Available online at www.elixirpublishers.com (Elixir International Journal)

Agriculture

Elixir Agriculture 69 (2014) 23094-23098

ISSN: 2229-712X

Linkages and the Performance of Livestock Farming: A Survey of Small Scale Livestock Farmers in Kerio Valley-Baringo County

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ARTICLE INFO

Article history:
Received: 25 February 2014;
Received in revised form:
29 March 2014;
Accepted: 9 April 2014;

Keywords
Small and Micro Enterprises (SMEs),
Linkages,
Economic Development,
Livestock Farming.

ABSTRACT

According to the Kenya Institute for Public Policy Research and Analysis, (2009) Kenya's poverty levels are estimated to be on the decline, while the number of those living below the poverty line is estimated to have increased from 13.4 million in 1997 to about 16.6 million in 2006. The incidence of poverty is higher in rural areas at 49.1 per cent compared with 33.7 per cent in urban areas. The purpose of this study was to determine the effects of linkages on small scale livestock farming in Baringo County. The study adopted the stakeholder's theory by (Friedman, 1984) which states that the organization itself should be thought of as grouping of stakeholders who manage their interests, needs and viewpoints. He posits that the parties involved in an enterprise, includes governmental bodies, political groups, trade associations, trade unions, communities, financiers, suppliers, employees, and customers, who play a significant role in enterprise success. The research employed stratified random and simple random sampling for data collection. A structured questionnaire using interviews was administered to a representative sample of 67 small-scale livestock farmers. Data was collected on types of links, incidence of links and function of identified link formations. The study hypothesis was tested using Chi-square at 0.05 level of significance. Study findings showed a significant relationship between linkages and small scale livestock performance. The study recommends that agricultural stakeholders such as KVDA, KARI, KLMC and MLFD should partner with the farmers in providing relevant information, so as to facilitate better management of their livestock, training on better technologies, breeding options, and ensure enterprise growth for sustainable economic development. Research on the establishment of community ranches and a meat processing firm within the county be carried for the benefit of the farmers and provide ready market with less exploitation from middlemen.

Introduction

The World Bank estimates that Kenya's poverty level stands at 44 to 46 per cent, which is almost the same level it has remained for six years. However, it represents an improvement from 12 years ago when poverty level stood at 56 per cent before falling to 46 per cent in 2005. Mr John Randa, an economist at the World Bank Group in Nairobi observed that currently, poverty stands at 44-46 per cent, which is an improvement from 56 per cent in 2000, but notes that the poverty problem still persists (Nation Media Group, 2013). In 2005, Rift Valley province where Baringo County is located had a poverty index of 50%, (Government, 2007). Research also shows that three out of five small scale businesses fail within the first few months of operation (KNBS, 2007).

The Kenya vision 2030 is based on three pillars: Economic pillar aims to improve the prosperity of Kenyans through economic development programmes, covering all the country, with an average GDP growth rate of 10% per annum beginning in 2012, (National Economic and Social Council of Kenya, 2007). The problem of high levels of income inequality multifaceted the problem and undermines the prospect for sustained and equitable economic growth and a significant reduction in the incidence of poverty. The rural areas, especially in Baringo County are not a new phenomenon to the persistence in poverty occurrences.

Baringo County is ranked as an Arid and Semi Arid Lands of Kenya (ASAL) and as such most residents in the rural areas practice livestock farming (pastoralist). Livestock production is the predominant source of income or livelihood for the majority of people in the county with few of them practicing subsistence agricultural farming due to the long spell of rains, which favors indigenous livestock that are adaptive to the environment. Poverty is widespread in the county. The main livelihood systems are livestock and crop production, wildlife -based tourism and fishing. Livestock is the primary livelihood system, especially in the lowlands. Despite all this Baringo is a food deficit district and water supply from rivers and lakes is inadequate to meet domestic, livestock and irrigation needs (Price wate house Coopers, 2005).

