

Factors Affecting Cattle Production in Puntland State of Somalia: A Case Study of Nugaal Region

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ABSTRACT:- As one of the primary milk and meat producing livestock species, cattle contribute greatly to food security in Somalia. Cattle usually account for 25% of milk production and 24% of exportation income in Somalia. However, cattle population has drastically been decreasing in northern Somalia including Puntland for the last 25 years. As reflection of cattle situation in Somalia, over 90% of cattle population in Puntland was claimed by diseases and droughts during 1992-2004. Today's surviving population is 95% less than that of 1991 or 2001. The objective of the research was to determine factors that affect cattle production in Nugaal region of northeastern Somalia. The research was qualitative and quantitative in nature. The target population was the cattle-herding community in Nugaal region. Data captured were analyzed by the usage of Statistical Package for Social Science to determine the recent trends in the cattle population; the result of the effects; and the view of the cattle-herding community on the current situation of the lifestyle. Descriptive statistical results suggested that critical insufficient feed supply in pasture, fodder, and water; lack of dependable cattle herders; diseases and lack of veterinary interventions are the factors that primarily affect the cattle welfare and numbers.

Key words: cattle production, fodder supply, labor availability, veterinary services, water supply.

I. INTRODUCTION

The cattle are one of the four major livestock species in Somalia with others include goats, sheep, and camel. In government livestock estimation of 1988, the base of later supposed estimations, cattle population in heads was 4,581,260 in Somalia, nearly 330,000 in Northeast (Puntland), and around 14,000 in Nugaal region. Somalia usually ranks number 8 in Africa for cattle population per country. The role of cattle in food production and food security is very historic in Somalia as even some social scientists tend to suggest that the ancestors of the living Somalis were in regard of 'privileged relationship' between them and cattle. With background reflections, we can fully understand what cattle socioeconomically mean for the Somalis. Cattle herding has been the primary economic activity of the Somali society at the beginnings of the Somali history. Researchers on food production history in the Somali peninsula at particular and in the Horn of Africa at general have found that people in Somalia had been practicing cattle breeding from 7000 years ago onwards. Moreover, a series of rock paintings in northern Somalia show that the cattle was herded at least from 5000 years ago towards. The cattle were the most important species among the animals that the people painted on the walls of caves. These linguistic and archaeological findings are supported by ancient records. Both the ancient Sumerian Iraqis and Egyptians mentioned (over 4000 years and 3500 years ago respectively) the cattle as animals attached to special importance in northern Somalia. The camel has just joined the cattle for economic importance by the few centuries prior to the birth of Jesus. However, Al-Mas'udi of Baghdad reported nearly eleven centuries ago that the cattle were still the leading economic resource in vast area south of Muqdisho or Mogadishu. The historian's singling out that region is understandable because Jubba-Tana area in the south of Muqdisho still holds regionally the largest cattle population in the Somali Peninsula. According to the estimation of 1988, the largest cattle population in central and northern Somalia was herded in the Northeast (Puntland).

II. STATEMENT OF THE PROBLEM

Despite the historical economic role of the cattle in Somalia, the numbers of the animals have been decreasing for the last 25 years as indicated by available statistics. For example, according to Puntland Development Research Center (PDRC) the cattle number of late 2003 in Puntland were 74% less than that of 2001 due to drought, while the drought and loss remained to occur increasingly throughout most of 2004. As further indication of the decline, there has been no single cow brought to the livestock markets of Garowe city, the capital of both Puntland State and Nugaal region, for beef production and for any other kind of trade at least from 2007 onwards, according to revenue records of Garowe Municipality. These data indicate that cattle production has fallen drastically. To reverse the trend, there is a need to know what is actually causing the problem, and hence this research.

III. THE OBJECTIVE OF THE RESEARCH

The objective of the research was to determine the effects of fodder and water supply, and labor and veterinary services availability on the cattle production in Garowe-centered Nugaal region of northern Somalia.

IV. THE CONCEPTUAL FRAMEWORK

The conceptual framework was built on the hypothesized variables as following:

1) Independent Variables:

Fodder supply: amount, varieties

Water supply: amount, sources

Labor availability: number of herders

Veterinary services: practitioners, treatments

2) Dependent Variable:

Cattle production: numbers, breeds

Standards of cattle needs in these resources, particularly fodder and water supplies, should be set out. Water requirements for cattle depend on four basic conditions: body weight, environmental temperature, stage of production (such as lactation), and amount and type of fodder consumed. For example, lactating cows of 453 kg (1000 pound) of body weight in USA can need around 83 liters of water per day for themselves plus 28 liters for their calf in high temperature (Rasby, 2016). Such cows need to eat 13.6 kg of fodder per day and thus 408 kg per month in average (Sprinkle & Bailey, 2004).

