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Executive Summary

Overview of the market

Urbanization in East Africa has caused the shrinkage of rangelands used for production of forage crops as the lands are converted into residential and commercial uses. This threatens the forage crops industry and consequently the animal feed industry, especially the dairy sub-sector. Smallholder farmers in this region are reliant on informal sources for their seeds. The region has a large gap in the supply of forage crops, and this serves as a very good opportunity for USA exporters. Ethiopia has the largest forage demand in the region while Uganda had the highest import growth from 2018-2022. Kenya and Tanzania are leaders in production of forage seeds within the region. This report therefore focuses East Africa's forage industry.

Production

A total of eight East African countries are reported on in the following sections. Ethiopia has the largest livestock population in East Africa with cattle ranking the highest. This shows the high level of potential demand for animal feed and hence, forage seeds and products in Ethiopia. Kenya and Tanzania lead in seed production, while Ethiopia and Uganda, also have significant company operations. None or limited investments were found in Burundi. However, despite significant investments and the broad presence of seed companies across the region, smallholder farmers continue, to a very large extent, to get their seeds from the informal sector. The east African region is dominated by a balance of international and African companies with sales operation (Access to Seeds Index 2019). Top international and indigenous companies that are operating within this region are shown in Table 1 below. Of the international companies, Corteva Agriscience, East-West Seed, Monsanto and Syngenta have production operations within the region, in addition to their sales operations. Corteva Agriscience is the international company with the largest seed production coverage in the region with deep involvements with smallholder farmers while Seed Co. is the indigenous company that contributes the most to the development of the region's seed sector through its engagement with local players in seed production activities as well as input and equipment funding. Darusalam Seed Company and Ethiopian Agricultural Business Corporation only operate within home markets, Somalia and Ethiopia, respectively.



Table 1: Top Intenational and Indigenous Companies Operating within East Africa

Indigenous to Africa	Country of Origin	International	Country of Origin
Ethiopian Agricultural Business Corporation	Ethiopia	Advanta	UAE
Equator Seeds	Uganda	Bayer	Germany
EA Seed	Kenya	Corteva	USA
Darusalam Seed Company	Somalia	C.P Group	Thailand
Demeter Seed	Malawi	East-West	Thailand
FICA Seed	Uganda	Monsanto	USA
Kenya Seed Company	Kenya	Syngenta	Switzerland
NASECO	Uganda		
ZAMSEED	Zambia		

Trends

Trends within the East African forage seed industry can enhance the regions imports process of seeds. Such seeds are largely made up of traditional grasses, legumes and fodder. Despite the predominance of traditional grasses, the improved varieties are gradually gaining importance.

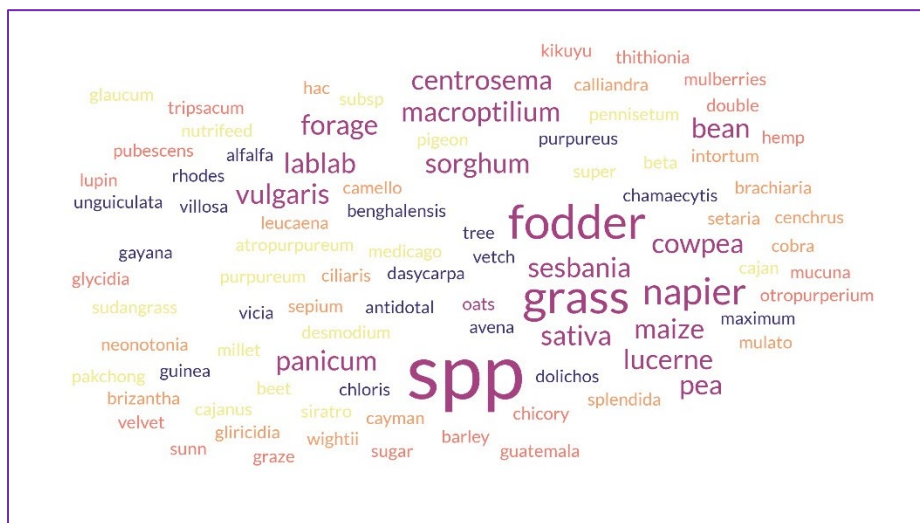


Figure 1: Common Forage and Fodder Crops in East Africa.

