Livestock sector correlation with other economic activities:The impact of productivity using green finance to increase National Gross Domestic Product

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Abstract

The economy of every country relies on the participation of different economic activities. The size and development of the various economic activities make them vary in size and participation to contribute to the national economy (national cake). In developing countries, the livestock sector does have a share in contributing to GDP (gross domestic product) compared with other economic sectors. This sector in Tanzania is more significant in size and development than other East African countries; thus, its contribution to the economy (GDP) is uncertain in conjuction with other available alternative existing energies. This paper investigates the livestock sector's contribution to the economy with other African countries and relates to other economic activities. It maintains that such a comparison not only increases the performance of the livestock sector but also strengthens its relationship with other economic activities in order to increase its economic contribution. Our study shows that improved relations and linkages between the livestock sector and other economic sectors are essential to improving the performance of the sectors, investments, and, ultimately, improving its contribution to the economy. Based on the research and data collected from livestock sectors, the coefficient of correlation was made to relate to other economic activities to see their cooperation and determine the potential actions to be used innovatively.

Keywords: Livestock sector; National economy; GDP (gross domestic product); Economic activities; African Countries; Investments.

Introduction

In order to guarantee the availability of food safety and nutrition, the livestock sector ensures the production of livestock products in Tanzania for livestock keepers, stakeholders, and consumers nationally at large(ASDS II, 2016). Through the Ministry of Livestock and Fisheries Development, the Government of Tanzania planned to develop the livestock sector by implementing the Tanzania development vision 2025 (Upton, 2004). To achieve success in this vision, the government has implemented some livestock development initiatives, such as the Five National Development Plan (2015-2020), the Agricultural Sector Development Program (ASDP II), the 2015 Livestock Modernization Initiatives (TLMI), the 2020-2025 Tanzania Livestock Master Plan (TLMP)(URT- MLF and ILRI, 2018).

The statistical analysis report published in 2019 indicates 32.2 million cattle and 20 million goats, and 5.5 million pigs. Some household stocks include pigs, poultry, and a modern version of improved poultry of 2 million, 38.5 million, and 40.6 million. While being the second nation to have a significant livestock market in Africa, still 90% of all stocks remain indigenous. Also, the annual consumption estimated for beef is 12 kg, 75 eggs, and 45 litres of milk consumed below the International Food Organization average, which indicates that a person must consume 200 litres of milk per year and 50 kg of beef and 300 eggs. Cattle grow slowly, and it requires around seven years to reach market weight, producing only about 2 litres of milk in one day (United Republic of Tanzania (URT), 2019).

The technological advancement in various sectors of the economy has made it possible for some developed and developing countries to increase productivity to their products by taking advantage of the opportunities available (Wilson, 2018). It is one way or another that some communities have improved from and increased their benefits from value additions resulting from the interaction of sectors of the economy(URTb, 2013). Extension of the current literature indicates that changes in domestic and international market demand that all livestock sectors, either medium or large, should meet the market's requirements. Therefore, small and medium livestock sectors found themselves scuffled when it came to finding time, quantity, and quality to meet established standards and continue to experience financial problems (Kavya & Shijin, 2020). The other challenge they encounter is intermediaries' success occupying most value chain functions (URT, 2017). They do not have up-to-date information on the market; most of them are not worthy of the facts. Due to small producers' level of production, incentives such as supplies, credit facilities, and other extension services other than large producers are taken into account. Graham's studies (2011) recalls various stakeholders' roles through its platforms that included smallholder farmers as farmers in Peru, Bolivia, and Ecuador. The design of their systems included technologies and their ties to managing and operating the market (Thiele et al., 2011).

Market functions in terms of sales and balance sheet of total revenue require an appropriate management and monitoring method(Unido, 2007). The entire livestock value chain requires a wide range of knowledge and diverse stakeholders and other economic sectors' coordination. (Agwanda & Amani, 2014). This involves investment in education for all individuals, extension officers, marketing specialists, government officials to uphold existing standards and to create flexible policies that will enable participants to make the necessary progress. The emphasis is to allow for the harmonization of all other processes in a single unit. The linking system method, including all procedures, approaches to actual evaluation with expected outcomes, requires arrangements, and multiple entities to operate as a unit(The United Republic of Tanzania, 2019).

Many of the factors that hinder planned activities with expected outcomes, as studied by many researchers, included interconnection strategies that, in one way or another, had no expected outcome. Therefore, this study contributes to increasing the livestock sector's performance to increase its contribution to national income and national productivity by capturing international markets by producing livestock products that meet international standards(Brenes et al., 2017).

