

Commercialization of Livestock through Value Chain Approach by Smallholder Farmers in the Gambia

¹Saikou E. Sanyang, ²Lamin Jobe and ³Mustapha Drammeh

¹Action Aid International the Gambia, Niamina Kudang Office, Central River Region of The Gambia

²Ministry of Finance, Economic Planning and Evaluation Unit, Quadrangle Banjul, the Gambia

³Local Consultant, Brikama Town, West Coast Region of the Gambia

Abstract: The livestock sub-sector accounted for about 10% to the national GDP and its share of agricultural GDP was estimated at 31%. The agricultural sector provides employment for about 75% of the labor force, increase income; reduce poverty and the attainment of food and nutritional security of its inhabitants. The predominant livestock production system in the Gambia is the low input subsistence system of management as a result the government decides to shift the gear from subsistence to commercialization focusing on the value-chain system. One objective of this study is to examine the production status and marketing of livestock as well as identifying challenges and possible solutions. This study was conducted in the 7 administrative regions of the Gambia targeting different actors along the supply chain. The sample size of this research finding was 240 questionnaires which were administered in 16 lumos (local markets) and 4 abattoirs. Based on research findings we conclude that, heavily investment in livestock sub-sector in terms of breeding and well managed animal fattening schemes can facilitate a breakthrough in the livestock-sub-sector and livestock production should be seen as business and wealth creation opportunity thus requiring wider sensitization and advocacy campaigns at the level of the producers. Thus, the team recommends commitment to consultative, stakeholder engagement in the policy development process to ensure transparency of the key strategies and policies and consideration of the practicalities of implementing the designed policies.

Key words: Commercialization • Livestock • Value chain approach • Smallholder farmer • Gambia

INTRODUCTION

Agriculture is one of the main drivers of economic and sustainable growth Gambia's economy, which contributes about 30.5% to GDP. The livestock sub-sector accounted for about 10% to the national GDP. The agricultural sector provides employment for about 75% of the labor force. Livestock manure contributes to agricultural production and productivity as well as soil conservation; crop residues provide a large share of livestock feed in the dry season at the same time valuable organic matter to the soil [1]. The predominant livestock production system in the Gambia is the low input subsistence system. Over the years, the traditional low input system is being complemented with improved production systems in line with agriculture and natural resource policy which has sharpened the focus on

transformation of the sector from a traditionally low output, subsistence sector to a modern market led sector with efficient value chains, diversified production base and effective decentralized structures [2]. Livestock and poultry are relatively easy to own by resource poor small holder farmers. Their small size, early maturity and low capital investment per head suits them particularly to the needs of families with limited resources thus making them key livelihood assets for those families as well as source of income to attain household food security [3]. The policy objectives for the livestock sub-sector include diversification of the sub-sector by broadening the number of species, variety of breed and by-product; improved traditional production system, enhancing food security and self-sufficiency goals. It also includes the development of the sub-sector to enhance its ability to generate foreign earnings and to create employment

opportunities to improve on livelihood ensuring efficiency and balance between livestock numbers and the environment [2].

Strategies to achieve the above objectives include the continued exploitation of highly productive and adapted existing species and the introduction of exotic breeds to ensure diversification; improvement of the traditional production systems through the promotion of fattening schemes, artificial insemination programmes and introduction of appropriate livestock production schemes [4]. Other strategies include the promotion of regional livestock trade and encouraging the participation of financial institutions in the development of the sub-sector; involvement of livestock professionals in private sector activities related to the development of the industry and the improvement of linkages between the traditional and modern sectors to enhance integration. The need for well-manage and functioning of livestock marketing support to institution and governments in order to create an efficient livestock marketing systemsto be propelled through research findings as way of documenting such information through empirical evidence [4, 5]. The primary production objectives of - production and marketing of livestock farming systems is the generation of income, savings, security, asset protection, manure and milk as well meat production while poultry is raised for cash and household consumption [6]. Pig rearing is restricted to non-Muslims, primarily important because it contributes to household food security and is also a source of income for poor producers. Household cash income is generated through the sale of live cattle, small ruminants, pigs, poultry and milk. Endemic ruminant livestock's contribution to household income was estimated at 6.5%. Milk, draught power and manure were also estimated to contribute 35.1, 12.9 and 8.9%, respectively. Non-cash income is derived from milk consumed on-farm, small ruminants, chicken and pigs slaughtered and consumed on-farm, manure applied to crop fields and draught power [7].