The isolated Kerio Valley is situated in a narrow, long strip that is approximately 80 km by 10 km wide at its broadest, through which the Kerio River flows. 4,000 feet (1,200 m) deep, the valley lies between the Cherangani Hills and the Tugen Hills (Wikipedia, 2013). Kerio river creates the boundary with other counties (see map in appendix). Kerio Valley region is a lowland area composed of small scale livestock farmers. These farmers engage in crop and fruit production and marketing besides livestock keeping. According to (Mutava Musyimi, 2001), although there has been improved livestock health in the region, this has not been in tandem with development of

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livestock marketing and alternative non-livestock investment in arid and semi-arid areas.

The key stakeholders in the livestock enterprise in the regions are: Kenya Livestock Marketing Council, Kenya Agricultural Research Institute and Kerio Valley Development Agency. These links are not being involved in livestock farming activities. By creating links among the stakeholders and pastoralists may identify new opportunities, access relevant information and gather necessary resources to adjust to any changes that might affect their productivity. Therefore for productivity to increase, information dissemination to the farmers has to be timely and objective, (Chambers, 1993). Livestock farmers in the county have not exploited fully the presence of identified stakeholders.

The problem is compounded by illiteracy levels among the farmers, and lack of knowhow. Addressing this problem will enable the farmers to enhance Sustainable & commercially viable livestock farming that can boost their income levels, improve their livelihoods and reduce poverty levels. This is what is required in supporting the attainment of MDGs and the Vision 2030.

Literature Review

Small Scale Livestock Farming in the County

In the rural areas of ASAL regions, it is a common phenomenon to find the residents engaging in livestock farming. A strategic linked livestock farmer remains the best alternative in promoting economic prosperity. The County witnesses quite a number of persons relying on relief food and this remains as the persistent signs of poverty extend.

The collapse of the goat auction project started by Mr Moi in 1986 and was aimed at improving the living standards of Baringo County residents, collapsed in 2002, when the former president retired. The project that was supposed to turn around the economy of the semi-arid area, whose mainstay is livestock keeping. According to the (Wycliff Kipsang, 2013), more than Sh50 million had been raised from the sale of 31,863 goats, 2,518 sheep and 180 cows, according to records held by Baringo County Council that run to the early 90s. This was one of the motivator among livestock farmers (especially goat herders) to improve their livelihood through the income earned.

The lowlands or plains are very dry. This means that 46.3% of the land in Baringo cannot support any meaningful crop production (KenInvest, 2011). This supports the populous view that this area supports more of livestock farming rather than crop farming. In 2012, KVDA reported that Baringo County had 1 091 899 cattle, 2 026 213 goats, 482 831 sheep and 67 083 camels.

This is an indicator of the potentiality of livestock farming as an opportunistic economic activity that can be pursued with immense success, and proper linkages can provide an avenue for the young farmers to prosper in such an economy.

Linkage Development among Livestock Farmers

A conference held in January, 2011 in Garissa-Kenya identified some of the following agencies as partners to the livestock farmers in ASAL areas (Ernest. N. Mbogo, 2011): included are some of the local agencies in Baringo County.

1. Kenya Dry-lands Livestock Development Programme (KDLDP)
2. Kenya Agricultural Research Institute (KARI),
3. Kenya Livestock Marketing Council (KLMC)
4. Kerio Valley Development Authority (KVDA)
5. Ministry of Livestock and Fisheries Development (MLFD)
6. Animal drug and feeds manufacturers with their suppliers
7. NGOs

The Stakeholders in the livestock sub-sector in North Eastern Kenya gathered for three days with the main aim of sharing information and building partnerships in order to build sustainable livestock – based livelihoods and ensure sustained economic growth for the pastoralists. Stakeholders in the livestock subsector comprised institutions involved in activities like livestock feeds/fodder (production, conservation and marketing), natural resource management, infrastructure development (water, loading rumps, slaughtering facilities, markets), animal health, livestock marketing, livestock products processing and peace building activities (Ernest. N. Mbogo, 2011). This is a forum that livestock farmers in Baringo County require so as to gain better insights into the existing opportunities in the livestock business. The ability of an entrepreneur to network effectively has emerged as an important factor in facilitating entrepreneurial activities and sustaining business development.

