are estimated to be employed by the tourism sector directly, while support to shuttered businesses remains limited.<sup>6</sup> Table 18 summarizes the growth in tourist arrivals over the past several years and the increasing reliance on tourism by The Gambia for economic growth and jobs. Kusta (2018) citing World Travel and Tourism Council data estimates the number of tourists to The Gambia will be 412,000 by 2027.<sup>7</sup> The linkages that the agricultural and livestock sectors have with the tourism sector cannot be understated. The government estimates that nearly half of tourist expenditures are comprised of food and beverages purchases (Republic of The Gambia 2018). A somewhat outdated (though still relevant) study from Mitchell and Faal (2008) estimated that about half of the food procured by the hotel and restaurant sector was locally procured, with programs in other sectors (e.g. horticulture through the 'Gambia is Good' program) increasing farm income up to five times through backward linkages with agriculture. These highlight the potential benefits that stronger linkages between livestock and tourism can bring, as well as the vulnerability of the sector to shocks such as COVID-19.

Table 18: Tourism arrivals and expenditures in The Gambia, 2014–2018

Item	2014	2015	2016	2017	2018
Passenger arrivals (people)	155,721	134,560	161,118	162,075	209,135
Tourism expenditures (million USD)	110	121	120	116	168

Source: The Gambia Bureau of Statistics (2018) and UN World Tourism Organization (<https://www.e-unwto.org/doi/abs/10.5555/unwtotfb0270010020142018201911?journalCode=unwtotfb>)

3 See <https://gm.usembassy.gov/u-s-citizen-services/covid-19-information/>

4 See <https://www.chronicle.gm/overpriced-rams-at-abattoir-a-pandemic-consequence/>

5 See <https://www.chronicle.gm/inside-gambias-tourism-where-stakeholders-expectations-are-shattered-and-government-support-not-forth-coming-amid-covid-19-pandemic/>

6 See Ibid. and [http://www.xinhuanet.com/english/2020-07/27/c\\_139244257.htm](http://www.xinhuanet.com/english/2020-07/27/c_139244257.htm)

7 See <https://medium.com/@stuart.kusta/the-gambian-tourism-opportunity-29ab0fde8755>

## 3. Overview of institutions and policies

### 3.1 Institutions and support services

#### Animal health services

The Department of Livestock Services (DLS) is responsible for veterinary services in The Gambia. It has two divisions namely, animal production and veterinary services (with two deputy director generals) partnership and information, animal health and veterinary public health. Due to its ecological characteristics, The Gambia is potentially vulnerable to many livestock diseases. The existence of wetlands, which are close to human settlements, attracts many migratory birds, some of which may be implicated in transmitting viruses. Porous borders and uncontrolled movement of people and transport at the level of the commercial farms are other sources of livestock disease transmission.

According to WTG eV (2020), animal welfare is a big challenge in The Gambia. Animals rarely have access to veterinary treatment. Livestock health is further worsened by the severe lack of veterinarians and animal health practitioners. Most of the existing practitioners are employed in the modern, coastal regions, and the para-vets that serve the rural areas lack capacities and resources. As a result, animal disease and surveillance systems in the country are minimal and logistically constrained.

Animal health service delivery is further constrained by a lack of laboratory capacity for controlling the quality of veterinary medicines. According to Touray (2016), only a few laboratories in the Economic Community of West African States (ECOWAS) region currently can acceptably control the quality of veterinary pharmaceuticals. Additional constraints include a lack of a dedicated department responsible for delivering animal health and production services to smallholder farmers and regulating the subsector.

Although the country has some regulations and laws governing animal health service delivery, there exists the use of uncontrolled substandard veterinary drugs, particularly antimicrobials (Molina-Flores et al. 2020) and significant lack of favourable policy for promotion and support of private veterinary services for the delivery of animal health care services.

