Review Article

iMedPub Journals
www.imedpub.com

Journal of Animal Sciences and Livestock Production
ISSN 2577-0594

2020
Vol.4 No.2:5

DOI: 10.36648/2577-0594.4.2.5

Towards Boosting Livestock Productivity in Africa-What Strategic Options do we have?

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Citation: Ocran JN (2020) Towards Boosting Livestock Productivity in Africa-What Strategic Options do we have? J Anim Sci Livest Prod Vol.4 No.2:5

Abstract

The productivity of livestock in Africa needs to be improved if we are to feed our population in the decades ahead. This need has become even more crucial with projections pointing to increased population, income and urbanization growth by 2050. This article, therefore, discusses this issue and provides productivity-enhancing strategies to boost livestock production in Africa in the areas of feeds and feeding, disease prevention and control, breeding and genetics, housing, husbandry and management, research and extension, education of livestock farmers and policy development and implementation.

Keywords: Livestock productivity; Africa; Strategic options; Animal feeds and feeding; Disease prevention; Breeding; Husbandry and management; Research; Extension and advisory services; Education and livestock policies and implementation

Received: March 26, 2020; **Accepted:** April 13, 2020; **Published:** April 17, 2020

Introduction

Available statistics indicate that Africa has 304 million cattle, 347 million goats, 328 million sheep, 35 million pigs and 1.83 billion poultry [1]. These livestock animals and poultry are raised under diverse production systems, ranging from extensive, semi-intensive and intensive systems. The livestock sector, therefore, plays an important role in the economies of most African countries. It accounts for averagely between 30 and 40 percent of the Agricultural Gross Domestic Product of Africa [2]. In some of our predominantly livestock producing countries, this figure may even be higher. Millions of people in Africa also eke their living and derive incomes from the livestock sector. Furthermore, livestock animals provide us with high protein and nutritious food such as meat, eggs, milk and other livestock products. Also, livestock is an important component of the farming system by providing animal traction and organic manure.

It is projected that the demand for livestock products in Africa would grow in the decades ahead as a result of increased population growth, rising incomes of the citizenry, urbanization and the change in consumer tastes for food of animal origin [3,4]. The livestock sub-sector, therefore, has a bright future in Africa. However, whilst the demand side for livestock products is high, the same cannot be said of the supply side. Under this demand-supply scenario, a greater part of the livestock products needed in Africa would have to be imported to meet the growing demand. On the other hand, if the needed investments are made in the sector to improve livestock productivity, Africa is capable of meeting its demand for livestock products internally. In this paper, an attempt is made to highlight some of the productivity-enhancing technologies that can be adopted to meet the growing demand for livestock products in Africa. These technologies are in animal feeds and feeding, disease prevention and control, breeding and genetics, improved husbandry practices, and housing systems and undergirded by effective policy formulation and implementation, research, and extension as well as advisory services.

Why Do We Need to Improve Livestock Productivity in Africa?

Africa's present population of 1.25 billion people would increase to about 2.4 billion by 2050 [5]. This development means that the present livestock numbers would not be able to meet the growing requirements of Africans for livestock products unless the productivity of the animals and poultry are greatly enhanced. Furthermore, the efficiency of resource use in the form of water, feed, and housing of the animals themselves needs to improve as there will be greater competition for these resources. If resource-use efficiency is achieved, it should lead to lesser soil and water pollution, lower emission of greenhouse gases and

higher incomes for livestock farmers in Africa. Also, the level of profitability of livestock farms will increase with a shorter put-through time for livestock animals and poultry during the rearing period. It has also been established that increased urbanization and incomes lead to a preference for proteins of animal origin. Africa's level of urbanization is projected to triple from 395 million in 2010 to about 1.34 billion in 2050 [6]. The demand for livestock and poultry products would increase sharply with this projection and therefore calls for the attainment of higher levels of livestock productivity in Africa. It is also projected that many African countries would move from low-income to middle-income countries in the foreseeable future. With the growth in income, their demand for livestock products would increase and would have to be met with improved livestock productivity in Africa.

Strategies for Boosting Livestock Productivity in Africa

Animal feeds and feeding

Gro Intelligence [7] has given the number of ingredients available in the world that can be utilized in feeding livestock animals and poultry as 900. Of this number of ingredients, there is the need to select not only those that are cheaper but also better in terms of their nutrient availability to livestock animals and poultry. Africa boosts of rich and diverse forms of feed ingredients that can be used in feeding livestock animals [8]. The level of digestibility and nutrient availability of most of these feed ingredients have been determined and published. A good place where such information can be obtained is Feedipedia.org, a website which is updated daily by CIRAD, FAO, and other partners. Pastures would have to be developed using grass, shrubs and leguminous crops that are not only high-yielding but also can withstand frequent inclement weather as a result of climate change. New advances in feeding livestock animals and poultry are being discovered year after year. It is now possible through microencapsulation to provide nutrients to livestock animals and poultry at exactly the level needed for optimal function, leading to less wastage of feed nutrients during feeding. Various enzymes, probiotics, and prebiotics have also been discovered that aid digestion and the process of nutrient utilization and availability in feeding livestock animals [9].