Considering the escalating population growth, shrinking grazing land and increased demand for animal products, sustaining livestock production through improved management, is critical to the issue of food security and poverty alleviation in the county and in other ASAL areas of developing nations. The challenges facing the research and extension services in these countries is to increase productivity in the livestock sector while sustaining and enhancing the productive potential of the available natural resources. In a climate of declining governments support for conventional means of extension and the evidence of lack of success of traditional methods, the need for alternative methods for disseminating technologies is recognized (Scarbough, 1997).

Link Functions in the County

Value addition

The key opportunities in the livestock lie in value addition. Through likanges, locally-based investments in small-scale firms that use livestock and livestock products have the capacity to provide livelihood options for the people of Baringo by way of trade and employment. Such industries could take the form of abattoirs, tanneries and production of handicrafts based on animal products such as hooves and horns. The livestock sector also has the capacity to provide veterinary-related incomes and trading opportunities in animal health products primarily for CBAs (PricewaterhouseCoopers, 2005).

Pasture

The marsh areas around swamps, river banks and lakes provide important dry season grazing and are of great importance in local livestock husbandry

Management

Better management of pasture (and water) is at the heart of improved livestock production in Baringo County. Animal diversifications which are more drought-tolerant should be encouraged. It also reduces the communities' vulnerability to droughts that affect cattle, goats and sheep.

Better management of existing water works could help enhance the health of he both people and livestock through easier access to safe water (PricewaterhouseCoopers, 2005). Marketing agencies provide information on livestock prices, market outlets, processing of animal products, and transport, can be enhanced through strategic linkages (Situma, 2008). The identification of Kenya Livestock Marketing Council (KLMC) by the Garissa Seminar can go a long way in opening markets with better prices for the farmers. Livestock farmers in Kerio Valley were found to have been consulting each other about the problems they encounter as they interact during auction days, market days and in informal gatherings. However, these encounters did not have a significant impact on what

information outside their localities. This therefore posts a great opportunity to enlighten the farmers on new emerging information that are available outside their sphere of influence.

Challenges facing livestock farmers in Baringo County

The following challenges were identified by the strategic planning committee of Baringo County, 2005-2015: These challenges remain to addressed, since very insignificant attempts to link the farmers with related agencies has not been done. The new County government should therefore begin to address the farmer's plight by facilitating the links identified by the study.

Deteriorating pastures

Periodic droughts, flooding and overgrazing continue to negatively affect the quality of the pastures available in Baringo. This is exacerbated by inflow of livestock from neighbouring districts (see map in appendices) during the dry season. All this puts pressure on the fragile eco-system.

Disease and pest prevalence

This is largely due to the lack of a system to monitor and control livestock diseases due to the porous nature of the district's boundaries. A key constraint in this regard is the limited access to veterinary services in the district. The high incidence of poverty among the pastoralists and poor physical and marketing infrastructure has dampened private sector investment in animal health. Emphasis has to be laid on traditional knowledge and building the capacity of Community Based Animal Health Workers (CBAHWs) to fill the gap.

Absentee herd ownership

Absentee herd ownership is "part time" pastoralism operated outside the traditional management system and is less likely to be concerned with sound ecological management of grazing resources. This category of herd owners is on the increase in the district.

Poor livestock marketing infrastructure

In common with other ASAL regions, the district lacks proper livestock marketing infrastructure. This is due to the constraints imposed by poor physical and industrial infrastructure. The result is limited access to markets outside the district and even the country.

Land tenure constraints

Land in the district is primarily trust land or communal. The current land tenure arrangements are deemed to be inappropriate in the face of growing individual herds that use common pastures.

Cattle rustling

There have been security challenges in the region, due to frequent cattle theft which has ended up in death of some of the herders and thousands of animals stolen. While this has been continuing into the year 2013, the new government after general elections held in March 2013, has managed to step-up security in the region. To this far, the situation is calm and most of the farmers interviewed expressed hope that the peace currently enjoyed will persist.

Methodology

The Study was based in Baringo County, Rift Valley Province. It focused on Barwessa division which stretches along the Kerio Valley (see map in appendices). Baringo County is located in the former Rift Valley Province of Kenya. Bordering Baringo County are: Turkana County to the North and North East, Samburu and Laikipia Counties to the East, Nakuru County to the South, Kericho and Uasin Gishu Counties to the South West, Elgeyo Marakwet County to the West, and West Pokot County to the North West (see map in appendices) (County, 2012) .