Literature Review: Livestock perform multiple functions in the Gambian economy by providing food, input for crop production and soil fertility management, cash income as well as in promoting saving, fuel, social functions and employment. Therefore, livestock can serve as a vehicle for improving food and nutritional security of small holder farmers, while contributing significantly to agricultural production and rural development initiatives [8]. Although live animals makes a considerable contribution to the economy in terms of export earnings, a great

number of the country's ruminants have been traditionally sold at local markets domestically and from neighbouring countries. It has long been clearly proven that, "poor livestock marketing and inadequate modern infrastructure facilities will be a prominent bottle-neck in the future to a reasonable number of livestock sustainably in the Gambia. Observers have noted that the dominance of small markets and the power of buyers in the period of drought spelt results to imperfect competition [9]. The marketing of live animals and retailing of meat are also dominated by individual businesses operating on a small scale. The Gambia livestock marketing agency supports the chain actors by promoting the commercialization of cattle and small ruminants through the provision infrastructure, facilities and promoting activities such as livestock shows [7]. In this regard, it provides training for butchers and dealers in partnership with service providers. It is also expected to establish a price determination mechanism for live animals and meat, provide market information and manage the livestock marketing development fund. Priceincrement and inflation have been an issue and will continue to be paramount issue that are dramatically reflection on the price competitiveness of many markets tied to the livestock value chain [10]. The market transaction is such that livestock issold to cattleprivate dealers and traders buy cattle directly from the producers at farm level or in designated primary markets or weekly lumos and transport them to the terminal markets. The cattle are then sold to individual customers on request or on loan basis out to butchers who slaughter the animals at the abattoirs and the meat transported to their butcher stall for sale to other butchers or consumers [11]. The livestock enterprises operate in a high growth market with much commercially oriented value chain actors to generate robust and regular cash flows that should support low-risk, viable and sustainable commercial financing if the operations and transactional relationships amongst their respective value chain actors are efficient and are properly understood. In order to appropriately finance the livestock value chain actors and thus minimize and/or plug the gaps mentioned above, it is imperative for the commercial bank to properly understand the transactional relationships and volume of business of the various actors in this value chain where actors are creditworthy and thus capable of supporting commercial financing in order for the bank to properly target its credit for the sector [11]. The understanding of the transactional relationships should also provide the commercial or micro-finance banks a better understanding of the risk profiles and magnitude at each transactional point in the value

chain and how to best mitigate issues. The meat value chain in particular generates daily cash inflows of relatively reasonable amounts for the majority of its actors (producers, traders, transporters, processors, wholesalers and retailers [12]. Buyers and sellers in the periodic markets of these centres established the details of the rural-urban linkages between farm households and the market centres. The choice or preference of market outlets is also heavily influenced by proximity to market centres, with itinerant village traders gaining importance as market outlets to scale-up serving as a spring board to boost smallholder production. Itinerant traders are the main link between smallholder producers and consumers in larger urban centres, largely through informal market chains [12, 13]. In the process of enhancing smallholder competitiveness to enter in the market, market accessibility and establishment of efficient and effective value chains' can serve as catalysts to livestock production and marketing for economic growth and development [14]. For each type of animal, market monitors are expected to collect price information from different buyers, while they obtain information on the total volume of exchanges from the relevant market authorities [15]. The industry might want to consider approaches to improving buyer-seller relationships, including holding reverse trade fairs which would involve inviting interested and potential buyers to the country to meet with and begin developing productive business relationships [16, 17].

Research Methodology: The study developed a mixed method approach with a stratified sampling model. This method was used to avoid sampling bias thus availing the relevant stakeholders 'equal chance to be part of the sample. The livestock producers association had necessitated an in-depth interview with some of the association members. Furthermore given the nature of the study, respondents from the primary, secondary/terminal markets were targeted for the quantitative data collection as part of the survey. The sample size of this research finding was 240 questionnaires which were administered in 16 local markets and 4 abattoirs. Overall 174 questionnaires were administered by; producers, middlemen and dealers with 58 questionnaires for each category and in addition, 57 questionnaires were administered for butchers/afra sellers. This was followed by focus group discussion in each of the four livestock markets namely; Banjul, Abuko, Brikama and Jeswang. Therefore, the study ends with the data analysis and interpretation of the data in addition to data gathered from focus group discussion and desk reviews to stem out the bottle-necks of livestock marketing in the Gambia.