By involving the various approaches to calculating GDP, such as the Value Added Approach (Production Approach), which states that $\gamma=\rho\times\theta$ where y denote GDP, p denote overall price, and q denotes the amount of production. Another approach is an expenditure approach in which $\gamma=C+I+G+NX$ where C denotes consumption, Y denote GDP, I denote capital formation, G represents Government Expenditure, and XY denote net export, and the final approach is the Income Approach, which states that $\gamma=(\gamma2-y1)/y1\times100\%$, where Y denote the growth rate, y1 represent the last year GDP, y2 is the current year GDP(Kwong, 2016). These approaches help to measure the economy's performance by involving all sectors of the economy (Economic Activity) over a given period. The selection of the Constant and Current price method was used to help measure the growth (advancement and improvement) of various sectors of the economy (economic activities), including the well-being of the general population and the changes that can be noticed in the price of various commodities from one time period to another (Mirle, 2012).

As one of the methods to help calculate GDP, Pearson's correlation coefficient correlates various economic activities in Tanzania. The selection of this method was made to link the contribution of the livestock sector in the economy compared to other economic activities. Several conclusions in the livestock sector show a gap in the sector's contribution to the economy compared to other economic activities despite the existence of considerable livestock resources in East Africa and Africa in general.

The livestock sector in Tanzania also includes dairy products as a sector that affects people's livelihoods in terms of income and also as a source of food nutrients (FAO, 2019). Some of the obstacles that dairy farmers face in case their value chain includes little producer participation with the rest of the market operations, their localities are not conducive, production is low, lack of inputs, therefore those factors lead to a high cost of operations (Bingi & Tondel, 2015). To solve these challenges, the intervention of collaborating economic activities will help provide reliable statistical market information, so that there will be an increase in production and revenue for dairy farmers(Katjiuongua & Nelgen, 2014). In order to understand the solution, one project presented in East Africa in 2008 for the first phase, and another segment was carried out in 2013-2018. The project called EADD (East Africa Dairy Development) was mainly carried out in Uganda, Kenya, and Rwanda. It is a centre for associating dairy farmers with the rest of the market operations. The project included multiple approaches through contracts and negotiations in which dairy farmers are on one side and other market participants on the other side (Rao et al., 2016). There are several designated research programs related to the livestock sector through the National Livestock Research Agenda, working under the Ministry of Livestock and Fisheries Development (MLFD). The program is expected to clarify current trends in the livestock sector, changes in climate conditions, the balance between demand and supply of livestock production, demand, and supply with the growing population. MLFD works with more than eighteen (18) research institutions, both local and international institutions.

Some of the problems faced by livestock research institutions in the livestock sector include the lack of funds to invest and carry out various livestock research developments (URTb, 2013), tools and facilities needed to conduct research, inadequacies of diverse expertise, including personnel and human resources managers to oversee, manage and conduct various research studies(United Republic of Tanzania (URT), 2019).

Objectives and Analytical Framework

The objective of this study is to understand the relationship between economic activities in terms of their contribution to the national economy. Second, the other objective is to understand the linkages between stakeholders, and other sectors' operations.The last objective is to understand the cooperation of the various stakeholders through the livestock value chain.

Materials

Based on the literature review, a range of data and information collected from various sources are analyzed, including the International Food Organization (FAO), MLFD, reports from various livestock stakeholders, and review of various literature works. The most important aspect of connection links with other economic activities in the livestock value chain is divided into seven parts. Further information and data in this article were obtained from the Tanzanian National Bureau of Statistics and the Bank of Tanzania and different websites documents. All information and data were verified for linkages and their application in the research paper.

Literature Review

There are several States to investigate the expression of links in which two or more parties join designated intentions to fulfil the party's needs. They exchange information and work as a unit in a specific direction. The importance of this is that it helps various sectors contribute, evaluate, and utilize effectively by applying the results to progress from one level to another (Siegel et al., 2004).

Predetermined terms of the agreement have been one of the best choices and alternatives for facilitating linkages in most developing and developed countries, as one of the studies conducted in Armenia (Shanoyan et al., 2016). In their vegetable industry studies, they find that tempting structures and effective enforcement are the best methods for developing effective chain relationships and linkages. Farmers in Andes is an example that has been linked through multi-stakeholder platforms. These platforms link small farmers (agro-processors) with other market operations (Thiele et al., 2011). Dairy hubs in East Africa, mainly in Uganda, Rwanda, and Kenya, link processors and dairy farmers. Their everyday participation and involvement increased their income (revenue) through the designed program called East African Dairy Development Project (EADD), and they were directly linked to larger dairy buyers (Rao et al., 2016). Farmers in sub-Saharan countries and, in most parts, Ghana have had significant issues with contractual arrangements and certification issues. As a result, the importance of different business practices was used to link large-scale agro-business people to small-scale farmers. The strong foundation was to build trust and harmonize the expected outcome to improve business between the partners. (Kleemann, 2016).

