



## Review Paper

# Importance of livestock and dairy cattle production in Burundi's economy: Review

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## Abstract

*In this study, the current situation of livestock production and their contribution to Burundi's economy were reviewed. On addition to being a very significant source of income, livestock production contributes to Burundi's GDP at the scale of 4.6% and to the fight against unemployment. Low income levels, inadequate modern infrastructure for setting up livestock enterprises, the demography which is growing exponentially, limited production resources such as land, limited studies on the performance of the sector and the low productivity of animals are major constraints which hamper the development and performance of Burundi's livestock sector. Promoting capacity building of livestock producers, financial support from the Government and NGOs to the livestock farmers, development of dairy enterprises' infrastructure, creation of cooperatives and associations, extending veterinary services to livestock producers, supplying tools for the conservation and marketing of livestock products are the main recommendations for the development of the livestock sector in Burundi.*

**Keywords:** Burundi, Dairy cattle, Burundi's economy and livestock.

## Introduction

Burundi is a landlocked country located in East Africa. It has an area of 27,834 km<sup>2</sup>. It is bordered by Rwanda, Tanzania and Democratic Republic of Congo in the north, east and west respectively<sup>1</sup>. The population is estimated at 12 million as of 2019. With more than 300 people per km<sup>2</sup>, Burundi is one of the most densely populated African countries. About 70% of the population lives below the poverty line. Per capita income is less than \$1/day, and 85% of total households are food insecure<sup>2</sup>. The main economic sectors of Burundi are currently agriculture, industry and crafts, forestry and energy. The industry and energy sectors contribute 18.3% and around 4.6% respectively to the GDP<sup>3</sup>. Agriculture provides employment for 90% of the country's population<sup>4</sup>. Agriculture accounts for 50% of the Gross Domestic Product (GDP) and provides over 95% of the food needs and over 80% of the country's foreign exchange income.

## Major developments in Burundi's Livestock sector

During the pre colonial era, Burundi had a large population of cattle, the Ankole breed in particular. Before the 1993 crisis, livestock experienced two important periods of livestock development. Figure-1 shows Burundi's livestock populations from 1961 to 2017<sup>7</sup>.

(i) The period from independence (1962) to the end of the 1970s which is characterized by an increase in the number of cattle,

the emergence of the rearing of small ruminants, pigs and rabbits. (ii) A period between 1978 and 1992 characterized by a 3% decrease in the cattle population and a 7% increase in the number of goats<sup>5</sup>. The 1993 crisis negatively affected all initiatives of the Government of Burundi and actors in this sector and in 1997 it was estimated that losses were 32% in cattle, 40% in goats, 51% in sheep, 67% and 80% in pigs and rabbits respectively<sup>6</sup>. However, the crisis caused the concentration of dairy enterprises around urban centers, leading to an increase in specialization in dairy production. After this crisis, FAO together with the Government of Burundi initiated a policy of restocking livestock through rural development projects financed by its partners.

## Composition of the cattle herd in Burundi in 2018

Burundi's cattle population is mainly composed of pure breeds or crosses from the following 7 breeds: Ankole, Sahiwal, Frisian, Montbéliarde, Ayrshire, Brown Swiss and Jersey. The cattle herd is dominated by the Ankole breeds<sup>8</sup>.

Nationally, there are 948,038 cattle, 548,608 sheep, 3,249,827 goats, 706,077 pigs, 514,977 rabbits, 1,047,223 guinea pigs and 2,949,537 poultry linked to farm households. The number of head of cattle by species is not uniformly distributed by provinces<sup>9</sup>. There are approximately 1,200,000 rural farmers in the country, of which 700,000 are engaged in animal husbandry and 20% raise cattle, 45% sheep, 5% pigs and 3% poultry. The other livestock enterprises are made up of farms with a poly-cultural structure<sup>10</sup>.

### Importance of livestock farming

Among the agricultural sectors, the livestock sector has the most opportunities for creating added value. Besides the cattle meat, milk and other livestock products, the sector makes a great contribution to the economy by creating new employment opportunities with the pharmaceutical, food and equipment industries based directly on livestock<sup>11</sup>.

Livestock plays a very important role in the economy of Burundi. Foods of animal origin are rich in protein that we need for well-being. Livestock production is widespread and contributes around 4.6% to the GDP and contributes to the fight

against unemployment and becomes a very significant source of income. It also provides organic fertilizers<sup>12</sup>.

Animals mainly produce milk, meat, eggs and honey for household consumption.