RESULTS AND DISCUSSION

Socio-Economic Profile of Respondents: In social research it is very important to establish the socio-economic profiles of the respondents as an indicator to determine the potentiality of livestock production and marketing in each of the local government areas. The socio-economic profiles include nationality, gender equity, education and business operations. The result in Table 1 shows the nationality of respondents and out of the total respondents, 85.1% are Gambians and 14.3% are Senegalese nationals. Only close to 1% are Mauritians, alluding that production and marketing is predominantly overshadowed by Gambian livestock entrepreneurs. Notably, given the percentage of Senegalese representation, one can attest to the fact that they are playing a significant role in supply and sales of livestock in The Gambia. This can be attributed to the proximity of the *lumas* (weekly markets) to Senegal as most of the settlements are close to the borders.

Ultimately, the production and marketing of livestock in the Gambia is mainly the domain of male. According to empirical evidence large ruminants are mainly owned by men while small ruminants and poultry are mainly owned and managed by women to supplement household nutrition and income. Animals are kept under traditional conditions with the exception of the fattening of sheep and goats by women for the *Tabaski* festival when animals are selected, penned and hand fed at *libodum* before being sold to a premium market for sacrificial obligations. The role of women in livestock market value chain most especially in the area of milk distribution to final consumers is most critical in the commercialization of livestock and its product [17]. As already pointed out earlier support is a pre-requisite to enable women smallholders to share the benefits of commercial production, not only as producers but also as decision-makers. It is necessary to take steps to ensure that women are adequately represented as members in the leadership of producer organizations and have equal opportunities to attend training opportunities and have access to advisory and financial services. Pricing and market information system is very crucial in any business set-up to determine the growth and sustainability of the business. Price is usually pegged on demand and supply law which is depending on the seasonality, religious and socio-cultural festivals. Price setting is a daunting factor for any enterprise because different markets have different prices of livestock species [18]. This survey exercise deems it necessary to verify the prices of different species of livestock. The result in Table 2, the average

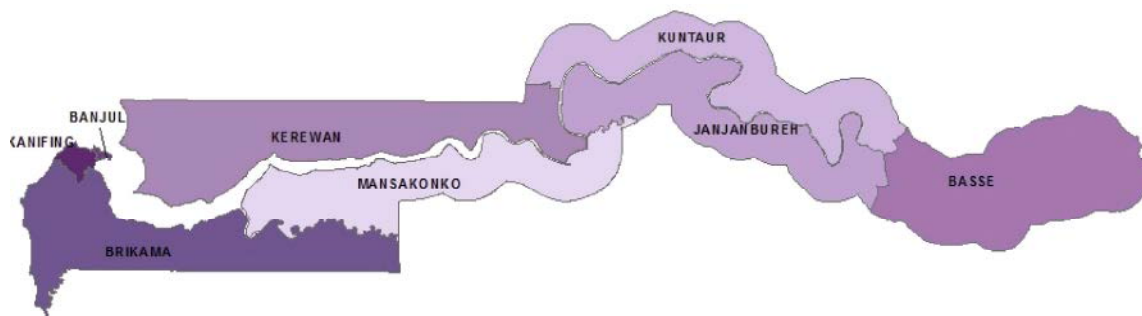


Fig. 1: Map of The Gambia showing the research areas by administrative region.

Source: population and housing census report, 2013.

Table 1: Nationality of respondents.

Local Government Area (LGA)	Nationality of Respondent		
	Gambian	Senegalese	Mauritanian
Banjul		66.7	33.3
Kanifing	90.0	10.0	
Brikama	77.8	22.2	
Mansakonko	90.9	9.1	
Kerewan	78.4	21.6	
Kuntaur	93.9	6.1	
Janjangbureh	85.7	14.3	
Basse	89.2	10.8	
Total	85.1	14.3	.6

Table 2: Average price of animals by species.

