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LIVESTOCK PRODUCTION AND MANAGEMENT IN DERIVED SAVANNA OF NORTH WEST NIGERIA: EVIDENCE FROM CONTENT ANALYSIS

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ABSTRACT

Livestock production and management in Nigeria dryland areas is important because the area produce larger percentage of livestock supply to Nigeria market but the areas receive the most threating impacts of seasonal variability of pasture and rainfall. Seasonal variability impacts on livestock production and management result into poor pasture quality and quantity as well as shortage of water in sub humid, semi-arid and agro-ecological zones of Nigeria dryland areas. During wet season in some dryland region there is usually sufficient quantity and quality pasture as well as shortage of water across all the areas for livestock consumption. As a result of these, exploration of resilience livestock production and management practices for dryland areas becomes his highly desirable. But unfortunately; there are scare information addressing these issues, therefore; this paper presents grounds for rethinking livestock production systems in Nigeria dryland areas, impacts of seasonal variations on livestock production and management in Nigeria dryland areas as well as potential solutions to overcome the negative impacts of seasonal variations on livestock production and management in Nigeria dry land.

Keywords: Livestock Production, Management, Pasture, Dry Land, Seasonality, Vegetation.

Introduction

Domestic livestock husbandry either at subsistence or commercial level is widespread in the Nigerian economy, cattle and to a lesser extent sheep and goat production are generally associated with pastoral Fulani who are reputed to own approximately 90 percentage of the national herd (Suleiman, 2020)Dryland areas in Nigeria across different locations in Kastina, Kano, Jigawa, Sokoto, Zamfara, Kebbi, Yobe, Borno, and Bauchi States. Annual rainfall ranges between 600mm to 1000mm depending on severity of aridity of the area but they are generally characterized by longer dry season annually that wet season. The rainfall pattern of the area is unpredictable as its changes variedly and often leads to drought in the areas causing poor soil fertility, scanty rain and poor pasture plant population and yield. The area has arid vegetation consist of plane lands, smaller trees and shrubs as well as grass species that are very poor in nutrients composition for animal consumption. Livestock production in the areas rely on extensive grazing and limited supplementation with crop residue hence there is poor yield from the animals in terms of meat and milk production. Due to drought and poor nutrients composition in pasture, animals often lost weight, die and sometime unable to produce meat, milk or even hardly reproduce. Dry lands in Nigerian arguably be describe as an important area when it comes to agricultural production because dry region alone in Nigeria. But the area is not only large; it is an area which support large livestock production and supply to other areas; however, continuous land degradation, drought, climate change and loss of vegetation currently challenge capability of dry lands to support animal production in Nigeria. If left unchecked, it can result into increased poverty among the dwellers of the region and shortage of animal products supply for the teeming population of Nigeria in other regions. States including Sokoto, Zamfara, Kastina, Kano, Jigawa, Yobe and Borno have

communities falling into this area; the area as at 2001 reported to have a population of about 42.6 million with an annual growth rate of 2.8% the population today can be put at about 58.7 million people all of them depending majorly on agricultural practices directly or indirectly involving crop and animal production.

In Nigeria dry land area, pastoral nomadism is the most common system of livestock production whereby cattle, sheep and goat are being herd to graze range that during wet season they are no more available; during dry season, nomads and herdsmen move their animal southward in search of green pasture throughout the dry season. These become so important for them to support their animals because of poor nutrient levels, poor yield and non-availability of pastures in their own areas. It is a common practice associated with livestock production in Nigeria but it has been reported not to be delight of the herdsmen themselves owing to the difficulty nature of the practice and laborious nature of the movement (Otchere, 2019), worst hit is the increasing spate of socio-economic disasters associated with the movement of the pastoral nomads in the modern time that is charging the peaceful polity of Nigeria systems.

Livestock management practices in Nigeria dry lands

Generally, livestock management practices employed in Nigeria can be classified into Traditional Extensive System, Nomadic or Pastoral System, Mixed Farming and Peri-Urban Modern System. Each of these systems are in response to provision of solutions to problems facing livestock farmers and owners in Nigeria; under traditional extensive system, few numbers of animals are kept by management practices including scavenging, tethering, fattening and compound dairy. Scavenging animals are only provided with shelter by the owners, seldom feeding with kitchen remnants and food waste as well as occasional veterinary services; animals are mostly owned by women as usually under village conditions. Tethering involve cutting-off of grasses, legumes and browse plants for animals' consumption, in this practice, animals are kept in stall then feed with cut feed; it is a common practice among people who are predominantly farmers but they are interested in keeping few animals but they don't want such animals to destroy their crop land as a result they tight and provide feed for the animals. Fattening and compound dairy are practices where by Livestock are supplied with highly nutritious feed resources majorly agro-industrial by-products for them to gain weight within a given time frame or produce milk that can meet up with demand of the household keeping the animals (Eroarome, 2019).

