

“Getting the Incentives Right”

Realising accessibility and affordability of improved and suitable forage seed varieties and a vibrant forage seed sector in East Africa

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1. Introduction

So far, limited research has been done on the effectiveness of incentive packages for the forage seed sector. In this paper we make an effort to give an overview of the different support modalities that have been practiced and a tentative assessment of their effectiveness. This is complemented by an overview of the issues that hinder the forage seed sector in East Africa to mature, in the context of this paper we include vegetatively propagated materials. We hope that this paper provides sufficient input for a first round of discussions with various stakeholders in the (forage) seed sector, to identify pathways and collaborations for enhanced accessibility, affordability and use of suitable forage seed varieties by livestock producers and commercial fodder producers and a vibrant forage seed sector.

2. Key dimensions in discussing issues around forage seed

In designing and evaluating incentive packages for the forage seed sector in East Africa, the contribution to the components or dimensions in the table below can be used as a yardstick. Combined, the dimensions in the table provide a useful framework for the development of strategies and interventions to arrive at a (more) vibrant forage seed sector. In annex 1 a vision for a vibrant seed sector is presented.

Dimension	Definition
(a) Seed availability	There is sufficient stock and supply at country level, to reach all interested farmers The seed is quality controlled and the forage crops are suited for different farming systems and agro-ecological conditions.
(b) Seed access	Access is affected by the following three factors:
(i) Awareness	The farmer has access to relevant information about the different forage seed varieties, i.e. type of forage seed and attributes (e.g. CP, ME, digestibility, DM yield, annual or perennial), price per kg and seeding rates, suitability per agro-ecological zone, good agricultural practices, including harvesting, conservation and feeding practices.
(ii) Distribution	An effective seed distribution network which reaches all livestock farmers is in place, thus seed close to the farmer or can be sought easily.
(iii) Affordability	The price of seed is affordable for the quantity and the acreage the farmer needs (seed cost versus cost of establishment annual/perennial). To be able to make informed decisions on affordability and costs, the farmer needs to know whether the forage is a perennial or annual and if it can be multiplied vegetatively or not (cuttings). For vegetative propagation there is a need for clarity on IP and breeding status.
(c) Seed quality	This encompasses the following four factors:
(i) Genetic quality	Genetic purity, varieties, and biodiversity.
(ii) Health level	Pests and diseases fall below specified threshold levels.
(iii) Physiological quality	Seed is of the appropriate physiological age.
(iv) Physical quality	Seed is of appropriate size and shape, without mechanical damage and with scarification and/or inoculation if needed.
(d) Use, control and tangible benefits	Farmers have the skills and knowledge to assure that the forage seed will give them the expected net-benefits, such as increased animal productivity at lower feed costs (considering the attributes DM, ME, CP and resulting in higher margins above feed costs). Farmers have a fair level of skills as regards the seed application and related agronomic practices, as well as livestock production (utilization) factors.
(e) Control over benefits	Farmers have control over the benefits by getting <i>extra income</i> from selling the forage they grow (commercial fodder production) or by selling milk and meat at fair farm-gate prices and to dependable buyers who pay in time.

Source: Adapted from Bentley et al., 2018

3. Present situation

Thanks to the presence of forage demonstration plots, practical trainings and knowledge sharing between farmers, there is a concrete and growing demand for forage seeds, seedlings or cuttings in Kenya, Uganda, Ethiopia and Tanzania. We assume that this is also the case in other parts of East and Southern Africa. However, apart from areas where dairy development and forage research projects are actively promoting improved forages, in most parts of East Africa, generally speaking there is lack of sufficient starting material at farmer's level. At the same time, it is our impression that in absolute terms the market-demand is still relatively small compared to food crops like maize or potatoes and even vegetable seeds. In addition, the willingness to pay for quality seed is not very high¹.

4. Forage seed suppliers

Based on discussions and surveys amongst forage seed suppliers in Kenya (SNV ICSIAPL project, 2021), including breeders, distributors, research, our impression is that seed suppliers, especially the private sector players, view the market for forage seeds as difficult and in the short term commercially not very attractive.

This said, during the past few years and especially in Kenya seed companies, with support of international research and development partners, have entered more varieties in national performance trials (NPTs) and are open for discussion with stakeholders, including development partners, research, financial institutions and government, on how markets could be developed and distribution networks and seed marketing and sales systems could be set up.

