
HARNESSING THE PASTORAL SYSTEM OF THE NIGERIAN DAIRY INDUSTRY FOR ECONOMIC GROWTH- A SHORT COMMUNICATION

Magaji, S.T^{1*}, Latu, M. Y⁺, Yibis, G.G.⁺ and Dastu A. J.*

* Department of Animal Health Technology, Plateau State College of Agriculture Garkawa

⁺Department of Animal Production Technology, Plateau State College of Agriculture Garkawa

¹Corresponding author's email: satimagaji2009@yahoo.com, Phone: +2347036574932

ABSTRACT

The pastoral dairy production has a great potential that will enhance economic growth in Nigeria if well harnessed. The system is faced with challenges ranging from poor genetic potential of our local breeds and poor nutrition that impede better productivity. The dairy industry need to be improved through the use of better technologies like cross breeding our locally adaptable breed with high yielding exotic breeds like Holstein Friesian. Efforts should also be channelled towards planting and fertilizing our grazing areas with high yielding grasses and legumes for better productivity

Keywords: pastoral system, dairy, industry, economic, growth

INTRODUCTION

Globally human population is expected to increase from the current 7.7 to 9.7 million by the year 2050 with available increases occurring in low income countries (UN, 2019). This population growth coupled with urbanization, increase in incomes and shifts in dietary patterns is expected to double the demand for animal protein by 60% from the current production of 8.5 billion tonnes/year (FAO, 2018). Milk and milk products one important high quality animal protein food items that are specifically needed to balance the Nigeria diet which is heavily cereal and root crop-based (Adu, *et al.*, 1978).

With increasing human population, the potential impacts of climate change and in some areas, declining available arable land, there is an increasing pressure to increase crop and livestock production (McDonald *et al.*, 2019).

Nigeria has the 4th largest cattle production in Africa estimated at 18.2 Million cattle, including 2.35 Million cows used for dairy production. The Nigerian dairy sector is largely fragmented, unproductive and inefficient despite its size. Though small holder dairy households (i.e pastoralists) produce most of the raw milk in Nigeria, the end market is controlled by large multinational that use imported milk in over 97% products consumed

Dairy development in developing countries has played a major role in increasing milk production, improving income level in rural areas, generating employment opportunities and improving the nutritional standards of the people especially for small and marginal farmers (Quaddus, 2012). Low and unreliable income from cash crops suggest that alternative income farming activities should be developed. There is an indication that there is a potential for dairy development and dairying can reduce the level of poverty. However, small dairy production is becoming increasingly important and it contributes magnificently to the improvement of the livelihoods of rural people (Quaddus, 2012).

This paper highlights the constraints and the way forwards towards harnessing the pastoral system of the Nigeria dairy industry for economic growth.

Dairy production systems

There are three main dairy production systems in Nigeria: The pastoral or extensive system, the semi-intensive or peri-urban system and the intensive (commercial) system. The pastoralists are primarily indigenous cow breeds (e.g White Fulani and Sokoto Gudali). They are owned on an average of 18 cows per pastoralist. They are primarily based in Northern part of the country, though some often migrate to the South in search of water and pasture and also to take cattle to markets where they are sold.

Production is subsistence oriented, but it is difficult to quantify its level because of within country and cross-country animal movements (Makun, 2018). Due to low productivity, milk yield ranges between 0.5 -1.5 litres /cow/ day. Pastoralist account for 95% of milk production in Nigeria while the commercial farms account for only 5% of level milk production (NASS, 2011). The Nigeria dairy

industry is growing at the rate of 8% since 2010, and generated an estimated revenue of over 345 million naira (USD 2billion) in 2013 (Celestine, 2014).

The semi-intensive (agro-pastoral) dairy production farms both crops and raise dairy animals, with the land devoted to crop and the use for grazing is clearly demarcated (Anonymous, 2011). Farmers take animals to grazing areas and water sources depending on the seasons and production is both subsistence – oriented and commercial (Makun, 2018). Production levels are low, around 1 – 3 litres of milk/cow/day with milk production being irregular and rarely recorded.

The intensive (commercial) dairy production system in Nigeria contributes about 5% to the total milk production in the country (Makun, 2018). Dairy farm differs in scale, they can be small, medium or large. In all cases, production is commercially – oriented and farm lands tend to maximize productivity. The animals are exotic breeds and cross-breeds. Anonymous (2011) reported that 8% of the commercial dairy farms are located in the North Central region and the animals are kept indoors or in shed or paddocks and milking is an automatic process (Makun, 2018). Productivity levels are higher with respect to the other dairy production systems, averaging about 8 litres of milk/cow/day.

Issues limiting milk production in Nigeria.

There are many limiting factors of milk production in Nigeria. These are:

- i. Animal genetic: There are low breeds with low milk yield. Ishaya, et al. (2018) reported that the fastest way to improve the dairy potential in our indigenous breeds is by introducing inheritance from *Bos taurus* (exotic) dairy breeds via crossing which is an efficient tool of blending adaptability of the indigenous breeds for increased milk production.
- ii. Nutrition: There are no available green and dry fodders and high price of concentrates limit productivity
- iii. There is high animal mortality and low reproduction rates due to diseases and inadequate nutrition..

Ways of improving the pastoral system for economic growth

To have safe, good quality milk from healthy animals, sustainable management practices can be adopted that are good for the animals from a socio and economic perspective. Dairy farmers can implement the following measures to achieve the desired outcome.

- i. Improved pasture production – The productivity and quality of pastures is improved through the application of fertilizer and species composition. Milk yield can be increased by over sowing native pasture with legumes to improve diet quality
- ii. Improved pasture + genetics – local cattle can be replaced with Friesian – Bunaji cross breeds of dairy cattle (Larger and higher yielding than the local cattle). Higher pasture yield and quality can support 83 herd/ ha
- iii. Improved pasture + genetics + supplementation with concentrates. Local cattle replaced with Friesian – Bunaji cross breed dairy cattle cows can be supplemented with concentrates atleast 3kg/cow/day can support 94 herds of cattle/ha
- iv. Improved animal health and welfare is a pre-requisite for an improved milk production. It is suggested that normal prophylactics treatments should be routinely carried out in the pastoral farms to enhance better productivity.

CONCLUSION

The Nigerian nation has the potential to meet the growing demand for milk, but the immediate need is to adopt and follow better technologies of dairy farming. There is need to improve our local breeds through cross breeding with high yielding breeds of the *Bos taurus* e.g Holstein Friesian breeds of cattle. Efforts should be geared towards improving the grazing areas with high yielding grasses and legumes for better nutrition.

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