

October 2018

# POLICY BRIEF

## COMMERCIAL PASTURE PRODUCTION AND ITS ECONOMIC FEASIBILITY IN ASAL COUNTIES



*Figure 1. Severely degraded grazing lands in northern Kenya*

### Vulnerability of Pastoral Livestock Production—What next?

Over 80% of Kenya's land surface is categorized as arid and semi-arid lands (ASALs). The main economic activity in these areas is livestock keeping mainly through pastoralism. In Kenya, pastoralism accounts for over 70% of total livestock production <sup>(1; 2; 3)</sup>. However, the ASALs are very vulnerable to climate shocks (droughts and floods). The livestock sector in ASALs is greatly affected by drought and climate change. Scarcity of pasture and feed resources leading to starvation account for up to 80% of the leading causes of livestock losses in the ASALs. A study by Ogutu et al., <sup>(4)</sup> indicates declining cattle population in the ASALs by 26.5%. This decline is mainly attributed to scarcity of grazing resources. In addition, an increasing number of poor pastoral

households are at risk of losing their livestock capital and dropping out of pastoralism <sup>(5)</sup> if feed resources remain scarce and inaccessible. This would mean less beef available in the country.

The occurrences, intensity and frequency of droughts have increased with significant impact on pastoral livelihoods. For example, pastoralists lose up to half their herds during droughts that are now occurring every 3 to 4 years. In 2016–2017 severe drought sparked sporadic resource conflicts in Laikipia County. Armed cattle herders invaded private ranches, wildlife reserves and private farms in search for pasture for their livestock. Unending drought emergencies, coverage and impacts continue to raise concerns over the effectiveness of the resilience measures put in place over the years. Kenya is



signatory to global agreements and frameworks towards building resilience against drought. Key among these is the United Nation Convention for Combating Desertification (UNCCD)'s Thematic Network 3 on rational range use and fodder crop development in Africa. The country also has legislation and relevant institutions to deal with disasters and emergencies. These include the National Drought Management Authority

(NDMA) which coordinates all activities related to drought management, Kenya's Vision 2030, and the Big 4 agenda. Despite this existing policy and legislative framework, droughts still result in emergency situations. The government has invested heavily in handling crises by, for example, providing fodder/feed relief to drought stricken pastoralists, at sometimes ridiculously high costs. However, opportunity exists to invest in promotion of commercial fodder value chain, especially during normal times.

## COMMERCIAL FODDER PRODUCTION AND CONSERVATION: A new dawn for livestock production in the ASAL's

Kenya faces major forage deficits estimated at 70% of the total annual fodder requirements of about 5.5 billion bales. The deficit is attributed to inadequate fodder production and conservation. This is coupled with overgrazing, poor land management practices and effects of climate change among others. Availability of sufficient and quality pasture and fodder is one of the key pillars of livestock production in the dryland regions of the country. With sufficient fodder and water resources, droughts do not have to result in emergency situations.

Healthy livestock steadily gets through stressful climatic conditions, and supply milk and meat to households, an important dietary component thus enhancing food and nutrition security.

The role of pasture and fodder production in enhancing the resilience of the livestock production seems to be ignored. Generally, the current policy

is in support of promoting traditional range use and grazing management. Thus, where land is severely degraded current policies in fact hinder meaningful production. Furthermore, the current policy is not robust in relation to providing a favorable environment for private investment in commercial fodder production or in supporting the fodder value chain in ASALs. Herein lies a major policy gap. The absence of a policy specific to fodder value chain in ASAL counties hampers investment to spur its commercial production and conservation.

Strategic investments in pasture and fodder production and conservation through a value chain approach will ensure that livestock productivity is increased and maintained even in the wake of droughts. Increased livestock production generates a tradable surplus that can stabilize households' incomes.



**Figure 2.** Fodder production by the Kawalash Pasture Group in Kipsing, Isiolo County.

In addition, fodder is highly profitable and can be undertaken as an agribusiness (Table 1). This has been demonstrated by fodder farmers, especially in Baringo and Makueni counties among others.