**Meat production:** Meat is very important in an adequate and balanced diet. However, meat consumption in the country is generally low and is high in only the richest households<sup>13</sup>. Between 1990 and 2001, the average meat production was 26,700 tons with 40% beef, 23% poultry meat, 18% mutton, 18% pork, and 1% rabbit meat. Figure-2 shows the meat production in Burundi<sup>7</sup>.

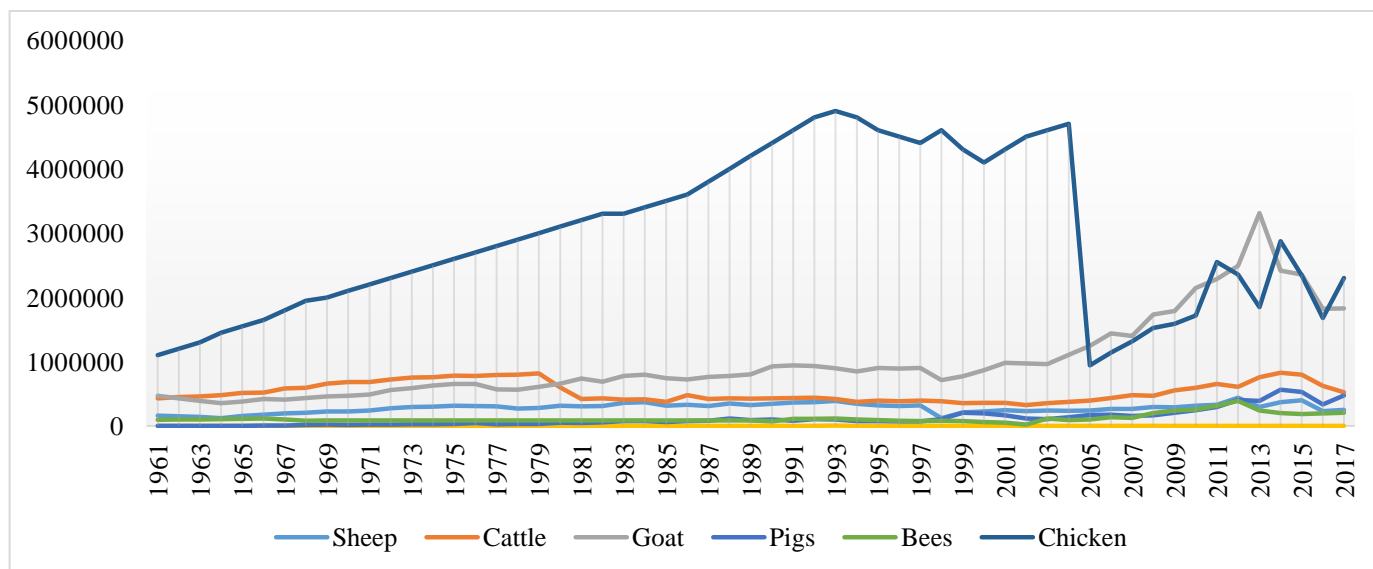


Figure-1: Livestock population from 1961 to 2017.