Predominance of traditional grasses.

Traditional species like *Cenchrus purpureus* and *Chloris gayana* are the predominant animal feed in East Africa. Due to low productivity and seasonality challenges with these traditional varieties, compounded by demand pressure arising from the increasing animal and human population, improved varieties are gradually being promoted (Florez et al., 2023).

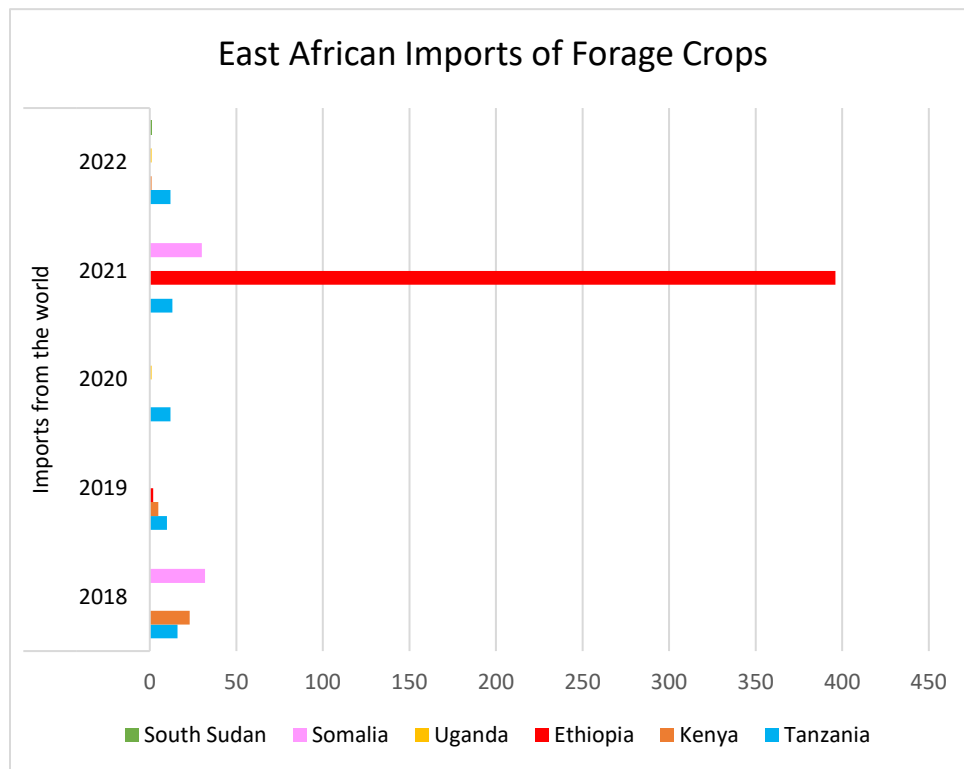


Low rate of adoption of improved varieties persists.

The most adopted varieties in the region are *Cenchrus purpureus* and *Chloris gayana* (local), respectively *M. maximus* and *Urochloa* (improved). The adoption of *Urochloa* hybrids cvs. Mulato II, Cayman, Camello, and Cobra are still largely low.

East Africa Forage and Grass Seeds Market by Country

Ethiopia, Tanzania, and Kenya jointly account for 70% of the potential market for *Urochloa* hybrids, while South Sudan, Ethiopia, and Tanzania jointly account for 67% of the potential market for *M. maximus* varietal crosses. East Africa records low imports of forage products from 2018 -2022 despite the need for forage as a suitable alternative animal feed as shown in Figure 2 below. In the year 2021, import of forage seeds was approximately \$439,000 from the world which is the highest recorded since 2018. Ethiopia ranks the largest importer of forage products as the country accounted for over 71% of the total import value into the region even though the country recorded import only in 2019 and 2021 within the five-year period. While Tanzania ranked second in imports, it had the most stable trend as it was the only country in the region that continuously recorded imports from 2018 – 2022. As shown in Figure 3, only Uganda showed positive annual import growth within this period while Kenya had the worst annual import growth over that period.