According to Touray (2016), The Gambia has four Acts related to animal health, namely the Disease of Animal Act (1844), the Medicines Act (1984) and the Veterinary Council Act (2000) and the Food Safety and Quality Act (2011). The Disease of Animal Act is outdated and is not in line with the World Organisation for Animal Health (OIE's) recommended standards for modern animal health legislations. The Act does not cover the powers to delegate regulatory functions to accredited veterinarians, define the role of private veterinary practitioners and their obligations to report on epizootic or zoonotic diseases to the veterinary authorities. Furthermore, the compensation levels to livestock owners in the wake of epizootic disease outbreaks are shallow. The Medicines Act that aims to regulate the importation, manufacture, distribution and use of both human and veterinary pharmaceuticals is constrained by the lack of regulations and enforcement of veterinary drugs management. The Veterinary Council

Act aims to regulate the veterinary practice, prescribe standards of professional conduct and ethics for veterinary surgeons, paravets and auxiliaries. However, there are no regulations that have been developed to facilitate the enforcement of the Act. An Animal Health Bill, which has updated all the outdated acts and also includes animal welfare, is awaiting ratification by Cabinet and the National Assembly.

The recommended actions for improved animal health services in The Gambia will include: strengthening the capacity of veterinarians and paravets; properly training and equipping the field staff to directly communicate livestock disease data to the central disease and surveillance monitoring unit; strengthening border control mechanisms; improving the capacity and infrastructure of the existing laboratories; adopting well-defined roles for the public and private veterinary service providers in conformity with the recommended OIE sanitary mandate; providing an enabling environment to encourage the private sector to operate in rural areas through provision of incentive packages; strengthening public-private partnership (PPP) in delivery of animal health services; revisiting the outdated Acts and regulations; introducing adequate legislation to regulate the use of antimicrobials; resolving the administrative constraints that inhibit animal health delivery, and establishing a system that ensures quality control and regulation of services.

## Animal genetic resources (AGR)

The Gambia has national policies on the management of animal genetic resources. According to Ceesay et al. (2011), the policy objectives were to progressively diversify the livestock sector by broadening the number of species, breeds, products and by-products. The strategies proposed to achieve this objective are: the continuous exploitation of existing species, which have proven to be highly productive and well adapted, and the introduction of exotic species and breeds to ensure diversification of the agricultural production base and satisfy the needs of the country.

One of the key strategies that were put in place to achieve the policy was the conservation and utilization of trypanotolerant breeds of livestock – the N'Dama, Djallonke sheep and West African Dwarf goats.

To achieve this goal, a pure breeding program was implemented for N'Dama cattle, Djallonke sheep and West African Dwarf Goats. The program's most significant opportunity is the multiplication and conservation of the unique trypanotolerant traits in low-input livestock production systems that are predominant in the tsetse-infested areas of The Gambia.

According to Ceesay et al. (2011), the programs' continuous implementation is constrained by institutional weaknesses at the national and local levels. This includes weakened research and development capabilities at the International Trypanotolerance Centre (ITC) and the Animal Health and Production Services (AHPS). Other constraints include lack of human, financial and material resources; lack of organization of the actors involved in the pure and cross-breeding schemes; lack of a legal and regulatory frameworks with regards to cross-breeding (risking dilution of the N'Dama's genetic traits) and market weakness in the market structures; operations and policy formulations with regard to importing exotic breeds and animal products.

The recommended policy actions include revisiting the AGR policies, strengthening animal breeders' capacity at ITC and AHPS, reinforcing the genetic improvement programs, encouraging PPPs, and ensuring adequate expertise and market infrastructure.

## Animal nutrition

Adequate and balanced availability of feed and fodder is a prerequisite for increasing livestock production. Over the years, The Gambia has pursued a policy aimed at ensuring efficiency and balance between livestock and the fragile environment. The strategies used to achieve the policy objective were to promote active community participation in the management and use of the range resources, improve and increase access to potential grazing areas and the availability of watering facilities there.

Under the traditional land tenure system administered by district authorities, rights to cropland are inheritable and relatively secure. This arrangement does not provide much incentive to improve the grazing lands since neither individuals nor households have rights to specific parcels of grazing land (Ceesay et al. 2011). However, the traditional tenure system is strained by population growth and the expansion of cropland at the expense of grazing.