Prices of animals by breeds	Price of average adult male (Dalasi)	Price of average adult female (Dalasi)
N'Dama	19,419.61	13,278.43
Zebu	19,385.37	12,833.78
Dwarf Goat	3,563.08	3,169.11
Sahelian Goat	3,412.95	2,931.36
D'jalonke	6,350.00	3,366.67
Sahelian sheep	4,640.74	3,169.23
Landrace	4,900.00	3,100.00

price for adult male Zebu is D19,385.37 while that of the adult male goat falls within the price range of D3000 – D3,600 with non-significant difference. However, on an average basis there is a significant difference between male goats and female goats as compared to other species. The D’jalonke which is the Gambian breed and preferred by consumers usually purchased at an average price of D6,350.00 while the average price for female sheep is D3,366.00. Importantly, pig producers have better average price than small ruminant producers considering the price margin. The livelihood of many actors in the rural communities is highly dependent on the income from accrued from livestock.

The availability of reliable and timely livestock market information is vital to livestock marketing across the regions helping livestock producers and other actors to

make sound marketing decisions. Market information about prices of livestock is vital thus livestock farmers and other actors would need other types of market information to sell their live animals at the market [19]. In order to know which price to accept, farmers must obtain information from outside their catchment areas. Ultimately, farmers must try to get as much information as possible about livestock prices. This pathway will become much easier provided farmers work through livestock farmers association at national, regional and districts level. The best way to get accurate and up-to-date of price is through telephone calls to traders at each market across the region. For this reason it is important for the groups to have easy access to mobile phones to gather market information from traders when they have live animals for sale. The information will help the farmers to decide where to send their animals for or wait until price improves at different markets i.e. price speculation. The high cost of travelling to distant places makes it impossible for livestock farmers to compare the prices being offered by traders in different market places. Moreover, with the availability of market information through SMS can pay dividend as this will improve livestock marketing and price stabilization and competition among livestock actors would increase [20].

Livestock pricing and Price Determinants: There are no fixed prices in a real market situation and animals are sold individually at prices directly negotiated between buyers and sellers. In the Gambia, from the results in Table 3 respondents mentioned that, livestock are generally traded by ‘eye-ball’ pricing of 42.8% and weighing livestock is uncommon in the respective local government areas except Kerewan where respondents mentioned price discovery of 32%. In the case of price discovery is the process of buyers and sellers arriving at a transaction price for a given quality and quantity of a product at a

Table 3: Pricing mechanism would attract better prices for producers/dealers?

Local Government Area (LGA)	Pricing mechanisms that attract better prices for producers/dealers?			
	Eye-ball pricing	Weighing pricing	Price discovery	Price determination
Banjul	100.0%			
Kanifing	80.0%			20.0%
Brikama	77.8%	11.1%		11.1%
Mansakonko	90.9%	9.1%		
Kerewan	5.4%	8.1%	83.8%	2.7%
Kuntaur	33.3%	27.3%	27.3%	12.1%
Janjangbureh	100.0%			
Basse	28.6%	8.6%	34.3%	28.6%
Total	42.8%	11.2%	34.2%	11.8

Table 4: Which market approach will be ideal for livestock marketing?

Local Government Area (LGA)	Which market approach will be ideal for livestock marketing?			
	Direct marketing (producer to consumers)	Indirect marketing (producer-wholesalers- Retailers-consumers)	Collective/ cooperative marketing (Producers coming together)	Individual marketing (producers selling without middle men)
Banjul	33.3%	66.7%		
Kanifing	30.0%	50.0%	20.0%	
Brikama	22.2%	55.6%		22.2%
Mansakonko	81.8%			18.2%
Kerewan	13.5%	83.8%		2.7%
Kuntaur	9.4%	56.3%	18.8%	15.6%
Janjangbureh	84.6%		7.7%	7.7%
Basse	69.4%	19.4%		11.1%
Total	39.1%	45.0%	6.0%	9.9

given time and place and price determination is the interaction of the broad forces of supply and demand that determine the market price level. The price discovery system has many interrelated attributes such as size of the market, market behaviour, market information and price reporting and risk management [8]. Importantly for producers to harvest the opportunities of price discovery to improve on their income thus Gambia livestock marketing agency has a critical role to play where marketing costs can be reduced by disseminating livestock market information to facilitate price discovery and improved market organization and operation. However, as in the case of Gambia the study reveals that, there is no readily apparent scope for producer organizations in the current market structure. Importantly, this is where GLMA should build cohesive relationship and closely work hand in glove with national livestock owners association to improve on livestock marketing in The Gambia.