Increasing the international market from different sectors of the economy makes exchanging information systems useful (Bahlmann & Spiller, 2009). Bahlmann& Spiller's (2009) study showed that inter-organizational systems' use and sharing support different flows of data and knowledge from one organization to another and are exchanged among members along the value chain. The previous research in Germany has shown that there has been a rise in cost-related, safety, and quality issues in the supply chain so that they understand that inter-organizational processes must establish different business structures, which strengthen our linkages and satisfy their demand.

Processing various systems to work together requires implementing multiple system modules and following up on all regularities. The adoption of any selected system is needed to enhance/improve an object's functions, such as the vehicle with a specific integrated mechanism. Singh and Chaudhary's selection of the Watt linkage model (2020) was used to linking two materials, namely AISI 4142 steel and carbon fiber reinforced polymer (Singh & Chaudhary, 2020).

Patel et al (2009), in their study of correlated values and other agents between patients, managed to correlate the values of vancomycin (MIC values), daptomycin, teicoplanin, and linezolid. Using the E test method, they found that the MIC values were associated with the other agents listed above (Patel et al., 2009). The study established a positive meaning between the values of both agents when patients affected by their blood circulation were examined as a result of MRSA.

Job opportunities worldwide are the most challenging for adjusting to the skills that people with job responsibilities possess. The study of Bhattacharya, Bhandari, and Bairagya (2020) on skills and employment linking in India was explicitly done to recognize India's different economic activities that can produce various skills to generate more employment. They adopted the Input-Output method to link the skills and employment generated from various sectors of the economy. They contributed to reviewing different skills related to general education, technical education, and vocational education.They managed to reach different four employment skills based on a low-to-high-skilled job. The assessment of the effects of the links between employment and skills classified the economy's different sectors. Changes in employment organizations are expected to involve various economic activities (Bhattacharya et al., 2020).

Theoretical Framework

This paper adapts current and constant pricing methods, and these methods were used byBerde (1980). The model adjusts the computation of various macroeconomic (Berde, 1980) and the succession of time from one time period to another, and with this model, it can be predicted what will happen in the next century, involving many economic activities. The research of previous understandings of macroeconomic progression is based on current progressions and results, including previous prices to understand the current prices. The reflections on the progress of the different economic activities are based on their relationships and interactions. The model's context is based on dynamic economic growth and development.

The growing economy of the United Republic of Tanzania is developing rapidly with a difference in its increasing population(Ministry of Agriculture and Food Security, 2002), which is growing at an average of 6.9% annually (Nyoni, 2013). Information and communication, financial and mining industries are the leading sectors to contribute to economic development.

The agricultural sector employs a larger population in which over 70 % of the total population depends on agriculture (Julle.A., 1987), and the addition of value contributes 23% among other sectors of the economy. The sector grows at an average of 2.5% (Tanzanian Policy Document, 2010). Advanced methods must be used to change the economy and make efficient and effective (Ministry of Livestock and Fisheries Development, 2015).

The livestock sector in Tanzania generated 22% of household income, and most of their income comes from various livestock economic activities. Their sales contribute 25% in the agricultural sales activities. Increasing demand for livestock products indicates the benefit for livestock farmers to increase their income and contribute to the GDP growth (Thamaria, 2017).

Several issues faced by the livestock sector also include the proper records management, registration, maintaining statistics of livestock production, medicines, and other incorporation (Profile, 2020). Other reported challenges include the existence of suppliers on informal channels, the implementation of policies and their applicability, the expertise and innovations of the experts required, the establishment of links between different stakeholders, the implementation of the appropriate technologies and ideas to increase the productivity and operation of various marketing systems (Market & Data, 2011).

The production and maintenance of livestock in most sub-Saharan countries, such as Tanzania, is based on the traditional system (Konga, 2014). Changes in consumer tastes and preferences are made to increase the livestock resources' productivity, which is left unused after the slaughtering. This sector depends heavily on interaction with other sectors of the economy. It largely depends on land use and resources (Ministry of Livestock and Fisheries

Development, 2015). The yields are of low quality, hence low productivity, in order to preserve the health of the stocks. Statistics indicate that population growth in both humans and livelihoods has contributed to increased land conflicts. Improving infrastructure through the livestock value chain will help to reach the foreign markets to deliver high-quality livestock. Given the existence of different projects, there are still faults with the implementation of the economic aspects, the various social factors of the economic aspects have been endowed(Tyler, 1983).

Statistical Description

The livestock sector in developing countries has contributed to an increase in livestock farmers' income, an increase in GDP, and other economic activities (The United Republic of Tanzania, 2019). The combination of different livestock activities is crucial for predicting livestock sector outcomes in terms of production, value chain, and all marketing activities (see Figure1). Several distinctions involved in the livestock sector will help support the livestock's increased contribution to the economy.

The agricultural and livestock sectors are important sectors that are essential for contributing to global food supply and environmental protection (Market & Data, 2011). The increase of the population worldwide led to an increase in demand for livestock products (By et al., 2011), which resulted in industrial development.