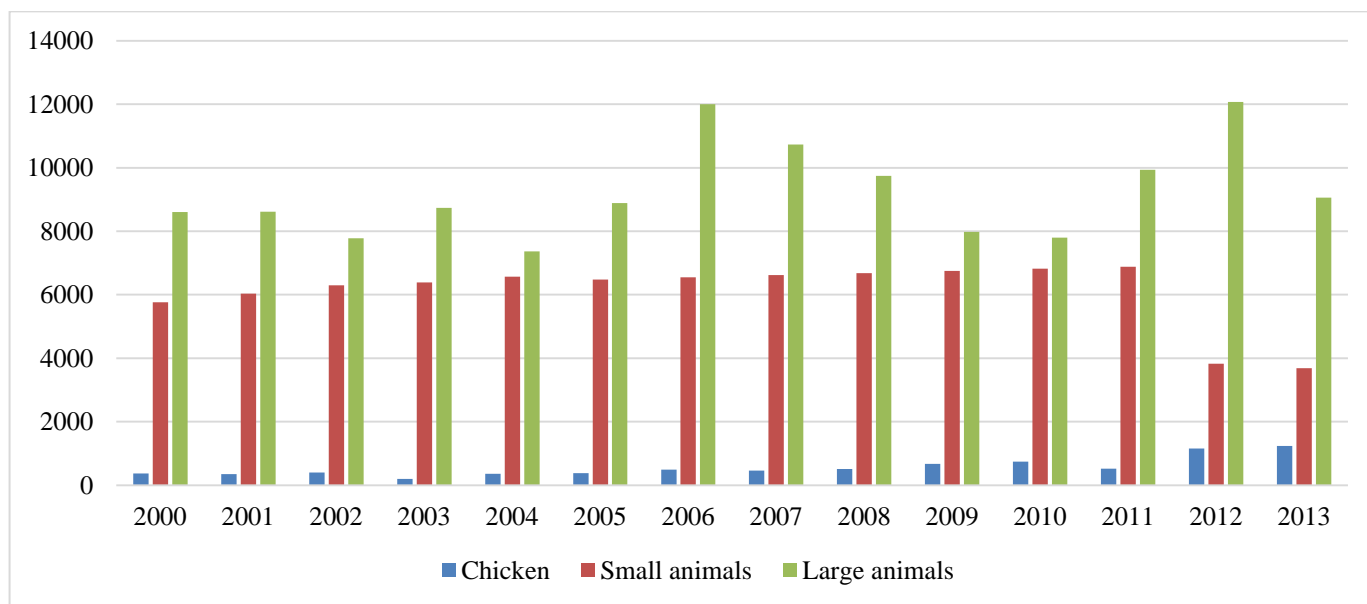


Figure-2: Meat production in Burundi between 2000-2013 (Tons).

The figure represents the different meat productions in Burundi. The meat consumed in Burundi comes mainly from large animals. This category includes cattle. Meat production from cattle is the most represented in all the years of the previous figure, in the years 2006 and 2012 this production reached the peak. In 2006 there was political stability which allowed for an intensification of large animal after years of war. In 2012, cattle distributed by NGOs began to be consumed. Small animals also contribute a significant source of meat. This group represents goats, sheep, pigs and rabbits. Chicken meat is always the least consumed due to its high purchase price. Meat consumption in Burundi is estimated at 3 kg / year / person. This value is well below both the world average and the average for developed countries (50 kg / person / year).

### Milk production and consumption

Milk is a very valuable food in human nutrition and it is important and indispensable in the nutrition of people of all ages and physiological conditions<sup>15</sup>. The milk produced in Burundi is mainly used for home consumption. Measuring the amount consumed is difficult because till now no study of milk consumption has been carried out. In 1991, national milk production was estimated at around 20,000 tons per year<sup>14</sup>. Average milk production in 1990-2001 was 37,600 tons, of which 74% came from cattle, 23% from goats and 3% from sheep. Milk production is mainly carried out by private farmers located in the Bujumbura region, which is the main dairy market<sup>16</sup>.

Dairy production consists mainly of cow's milk. The total quantity of milk increased gradually from 2000 to 2013. It increased from 27,580 tons in 2000 to 59,836 tons in 2013. However, the highest milk production was recorded in 2011 with a total quantity of 62 286 tons<sup>7</sup>. Milk production has increased, but production remains insufficient. Demand for and consumption of livestock products (especially meat and milk) is concentrated in urban areas.

The largest percentage of milk in Burundi is produced by Friesian cattle breeds. A study conducted in downtown Bujumbura in Burundi reported that Friesian's milk production was 5,478 liters in 330 days and the milk yield of 6,230 liters

was obtained at altitude in 300 days under intensive conditions. It was concluded that the daily milk production is between 16.60 and 20.76 liters. In a study carried out at the Mahwa Zootechnical Station (for 2005), the milk yield of Friesian cattle was calculated at 2,951.5 liters and 8.46 liters per day during the lactation period lasting more than 330 days<sup>17</sup>.

Some performance parameters of cattle reared at the Mahwa Zoo technical Station, where breeding studies were conducted, are presented in Table-1.

As Table-1 shows, the productivity of the Ankole remains very low. The average daily milk production of Sahiwal breeds is 5.1 l / day or 1,415 l / lactation. The crosses Ayrshire X Sahiwal and Frisian X Sahiwal have a slightly higher production with a yield of 5.6 l and 5.2 l per day respectively, hence a production of 1,570 l and 1,464 l / lactation. Ankole breeds have an average daily milk yield of 2.5 l or 700 l / lactation<sup>18</sup>.

Annual milk consumption is estimated at 3.3 liters per capita. This consumption is less than 20 liters of milk per capita per year recorded in sub-Saharan Africa in 1986 and at least 220 liters of milk per capita per year recommended by the FAO<sup>13</sup>.