Its county headquarters and largest town is Kabarnet. The county has a population of 555,561 (2009 census) and an area of 11,075.3 km2 (4,276.2 sq mi) (Wikipedia, 2013). Baringo County has varied climatic/weather conditions. The temperatures range from a minimum of 10 °C to a maximum of 35.0 °C in different parts of the county; the rainfall varies from 1,000mm to 1,500mm in the highland areas and goes as low as 600mm per annum in the lowlands areas which forms the Kerio Valley region. The County has 6 Constituencies: Baringo East, Baringo North, Baringo Central, Mogotio, Baringo South and Eldama Ravine (County, 2012). The livestock reared in the region are mainly: goats, cattle, and sheep.

Barwessa division was purposely selected while the 67 respondent were randomly selected. All the respondents selected excluded those living in trading centres. The division has 603 households according to the 2009 census (KNBS, 2009). Data was analyzed by use of descriptive statistics in order to determine frequencies and percentage of the responses to each question was calculated and presented in tabular form. This work was done with the aid of SPSS data version 17. Actual data analysis began with computation of the major variable of the study, which included ascertaining links used by small scale livestock farmers, functions of these link formations and how they impact on their small enterprise performance.

Study Findings

Literature that was reviewed showed that indeed, livestock farming formed a high investment among the farmers with minimal return and. The livestock farmers in the region requires information and services covering a range of subjects including animal health, nutrition, breeding and marketing to increasing the productivity of their high potential animal (Situma, 2008).

Through participation in farmer field days, farmers can develop skills which allow them to continually analyze their own situation and adapt to changing circumstances. The links facilitates in a sustainable manner the identification and exchange of knowledge on appropriate technologies for smallholders to improve their enterprises that are adaptive. Effective linkages therefore remain as a fundamental tool for farmers in carrying out successful enterprises.

Networking Formations

The first objective of the study was to determine the types of linkages that are accessible to small scale livestock farmers. It was established that 2 % visited government agencies, majority of them, (61%) of the respondents preferred meeting business links informally and 37% made an attempt to link with other stakeholders at least three times a year. Other types of links identified were market/auction days where majority (64%) attended, it also emerged that the vernacular radio stations provided information to the farmers with 36% respondents. 2% of the farmers attended agricultural shows, and this was only the Kabarnet ASK show. Similarly, 6% of the farmers received training on livestock management.

There was an indication that if the livestock farming was to improve in its performance, different approaches need to be taken from study findings such as, access to information. The study found poor links and that the majority of the respondents never bothered to utilize even the local links. This findings confirms (Situma, 2008) findings that there are weak links among farmers in the country.

Past studies have also stated that livestock extension has focused on services such as artificial insemination, an ignored delivery of information on better livestock management practices. If further asserts that livestock production and marketing information has been either poor or non-existent as compared with crop producers, (CIP-UPWARD, 2003).

Results also showed the existence of drug sellers, food suppliers, extension officers, shows and exhibition as available

links. Other categories are butchery owners, milk vendors, large scale livestock buyers/middlemen from neighbouring counties and within the local community.

Family members were also found to have participated in farmer field days, attending trade shows and exhibitions and contacting the local extension officer. Although in breeding has taken place in some parts of Baringo County, its presence is only limited in the high lands of the expansive county. The District Livestock development officer in his annual report for 2012 indicated that Kabarnet division led in the population of dairy goats with 1,680 animals followed by Sacho with 270, Salawa with 230 and Tenges in the fourth position with 115 goats. No information was available for the low land areas of the county (Wangui, 2012).

Results obtained indicated that those who networked effectively got better grasp of the business with timely information on disease management and point of sale for their livestock. This therefore showed a weak link in the information provision for better management and growth of the enterprises.