There are a number of issues that seed companies face when developing the market:

- a) Taxes, levies, laborious and hence costly procedures for registration (vis a vis the market demand) and importation of seeds. For Ethiopia, the lack of FOREX makes import impossible or at least impractical.
- b) Registration procedures are not 'business friendly' and IP can, except for Kenya, not be protected.
- c) The relatively short 'shelf life' of most seeds of tropical grasses (i.e. storage conditions in terms of temperature and humidity are critical), makes setting up and managing distribution networks complicated and costly in a developing market with low demand.
- d) Short and longer-term demand by livestock producers for forage seeds are difficult to predict. With sufficient rainfall the demand for forage seeds – especially the grasses - tends to drop.
- e) The market demand of certified seed is also affected by the use of farmer-saved seed and/or multiplication and sale by local informal seed businesses. Also, it might be attractive for a cooperative, farmer group or individual to set up a business for vegetative propagation (splits, cuts). In most cases with local propagation the quality of planting material will over time go down.
For annual forage crops such as oats, Sunn hemp, forage maize, forage sorghum or forage millet, farmers are more likely to buy on a regular basis quality seed of improved varieties from a seed company.
- f) Agro-Vet Shops give generally priority to sales of medicines, fertilizer, seed of food crops like maize and vegetables and forage seeds does not yet get much attention.
- g) Sales staff of seed companies lack know how on forage cultivation/conservation and ruminant nutrition and they are not well equipped to advice agrovets and farmers on selection and use of forage varieties.

5. Accelerating forage seed markets

As mentioned above there is a growing demand for forage seeds amongst livestock producers and commercial forage producers, which is presently not met. At the same time there are a good number of professional forage seed companies active in East and Southern Africa, with a relevant portfolio of forages that are suitable for the livestock sector in these countries². The number of registered varieties is still limited, but several companies and research organisations (e.g. Barenbrug, Advanta Seeds, U-Farm, Advantage Crops, CIAT and KALRO) have put

¹ This may be partly caused by lack of knowhow or consideration regarding the following points the following: 1) all seeds are sold per kg regardless of number of seeds one kg contains; 2) seed rate (kg/ha) is often not considered when the purchase is made; 3) the farmer usually does not consider that seed cost for perennial crops (grasses) are only made every 5-10 years whereas annual crops need seed for replanting every year or season.

² Note that *Brachiaria* hybrids are marketed by U-Farm and ACL are derived from CIAT breeding materials and that Papalotla/ NANDI/Tropical Seeds - a CIAT Private Sector Partner based in Mexico - does product development of the breeding lines.

varieties in NPT-trials in Kenya. Therefore, soon a wider range of forage seeds can be expected to be available in the market, provided after registration sufficient stocks are kept by the seed company or its distributor.

Through the SAPLING-project ILRI and CIAT are supporting NPT-trials in Kenya, Uganda and Tanzania with varieties developed by CIAT and distributed by private companies. Parallel trials are also progressing in Zambia through the Papalotla/CIAT partnership.

Hence, the forage seed sector is in principle in a good position to accelerate market development and to work towards realising enhanced access to and choice of forage seeds for farmers. At the same time, we notice there is a chicken and egg problem. The demand is still small and not well articulated, so keeping larger stocks of seed and developing distribution, marketing and sales networks may not yet be commercially viable in the short run. At the same time, because farmers lack awareness and access to the seed, the concrete demand remains small.

Experience from the vegetable sector learns that it can take up to 10 years for a company to break even in setting up seed business serving smallholders. We therefore think that for fast-tracking the development of a vibrant forage seed market, a good set of incentives is needed.

For exploring and discussing options, we have reviewed a variety of support modalities applied in Dutch funded projects in East Africa promoting improved seeds and seed markets for forages and vegetables. In the table on the next page an overview has been made of support modalities that are or have been used in these projects, along with a qualitative rating (“guestimate”) of the contribution to key components of market development.

Impact/Effect	The enabling and regulatory environment is clear, transparent & enforced. Government institutes (research, par -statal) do not (unfairly) compete with private sector	Farmers are able to make informed choices of suitable well-performing varieties, creating demand	Farmers have access to - and can choose from - a diverse package of suitable, improved forage varieties and of good quality	Varieties of choice are affordable ((per kg seed as well as establishing cost per ha)	Farmers have been capacitated with adequate knowledge and skills (GAP) through regulatory updated training & coaching	Seed suppliers are motivated and stimulated to develop markets for forage seeds. Seeds are available and last mile service delivery	Contributes to seed sector vision
Support Modality							
1) Free seeds by Government or NGOs	---	---	?	?	?	---	---
2) Support for demos by coops, processors, service provider or development project (or a combination)	++	++	?	?	?	0/+	0/+
3) Small amount free seeds of 2-3 of the varieties demonstrated + GAP training	0	+++	+	+	++	0/+	0/+
4) MoU Seed Company -Cooperative Union for supply seeds at agreed price							
5) Voucher for farmers to buy quality seeds from agrovets at a discount	+	?/+	+++	+++	?	++	+
6) Making cuttings and/or seedlings at cost price available next to package 2	0	+	+	++	?	---	?/-
7) Grant for agrovets to keep a stock or portfolio of forage seeds of proven and suitable varieties	+	+	++	++	?	+++	+