Source: Trade Map Data

Figure 2: Import Value of Forage Products into East Africa from 2018 to 2022.

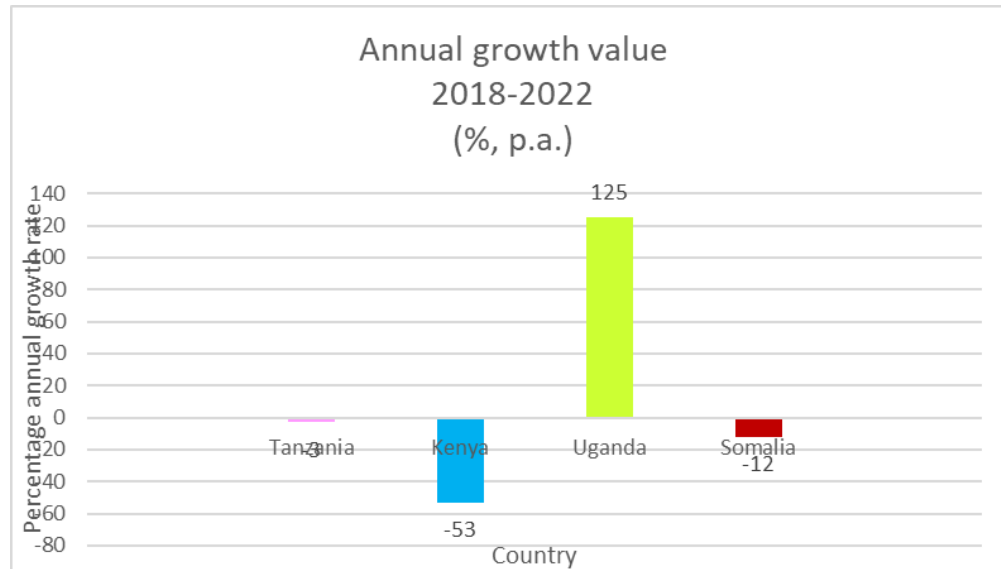


Figure 3: Annual import growth of forage products in East Africa from 2018 to 2022.

Ethiopia

Ethiopia has the largest animal (and human) population within the region, making it the country with the greatest demand for animal feed. The country also accounted for the largest import value within the region from 2018 till 2022. However, the forage seed sector is still emerging with the production and marketing within the sector largely informal. Farm-saved seeds are the prevailing system of seeds used by 85% of these smallholder farmers. In general, most seeds circulating formally are sourced from the public sector although it remains inadequate to fill the demand gap. Within the formal segment of the sector, the top seed companies with sales operation include Advanta, Bayer, Corteva Agriscience, East African Seed, Ethiopian Agricultural Business Corporation, GAWAL, Lima grain, Seed Co and Syngenta as well as Oromia Seed Enterprise, South Seed Enterprise, Nono Agricultural Development PLC (Access to Seeds, 2019). However, only four of these also engage in production within the region. Common forage crops in Ethiopia are Oats (*Avena sativa*), Rhodes (*Chloris gayana*), Panicum (*Panicum antidotale*), Vetch (*Vicia dasycarpa*), Vetch (*Vicia villosa* L.), Dolichos lablab (*Lablab purpureus*), Cowpea (*Cowpea unguiculata*), Tree lucerne (*Chamaecytis* spp), Pigeon pea (*Cajanus cajan* L.), Sesbania (*Sesbania* spp), Alfalfa (*Medicago sativa* L.), Fodder beet (*Beta vulgaris* subsp. *vulgaris* L.), Siratro (*Macroptilium atropurpureum*) and Sudangrass.