Usually, a tropical cow needs to drink 50 liters of water per day for herself (not including water for feed production and evaporation). In Somalia, a lactating cow with about 290 kg of body weight needs 50-70 liters of water while non-lactating cow needs half of that water. Such cows need 9 kg of forage per day. At least two herders should look after 50 to 100 heads of cattle in Somalia. Veterinary services also affect the survival of cattle herding system. There are great challenges preventing to meet these requirements for these resources. Because of shortages in labor and other resources, the old system of rearing the cattle is in disarray.

Three forms of cattle herding options are adopted today in Somalia. First, some families still remain in the mobile way of cattle herding, going after the pasture. Second, others adapted to sedentary form by holding few animals, mostly less than 10 heads, and keeping them at the village. Third, others mix the two forms. They use the public rangelands when forage is available and bring the animals back into a farm when it is not.

V. LITERATURE DATA GAP

Most of the available reports such as WSP (2000) and FAO (2004) on cattle population in Puntland supposed a steady yearly percentage increase of all livestock species of which the cattle's one is 1.6 times for 1988-1998. For instances, the cattle population of north Mudug, Nugaal, and Bari in Puntland was estimated 271, 310 heads in 1988, so it was assumed to be 434,069 heads in 1998. That approach would make today's cattle population in Puntland over one million heads and animals' number in Nugaal about 57,000 heads. But the realistic case is very different from that one. The problem is that, as noted by FAO research mission, droughts and diseases were not taken into account. Because of these gaps, these works lent little confidence to these estimations of theirs.

VI. METHODOLOGY

The research was qualitative and quantitative in nature. Survey questionnaire, interviews, direct research, and review of exiting records were used as research instruments. Besides follow-up interviews with some of the questionnaire respondents, around 20 well-versed interviewees consisting of experts or other knowledgeable persons in livestock statistics, and cattle herders from the five regions of Puntland were also interviewed.

VII. FINDINGS

a) Cattle numbers in Puntland and particularly in Nugaal region

Puntland: Notwithstanding the above-mentioned estimations, most of the cattle regarded for 1988-1998 were claimed by recurring droughts and epidemic diseases of 1992-2004. One study (PDRC, 2004) found that 74% of the cattle were lost to drought by late 2003. Interviewed cattle herders and experts added to that over 90% of the animals perished by late 2004. Another drought in 2010 and the ongoing devastating one have put the cattle of Puntland in a condition of pending extinction. Since PDRC study geographically covered almost one-third of Somalia i.e. northern Mudug, Nugaal, Sool (upper Nugaal), eastern Sanaag, and Bari as the regions of Puntland, a harbinger of a serious trend has already been noted.

In fact, around 20 well-versed interviewees consisting of experts of livestock statistics and cattle herders from the five regions of Puntland emphatically state that the present-day cattle in Puntland are even less than 5% of the cattle population of 2001 or 1991. The examples that can support their view include that 88% of the cattle population in Puntland was owned by northern Mudug according to the estimations of 1988 and 1998. But according to interviewees, there are only some hundreds of those cattle in that region today. Nugaal is one of the four places that used to breed the largest number of cattle in the state with Nugaal has currently the highest number of cattle in the state because of its better water supply and cattle-favored grass rangelands.

Nugaal: Moreover, the descriptive finding on the following table has very important piece of information for it is giving us the picture of surviving cattle population in Nugaal Region. Cattle numbers of only 19 families are over 50 heads, and according to follow-up interviews, no family even reported that his cattle number exceeds 80 animals and even few of them have cattle reaching that particular number. Cattle numbers of 15 families are between 40 and 49. Similarly, Cattle numbers of 28 families are between 20 and 29; whilst 7 families head between 30 and 39; and only 5 families hold 10 to 19 animals. This generally means that cattle population held by the respondents is somewhere around 3000 heads. Elders from cattle-herding community estimate that the average cattle size per family was 60-80 heads in 25 years ago.

With that, according to the interviews with the respondents, these respondents own over 95% of the cattle population in Nugaal region. Therefore, the maximum number of cattle held in Nugaal at the time of the interview can be 3,500 animals while a high number of that is claimed by the current drought after the data were collected. This means that just several thousands of cattle heads can be expected to be surviving in Puntland today.

