AFSTA
The African Seed Trade Association
L'Association Africaine du Commerce des Semences

THE African Seed

Issue # 10 | March 2024

AFSTA 24 Years

Special features

Indo-American Hybrid Seeds (India) Pvt. Ltd.

Research | Bio-Technology
Production | Sales & Marketing





Indo-American Hybrid Seeds (India) Pvt Ltd (IAHS) is a **59 year** old pioneer Indian company which takes pride in *contributing quality seeds* to the agri-horticulture business in India and global market. Engaged in extensive **Research & Development (R&D), Bio-Technology, Production and Marketing of hybrid seeds of selected vegetables, field crops, flowers and ornamental plants**, the company is a highly trusted for innovative offerings in the segment.

IAHS R&D strives to offer *superior quality*, *high yielding* and *disease tolerant hybrids of important vegetable and field crops*. The R&D division has won prestigious National Award twice, in 1995 and 2000, for innovative research by the **Council of Scientific and Industrial Research (CSIR), Government of India.**

IAHS Commercial Tissue Culture (TC) laboratory produces disease free TC plants of select *ornamental, fruit and plantation crops*.

The company's **Bio-Technology Laboratory** carries out DNA finger printing, hybrid seed purity analysis using *Electrophoresis (EP) and DNA technology.* It also imparts hands on laboratory training to *graduate and post graduate students of Bio-Technology.*

IAHS seed production division specializes in high quality hybrid seed production in fields and net houses for domestic and export markets. The seed lots are then tested in the **International Seed Testing Association (ISTA)** accredited laboratory.

IAHS seed laboratory is an **ISTA accredited laboratory**, which issues orange and blue ISTA certificates to Indian seed companies for exports. The company has ***won*** **National Awards** for export several times from *APEDA (Agricultural and Processed Food Products Export Development Authority)*. The IAHS brand is synonymous with quality in India and abroad.

Contents

African Seed Trade Association (AFSTA) is a not-for-profit membership association formed in 2000 to champion interests of private seed companies in Africa. It is registered in Kenya as an international organisation with an office for West Africa in Dakar, Senegal.

Currently, the Association has about 120 members comprising seed companies and national seed trade associations, among others.

Mission
To promote trade in quality seed and technologies in Africa for the benefit of members and farmers

Vision
To be the principal organisation at the centre of achieving sustainable food security through use of quality seed for improved livelihoods in Africa

Objectives
The objectives of AFSTA are to:

1. Promote the trade in quality seeds;
2. Strengthen communication with African seed industries and the world;
3. Facilitate establishment of national seed trade associations in Africa;
4. Provide information to members;
5. Interact with regional governments and NGOs involved in seed activities in order to promote the interests of the private seed industry;
6. Promote activities that lead to regulatory harmonization throughout Africa to facilitate movement of seed; and
7. Develop a statistical database on African seed production and trade.

Cover photos
Maize farmer Mrs Wenwa Eric from Kenya; Abdullahi Ibrahim, a young Bt Cowpea farmer from Nigeria, Daniel Joshua, a young Bt Cotton farmer from Adamawa in Nigeria and carrot farmers in Kenya.

Photo Credits: Aghan Daniel, Vincent Yusuf and EASEED

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Word from the President

The year 2023 was the anchor leg of implementing the African Seed Trade Association (AFSTA) 2021-2023 strategic plan. In relay races, the anchor leg is responsible for making up ground and preserving the lead made in earlier laps. In AFSTA's strategic plan, 2023 worked to fast-track seed trade targets that were impacted by COVID-19, food/seed/fertiliser supply chain challenges due to geopolitical challenges in the Middle East, war in Ukraine, besides climate change complications that slowed down the roll-out of new seed varieties in Africa.

Despite the global challenges, AFSTA made significant gains to strengthen seed trade in the continent and improve access to quality and certified seeds by farmers.

The four key performance areas (KPAs) for the 2021-2023 strategy were strengthening member services (including increasing membership) and operational effectiveness, promotion of movement of quality seeds in Africa, strengthening AFSTA partnerships and enhancing innovation in the seed industry.

Here are a few highlights on the KPAs for the period under review:

- AFSTA on boarded 23 new members between 2021 and 2023
- As part of improving member services, a portal for seed statistics for more than 40 countries was set up and key seed trade data uploaded from various partners (including The African Seed Access Index (TASAI) and National Seed Trade Associations (NSTAs)
- Collaboration is ongoing with Regional Economic Communities (RECs) to address seed trade barriers (tariffs in East African Community (EAC), phytosanitary trade barriers, and increased Distinctness, Uniformity and Stability (DUS) tests/registration fees), and fast-track the utilisation of harmonised regional seed systems in ECOWAS
- Plant Breeding Innovation (PBI) – Collaborated with The African Union Commission and the African Union Development Agency-NEPAD (AU-NEPAD), Croplife International (CLI), International Seed Federation (ISF), and other partners to increase NSTAs PBI awareness through webinars/symposia, identifying policy bottlenecks, and making inputs on PBI regulations in countries such as Ghana, Malawi, and Ethiopia
- Communication – Improved AFSTA's visibility by sharing through various media tools (social media, Flash News, quarterly E-Review, and the "African Seed" magazine the benefits of joining AFSTA and progress made in strengthening African seed systems
- AFSTA "West Africa" committee participated in all Economic Community of West African States (ECOWAS) seed meetings spearheaded by West and Central African Council for Agricultural Research and Development (CORAF) through the "West Africa" committee. In May 2023, the Secretary-General participated in the 8th ECOWAS ordinary session of the Regional Committee for Seeds and Seedling of West Africa and the Sahel (RCSSWAS) in Bissau, Guinea to discuss, among others, the ECOWAS manual for seed import/export to voice the concerns of the private seed sector
- Partnerships - Considering the importance of vegetables, a partnership we launched with the World Vegetable Centre (The WorldVeg) in 2019 to set up the "African Vegetable Breeding Consortium" (AVBC) has borne fruit, with our members now accessing germplasm from this arrangement
- To improve operational effectiveness, the Board underwent corporate governance training in 2023. Human Resource and Code of Conduct policies have been updated, and the AFSTA Constitution and Board Charter is being reviewed to reflect the changing business environment.

Dr. Kulani Machaba
President | AFSTA

In 2024, AFSTA will bid farewell to its long-serving General Secretary, Mr Justin Rakotoarisaona, who will retire after serving the organisation for 24 years. I would like to thank Justin for leaving a legacy of "servant leadership" and making a great contribution to the growth of AFSTA.

The new AFSTA Secretary-General will be announced soon, as the recruitment process is being finalised by the Board. I wish the selected candidate success, with their immediate task being to develop the 2024-2027 strategy that will take AFSTA to greater heights.

Lastly, I thank the Board members, secretariat, donors, and partners and all members for the responsibility you entrusted me with to serve as AFSTA President for the past two years.

As I step down, I wish my successor Mr Amadou Sarr well. I wish AFSTA well in the vision of delivering better seeds to change livelihoods in Africa.

I wish you all a happy reading of this 10th edition of the African Seed Magazine and most importantly a successful and fulfilling AFSTA congress 2024.

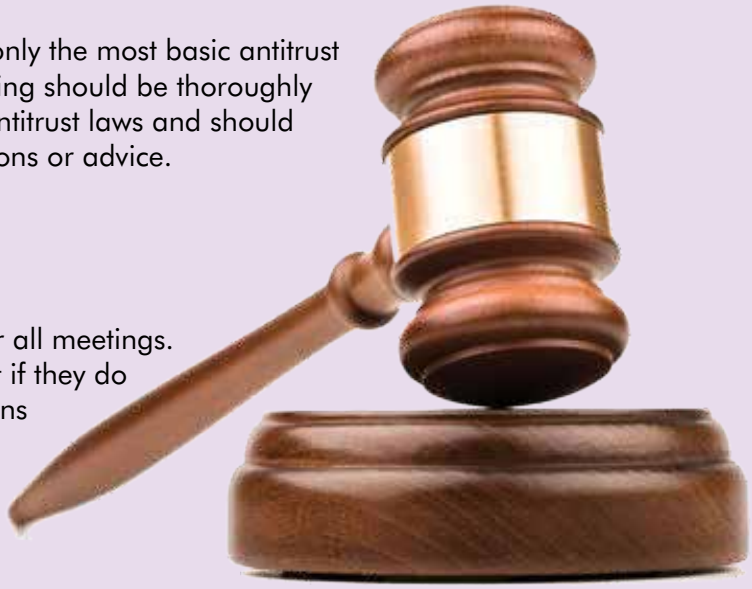
Better Seed Better Life!

Antitrust guidelines for AFSTA's meetings

All AFSTA meetings bring together competitors in the seed trade to discuss industry concerns. Therefore, it is absolutely necessary to comply with national and international antitrust laws. Whereas some activities among competitors are both legal and beneficial to the industry, such gatherings of competitors are inherently treated as suspect under most antitrust laws. Antitrust laws do not require agreements or combinations among competitors to be necessarily formal in order to raise questions. It may include any kind of formal or informal understanding, secretive or public, under which each of the participants can reasonably expect that another will follow a particular course of action.

All participants in any AFSTA meetings are responsible for ensuring that topics, which may give an appearance of an agreement that would violate any antitrust law, are not discussed. It is the responsibility of each participant to avoid raising improper subjects for discussion. These guidelines have been prepared to ensure that participants in any AFSTA meeting are aware of their obligations.

The dos and donts presented below highlight only the most basic antitrust principles. Each participant in any AFSTA meeting should be thoroughly familiar with his or her responsibilities under antitrust laws and should seek counsel for specific situations, interpretations or advice.