Tanzania

Forage seed market in Tanzania is largely fragmented and distributed through informal channels. The concern for sustainable livestock management practices has raised the demand for forage as a suitable alternative feed over the last few years (Ngunga and Mwendia, 2020). The decline in annual import growth by 3% from 2018 to 2022 has added more pressure to the demand. A lot of private seed companies are beginning to find viability in the forage seeds market and are starting to engage in variety development, seed production, processing, sales, exports and imports. The public companies also conduct similar operations as the private companies. Notable seed companies in Tanzania include Advanta, Bayer, Charoen Pokphand, Corteva Agriscience, Demeter Seed, East African Seed, FICA Seed, Kenya seed company,



Monsanto, Namdhari Seed, Nuziveedu Seeds, Seed Co, Syngenta, Zamseed, Beula Seed Company and Consultant, and IFFA Seed Company. However, only five of these also engage in production. Common forage crops in Tanzania include *Chloris gayana*, *Pennisetum purpureum*, *Rhodes* spp, *Medicago sativa*, *Desmodium* spp, *Gliricidia sepium*, *Leucaena* spp, *Calliandra* spp, maize fodder, *Setaria splendida*, *Brachiaria* spp, *Cenchrus ciliaris*, *Neonotonia wightii* and *Macroptilium otropurperium*.

Kenya

Kenya has the second largest animal population within the region (FAOSTAT). This points to the potential demand for animal feed, especially forage crops. Specific forage crops such as *Brachiaria* varieties and leguminous forage (including alfalfa and *Centrosema*) are gaining prominence and are favored over the traditional ones, due to the awareness and involvement of USAID in the Feed the Future project. The reason for this is largely because the traditional ones are generally not beneficial to other types of crops, especially when planted together. Other popular forage crops in Kenya include *Brachiaria* (Mulato, Cayman and Cobra), Alfalfa/lucerne, *Calliandra*, *Centrosema*, Rhodes grass, *Desmodium*, Lablab, Double bean, Fodder barley, Fodder beet (Mangels), Fodder pea, Forage millet (Nutri feed), Forage sorghum, HAC maize, Kikuyu grass, Lupin, Maize forage, Mucuna, Napier grass, Oat, *Panicum*, Purple Vetch, *Sesbania*, Sorghum (Sugar graze), Tree lucerne and Yellow maize. Among the popular seed companies that engage in sales operation are Advanta, Bayer, Charoen Pokphand, Corteva Agriscience, Demeter Seed, East African Seed, Kenya seed company, Lima grain, Monsanto, Namdhari Seed, Nuziveedu Seeds, Seed Co, Syngenta and Western Seed Company (Access to Seeds, 2019). 8 of these also engage in production. With a growing populace, the sector remains vital to food and nutrition security in the country.

Uganda

Forage crops are important to the dairy industry in Uganda, but this industry is threatened by highly degraded rangelands caused by overgrazing and lack of control during grazing periods or over stocking rates. These threats are further heightened in the dry seasons that are prolonged due to unfavorable weather variations which result in inadequate seed supply. In this sector, fodder, forage and grasses are the most preferred and popular varieties include:

- Forage seeds - sugar Napier, Pakchong super Napier, *Bracharia* species (brizantha, Mulato, Cobra, Cayman and Camello), Rhodes grass, *Panicum maximum* (Mombasa variety and basilica), Guinea grass, Kikuyu grass, sugar graze (sorghum), pearl millet, maize and Guatemala grass.
- Forage legumes - alfalfa, cowpea, siratro, *Centrosema* (*Centrosema pubescens*), green leaf desmodium, lablab, velvet bean, chicory, hairy vetches and sunn hemp.
- Fodder tress - *Calliandra*, *Sesbania*, *Glycidia*, *Thithionia* and mulberries.

