

Fact Sheet Series

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PEACE, PROSPERITY AND REGIONAL INTEGRATION



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BUSINESS CASE OF RESILIENCE-ENHANCING TECHNOLOGIES AND GOOD PRACTICES ON FODDER AND FODDER SEED PRODUCTION IN KARAMOJA CLUSTER

A. BACKGROUND

The Intergovernmental Authority on Development (IGAD) region landmass is about 60-70 percent Arid and Semi-arid Lands (ASALs) characterised by low, erratic rainfall. The pastoralists and agro-pastoralists who inhabit these ASALs mainly depend on livestock keeping for their livelihood. However, livestock keeping is constrained by the effects of climate change that has contributed to increased frequency of drought and flood occurrence since the beginning of the 21st century.

Feed related challenges to livestock keeping

Inadequate water management technologies, poor practices such as improper siting of water infrastructure, inefficient water harvesting facilities, erratic, unpredictable rainfall patterns, and high ambient temperatures limit livestock production efforts. Water management technologies are not adequately used: for example, climate information is not applied to guide decision making on water management. There is inadequate capacity building



and networking of technical, academic and professional stakeholders to improve water use efficiency. Failure to increase water governance in watersheds in order to strengthen integrated water resources management further aggravates the situation. As a result, shortage of water and pasture/fodder and animal feed are a frequent occurrence. This has contributed to high incidences of livestock mortality and reduced production/productivity. To cope, pastoralists must frequently move with their livestock in search of water, pasture, fodder and animal feed during drought periods or prolonged dry spells.

It is against this background that the IGAD Center for Pastoral Areas and Livestock Development, with financial support from United States Agency for International Development (USAID), undertook an assessment of proven resilience-enhancing innovative technologies and good practices applicable in fodder and fodder seed production in Karamoja Cluster (Karamoja region in Uganda, Turkana and West Pokot counties in Kenya, and South Omo in Ethiopia). The assessment included comprehensive literature review, consultative meetings and interviews with key informant, focused group discussions as well as field observations conducted in Karamoja Cluster starting October-November, 2019.

Fodder production efforts in Karamoja Cluster

By and large, the governments of Ethiopia, Kenya and Uganda have taken initiatives since the 2010/2011 drought emergency to produce and conserve fodder/pasture in areas prone to drought in the Cluster. Fodder production is supported by various government projects and development partners such as FAO and a host of NGOs. Production is either rain-fed or under irrigation from nearby rivers or water harvesting dams, valley tanks, boreholes, wells among others. A number of common interest groups have been organised or established and trained in modern technologies of fodder production and conservation in form of hay, briquettes, crop residues etc.

Some have even been trained in fodder seed multiplication and harvesting, and processing of multinutrient animal feed blocks utilising locally available raw materials including *Prosopis juliflora* and acacia pods to ensure year round availability of animal feed and fodder. The common pasture types promoted include; Rhodes grass (*Chloris gayana*), Guinea grass (*Panicum maximum*), Signal grass (*Brachiaria brizantha*) and Green leaf Desmodium (*Desmodium intortum*). Some pastoralists have set aside land for commercial fodder production in the three countries visited.

B. SOME RESILIENCE-ENHANCING TECHNOLOGIES AND INVESTMENT OPPORTUNITIES

Listed below are some resilience-enhancing technologies and investment opportunities based on multiple-benefits, scalability, ease of implementation, profitability, cultural sensitivity, susceptibility to climate change and stability/land tenure.

Constraint	Innovations	Scalability by smallholder farmers			Comments made from farmer interactions	Opportunities for private sector engagement
		Low	Med	High		
Erratic rainfall and drought	Pasture fodder-hay production			X	Hay is easy to grow and make at farm level and upscale as long as there is purposeful use of traditional and modern agro-weather management information systems and/or water harvesting systems (valley dams, weirs, water pans, household roofs) and use of small-scale irrigation schemes	<ul style="list-style-type: none"> • Supply of grass seeds, manual or mechanical land preparation, planting, harvesting and baling and selling distribution to pasture deficient areas as well as outside the Cluster targeting dairy farmers further inland • Supply of the hay processing equipment e.g. tractors, rakes, balers, trailers etc. and stores • Water harvesting systems (valley dams, weirs, water pans) and household roof harvesting storage tanks and piping • Supply of simple irrigation technologies e.g. furrow, gravity sprinklers, drip lines etc.
	Hay fodder banks			X	These are quite beneficial to farmers and considered inexpensive	Erection and lease of farmers' stores and rentals in small towns. Can be linked to financing through warehousing receipts models
Erratic rainfall and drought	Pasture seed multiplication			X	Farmers are always looking for quality certified Rhodes improved seeds that are often in short supply	<ul style="list-style-type: none"> • Pasture seed multiplication on own and or leased farms • Supply of improved seed in large packages for on-selling to village-based vendors, towns, other regions and seed companies on a contractual basis
Erratic rainfall and drought	Drought-mitigating livestock supplementary feeds through diversification to add value to local natural resources	X			Prosopis juliflora is an invasive fast growing, drought resistant, climate resilient plant that can in part be controlled by using its seeds which are self propagating for livestock feeds	Village-level manufacture of fortified animal feeds using simple technology and readily available natural resources. Gate-farm provision of bags of Prosopis juliflora fortified animal feeds for farms use and excess output to market

C. BUSINESS CASE FROM GRASS SEEDS UNIT PRODUCTION / HA

Seed production/Ha	USD
Land preparation/Ha	170
Input seeds 5 kg/Ha	80
Inputs manure/DAP fertiliser 50 kg	25
Labour for seeding, weeding	100
Labour harvesting	100
Packaging (2 kg multi-wall bags)	45
Total costs	520
Total seed harvested (kgs)	350
Sales price/kg	16
Total sales revenue	5,600
Net margin	5,080

D. POLICY ADVICE

1. Member States should strengthen private sector investment in fodder and animal feed production through enactment and strengthening of public-private-partnership policies and laws;
2. Member States should develop or strengthen policy and legal frameworks that regulate or enforce efficient management of the environment including safeguarding communal land tenure, land use planning, sustainable utilisation of rangelands and natural resources (fauna and flora) and water;
3. Member States should review policies to accommodate integrated early warning systems for early action to mitigate severe impact arising from climate change that has contributed to increased vulnerability of communities in the Arid and Semi-Arid Areas (ASALs) of the IGAD region;
4. Member States should put in place policies focused for effective control and subsequent eradication of invasive plant species especially *Prosopis juliflora* that is currently threatening rangelands and water resources;
5. Policy strengthening on feasible fodder production should be strengthened through investment in reseeded of pasture lands considering limiting factors such as adequacy of rainfall, natural regeneration aided by sustainable rangeland management in communal pastoral lands.



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