Nomadic or pastoral system of livestock management is the system of livestock production Nigeria that support largest number of livestock, utilize largest range pasture and that is most susceptible to seasonal variability of pasture. This system includes exclusive pastoralism, transhumant pastoralism and agro- pastoralism. Under exclusive pastoralism, herdsmen keep moving at all-time depending on availability of green pasture for their livestock consumption. The nomad in the course of their movement are subjected to series of challenges and commit series of havoc that have both social and economic consequences. In the practice of transhumant pastoralists, they usually have Temporal or permanent location but continue to move their livestock and family members in search of green pastures. They seldom engage in crop production to meet up with grain production of their family, women and young female members of their family usually engage in sales of milk and other products such as fura, moinshanu and cheese. Some members of the family[Balogun,2020] are saddled with responsibilities of moving their animals southward in search of more green pasture Especially during dry season while some stay back with older members of the family and older animals to serve as guard and work on farm. These pastoralists Usually don't own land, cause they rent or lease land for building their huts and cultivation of grains (mazara, jero, dawa)for their

household consumption, Elderly pastoralists usually Visit the camps where animals are moved to Southward and the herdsmen move upward not as wet season approach because by wet season, there is risk of Tsetse fly infestation in the South and availability of quality pasture in North. Agro-pastoral system of livestock production is characterized by a mixed of livestock and crop production, originally the individuals involve are pastoralist but due to loss as result of animal death or other reason, the number of their livestock is greatly reduce but since they are not traditionally and culturally farmers; they cannot result into crop production therefore, they settle permanently at a location, own land, cultivate land for crop production for commercial sales and household consumption. These system entails hardly sales of livestock, instead of selling their animals, they prefer to sell their grains and buy more cattle to their herd (Cyburn, 2019 and Aregheore, 2020).

Mixed-farming integrate both livestock and crop production, under this System; crop and livestock are kept together on the same piece of land usually by people who are not pastoralists culturally. They are keeping livestock in addition to their farming may be for economic gains or as draught animals; they use manure from the animals as fertilizers on their farms and they use agricultural by-products from their farms to feed the animals (Bourn,2020). Peri-urban and modern ruminant husbandry system in Nigeria can describe as ruminant equivalent of poultry husbandry. In this system, housing and feeding are intensive; livestock are held in a system that support improved animals' performance, high products yield and huge investment. They are good investment by individuals and companies that keep cattle, sheep and goat for meat and milk production. Although the animals do graze but very few of them have established pasture or range as a result of this, the animals under this system rely mostly on concentrate feed supply to them by their owners. But, lately this system of livestock production is facing huge challenges of cattle rustling whereby armed men will invade a farm or compound where livestock are kept and steal away the animals. More than 20000 cattle were reported stolen between 2011-2015 along peri-urban cattle facilities located across Niger, Kaduna, Zamfara, Kano state and Abuja in Nigeria. In some cases, lives and properties worth million were lost while in some cases no lives were lost (Eroarome, 2019).

Impacts of seasonal variations on livestock production and management in Nigeria dry lands

In a typical dry land area of Nigeria, livestock production is an important part of a household because livestock production is source of livelihood and food for human consumption. But, despite its importance, seasonal variation exerts on it the following impacts:

i. Loss of rangeland to other activities: natural range is the best and cheapest source of feeding for livestock but due to change in season, rangeland in dry land often left un-occupied for a long period (dry land) within a given year due to movement of man and livestock away from the area in search of green pasture and water; and since these livestock owners hardly participate in socio-political affairs, they are busy all year round in search of pasture for their animals rangeland becomes encroach by government, private corporate organizations, individuals and international conglomerate for other activities outside livestock production or intensive private livestock investment such as irrigation project, massive housing, massive housing estates and lots of other activities.

ii. Loss of valuable traditional knowledge: valuable traditional knowledge associated with livestock production are lost because seasonal variation cause reduction in stock population and productivity which reduce capability of the livestock producers to sufficiently support their families and younger generations (USAID, 2019), therefore younger people take alternative lifestyle by engaging in trades or other means of becoming self-sufficiency. As these younger generations move to self-sufficient; they become modernized and get

changed. As these cultures become increasingly modernized, they will become less self-sufficient and increasingly dependent on as against independent nature of their generation. The loss of these cultures translates into a loss of valuable traditional knowledge regarding livestock production and management in dry lands.