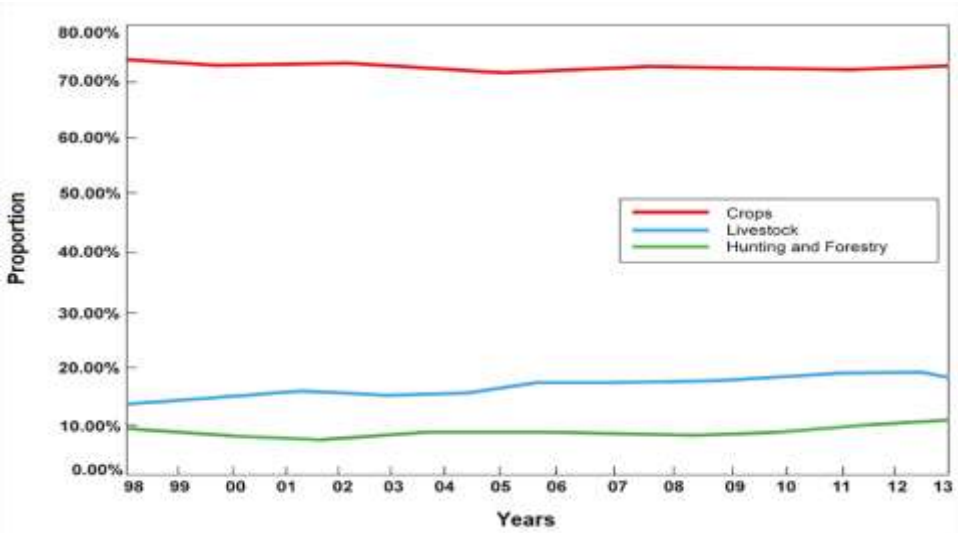

Figure 1. The proportion of agriculture hunting and forests from 1998 to 2013 (BOT, 2020a).

The contribution of the Livestock sector, mainly in developing countries, can be seen in its contribution to the economy (GDP). By combining their contributions with other sectors of the economy, they contribute to the economic growth overall. The only way to determine their efficiency is to compare them with other developing countries with the same economic climate / geographical location to see the extent to which the livestock sector contributes to the economy (see Table 1).

Table 1. The relation of the Livestock contribution to the economy with other African countries

Countries	**Number of Livestock (cattle, goats, sheep) Millions**			**Contribution to the Economy (GDP %)**	**Contribution to Agriculture GDP**	**Livestock Keeping (Indigenous) %**
	Cattle	Goats	Sheep			
Tanzania	32.2	20	5.5	7.6	35	90
Kenya	17.5	27.7	17	12	42	60
Somalia	0.4	8.4	8.75	65	40	80
Ethiopia	53.9	24.1	25.4	20	40	70
South Africa	14.97	6.33	38	30	49	70

(United Republic of Tanzania (URT), 2019), (Danermark, 2019), (Roy Behnke and David Muthami, 2011), (Muthami, 2011), (MWANAWIMA AER, 2010), (Endalew & Ayalew, 2016), (Gelan, A., Engida, E., Caria, A.S., Karugia, 2012), (Rootman et al., 2015), (Monau et al., 2020).

Changes in consumer taste and preferences have increased, and a fall in demand and supply led to changes in various roles that the livestock sector can play in the Economy (Market & Data, 2011). Several efforts are needed to increase the livestock sector's efficiency in developing countries in terms of production, value chain, and market operations. Most African countries are blessed for having much livestock, but they make little contribution to the Economy (Herrero et al., 2013). The livestock sector contributes to an increase in economic growth, increased livestock keepers, an increase in value chain functions, and some market operations. The sector contributes to increasing the availability of nutritious food, transport mode in rural areas, manure, and other employment opportunities (Bettencourt et al., 2014).

Among other sectors of the economy, the livestock sector grows at an average of 2% and contributes to the economy between 5% and 7% (GDP), as shown in Figure 2(Growth & Reduction, 2019). It is expected that the results obtained from several academics and various national and international academics will facilitate the increase in investment levels and also increase productivity.