8) Grant for forage seed suppliers for last mile delivery of suitable portfolio + demos + GAP training- first come first served	+	++	++	++	++	+++	++
9) Challenge Fund for grants to forage seed suppliers for last mile delivery of suitable portfolio + demos + GAP training	++	++	++	++	++	+++	+
10) Grant for free/ subsidised 'Starter Kit'- seeds of portfolio of proven suitable forage seeds, fertiliser, GAP- leaflets SOPs, plus training provided by seed company	++	+++	+++	++	++	+++	++
11) Starter Kit as in 10) plus advise on feeding/ balanced ration	++	+++	+++	+++	++	+++	++

Reference:

(1) Widely used by NGOs in Ethiopia; (2) Used in TIDE, ICSIAPL and KMDP; (3) ICSIAPL; (4) 2Scale-Kenya; (5) BRIDGE; (6) Seedlings in ICSIAPL and ISDAP - proposed package not yet practiced; (7) BRIDGE; (8) Former ISSD-Uganda for vegetable seeds; (9) Not yet tried; (10) Proposal for funding by a seed company; (11) Builds on (10)

6. Reflection on the support modalities

As a start, we note that demonstration plots or gardens (demos) are an important and commonly applied method to expose farmers to novel seed varieties and crops, to demonstrate good agricultural practices, and/or to compare existing and new varieties next to each other in the same field. Demos are done by farmer groups, cooperatives, input suppliers, research organizations and seed companies, often with the support from – or in partnership with – development partners and projects.

It is also a very common practice in dairy development projects in East Africa and has helped to create interest in planting and adoption of improved varieties. However, it is also noted that once farmers start to adopt the demand for the seed grows, the seeds are often not or not sufficient available and/or the linkages to private seed suppliers are weak. In such a scenario it is not of much use to continue with demos and promote novel forage seeds, without ensuring that farmers have access to the seeds or vegetative planting material. In other words, and to put it simple: demos are a must but are in itself not enough.

The relevant debate we think is on the pros and cons of using grants or other mechanisms (e.g. loans through engagement of a financial institution, or a combination of grants/subsidy and loans/credit):

- a) Putting agro-vet dealers and/or cooperatives in 'position' to source, stock and sell forage seeds and advise farmers on GAP.
- b) Stimulating and facilitating forage seed companies in market development.
- c) Putting farmers in the lead.
- d) A combination of a), b) and c).

Ad a) Pros and cons of putting agro-vet dealers and/or cooperatives in position

- Secure and predictable access for farmers of seeds, seedlings and/or cuttings.
- Makes it possible to 'pick' the best varieties from the portfolio of the different seed companies.
- Improves the overall service package.
- The downside is/might be that for forage seed companies this arrangement is a less conducive market as demand forecasting might be difficult.
- Scaling brings quite some administrative burden for supporting and funding organizations, as the organization has to make contractual and financial arrangements with each agroveterinarian-dealers and/or cooperative. This could be reduced if working with apex organizations such as Cooperative Unions.

Ad b) Pros and cons of stimulating and facilitating seed companies in market development

- Commercial interest and drive. Companies are in it for the long run and bring in professional businesses knowhow, including their knowledge about seed distribution networks.
- Co-funding and support through grants or subsidies lower upfront investment for market development.
- Companies sales-persons trained in GAP and engaged in demos, field days and trainings on animal nutrition and ration balancing.
- Company benefits from the network, contacts and 'solutions' of the development organization.
- The big international companies might be quicker in stepping forward than smaller local seed companies, as it might be easier for them to comply with the requirements of support. This can be solved by a stratified set of criteria to apply for funding, one for local MSMEs and one for international seed companies (NB: *An option which is not discussed in this paper is stimulating regional tropical grass seed production. CIAT is exploring this option.*)

Ad c) Pros and cons of putting farmers in the lead

- A 'discount-voucher' creates a "demand-driven level playing incentive for both agro-dealers and forage seed companies. It gives a stimulus to forage seed companies to get the distribution, including last mile delivery up and running.
- A pre-condition for success is that farmers "know where to ask for what" and have knowhow and skills in forage production, conservation and feeding. So it can only be effective if it is combined with training and extension.
- To create a positive stimulus and 'market pull' a large number of farmers should be able to make use of the voucher system, thus it requires substantial funding.