In the National Agricultural Surveys (ENAB), about 80% of rural herders in Burundi reached a milk production of 500 liters per cow per year. This means that each household consumed 41 liters of milk per household / per year, hence 8.1 liters of milk per person per year (considering the average of 5 people per household according to the data from this survey). These estimates do not include milk production in the capital Bujumbura. The highest annual per capita milk consumption appears to be in the provinces where cattle ranching are practiced. The highest quantities of milk consumed per person are observed in the provinces of Mwaro (20 liters); Muramvya (17.1 liters) and Bururi (16.1 liters). In the following five provinces milk consumption is less than five liters per capita: Cibitoke (2.9 liters), Kirundo (3 liters), Bubanza (3.9 liters), Makamba and Muyinga 4.1 liters<sup>19</sup>. It is estimated that 20% of the country's meat consumption and 5% of milk consumption is provided by imports<sup>20</sup>.

**Table-1:** Milk production in the Mahwazo technical station.

Breeds	Number of dairy cattle	Milk production (l) / day	Lactation duration (day)	Total milk production (l)
Sahiwal	67	5.1	280	1415
Ayrshire X Sahiwal	26	5.6	280	1570
Frisian X Sahiwal	10	5.2	280	1464
Ankole	30	2.5	280	700

**Egg and honey production:** The annual egg production in Burundi is estimated at around 4,600 tons. The annual honey production is around 300 tons<sup>21</sup>. Poultry production is fully covered by imports due to high input prices and low-priced imports<sup>16</sup>.

**Biogas energy supplier:** In Burundi, animal manure is collected from meadows and pastures during the summer / dry season and used as fuel. The promotion of biogas production is a new and current issue. In this way, animal manure is a source that can be used for both electrical power and lighting. In this sense, there are initiatives and investments made in Mutwenzi in Burundi and they are already being used<sup>23</sup>.

**The social role of livestock:** Cows and sheep are used in the payment of dowry and marriage functions<sup>22</sup>. Livestock are also given out as gifts in rural development projects in the name of chain of community solidarity “CSC” where the first beneficiary of the livestock gives the first borne to the neighbor. This act strengthens social relations between people<sup>23</sup>.

**Source of income and contribution to the country's GDP:** Taking into account these productions, the added value of the post-production stage and manure, the added value of livestock was estimated at 29% of agricultural G D P and 14% of national GDP<sup>1</sup>. In the Bututsi region, 63.4% of agricultural income comes from livestock farming (cattle and sheep combined) and cattle farming provide 94.9% of income<sup>24</sup>.

Livestock contributes nearly a fifth of agricultural production. The most widespread type of livestock is cattle and accounts for only 5% of gross domestic product (GDP)<sup>21</sup>. It is reported that the contribution of the livestock sector to the Burundi's economy in 2007 was around 133 billion BIF (around 86 million USD). Livestock contributed 27.2% of agricultural GDP

and 12.7% of national GDP. In 1997, the livestock farming is widespread in Burundi, contributing around 4.6% to the GDP, which was BIF 14.7 billion.

**Tax on livestock products:** Animal production has remained largely stable since 2011. All production is intended for domestic consumption. At market level, cow traders pay a tax of 3,500 BIF (1\$ =1980 BIF) per animal. The animals slaughtered per day consist of 40% cattle and the remainder of the slaughter consists of small ruminants and pigs. There is a slaughter tax of 5,000 BIF per cattle and 1,700 BIF for sheep, goats and pigs<sup>16</sup>.

**Export and import of livestock products**

**Export of livestock products:** Among all livestock products, Burundi exports only leather. The export of leather is a new activity in the Burundi's economy. Figure-3 shows the exports of raw hides in millions of BIF from 2008 to 2018<sup>25</sup>.

According to data from the Central Bank of the Republic of Burundi (BRB), during a period from 2008 to 2018, it was observed a large quantity of leather exports in 2012 and 2015 which were respectively 9,552.4 tons and 7,954.3 tons. Exports of leathers fell from 2015 following the socio-political problem that crossed the country. In 2017 the quantity of leather exported was 959.4 tonnes. But from 2018; exports of leathers resumed with only 2,657.8 tonnes.

Leather exports were estimated at 292.4 million BIF (approximately 215,000 euros) between 1997 and 2001, thus contributing 0.2% of the GDP of exports of primary products<sup>26</sup>. In addition, it is estimated that Burundi's leather exports were around 1.8 thousand tons in 2006 and this figure increased to 2.7 thousand tons in 2007.