Marketing of livestock is a problem and will continue if proper livestock marketing strategies are not developed. The result in Table 4 showed that, 45% of the respondents indicate indirect marketing while 39.1% mentioned direct marketing approach. Furthermore, 6% of the respondents indicate cooperative marketing while

9.9% mentioned individual marketing. The implications of direct marketing would reduce if not eliminate the functions of middle-men in a prevailing market situation while for indirect marketing would make the consumer to take the burden of extra cost on live animal to be purchased. For this method, the middle-man would seize the opportunity to make better price on each animal taken from the producers. Hence, to avoid this kind of situation or scenario in a market place, the premise of cooperative marketing should be encouraged at farmer level with the help of Gambia livestock marketing agency and national livestock owners association. Co-operatives would have the potential of improving market efficiency while reducing marketing costs. For example, a village livestock marketing co-operative can co-ordinate the production schedules of small farmers, so that sufficient animals would reach market on time as it will reduce the unit cost. Co-operatives can also be used among buyers, by creating greater bargaining power, distribute credit, or subsidized inputs among producers[20].

Generally standard infrastructure facilities are totally absent in most of the primary and secondary markets according to the results. The result presented in Table 5 indicated that, almost all the respondents from the administrative regions indicate mixed market as their

Table 5: Specialized market infrastructure for sale of animals

Local Government Area (LGA)	Which specialized market infrastructure do you sell your animals?				
	Cattle market	Goat market	Sheep market	Mixed market	Others
Banjul				100.0%	
Kanifing	10.0%			70.0%	20.0%
Brikama				100.0%	
Mansakonko				100.0%	
Kerewan			2.7%	94.6%	2.7%
Kuntaur	18.8%			81.3%	
Janjangbureh				100.0%	
Basse	29.4%	5.9%	5.9%	55.9%	2.9%
Total	11.3%	1.3%	2.0%	82.7%	2.7%

central point of selling their livestock representing 82.7%. According to [22] on livestock marketing in Uganda, market areas are usually organized into sections for different categories of livestock species. However, this is not the situation on the ground as in the case of the Gambia. Therefore, Gambia Livestock Marketing Agency in collaboration with other relevant stakeholders should come up with block design mechanism of livestock categories such as cattle, sheep and goat even within the same confinements of the market. Further, this will help the customers to know which of the livestock markets they should directly go to when they want to buy livestock of their choice.

CONCLUSION AND RECOMMENDATIONS

The Gambia's agricultural sector is predominantly on subsistence farming where the use of proven and appropriate agricultural technologies is modicum. Primarily, for the country to have a vibrant and strong economic capacity there is need for heavy capital investment in research and development. Ultimately, the booming of the economic would entirely depend on crop and livestock production and marketing with more emphasis on livestock production and promotion across the administrative regions of the Gambia. This study attaches great attention and importance of production and marketing of livestock in Gambia as in the case of other countries like Ethiopia, Kenya and Tanzania where similar studies have been conducted by different researchers. The activities of the various livestock value chains - production, processing, packaging, marketing and services provide diversified livelihood opportunities. They are among the principal contributors to the welfare of the population; providing proteins and income thus contributing significantly to meet the food and nutritional security requirements of Gambians as enshrined in the Agricultural and Natural Resource policy [2] and other related policy document. On marketing, animals are usually

sold to substitute household food requirements; implying that the animals are sold in their present condition and the price is determined by the interaction between the farmer and buyers. The traders in turn sell these animals to butchers or keep them until prices are more favourable. Nonetheless, middlemen according to information gathered from different markets in the country shows that their involvement in the marketing of livestock reduces the buying power of the customers, price increases and above all they circulate wrong information about market prices. Therefore, linking smallholders to markets is widely viewed as a milestone towards promoting economic growth and poverty reduction, but rarely developing country governments have access to reliable data and statistics to design effective investments which promote a market-driven development of the agricultural sector. In conclusion, linking all the actors to markets along the value chain focusing on production, processing, distribution and marketing with the supported of well design policy frame work can go a long way in improving production and marketing of livestock in a sustainable manner. Thus, recommending consultative engagement of relevant stakeholders in policy development process to ensure transparency of the key plan, programmes, policies and consideration of the practicalities of implementing the designed policies.

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