Table 1: Number of Cattle per Family in Nugaal

	Number of cattle	Frequency	Percent
	10-19	5	6.7
	20-29	28	37.8
	30-39	7	9.5
	40-49	15	20.2
	50 +	19	25.7
	Total	74	100.0

b) Effects of the variables on cattle numbers in Nugaal

Fodder Supply: In descriptive analysis, seventy one respondents (96%) stated that fodder shortage is the most difficult obstacle to cattle well-being and increase in number. Seventy two respondents (98.6%) agreed that the traditional pasture does not produce forage that can closely feed the animals anymore. In the supportive interview, cattle pastoralists stated that even in the wet seasons the animals are less-fed because of lack of grass. The results also show that 95% of the respondents see that the current Situation of cattle herding is unsustainable so they would prefer to change it to more controllable or settled system.

Water supply: Sixty four respondents (86%) stated that there is no sufficient free water for the cattle. Only 13.5% of them agreed that sufficient free water is available for the animals.

Labor availability: Seventy one of the respondents (96%) disagreed that their cattle are herded by enough number of herders. Forty three (58%) stated that they use hired workers that are not dependable but need to be assisted and supervised by the owner. Sixty five or 88% of the respondents indicated that even these hired workers are not always available.

Veterinary services: The respondents 100% agreed that they use always only their own experience and money to treat cattle diseases. Around 53% of them indicated that they consult by payment with paravets for bad conditions of animal ailment. The interviewees, similarly, 100% stated that they lose number of cattle to diseases in every year.

Generally, a study on macro-economy of Puntland (PDRC, 2004) and another one on Somali Galbeed, the Somali region in Ethiopia (Devereux, 2006) found that shortages in supplies of fodder, water, labor, and veterinary services severely de-stock the animals in the two regions respectively.

c) Cattle Breed

The respondents in the region indicate that they herd one cattle breed, North Somali. This is understandable for the cattle in the Somali region are mainly grouped as Somali shorthorn Zebu or small Zebus of the Somaliland. The main breeds are Gasara, Garre, and in less significance Booran, in the south; and North Somali in the north. The cattle raised in Puntland belong to North Somali. Despite the fact that the small Zebus of the Somali are less weigh (290 kg for average cow) and less milch (2.5 kg per day, with fat content of 5.4%), this does not mean that the animals are substandard because they have rather traditionally been selected for survival throughout hundreds of generations and not for productivity (FAO, 2004).

VIII. CONCLUSION

The results show that the living cattle in Puntland generally and in Nugaal particularly is less than 5% of the cattle population of 2001 or 1991 and the decline is in continual course. The reasons of such deterioration are shortages in pasture supply because of environmental degradation; shortages in water supply because of lack of water management with recurring droughts; shortages in labor supply because the young generation have lost confidence and will in pastoralism lifestyle; and shortages of veterinary services because of absence of the required human and financial resources. Overall picture indicates a condition of pending failure in cattle-rearing pastoralism at anywhere in the north of Shabeelle valley in the south of the country. In that vast land, cattle are in fading condition. The condition actually mirrors today's situation of pastoralism lifestyle in Somalia. By judgement of the researcher, who has long intimately been observing the situation, the case of other livestock species is not much better than that of the cattle.

In fact, it is observable that whenever these pastoralists feel resource setback they resort to adopt more environment-destroying mechanisms, a process that is now turned to be endless because of absence of caring system. For example, the use of wells has mostly been substituted by undoing barkado (dams), while the camel-borne herding system is now replaced by destructive vehicle-borne one. In fact drought is not about the traditional pattern of rainfall-failure any more, but it is more about human actions altering the environment. Herding system and use of environmental resources are in disaster.

The results of the research also reflect questions and even gaps that need further researches to be carried out. For example, the interviewees were promptly pointing out that the problem primarily emanate from absence of functioning government role and regulations. FAO (2004) and African Development Bank (2013) hold the view also. Most of the respondents stated that they would prefer a settled pastoralism but they can't have land for their animals due to absence of effective law and order. Is it then making sense to think about betterment of pastoralism situation without dealing seriously with the problems of institutional shortcomings and the environmental degradation, and adopting a totally different system of pastoralism?