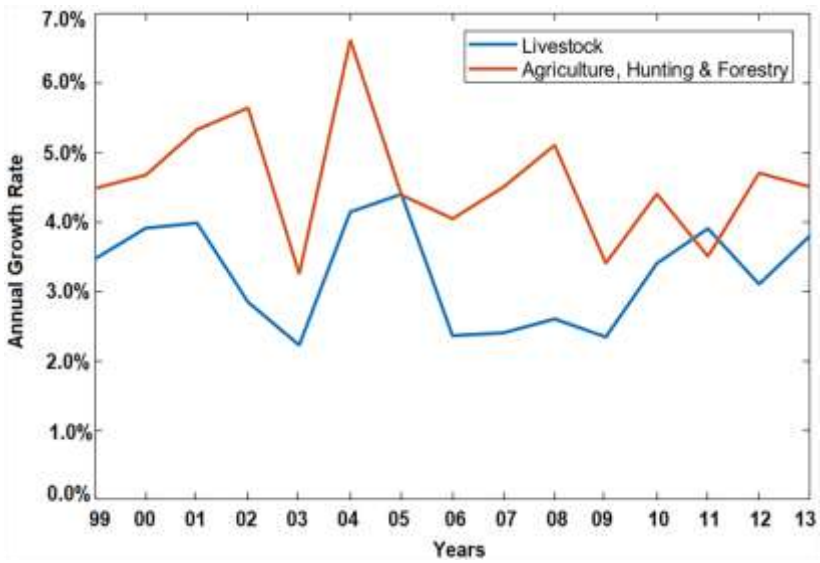

Figure 2. The annual growth of the Livestock Sector and other interdependent sectors of the economy (economic activities related to activities-agriculture, hunting, and foresting) (BOT, 2020a).

The Livestock sector's annual growth was reduced between 2009(09) and 2015(15) compared to the agricultural, forestry, and fisheries sectors. Since 2006(06)-2009(09), the livestock sector has risen above the agricultural, forestry, and fisheries sectors and improved its national income contribution.

The majority of people living in developing countries, such as the eastern, central, and southern parts of Africa, rely on the cultivation, selling of livestock and agricultural resources. Despite the availability of livestock resources, livestock resource wastage also exists, and other resources are wasted without being used.

This requires an increase in the existing technologies to achieve the value of products to increase the consumption of meat, milk, and other livestock resources, such as leather goods. Some investments are required in all aspects of the livestock value chain. The use of the property is necessary to prevent property disputes with farmers and resolve this issue, increase the value of livestock products, improve breeds, and increase production(Upton, 2004).

Reseach Methodology

Based on the contribution of the various sectors of the economy to the national economy GDP, the livestock sector has developed with the cooperation and collaboration of other sectors.

The sector is linked directly to the agricultural, forestry, and hunting sectors. It also co-operates with some other sectors of the economy, such as the services and manufacturing sectors. The livestock sector is observed for its growth by analyzing its contribution throughout the sixteen years from 1998(98) to 2013(13). As a result, other factors related to the growth of the livestock sector also include an increase in the livestock number from 22,175,000 (cattle, sheep, goats, and pigs) (Brief, 2005) to 56,223,570 in 2016 (Bernard & Barasa, 2018).

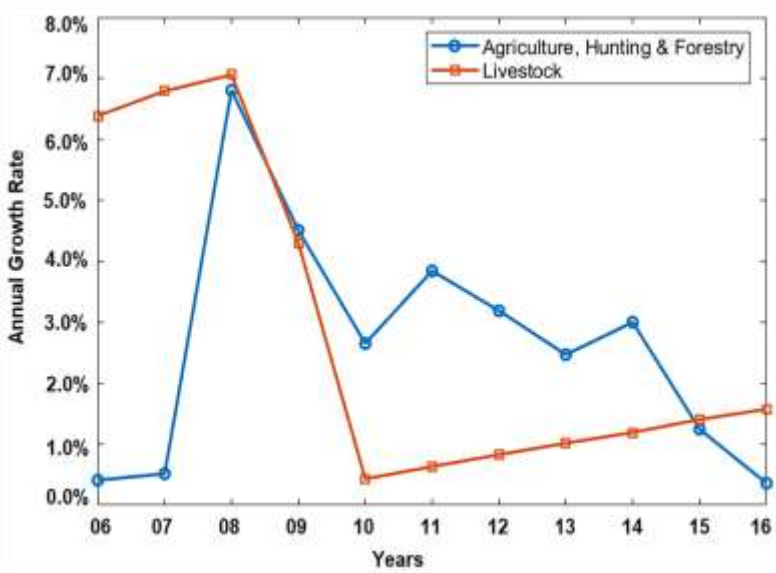

Figure 3. The comparison of the Livestock sector with the agriculture sector (BOT, 2020c).

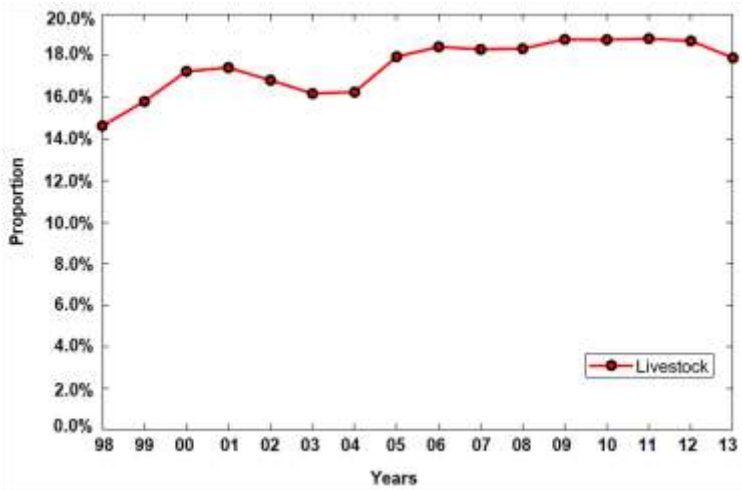

Figure 4. The proportion of livestock for sixteen years to GDP (16) (BOT, 2020a)