The Ugandan government regulates the official release of new varieties, licensing and oversight of seed merchant activities, especially regulating importing/exporting seeds, quality assurance in seed production, seed conditioning and local seed trade, and overall regulatory framework implementation. Local seed companies have basic and certified seed production activities on-farm or with seed growers. Major seed selling outlets are facilitated by the government, agro-



dealer distribution networks and non-governmental organizations operating in the region. Popular seed companies with sales operation in Uganda include Advanta, Bayer, Corteva Agriscience, East African Seed, Equator Seeds, Kenya seed company, Limagrain, NASECO, Seed Co, Syngenta, Victoria seeds and Pearl Seeds (Access to Seeds, 2019). 5 of these also engage in production.

Rwanda

The forage seed market in Rwanda is still in its developing stages. The greatest challenge has been the effects of the unfavorable weather conditions. This has created a gap and the need for drought tolerant improved varieties. According to a 2009 Alliance for a Green Revolution in Africa (AGRA) baseline study, adoption of improved varieties was relatively low (7%–13%) across Rwanda, where the informal seed sector dominates. Adoption was however expected to increase. Although Rwanda depends on seed imports, the regulatory principles of the UPOV and Breeders' Rights are relatively new in Rwanda and were only recently introduced under newly introduced seed regulations. The Ministry of Agriculture and Animal Resources has officially launched the National Seed Association of Rwanda, bringing together seed traders, seed multipliers, agro-dealers and institutions that develop plant varieties and avail quality seed to farmers. Prominent seed companies with sales operation in Uganda include Advanta, Corteva Agriscience, East African Seed, Kenya seed company, Seed Co, Syngenta, Victoria seeds and Tubura Seed (Access to Seeds, 2019). Only three of these also engage in production.

Somalia

The Somalian livestock industry relies on natural pastures. However, this is characterized by low productivity largely due to environmental conditions. Demand for fodder and forage is increasing with the booming livestock population. Forage is able to fill the gap during the seasonal lean periods of natural pastures. In 2022, the International Fund for Agricultural Development (IFAD) supported the production of cultivated fodder, supply of forage seed and adapted feeding and herd management techniques by distributing 1,368 metric tons of improved seed across the Horn of Africa. The seed sector generally falls under the Research and Plant Protection Directorates of MAFS, which has the challenge of limited funding. However, the Somalian seed sector is dominated by non-governmental organizations, like the Food and Agriculture Organization which leads in this sector with an emphasis on community-based production of quality declared seeds, funding cycles. The focus of the MAFS strategy is to increase imports from neighboring countries for local sales and distribution. Somalia benefits from the Harmonized East African Seeds Standards and Regulation. Popular seed companies with sales operation in Somalia include Darusalam Seed Company, East African Seed, Equator seeds, and Filsan Somalia (Access to Seeds, 2019) but only one of these engages in production activities.

Market Intelligence Update

This section focuses on Product, Price, Place, and Promotion as the four elements of a marketing strategy. This will provide US exporters with an overview of the target market and price products competitively with a special feature of Alfalfa in the region.



Product and Price

The focus in this section is on the retail price range for seven forage seeds in comparison with international prices in the forage seed industry. The reference international retail price used in this report is the USA pricing. The comparison is as of April 2024 and all comparison was on 1kg bag of the respective seeds. The regional countries included in this are eight East African countries i.e., the six countries making up the East African Community and the largest two countries designated as Horn of Africa).

Table 2: Comparison of local and USA retail price range for seven grass seeds used for forage and fodder.