IX. RECOMMENDATIONS

Realization of saving the future of cattle and pastoralism generally would call for different types of tasks by the Somali government as well as the citizens. The government, be it national or local, should determinedly take the lead for action:

- The government should Introduce and operationalize a culture and system of community land management which can allow appropriate fodder planting and stocking for long term use.
- Encourage and develop establishment of settled pastoralism creating a pilot program for encouragement.
- Take an approach of adopting and educating that pasture shortages, land male-management, environmental degradation, population growth, and droughts are interconnected problems, and the droughts are not caused only by less rainfall but also by lack of land management and of environmental services.
- Stop undoing or illegal privatization of more-favored public rangelands; and encourage investing and the reversing the degradation in less-favored areas for agricultural development.
- Reduce the heavy population pressure on the once-well-vegetated Hawd area by developing vast coastal area of Cadduun and flood valleys of Afaaf belt.
- Preserve and develop national rangelands preventing them from alteration of private use.
- Stop proliferation of undoing urbanization.
- The government should also encourage and assist a system of community water management; establish safe, small dams at the flood plains of seasonal rivers (togs) with regulations and technical advancement to provide water management mechanism, agricultural production growth, and environmental protection technique.
- Introduce and utilize solar energy for animal watering, and irrigation for fodder and small mixed farming, bearing in mind that irrigation causes salinization.
- Reduce livelihood vulnerability and unnecessary herding burden by effective rural development programs to keep the young generation in herding job.
- The government should allocate a certain budget for animal health services for more trained vets and paravets, research on diseases, and treatment of the diseases.

SUGGESTION FOR FURTHER RESEARCH

The researcher sees that urgent researches to be undertaken on the following areas:

- The critical gap between the findings of this research and the existing records on the cattle population of northeastern Somalia (Puntland);
- The best ways to change the traditional Somali pastoralism to settled one;
- The best ways to control the sweeping environmental degradation and desertification in Somalia.

REFERENCES

- [1] African Development Bank Group. (2013). Somalia: Country Brief. P. 4.
- [2] Al-Mas'udi. (1982), [first 935]. Muruuj Ad-Dahab wa Macaadin al-Jawhar. pp. 330, 338-9.
- [3] Devereux, S. (2006). Vulnerable Livelihoods in Somali Region, Ethiopia. Brighton: Institute of Development Studies. pp. 26-47, 192.
- [4] Ehret, C. (1979). On the Antiquity of Agriculture in Ethiopia. The Journal of African History, Vol. 20, No. 2, pp. 161-177.
- [5] Food and Agriculture Organization of the United Nations (FAO) with the World Bank and European Union. (2004). Somalia: Toward a Livestock Sector Strategy. pp. 5-49.
- [6] FAO. (2016). Catalogue on Somalia: Somalia exports 5.3 million animals in 2015. www.fao.org/somalia/news/detail-events/en/e/410266/ accessed Aug. 15 2016.
- [7] FAO. (2015). Catalogue on Somalia: Somalia registers record exports of 5 million livestock in 2014. www.fao.org/news/story/en/item/283777/icode
- [8] Garowe Municipality. (2013). Statistical Abstract of Garowe Municipality. Garowe. p. 40.
- [9] Gutherz, X. and Luc J., eds. (2011). The Decorated Shelters of Laas Geel and the Rock Art of Somaliland. Montpellier, France. P. 18.
- [10] Kramer, S. (1963). The Summerians, their History, Culture and Character. New York. pp. 276.
- [11] Ministry of Planning and International Cooperation of Puntland. (2007), 3rd edition. Puntland Facts and Figures. Garowe. p.6.
- [12] Puntland Development Research Center. (2004). Macro-Economic Analysis in Puntland: Draft Report Funded by UNDP/World Bank and implemented by PDRC. Garowe. pp. 9-13.
- [13] Rasby, R., (2016). Producer Question from 2016: How much water cows drink per day. [beef.unit.edu/amounts water cows drink](http://beef.unit.edu/amounts%20water%20cows%20drink), accessed Sep. 4, 2016.
- [14] Said, H., (2011). Long Term Solutions for Drought Prevention in Somalia. www.shahid.net.

- [15] Sprinkle, J. and Derek B. (2004). How many animals can I graze on my pasture? Determining carrying capacity on small land tracts.
<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1352.pdf>. Accessed Sep. 15, 2016.
- [16] WSP Somali Programme. (2001). Rebuilding Somalia: Issues and Possibilities for Puntland. London: WSP International through Haan Associates. pp. 99-101.