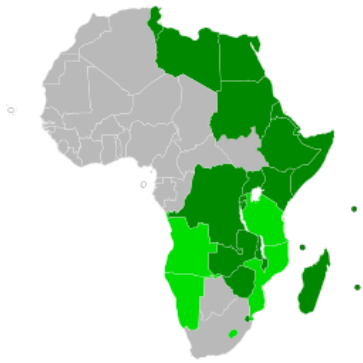
7. Epilogue

Projects that work in the forage seed sector in East and Southern Africa, may wish to engage with forage seeds companies and agro-dealers/coops to validate and enrich this paper. Pending the outcome of these interviews 'inspirational' options or modalities of PPP-support-packages could be developed. This can help organizations who are supporting - or intend to support - market development for forage seeds in developing project strategies and interventions.

Annex 1. Vision on a vibrant forage seed sector

- A mix of at least 4 international and 5 national forage seed companies are active in the market; each has a relevant, well-documented, portfolio of forage species and varieties and has an extensive marketing and distribution network.
- The forage seed companies in the market compete in a fair way for market share.
- Larger companies have quality control systems in place and guarantee germination rate and purity. IP-regulations are in place. Smaller companies, farmer groups or individual farmers use Quality Declared Seed systems. The leading companies have sales/advisory services to support and guide clients in applying good agronomic and utilization practices for the forage crops.
- The seed systems, formal, semi-formal and informal are integrated and mutually supportive.
- Companies consistently have ~~regularly~~ a good number of new varieties in their portfolio.
- There is a growing interest among the wider farming community in improved forage production, with increasing demand for forage seeds, based on positive results and improved animal performance among the early adopters.
- There is a Public-Private-Partnership-arrangement for “getting the incentives right” for a vibrant forage seed sector, including the development and annual publication of a list of recommended forage species and varieties.
- In the annual list of recommended forages, varieties are scored on DM yield, nutritional values, stress tolerance (e.g. disease/drought/waterlogging), harvesting stage and intervals, ease of establishment, soil fertility requirements, suitability for grazing, cut and carry, hay making or ensiling.
- The national seed authority aligns standards, processes and guidelines for certified seed with international best practices, has accepted seed testing of ISTA accredited laboratories, and has streamlined forage seed trade between COMESA member states.
- National Performance Trials (NPTs) are evaluated by an independent- NPT committee based on a comprehensive and relevant set of criteria concurrent with the specific attributes and intended use and benefits for the species and varieties in the trials; cost of both competent authority-led and company-led NPT trials are fair.
- A special window is in place for forages of national importance that are not (yet) commercially interesting for seed companies to register and upscale. For example, for increased availability of native and rangeland grasses to support landscape restoration, regeneration and/or conservation, e.g. through a Quality Declared Seed system.
- Newly registered varieties are introduced to farmers through demonstration plots during field days and farmer-to-farmer visits to early adopters.
- Key, evidence-based, farm economic data are available on relevant forage production and forage conservation systems, taking into account the nutritional benefits of the forages versus the nutritional needs of the ruminant livestock.
- Easily accessible, detailed and evidence-based Good Agricultural Practices are available for the different forage species/varieties, specified for the different agro-ecological zones and farming systems in the country.
- There is an active community of forage researchers, animal nutritionists, feed companies, commercial fodder suppliers, livestock- and crop advisors, lecturers, trainers and lead farmers for knowledge sharing, policy adaptation and formulation and running a broad set of training courses.
- Forage production and conservation is included in all formal trainings, courses and curriculum on ruminants. Vice versa ruminant nutrition is part of the curricula for forage crop production.
- Scaled mechanization and agro-contracting services are available for small, medium and larger scale forage crop establishment (including pastures), forage crop maintenance, harvesting, and conservation.

COMESA Member States
(light green former members)



Former members [\[edit\]](#)

Country	Left
Lesotho	1997
Mozambique	1997
Tanzania	2 Sep 2000
Namibia	2 May 2004
Angola	2007 ^[n 4]

IGAD Member States



EAC Member States (light green former members)



16 Member States (SADC) (Burundi requested to join)