The relation of the livestock sector in its contributions to the country's economy with the other economic sectors, after previous studies such as the estimate in India, the literature on constant and current prices, the cross-sector linkages in China (Drozd & Nosal, 2011) and the estimation of the Pearson Correlation Coefficient, will help to make a correlation with the livestock sector.

$$cor_{coeff} = \sum XY - \frac{(\sum X)(\sum Y)}{n} \Big/ \sqrt{\left[(\sum X^2 - \frac{(\sum X^2)}{n_x})(\sum Y^2 - \frac{(\sum Y^2)}{n_y})\right]}$$

From the general equation, cor_{coeff} denotes the correlation coefficient of the sectors of the economy X for sixteen sectors n while the $= \sum XY$ represents the total scores of total sectors of the economy multiplied together, and $\sum Y$ denotes the total values of the economic activities of the economy.

The overview of the scores obtained demonstrates the relation between the economy sectors by linking the livestock sector to other sectors. A positive value reflects a positive relationship between different economic sectors, and negative values reflect a negative relationship between different economic sectors. The ups and downs in values demonstrate the progress of the economic sectors over a given time. The study analysis shows a positive relationship between several economy sectors based on the calculation, as shown in figure 5 (A, B, C, D).

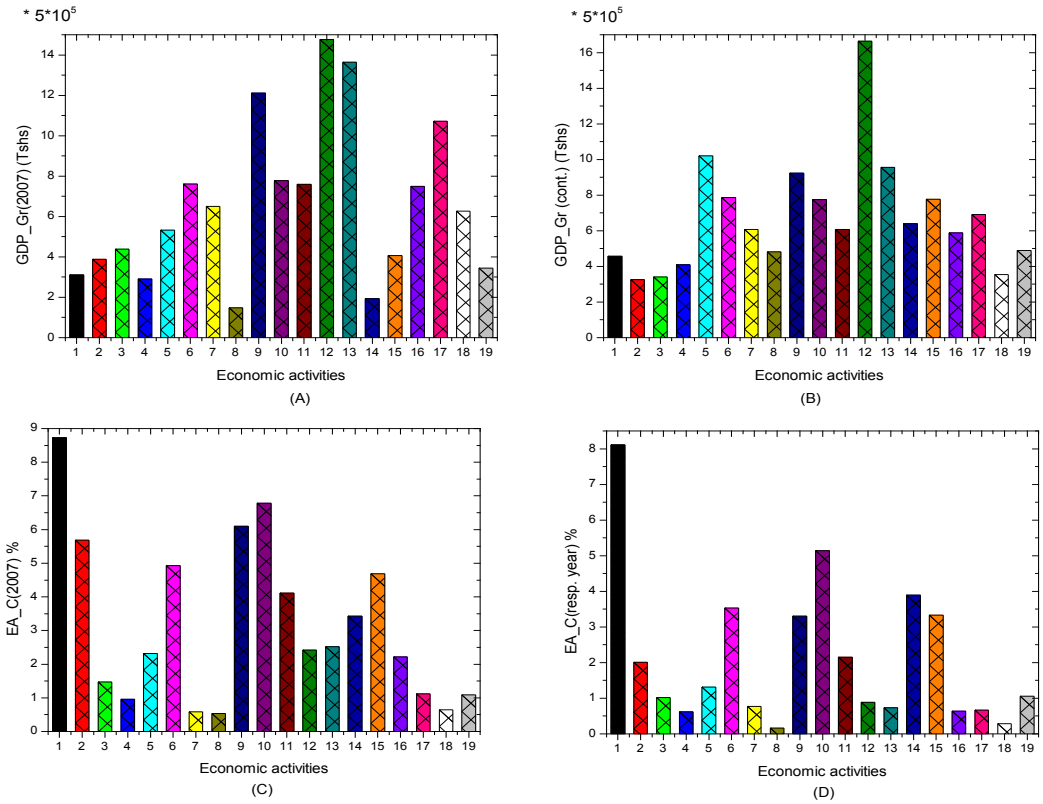

Figure 5 (A, B, C, D). GDP by activity Constant Prices- Millions of Tzs(BOT, 2020c), by activity Current Prices (Millions of Tzs) (BOT, 2020b), growth rate by activity prices percent (BOT, 2020a), and Annual growth rates of GDP by economic activity constant price-2007 prices (BOT, 2020d) respectively**.**

Integration depends on economic activities. The assumption is that the livestock sector's growth depends on the functions of other economic sectors, such as production, processing, and other integrated services, to the final distribution of goods to customers. This connotation is supported by the results of aggregation of development achieved by linking the level of employment in Denmark on the one hand and the resulting production by using a constant price. The results relate to the various goods from different economic activities aimed at reaching the end customer. (Dietzenbacher & Temurshoev, 2012).