Disease prevention and control

A diseased animal is less productive than its healthy counterpart. As such, disease prevention should be the cardinal goal of any livestock farmer. Entry points to the farm should be jealously guarded to prevent the entry of disease organisms to the herd or flock [10]. With the availability of various gadgets and digital tools, it is now possible to monitor and evaluate the health of livestock animals and poultry at the individual level. It is also now possible to trace the sources of diseases in a livestock herd or flock through the process of tagging and traceability from the farm to the consumer. This process can take place both within and outside the African continent. It is now also possible to gather epidemiological data very cheaply and effortlessly. Some of the killer animal diseases in Africa such as rinderpest have been eliminated and good progress is also being made in combatting others. Quite apart from infectious diseases, there are also non-infectious diseases that are productivity-limiting that the livestock farmers should deal with through better husbandry practices.

Breeding and genetics

The level of productivity of livestock animals and poultry is controlled by its genetic make-up and the environment in which they are raised [11]. The productivity levels of African breeds of livestock and poultry are generally very low compared to their counterparts in other parts of the world. Whilst this is a limitation to profitability, the enhanced ability of African breeds of livestock and poultry to withstand the harsh environmental conditions in Africa is an added advantage. Various cross-breeding and selection programmes have been undertaken by animal scientists in Africa to improve the genetic make-up of African breeds. However, the outcome of these programmes have been mixed (i.e. others were spectacularly successful, whilst the rest were abject failures). This development notwithstanding, there is the need to continue with livestock-productivity enhancing breeding programmes, so that the genetic make-up of our breeds can be improved. With the advent of climate change, such programmes are even more needed. Thankfully, the use of gene or DNA markers and artificial insemination technologies have shortened the cycle through which improved livestock and poultry breeds can be identified.

Housing facilities

Housing facilities contribute immensely to the productivity of livestock animals and poultry. To obtain optimal performance from livestock animals and poultry, they should be housed in better ventilated and sheltered housing facilities [10]. Such facilities should also meet animal welfare requirements and standards. The facilities should also be kept clean and hygienic to prevent the spread of diseases and parasites.

Husbandry and management practices

Improved husbandry and management practices play a key role in enhancing the productivity of livestock animals and poultry. Livestock animals should be well watered and fed to meet their requirements for maintenance, production, and reproduction. Failure to do so would lead to sub-optimal productivity. In seasons of the year, where the quality and quantity of feed are poor, strategic supplementation especially to pregnant, lactating and infant animals should be practiced [10]. Animal manure should also be well disposed of to prevent disease outbreak and emission of greenhouse gases such as methane and nitric oxide that contribute to climate change. Sick animals should be quarantined and treated. Prophylactic measures should also be undertaken to prevent the outbreak of diseases. Where possible, the period of reproduction of livestock animals should be synchronized to facilitate their easier management.

Research, extension and advisory services

Mention has already been made of some of the research activities undertaken in breeding to enhance the productivity of African breeds of livestock and poultry. Research, extension and advisory services should be rendered in every aspect of livestock and poultry production to enhance the productivity of livestock farmers in Africa. Research and Extension in Africa should be well funded and focused on tackling problems and challenges facing the livestock Farmer. If this is done, the productivity of livestock animals and poultry would be enhanced and our ability to meet the demand for livestock products internally would be assured.

Education of livestock farmers

Some livestock farmers in Africa keep animals for the prestige they give and not to meet market conditions. As such, their put-through time is unduly long and they do not focus on productivity-enhancing activities. Such farmers need to be educated and taught livestock productivity-enhancing technologies. Their orientation towards the market should also be strengthened.

Livestock policies and implementation

To boost livestock productivity in Africa, the sector must be undergirded by not only good policies but also effective implementation of such policies, especially at the country level. The research study carried out by Enahoro and co-workers (2019) revealed that poor implementation of policies is the bane of the livestock sector in most countries. To forestall such situations, the policies themselves should be well researched upon before they are developed, so that they are not skewed towards a particular group of actors in the livestock sector.

Conclusion

It is evident from this discourse, that the productivity of most livestock animals in Africa is sub-optimal and needs to be improved. Some livestock productivity-enhancing strategies have been outlined, which when implemented can boost productivity in Africa. With the anticipated increase in population, urbanization, and income and the growth in demand for livestock products that will result from it in the decades ahead, the need to apply these productivity-enhancing strategies has become even more crucial.

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