This study therefore agrees with the Garissa's Conference findings that there is need for Advocacy of interest and rights of the members on livestock matters in collaboration with other stake holders, promote livestock and livestock products marketing nationally and internationally and in particular in pastoral areas, in order to enhance and improve the economic well being of pastoralists, develop local and regional marketing research centres and marketing institutions, Enhance marketing information, dissemination and communication to producers and traders, Lobby for policy change to favour appropriate and Build capacities of user groups to sustainably manage livestock related infrastructures and undertake community based disease control measures (Ernest. N. Mbogo, 2011).

Relationship between Linkages and Small Scale Livestock Farming

The second objective was to establish whether there was a relationship between linkages and livestock farming performance. The findings found that those who networked were able to get relevant information on livestock management, availability of better markets and a positive view of the enterprise.

Chi-square tests on the independent variables validated the assumption. Training had a chi ($\chi 2$) value of 16.432 with 1 degree of freedom at $p<0.05$ level of significance. Field days attendance had a chi ($\chi 2$) value of 18.123 with 1 degree of freedom had a significance of $p<0.05$, meetings and event attendance in the last one year had a $\chi 2$ value of 21.25, with 2 degrees of freedom with a significance of at $p<0.05$ level. The results therefore indicated that there was a significant relationship between identified links and better livestock management.

Further test showed significant benefits in live stock linkages and enhanced livestock performance. Chi-square ($\chi 2$) was 18.47 with 1 degree of freedom at $p<0$. The hypothesis was thus rejected at 0.05 level of significance.

Conclusions

The study observes that there are links which when well designed and coordinated can assist small scale livestock farmers increase their productivity and hence better livelihoods and reduction in poverty levels. Marketing links, trainings, and advisory services at the local level, visit by extension workers to the households or community based groups, membership in farmer associations and county government support are the key in boosting the business performance

The linkages identified such as; Kenya Dry-lands Livestock Development Programme (KDLDP), Kenya Agricultural Research Institute (KARI), Kenya Livestock Marketing Council (KLMC), Animal drug, feeds manufacturers and suppliers, Kerio Valley Development Authority (KVDA), Ministry of Livestock and Fisheries Development, and local NGOs who have presence in the county can should play as the link agencies in advancing the farmers efforts of better livestock management and hence becoming economically depended through livestock farming. Livestock farmers may thus fail to achieve desired levels of productivity due to lack of information on proper utilization and management of livestock farming.

Policy Recommendations

The agencies in the livestock sector should link the farmers through information provision and training. This is achievable by involving the farmers to identify their challenges and remedies. Particular consideration should be given to adaptive research to ensure that promising technology is suited to local circumstances.

Funding information on lending institutions should also be availed to the farmers so as to boost their capital base and manage the costs of animal feeds and disease management. The Central government should also subsidize on taxes on animal feeds and drugs being sold for farmers in ASAL areas so as to cut down on cost of production and this will motivate them in entrepreneurial growth.

Recommendations for further Research

Further research is recommended on the establishment of community ranches within the ASAL areas where particular areas for grazing are identified. This is to ensure a centralized system of livestock management, security, extension services, water provision and pasture. A recommendation is also made on future studies to focus on the possibility of the livestock farmers being involved in the establishment of a meat processing firm within the county. The factory will alleviate exploitation by middlemen who buy the livestock at low prices for resale at better high prices.

References

Chambers, R. (1993). *Challenging the Professions: Frontiers for Rural Development*. London: Intermediate Technology Publications.

CIP-UPWARD. (2003). *Farmer Field Days: Emerging Issues and Challenges*. Los Banos, Laguna, Phillipines: International Potato Centre.

County, E. K. (2012, July 18). *Baringo.* Retrieved May 27, 2013, from http://www.countyedition.co.ke/counties/b-e/counties-baringo.html

Ernest. N. Mbogo, D. T. (2011). *Livestock Sub-Sector Stakeholders' Conference for North Eastern Kenya: Building Partnerships for Sustainable Livestock-based Livelihoods and Economic Growth.* North Eastern Province: Provincial Director of Livestock Production.

Freeman, R. Edward (1984). *Strategic Management: A stakeholder approach*. Boston: Pitman.

Friedman, A. a. (2006). *Stakeholders: Theory and Practice*. The Stakeholder Theory, 3.