The variables obtained depend heavily on the markets' operations and performance involving all economic activities that contribute to the national economy. Innovation in other sectors of the economy and especially value-addition is expected to influence the livestock sector's increased efficiency significantly.

The national economy is an economy that encompasses all sectors of the economy to increase national GDP. Therefore, the economy's performance is measured by the performance of its economic activities from one-period n to another period. Projects and different policies imitated from time to time through economic analysis help predict the extent to extent which they manage to develop various economic activities (Kwong, 2016).

Data and related variables

The combination of data used in this study was obtained from the Tanzania National Bureau of Statistics, Bank of Tanzania, Ministry of Livestock and Fisheries Development from 1998 to 2013 to measure and evaluate the livestock sector's contribution to other sectors of the economy. A total of sixteen economic activities were considered economic sectors due to their contribution to the national economy. The data and information collected include the actual value based on constant value and current value without forgetting their growth terms.

All the data obtained shows that the sectors interdepend on each other in terms of their functions. This means that the development of a sector stimulates the development of other economic activities. The study shows a positive correlation based on the time recommended. Table 2 indicates the statistics for economic sectors.

Table 2. Descriptions of Statistics of Economic Sectors

Description	Activity (Current Price)		Activity (Constant Price)		Growth Rate (Activity Constant price)	Rebased GDP (Activity Growth Rates)
Economic Activity	Average	Std. Err	Average	Std. Err	Average	Average
Agriculture, Hunting and Forestry	5569444.64	3336486	5569444.64	3230539	4.2%	3.4%
Crops	4055414.77	2348027	4055414.77	2273468	4.6%	3.1%
Livestock	1002599.54	635234.4	1002599.54	615063.1	3.3%	3.9%
Hunting and Forestry	511430.333	358023.9	511430.333	346655.2	3.4%	4.4%
Fishing	306990.027	191697.5	306990.027	185610.3	4.1%	2.9%
Industry and construction	4537866.82	3247429	4537866.82	3144310	8.2%	8.6%
Mining and quarrying	657673.421	534684.3	657673.421	517705.9	10.2%	5.3%
Manufacturing	1765202.18	1190862	1765202.18	1153048	7.9%	7.6%
Electricity, gas	384652.758	259731.3	384652.758	251483.8	6.1%	6.5%
Water supply	80363.8568	43607.07	80363.8568	42222.36	4.8%	1.5%
Construction	1649974.6	1225038	1649974.6	1186138	9.2%	12.1%
Services	9389758.62	6295757	9389758.62	6095841	7.4%	7.0%
Trade and repairs	2570873.85	1725801	2570873.85	1670999	7.8%	7.8%
Hotels and restaurants	528797.969	334060.8	528797.969	323452.9	4.9%	7.6%
Transport	1075228.38	802758.6	1075228.38	777267.7	6.1%	3.4%
Communications	442152.729	368318.2	442152.729	356622.6	16.6%	14.8%
Financial intermediation	367669.159	258962.5	367669.159	250739.4	9.6%	13.6%
Real estate and business services	1944693.08	1172963	1944693.08	1135716	6.4%	1.9%
Public administration	1664907.12	1151257	1664907.12	1114700	7.8%	10.7%
Education	321210.537	173996.4	321210.537	168471.3	5.9%	6.2%
Health	333536.678	250452	333536.678	242499.2	6.9%	4.1%
Other social and personal services	140689.126	76893.84	140689.126	74452.14	3.5%	7.5%

Table 3. Description of Statistics of Sectors of the Economy

	Activity (Current Price)		Activity (Constant Price)		Growth Rate (Activity Constant price)	Rebased GDP (Activity Constant Price-2007)
	Std. Err	Correl.	Std. Err.	Corr.	Correl.	Correl.
Economic Activity						
Agriculture, Hunting and Forestry	3336486	0.998509	3336485.99	0.998509	0.745957	0.518538
Crops	2348027	0.944923	2348027.44	0.944923	0.947222	0.377975

During sixteen years, there is an increased decrease in average but maintains positive values. This description showed that there is a close interdependent and interrelationship between economic activities. The increase and decrease in values signify their correlation with the economy's growth for the given period 1998-2013. The display of table 2 also shows that three interdependent sectors, namely the livestock sector, crops (agriculture), forestry, and hunting and fishing, are the sectors affecting other economic activities. The reason behind them is that they are the primary source of raw materials to be used by other sectors of the economy. Therefore, changes in any of the sectors mentioned above affect the functions of all other economic activities.