Seed	Country	Retail Price range \$	
		Local	USA
Alfalfa seeds	Burundi	4.87 - 9.74	7.88 – 15.76
	Ethiopia	2.40 - 3.07	
	Kenya	4.12 - 6.24	
	Rwanda	2.02 - 4.12	
	Somalia	3.41 - 4.09	
	South Sudan	0.86 - 1.59	
	Tanzania	18.51 - 22.03	
	Uganda	2.23 - 4.45	
Sugar beet seeds	Burundi	0.73 - 4.37	2.87 - 4.78
	Ethiopia	7.70 - 12.14	
	Kenya	0.15 - 0.24	
	Rwanda	14.18 - 27.87	
	Somalia	3.33 - 7.36	
	South Sudan	0.48 - 1.05	
	Tanzania	5.34 - 7.14	
	Uganda	0.73 – 1.41	
Clover seeds	Burundi	2.92 - 9.74	3.82 - 11.46
	Ethiopia	2.41 - 3.86	
	Kenya	1.16 - 1.45	
	Rwanda	7.58 - 15.53	
	Somalia	6.03 - 9.76	
	South Sudan	0.39 - 0.88	
	Tanzania	0.86 - 2.28	
	Uganda	4.30 - 6.21	
Kentucky bluegrass seeds	Burundi	2.88 - 11.54	2.96 - 10.85
	Ethiopia	19.55 - 39.10	
	Kenya	4.34 - 6.27	



	Rwanda	0.59 - 3.93	3.88 - 7.76	
	Somalia	34.76 - 43.53		
	South Sudan	2.88 - 8.66		
	Tanzania	4.84 - 14.62		
	Uganda	2.33 - 4.87		
Fescue Grass Seed	Burundi	4.77 - 18.11		
	Ethiopia	8.57 - 17.16		
	Kenya	3.24 - 14.39		
	Rwanda	15.32 - 54.62		
	Somalia	2.28 - 7.02		
	South Sudan	0.73 - 2.91		
	Tanzania	25.59 - 77.92		
	Uganda	19.47 - 38.94		
Timothy grass Seeds	Burundi	1.96 - 7.85		6.84 - 9.77
	Ethiopia	2.07 - 3.21		
	Kenya	1.95 - 2.93		
	Rwanda	8.14 - 18.57		
	Somalia	3.67 - 5.79		
	South Sudan	1.98 - 7.91		
	Tanzania	11.44 - 23.85		
	Uganda	0.82 - 2.10		
Ryegrass Seeds	Burundi	6.80 - 24.28	9.54 - 12.41	
	Ethiopia	0.56 - 4.19		
	Kenya	0.31 - 0.88		
	Rwanda	5.51 - 6.65		
	Somalia	0.54 - 0.74		
	South Sudan	4.10 - 8.60		
	Tanzania	8.62 - 15.33		
	Uganda	0.39 - 2.47		
Source: 2024 Prices, Trends & Insights Food & Agriculture Statistics (selinawamucii.com)				
*Greatest trade potential				

Table 2 above shows the retail price range for some forage seeds in East Africa in comparison with and these are compared with the retail price range in the USA. This comparison is very useful as the countries in this region with the highest price ranges have the largest potential for USA exporters. Each forage seed on the table has their strongest trade potential in varying countries within the region. Tanzania has the greatest potentials for sale of alfalfa seeds in the region and closely followed by Angola and so Tanzania would be the most lucrative market for US Alfalfa exports. The most favorable markets for sugar beets in the region are Rwanda, Ethiopia and Tanzania. Rwanda and Somalia have the highest potential for clover. Somalia and Ethiopia have



the highest retail price for Kentucky bluegrass as their retail price exceeds the US retail price. Tanzania and Rwanda have great potentials for sale of fescue and timothy grass seeds while the sale of ryegrass has the greatest potentials in Burundi and Tanzania. In summary, five countries within the region have the greatest trade potential for these forage seeds. Rwanda (ryegrass, clover and sugarbeets), Tanzania (alfalfa, fescue, timothy and rye grass seeds), Somalia and Ethiopia (Kentucky bluegrass) and Burundi(ryegrass). All these seeds have very good sales potential within the region, especially fescue grass. The greatest efforts can be made to direct outreach to the countries with the highest potential for each grass seed.