ITEM	GRASS SPECIES			
	CHRO	CECI	ERSU	ENMA
Gross Margin (GM)	108,806.20	66,163.20	81,573.50	118,965.00
Cost Benefit Ratio (CBR)	3.1	2.7	2.9	3.3
Net Present Value (NPV)	83,697.10	50,894.80	62,748.90	91,511.50

**Table 1.** Estimate of cost and benefit for seed and hay production of four grass species per hectare

\***CHRO** = *Chloris roxburghiana*, **CECI** = *Cenchrus ciliaris*, **ERSU** = *Eragrostis superba*, **ENMA** = *Enteropogon macrostachyus*

Based on the results of a cost-benefit analysis undertaken for a commercial pasture production enterprise (Table 1), we concluded that:

- All the selected grass species gave a positive NPV and GM and a CBR above one.
- This means that the costs invested in range rehabilitation or the improvement of pasture through reseeding are recovered and high benefit realised.
- The discounted net benefit (NPV) was far above zero implying that it is worthy investing in restoring and improving pasture for enhanced future benefit, and especially if directly connected to the livestock value chain.



**Figure 3.** A herd of cattle grazing on a restored grassland in Baringo County



## What can ASAL counties do?

- i. Give feed security the same level of attention as food security because for pastoralists /agropastoralists, the two are intertwined - you cannot talk of food security when animals that they depend on for nutrition (meat, milk, blood, fat) are dying out of starvation.
- ii. Reposition the fodder value chain by strengthening investments and agribusiness enterprises (individual farmers, pastoral groups or companies) in fodder and fodder seeds production in ASAL counties.
- iii. Facilitate the mapping of fodder production areas in the ASAL counties for integration within the county spatial plans/maps.
- iv. Review and develop supporting policy regulations and institutional framework for fodder production, conservation and marketing at ASAL county levels.
- v. Strengthen collaboration among all fodder value chain actors including national and county governments, development partners, private sector, farmers, academic and research institutions to synergize efforts towards curbing the national fodder deficit.
- vi. Provide funding to scale up fodder commercialization for increased fodder production and pasture land rehabilitation to ensure that the country has sufficient supplies of quality, safe and affordable fodder.
- vii. Convene annual county pasture production forums and national fodder conferences to review milestones achieved, provide learning and exchange platform and ideas sharing on fodder strategic interventions.

## Acknowledgments

*Preparation of this policy brief was supported by the AgriFose2030 programme and the International Livestock Research Institute (ILRI) with financial support from the Swedish International Development Agency (SIDA). I wish to thank Joseph Karugia for his valuable technical input and Anne Nyamu for the excellent editorial support.*

1. Huho, J.M., Ngaira, J.K. and Ogindo, H.O., 2011. Living with drought: the case of the Maasai pastoralists of northern Kenya. *Educational Research* 2(1):779-789.
2. Otuoma J. 2004. The effects of wildlife-livestock-human interactions on habitat in the Meru Conservation Area, Kenya. LUCID Project, International Livestock Research Institute, 2004.
3. Ottichilo et al. 2000. Wildlife and livestock population trends in the Kenya rangeland. In *Wildlife Conservation by Sustainable Use* (pp. 203-218). Springer Netherlands, 2000.
4. Ogutu JO, Piepho H-P, Said MY, Ojwang GO, Njino LW, Kifugo SC, et al. 2016. Extreme Wildlife Declines and Concurrent Increase in Livestock Numbers in Kenya: What Are the Causes? *PLoS ONE* 11(9): e0163249. <https://doi.org/10.1371/journal.pone.0163249>
5. Watete PW, Makau WK, Njoka JT, MacOpiyo LA, Mureithi SM. 2016. Are there options outside livestock economy? Diversification among households of northern Kenya. *Pastoralism* 6(1):p.3.

### CONTACT ADDRESS

**Stephen M. Mureithi**

*University of Nairobi, Department of Land Resources Management and Agricultural Technology/African Drylands Institute for Sustainability (ADIS)*

**Correspondence:**

***stemureithi@uonbi.ac.ke / adis@uonbi.ac.ke***

**ILRI**  
INTERNATIONAL  
LIVESTOCK RESEARCH  
INSTITUTE

**AgriFoSe2030**

Agriculture for Food Security 2030  
- Translating science into policy and practice



**University of Nairobi**