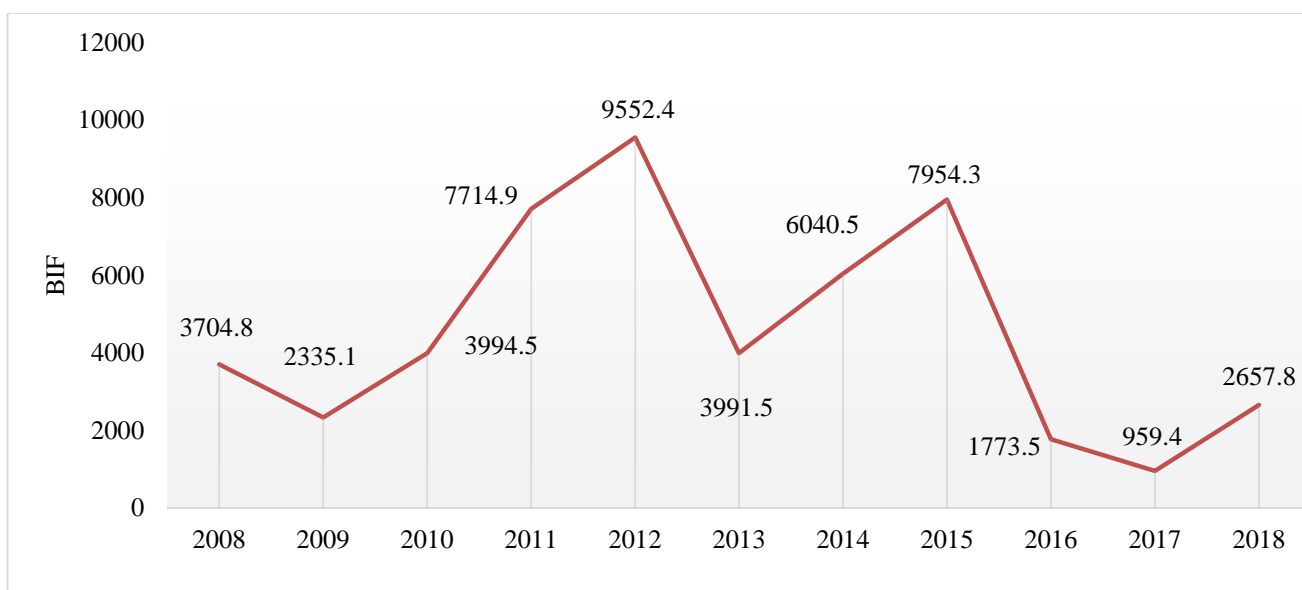


Figure-3: Exports of leather.

## Importation of livestock products

The import consists of milk and dairy products, which account for about 62% of the total value of Burundi's livestock products imports. About 70% of this import is intended for national consumption and for the order of non-governmental organizations (UNICEF, charities, etc.). Imports of milk and dairy products amount to 5.6 million liters per year; 72% of them are fresh milk, 20% powdered milk, 9% cheese and 1% yogurt. Imported meat represents about 34% of the total food imports registered at customs<sup>27</sup>.

## Conclusion

Cattle's farming is traditional, extensive and constitutes the second main activity in Burundi. Apart from providing the protein-rich foods that are needed for a good life, this activity also plays an important role in the household economy and in the overall economy of Burundi. Burundi's livestock farming is characterized by a lack of infrastructure and industries for the processing of livestock products and the undeveloped livestock 'sector. The country's economic and political instability and poor livestock management make livestock farming less efficient and lead to the small animals' breedings. Dairy farming in Burundi is underdeveloped, consumption and total demand for milk cannot be met in terms of the quantity and quality required for adequate and balanced nutrition. This situation worsened with the sharp decrease in livestock numbers following the 1993 civil war and the gradual reduction in the areas allocated to grazing. The productivity performance of dairy cows in the country is quite low.

A series of measures should be taken to improve the current situation of dairy cattle in Burundi. Since milk is a highly perishable product, it must be stored in order to reach the end consumer or to be transformed into its by-products. It is imperative to set up a sector that accepts milk as a raw material and transforms it into more sustainable and standard products. Since leather is one of the products exported from Burundi, it is necessary to develop the leather industry to increase export income.

There is need to establish a national policy for the implementation and development of the livestock sector. A database and structure for recording national statistical data on livestock is a necessity. Livestock is a profitable industry and livestock businesses must be supported to increase and stimulate investment in this sector. Information and awareness-raising studies should be carried out so that companies develop modern technical methods of animal husbandry and feeding. Breeders need in-depth training in the technical and economic management of their farms.

Finally, the Ministry of Agriculture and Livestock should define a policy aimed at promoting the creation of private services which will gradually help the public structures responsible for

supporting dairy farming. Institute of Agricultural Sciences of Burundi (ISABU) will need to improve its research to ensure the transfer of appropriate technologies.

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