Alfalfa production and imports are generally low within the region although it is more popular in specific areas within the region. There is an ongoing campaign about the suitability of its inclusion in animal feed, especially for improved dairy production. South Sudan exports about 3.25% of world alfalfa seeds while Kenya exports less than 0.1% Popular varieties in Kenya and Ethiopia include: Cuf 101, Hairy Peruvian, Hunter River, Lucerne Aurora, Pioneer 00407, Magna 788. Hairy Peruvian ranks the most preferred variety because of its higher dry matter content and adaptability to subhumid environmental conditions and lower altitudes. Table 3 below shows that South Sudan ranks the highest exporter of alfalfa within the region with a total export value of \$15,599,000. South Sudan exports primarily to the Middle East. However, the largest importer of alfalfa within the region is Sudan with a total export value of \$3,330,000.

Table 3: Trade of Alfalfa seeds, meals and pellets for East Africa

Country	Import			Export		
	Value \$'000	% of world imports	Growth% (\$'000 value)	Value \$'000	% of world exports	Growth% (\$'000 value)
Alfalfa Seeds for Sowing						
Uganda, Tanzania and Cape Verde	11.2	0.036				
Burundi	29.5	0.094				
Ethiopia	231	0.74	8.31 (17.7)			
South Sudan				799	3.25	
Kenya	125	0.4	20.7 (21.5)	3.66	0.015	
Sudan	3,330	10.6	14.9 (432)	905	3.68	529 (761)
Alfalfa Meals and Pellets						
South Sudan				14,800	17.8	



Sudan		13,800	16.6	
Kenya	11.8	3.58		

Updates on Relevant Market Changes.

Developments in the market

East Africa has very high demand for animal feed, largely in the animal and human population as well as the large dairy industry. Forage is fast gaining prominence over traditional grasses even though it is still a very young market within this region. An opportunity, therefore, arises for US forage seeds export to fill. There is an increasing pressure for sustainable and innovative ways to surmount the challenges peculiar to the region in terms of seasonality of animal feed production. The section below highlights a few notable and interesting developments, which prove crucial to US exporters in this industry, seeking to expand into the East African seed market. The following developments highlight opportunities that lie in entering the West African market while the industry is in its mature stages.

Launching of the Seed Centre: One Acre Fund – The Rwanda Institute for Conservation Agriculture (RICA), with funding from the Howard G. Buffett Foundation launched the Seed Centre. This center is created to promote the domestic seed sector through partnership with seed companies. This center would focus on three aspects:

- Potato Seed: production of approximately 10,000 tons of commercial disease-free potato seeds
- Multigrain Seed Processing: providing support to local seed companies in terms of processing about 4,000 tons of seeds.
- Seed Innovation: training of seed professionals and promoting prompt releases of seed varieties by private seed companies.

Foreign Seed Companies can undertake research on non-restricted crops in Ethiopia – The Ethiopian National Seed Policy gives room for private, foreign seed companies to undertake crop research activities on non-restricted crops. However, seed certification is mandatory and overseen by the Ethiopia Seed Association, established in 2006. The Ten-Year Development Plan (TYDP) by the government of Ethiopia was to increasing milk production from 4.37 billion liters in 2020 to 11.8 billion liters in 2030, and meat production from 295,000 tons to 1.7 million tons.

Building Rural Income through Inclusive Dairy Business Growth (BRIDGE) – Ethiopia introduced a five-year project that lasted until 2023. This project was aimed at creating a forage seed smart subsidy market model as a strategy to improve farmer access to forage primarily for animal feed. The project was financed by the Embassy of the Kingdom of the Netherlands, EKN and implemented by Netherlands Development Organization, SNV and Wageningen University & Research. The final goal of this project was to improve the income of dairy farming both at the household and sectoral levels.



Tedious Seed Verification Process in Uganda and Kenya – The lengthy and rigorous seed verification process imposed on importers in Uganda and Kenya has been a major disincentive to import forage seeds. This partly explains their reliance on informal routes for seeds in these countries.