In practice, innovations and development influence the increase in raw materials' production quality and finished products. This final increase in national income contributes to various economic activities because the products can compete in domestic and international markets, thus increasing the country's earning. Data analysis showed that the livestock sector for sixteen years (1998-2013) grew at an average of 3.3% using the Constant Prices and 3.9% using the constant price (2007). The difference is that the constant price was adjusted using the GDP at inflationary prices, while the 2007 constant price was reflected in GDP based on the 2007 average price.

Results and Discussion

The study reported in Table 3 analyses economic activities' performance and contribution with activity-based values and growth rates. The results provided interdependence and cooperation between the different economic activities. Using the standard coefficient of error and correlation, both the GDP calculation method using the current method and constant price (2007), the differences were reflected by basing the inflation rate on a given time. Constant price (2007) has shown adverse inflation effects in the economy, with the result that major sectors such as forestry and hunting, agriculture, and fisheries have shown interdependent and negative inter-relationships, thereby contributing negatively to other economic activities.

The results of the positive values 0.518538 and 0.377975 showed that the forestry and hunting, crop, and agricultural sectors are interdependent, which means that their contribution would improve the output of other sectors of the economy. On the other hand, the negative values obtained -0.6547, -0.53754 and 0.40782 (negative correlation coefficient) indicated the negative interdependent treatment of the livestock sector with other economic activities, thereby influencing other economic activities and decreasing its contribution to national income. Despite the increase in the number of livestock year over year, the national economy's contribution is low compared with other economic activities. Some of the factors that impede its contribution include feeding and substitution, genetics, and diseases induced by changes in weather conditions (United Republic of Tanzania (United Republic of Tanzania (URT), 2019).

The livestock sector grew over 15 years, from 1999 to 2013, by an average of 3.3%. Since 1999, the sector grew from 3.5% to 4.0% in 2001 and decreased to 2.2% in 2003 and grew to 4.4% in 2005. The sector decreased again by 2.3% in 2009 and grew to 3.8% in 2013. Most publicly controlled investments and industries were privatized to individuals and organizations inside and outside the country. Some sectors performed well; for example, the revenue collection authority and other livestock sectors were developing(Estrin & Pelletier, 2018). Other factors also include changes in its ministries' governance framework and its institutions(MAHMOUD, 1992). This led to changes in the government's operation to provide subsidies, changes in competition between private and private sectors.

The Findings also indicated that changes that were made in the agriculture sector to separate it into two ministries and formed a new Ministry of livestock and fisheries development were the result of the Agricultural Sector Development Program (ASDP) (I) and (II) (Michael et al., 2017). The inefficient implementation of short, medium, and long-term plans also led to an impending hampering of the livestock sector's development. The livestock sector's potential is that it accounts for 11% of all cattle in Africa; the sector has the advantage of increasing its production to increase food availability and compete in foreign markets.

The leading sector for growth and contribution in the economy (GDP) is the communication sector for an average of 16.6% from 1998 to 2013, followed by mining and quarrying 10.2%. Livestock sector interventions with other sectors of the economy, such as the service sector and manufacturing sectors, have the advantage of increasing the value chain for the livestock resources. By 2022, red meat consumption is projected to increase by 71%. This results from a rise in population growth (URT- MLF and ILRI, 2018).

Conclusion

Many different efforts and research work are being made to increase the livestock sector's growth to support economic development. This is an area that is essential to the extension of the livestock value chain in the fight against diseases, the improvement of the feed system, genetics, and the general health of stocks and all other human activities.To minimize cost of operations, there must be a linkage between financial institutions to assist

private sector to iniate alternative energies like solar energy to increase efficiency in production.The experiencing of adopting green finance strategy as applied to developed countries and other emerging countries will assist to reduce the cost of operations and hence using the available resources effectively and effeciently. Due to the current lack of resources to achieve and execute different research results during the year, we recommend that the ministry set a few targets to be achieved each year. Therefore, all issues require further research undertakings to be circulated to different researchers and institutions to be used in their research programs. This will help avoid duplications of work done in one area, leaving other areas uninvestigated.

We believe the proposed findings and links (correlation) would strengthen cooperation by giving the skills and expertise required to all beneficiaries of the livestock sector. All academic institutions such as colleges, universities, and various ministry bodies and other local research institutions and international institutions will work hand in hand with the rest of the livestock sector participants.In conclusion, the improvement in its different economic activities' performance is an essential feature of economic development. Future research related studies may relate to the roles of autonomous institutions (private sectors) in terms of their expenditure to be compatible with government programs.

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Conflict of interest

The authors declare no conflict of interest towards the publication of this manuscript.

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