Government, K. (2007). *Kenya Integrated Household Budget Survey* (KHIBS): Basic Report 2005/06. Nairobi: Kenya National Bureau of Statistics.

KenInvest. (2011). *Baringo.* Retrieved May 27, 2013, from North Rift Investment Conference: http://www.noric.co.ke/

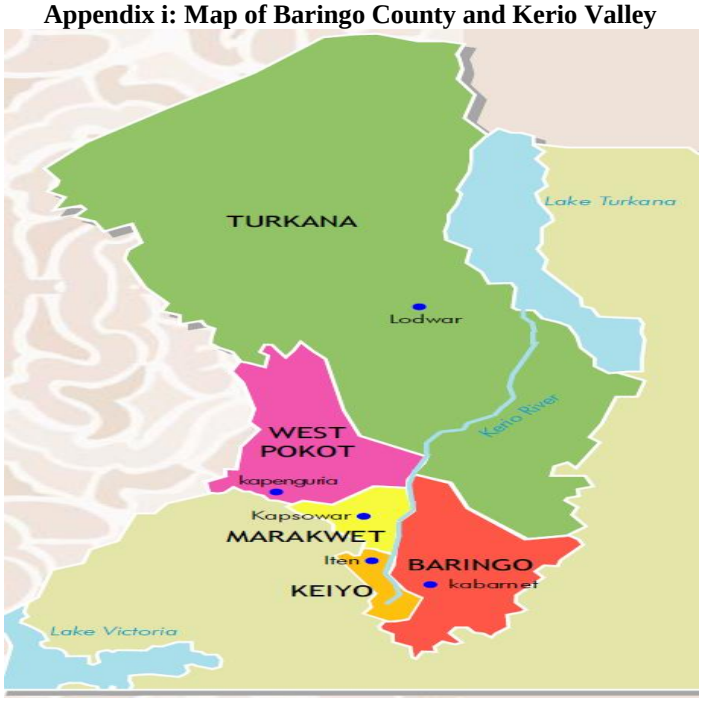
Kenya Institute for Public Policy Research and Analysis. (2009). *Kenya Economic Report 2009, Building a Globally Competitive Economy.* Nairobi: KIPPRA.

KNBS. (2007). *Kenya Facts and Figures*. Nairobi: Kenya National Bureau of Statistics.

KNBS. (2009). *Population by District*. Kenya National Bureau of Statistics: Nairobi.
Mutava Musyimi, J. B. (2001). *Pacifying the Valley: An analysis on the Kerio Valley Conflict*. Nairobi: SNV.
Nation Media Group. (2013, May 20). *Kenya poverty level constant for six years*. Retrieved May 28, 2013, from http://www.nationmediagroup.co.ke/Kenya poverty level constant for six years - Politics and policy - businessdailyafrica.com.htm
National Economic and Social Council of Kenya. (2007, August). *The Kenya Vision 2030*. Retrieved January 2012, from www.nesc.go.ke: www.nesc.go.ke
PricewaterhouseCoopers. (2005). *Baringo district Vision and Strategy*: 2005-2015. Nairobi: PricewaterhouseCoopers.
Scarbough, e. a. (1997). *Farmer – Led Extension Concept and Practices*. London: Inter-Medial Technology Publishers .
Situma, C. (2008). *Entrepreneurial networking and its effect on performance of small holder farmers in Kenya*. Eldoret: Moi University.
Wangui, E. (2012, December 28). *Goat keeping proves success*. Retrieved 2013 20, May, from http://www.Coastweek.com on goat farming in baringo.htm
Wikipedia (2013, April 27). *Kerio Valley*. Retrieved May 20, 2013, from http://en.wikipedia.org/wiki/Kerio_Valley
Wycliff Kipsang, D. O. (2013, May 20). *Baringo rues collapse of Moi's goat auction*. Retrieved May 27, 2013, from htp://www.nationmediagopu.co.ke/Baringo rues collapse of Moi's goat auction - News - nation.co.ke.htm

Appendices:

Appendix i: Map of Baringo County and Kerio Valley



Source: (Mutava Musyimi, 2001)