In most parts of the country, cattle tracks have been encroached on, limiting access to grazing and watering points. The lack of proper identification of the tracks and the need to expand crop production are the main contributors to encroachment. Generally, there are no instruments that define the allocation of rights to grazing and watering and controlling resources.

The government has an active role to play in making land available for feed production and grazing, establishing feed quality standards and monitoring, establishing policy instruments, regulations and incentives to define the rights to grazing and watering, controlling resources, and supporting private sector investment in animal feeding.

The government's role also includes revisiting and modifying the land tenure system in a socially acceptable manner and providing efficient management of range resources is crucial.

## Livestock research

The National Agricultural Research Institute (NARI) and the West Africa Livestock Innovation Centre (WALIC) provide agricultural research services. According to Touray (2016), the NARI is the country's primary agricultural research and development institute with a mandate to conduct applied/adaptive research on all crops, including horticultural crops, livestock, forestry, fisheries and natural resources.

The WALIC is a regional centre of excellence on livestock innovation for West Africa, built on the legacy and achievements of the ITC. It has expanded its focus from concentrating mainly on indigenous breeds of cattle, sheep, and goats that are naturally tolerant to tsetse-transmitted trypanosomiasis, to a broader regional reach in order to unlock the potential of the West African ruminant livestock subsector through innovative partnerships and knowledge-based solutions that empower stakeholders along value chains (Molina-Flores et al. 2020).

The country is predominantly on subsistence farming, where the use of proven and appropriate agricultural technologies is modicum (Saikou et al. 2017). The main constraints in livestock research include a limited capacity of NARI to conduct livestock research, poor research support, weak services, and innovations (Touray 2016). There are inadequate operational resources, and the staff with livestock sciences background and research expenditure are few.

Some of the policy and institutional actions required include strengthening research on local breeds characterization, genetic improvement, transboundary animal diseases (TADs) control, and improving animal feed; capacity development for research scientists including animal scientists; enhancing dissemination of research results on livestock products; strengthening farmer-researcher-linkage in evaluating technologies, increasing capital investment in research and promoting PPP for infrastructure investments, development of multidisciplinary systems-oriented livestock research, and updating and implementing of the FAO-supported research master plan.

## Livestock extension services

The Animal Health and Production Services (AHPS) is the arm of the Department of Agriculture responsible for the provision of technical advice on all matters related to animal health and production (Touray, 2016). It is now the Department of Livestock Services headed by a director general (DG) with two deputy director generals (DDGs) and not under the Department of Agriculture. The department has its own budget allocation. Apart from the inadequately qualified staff, the main constraints of the livestock extension services are related to the organizational structure of the AHPS. Under the current structure, the roles and responsibilities of the services vis-a-vis the regions are not clearly

defined, there is no transparent chain of command from the services to the region, and it has a limited budget to implement field-based activities. Such a structure does not allow for routine extension work and hampers extension services on improved production techniques and disease surveillance. It has a cleared structure since 2015 (DG, DDGs, Regional Livestock Directors, principals for health and production, livestock officers and livestock assistants). Units of the AHPS include veterinary epidemiology, public health, central laboratory and six regional directorates.

The responsibility for providing market information falls under The Gambia Market Information System (GAMIS), a public/private partnership framework, which is jointly managed by the Planning Services Unit of the Department of Agriculture. The unit is, however, underfunded and requires both material and financial support to function effectively.

According to the FAO (2008), in general, there is a weak support service capacity in extension, technology generation and financing. The extension services transferring disease prevention and control knowledge to producers are not strong enough (Molina-Flores et al. 2020). Besides, the extension and advisory services in crucial production subjects (e.g. feeding, biosecurity) to producers in the traditional system are inadequate.

Policy and institutional actions required to improve the efficiency of livestock extension services and delivery include reviving service delivery, improving the research-training-extension-farmer linkages, upgrading infrastructure and facilities, and carrying out capacity development and training of extension service staff and livestock value chain actors. It is also essential to increase funds allocation to extension services and improve the utilization of the available funds. Moreover, there is a great deal of urgency in consolidating the roles of extension service providers and improving partnerships between the public sector, private sector, local and international development partners, research, and educational institutions.