iii. Deforestation: Deforestation in dry lands is linked to slash and burn cultivation and the dependency of rural populations on wood fuel as source of energy in preparation of their food. Cutting of wood fuel for sales in cities and metropolitan communities by the rural dwellers and urban inhabitant also contribute to loss of forest trees. The loss of forest has many negative effects on livelihoods and livestock production in dry land because some of these trees that are been cut down are part of range plant which provide huge nutrient for grazing animals. When areas are demanded on f trees, catchments can dry up,carbon, sequestration is reduced, and the local climate becomes hotter. Soil health is compromised and this in turn affect rangeland health because the soil will not be able to provide nourishment for pasture plants any longer.

iv. Harmful effect of overgrazing and overstocking; They are common pressure generators in dry land livestock production and the consequences of these is increase soil erosion, reduced carrying capacity of rang land, loss of biodiversity and reduce resilience to climate change. Overgrazing reduces the density of vegetation and the amount of pasture or browse generated. Perennial grasses, being more favoured by livestock, are replaced by animals, which have less root growth to hold the soil, and produce gracing after it has rained, Soil erosion, from water or wind is the usual consequence of loss of perennial grasses, and this further decrases soil fertility through loss of nutrients. The ultimate outcome is desertification which can be very difficult to reverse when the suite of grasses has changed from perennials to mainly annuals, and invasive less palatable species have grown dominant (USAID, 2014).

Livestock production and management in Nigeria Dry land

All over the world, some livestock have been physiologically adapted to dry land condition when compare with other livestock goat is an example of this livestock. Goat is an animal that do well even under poor or harsh environment condition. Traditionally, in Nigeria while Borno goat, Red Sokoto goats, Maradi and Kano Brown goats are parts of the country, that means these breeds of livestock are more adapted to the dry condition and seasonal variability of the areas. In other parts of the world and Africa, goats are also leading animals found in dry areas; in southern Africa for examples, Kalahari Red goats are found in abundant and are known to be high performing animals in an area where pasture plants are poor nutritionally, high temperature regimes and low precipitation. Therefore, breeding and production of such animal in Nigeria dry lands can serve as a new way to livestock production in the areas.

Since in the dry land pasture plants are poor nutritionally, soil degradation, scanty alternative feed resources and low precipitation; goat because of their nature to cope with poor feed resources if given priority can be an economically viable production activities in the Nigerian dry land areas. With goat production in Nigerian dry land, economic conditions of the areas can be turn around within shortest possible period because of the increasing demand for goat meat (Chevon) in local and international markets of Africa and Asia.

Globally, goat production is on increase when compared with other livestock. Between 1985 and 2005; world other livestock. World goat population increased by 78percentage compare with cattle and sheep which were 13% and -1% increase respectively (Simela l, 2018). Goats are hardier an better

adapted to dry areas around the world. In addition to these advantages; goats nutritional requirements are lower compare with cattle and sheep. Goat can subsist well on poor pasture which characterized most dry rangelands in Nigeria. Hence breeding and production of goat as a more adapted animal to dry lands can contributes to dry lands productively. In order to further enhance goat performance in dry lands, researches into their nutrition through supplementation using concentrate feeds as well as genetic manipulation for improved performance can also be employed to promote economic return from livestock production in Nigeria dry lands areas.

Integration crops and livestock production in Nigeria dry lands will encourage introduction of sustainable livestock production and management practices in Nigeria dry lands areas. There will be optimum utilization of natural resources for production of and crops and animal's production. Livestock wastes and manure can be used for improvement of soil fertility while residues from processing of crops harvest can be used as supplemental feed resources for livestock feeding. This integration can create economics, environmental and sustainable valuable synergies in the dry lands areas of Nigeria. With this, income of the people living in the dry lands will increase because high crop yields due to fertility improvement from addition of into soil as well as improved and performance USAID, 2014. Provision of infrastructure and facilities such as l drilling of boreholes construction of dams, motorable roads, rural electrification, market access and other related facilities that support lives of the dryland dwellers. Provision of infrastructure will make life to be important less stressful in the dryland areas. Apart from there will be increase income generation to access to better markets as well as close customers. Availability of water in the dryland can also promote irrigation activities for produce food crop, vegetables and fruits; this will allow income diversification and inclusion of women into economics orbit of dryland society.

Conclusion

Dryland areas in Nigeria are significant society as far as livestock production in Nigeria is concern but growing difficulties associated on climate variation in these areas is threatening sustainable livestock production management. Therefore, a rethinking of livestock production and management in these areas becomes necessary focusing on breeding and production of dryland adapted livestock, integration of livestock and crop production assessment of feed resources availability in dryland areas for livestock consumption and provision of infrastructural facilities all for the purpose of improving lives and productivity of livestock in Nigeria dryland areas.

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