## Livestock marketing

The Gambia Livestock Marketing Agency, which was established in 2008, is responsible for promoting the commercialization and marketing of livestock; establishing and managing livestock markets, owning and operating abattoirs and holding grounds; creating a price determination mechanism and marketing information system; conducting training for various actors in the livestock sector; assisting in creating linkages for dealers and butchers with employment schemes; issuing permits for marketing, trading and dealing in livestock and engaging in purchase and sale of livestock.

Although the organization is striving to fulfill its mandate, several constraints limit its operation and impact. The marketing of animals at the open markets and animal transportation are reportedly still uncoordinated and subjected to variations of local norms and rules, and a basis for an abuse of discretion by those who apply them (Sabaly 2011). There is a perceived misunderstanding on its interpretation among value chain actors regarding pricing, licensing, and classification of the actors in the production and marketing segments concerning their roles, responsibilities and obligations.

Additional constraints include the absence of a strategic plan, the substandard nature of the marketing infrastructure, including slaughtering, processing and handling facilities (e.g. lack of water and cold storage facilities). Also, lack of training in meat handling, hygiene, cutting techniques and grading are serious constraints to the provision of quality meat.

It is recommended that the price control mechanism be revisited with a view to facilitating an equitable and responsive livestock market. Meat or animal inspection at the point of sale should be strengthened to avert risky health behaviour or practices. Furthermore, the issue of the role of the local government authorities needs to be clarified in terms of licensing, management of livestock markets and slaughtering facilities. Additional policy actions include establishing national standards and regulations, training value chain actors, and encouraging PPPs in the provision of infrastructure and facilities.

## 3.2 Policies

The agricultural sector is among the eight strategic priorities of the newly adopted 2018–21 National Development Plan (NDP). It is driven by a vision of a productive, resilient, competitive and market-oriented Gambian agri-food sector anchored in a robust institutional and policy framework allowing the optimization of smallholders' and private sector investments along value chains to meet the quadruple goals of (i) improved food and nutritional security, (ii) increased income and job creation, (iii) effective poverty reduction and (iv) an inclusive and sustained economic growth.

Therefore, it is crucial to build a climate-smart agri-food system to increase productivity and resilience by expanding and improving water management systems, strengthening the innovation system through smart use of digital technologies (focus on productivity resilience and competitiveness as well as research and extension), and supporting better access to, and large-scale adoption of, quality inputs and innovations, in particular improved feed and vaccines for disease control, financial innovations (access to credit, insurance etc.).

In addition, there is a need to develop the agricultural value chains further by actively involving the private sector and ensuring upstream and downstream linkages, improving food and nutrition security, income generation and job creation, market information systems, promotion of short-cycle economic businesses and fast-growing value chains.

Finally, it is essential to introduce critical structural reforms to support agriculture and trade policies. These reforms include undertaking effective input subsidy reform, developing an efficient input market with a view to correct market distortions and failures, raising the public budget for the agriculture sector, initiating land policy reform to both secure farmer's land property rights and promote private investment, building and strengthening the capacity of sector institutions through short-term technical assistance, human capital building and logistics systems development (World Bank 2019).

## 4. A review of livestock sector development programs: overview of PROGEBE

The Regional Project for Sustainable Management of Endemic Ruminant Livestock in West Africa (PROGEBE), was an eight-year project (started in 2008) that covered four countries (Gambia, Guinea, Mali and Senegal). It was funded by the African Development Bank (AfDB), the Global Environment Facility (GEF) and the governments of its member countries. The project partners were ministries and research institutes in charge of livestock in the four member countries as well as ILRI, based in Nairobi (Kenya), the Centre International de Recherche-Development sur l'Élevage en zone Subhumide (CIRDES), based in Bobo-Dioulasso (Burkina Faso) and FAO. The project regional coordination unit operated from the International Trypanotolerance Center (ITC) in The Gambia, with a National Coordination Unit in each country. The goal was to support in situ conservation of key animal genetic resources (N'Dama cattle, Djallonke sheep and the West African Dwarf goat) that possess genetic attributes of global significance.

Endemic ruminant livestock (ERL) are perceived as inferior compared to 'improved' breeds due to their lower productivity, threatening their use and loss of unique genetic traits. Yet, these livestock have multiple adaptive attributes that allow them to provide milk and meat to many households in the region. The project therefore aimed at testing models to demonstrate their economic viability and competitiveness, taking into account livestock breeding and productivity, market development and economic policies, incentives and distortions and resource use and land tenure. Lessons learned and achievements are detailed in Fall et al. (2016) and include:

- PROGEBE successfully implemented a model of sustainable management of the ERL of West Africa, defined as an integrated cluster of technical, institutional and organizational interventions. These processes have proved successful in making ERL in the region more economically attractive in the long term, thanks to improved production, productivity, marketing and conservation of ERL habitat.
- The project had a positive impact on improving the existing breeding programs in the four countries through the rehabilitation and restocking of breeding stations and the strengthening of the capacity of farmers, scientists and managers on breeding and genetics.
- Access to inputs and veterinary services was also improved, thanks to capacity development of livestock keepers, extension staff and community animal health workers, also working with the veterinary professionals.
- Better feeding and community natural resource management were also achieved through the project.
- Increased access to marketing infrastructure was achieved through investments in livestock markets, roads and milk processing units.

Overall, studies have shown that livestock keepers value ERL, and PROGEBE supported not only the conservation of these livestock but was seen as an effective model of rural development for the West African subhumid zones. Livestock keepers will continue making smart choices on breeds, or combination of breeds, to match their

biophysical and socio-economic conditions. In the subhumid zones, it is therefore crucial that development policies do not constraint farmers in their choice of herd composition, as the fate of ERL is unlikely to be at risk in the near future thanks to their large numbers.



## 5. Summary: constraints and opportunities for the livestock sector

The livestock sector in The Gambia comprises an important part of the economy, creating employment and livelihoods activities for a significant segment of society. COVID-19 has profoundly shocked the country's economy, particularly its tourism sector which provides both jobs and backward linkages to the agricultural sector, of which livestock is an increasingly important beneficiary given the growing demand for animal-source foods. An important recovery strategy will be both rebuilding those linkages but also diversifying the livestock sector in a manner that is more resilient to future economic shocks.

One of the critical constraints in the Gambian livestock sector, as noted by the PROGEBE project, is the fragmentation of local value chains, with marketing by producers not following market signals but the livelihoods needs of farmers to meet family or social obligations. This behaviour, while following a rational livelihoods logic, makes it difficult to create robust value chains, particularly limiting investments by downstream actors in needed infrastructure (processing, feed, hygiene, packaging, animal health) to create the conditions necessary for adding value to the sector. While past studies (Touray 2016; Loum 2019) have noted the low productivity of the N'Dama traditional breed, there is a potential niche market that exists for such indigenous breeds should marketing constraints be overcome (IDELE-CIRAD-CA17 2012). A related constraint to those on the marketing side include credit constraints, with financial products for producers and small-scale enterprises often not readily available or accessible at profitable levels of interest.

While we have noted the potential for the livestock sector to meet increased demand for meat products from the domestic tourism sector, opportunities also exist in meeting demand for regional markets in West and North Africa that has been historically met from European, American or Brazilian sources. There is growing interest amongst the donor community and national governments in the Sahel to find ways to add value to local production through the export of meat products rather than traditional live animals. These trends have important implications on the volumes of Sahelian animals that arrive in The Gambia and how new imports of Sahelian meat products may compete with local production, as well as potential impacts on local employment. On the other hand, developing a local niche market through indigenous breeds coupled with The Gambia's beneficial location for regional trade may provide unique value-adding prospects in the beef sector. Likewise, in poultry, finding ways to improve competitiveness against imports and leveraging the growing interest of youth and women in the sector will be crucial. Quantifying these opportunities and scenarios for success will be an important contribution of The Gambia livestock master plan.

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