Dos & Don'ts

Dos

1. Have a written agenda and adhere to it for all meetings.
2. Prepare minutes of all meetings and object if they do not accurately reflect discussions and actions taken.
3. Consult with legal counsel on all antitrust questions relating to meetings.
4. Protest against any discussions or activities which appear to violate antitrust laws; disassociate yourself from any such discussions or activities and leave any meeting in which they persist.

Don'ts

1. Do not, in fact or appearance, discuss or exchange information regarding products or services, including.

(a) Individual company prices, price changes, price differentials, mark-ups, discounts, allowances, credit terms, etc., or data that bear on price, such as costs, production, capacity, inventories, sales, among others.
(b) Industry pricing policies, price levels, price changes, differentials, among others.
(c) Changes in industry production, capacity or inventories.
(d) Bids on contracts for particular products and services; procedures for responding to bid invitations.
(e) Plans by individual companies concerning design, production, distribution or marketing of particular products, including proposed territories or customers.
(f) Matters relating to actual or potential individual customers or suppliers that might have the effect of excluding them from any market or of influencing the business conduct of firms toward such suppliers or customers.

2. Do not discuss or exchange information regarding the above matters during social gatherings incidental to meetings, even in jest.

Word from the Secretary General

Overcoming challenges confronting the seed sector in Africa

I have worked in the seed sector for more than 30 years, engaging with several companies that endeavor to maintain high standards in high-quality seed production.

Besides, I have interacted with companies that are fully committed to increasing crop productivity, in particular through improved varieties and technological progress.

This is reflected in the growth of the sector and the surge in international trade, both in volume and value. In 2020, for instance, more than 4 million tonnes of seeds were traded. Since 2000, the global seed market is estimated to have tripled to nearly $73 billion, according to a recent report by Mordor Intelligence.

Although seed trade continues to grow with each passing year, it is no less a walk in the park.

First comes the cost of research. With the changing landscape of varying environmental changes that require crops that can withstand the ever-changing weather patterns, seed companies find themselves spending more resources and time on research.

Today, the "agroecological transition" requires the use of "resilient" varieties that are both resistant to disease and pest attacks and capable of adapting to very contrasting climatic episodes.

This situation has forced the seed industry to take up the challenge of an agriculture that uses fewer inputs. New plant breeding techniques, such as new breeding technologies, are promising. The decoding of the genome is within reach. All data must now be analysed to select the right varieties. The breeding profession has entered the "big data" era.

Mr. Justin Rakotoarisaona
Secretary General | AFSTA

Inevitably, there are more issues to worry about. Inflation, driven primarily by rising energy costs and overall consumer prices, continues to be a concern to the African seed sector, dampen consumer spending and reduce trade activity.

The challenges facing the seed industry are however just a tip of the iceberg. In my own estimation, from experience, a united African seed sector can surmount these challenges and make the continent a leading producer of certified seeds. There is need for more concerted and regularised systems to slay the ills that bedevil the sector.

Despite these challenges, according to Mordor Intelligence, whose main mandate is to undertake research on global seed sector, hybrid seeds have witnessed high growth, mainly from the major agriculture-producing countries.

This is attributed to their various benefits, including higher productivity, wider adaptability, and a high degree of resistance to biotic and abiotic stresses. For instance, in cotton, hybrids give 50% more yield than conventional varieties. Their wider adaptability is mainly due to their high buffering capacity to environmental fluctuations.

New plant breeding techniques are allowing the development of new plant varieties with desired traits by modifying the DNA of the seeds and plant cells. Innovations in plant breeding have also helped address the challenges farmers face in the field every day.

The good news is that companies are heavily investing in new plant technologies due to the increasing demand for advanced varieties that are adaptable to different climatic conditions, have high yield potential, and are resistant to diseases and drought.

I therefore wish to urge all our members and readers to continuously work together to make the African seed sector a force to reckon with. I also appeal to you all to utilise this magazine to share experiences each of us encounters in our quest to make the seed sector the pride of the continent.

I thank all the authors of the articles, partners, advertisers, the AFSTA Board, the Secretariat and everyone who actively participated in the production of this edition of *The African Seed Magazine*.

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From the Editor's Desk

Climate talks: Why African seed sector must occupy more space at decision-making table

The 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Dubai from November 30 to December 12, 2023, had several outcomes, some of which were critical to the agriculture sector.

The global climate talks that brought together thousands of delegates, organisations, and negotiators from at least 193 member countries and interest groups for more collective responsibility to tame global warming and achieve climate justice, also launched the Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action.

The declaration, ratified by at least 152 countries, aims to scale up adaptation and climate resilience to reduce the vulnerability of farmers, increase innovation, and strengthen the rules-based trading system, with the World Trade Organisation at its core.

To increase the chances of achieving the declaration's objectives, a ministerial plenary highlighted country-level actions that would make nations embed food systems in their Nationally Determined Contributions (NDCs), and National Adaptation Plans (NAPs). This therefore will be a major consideration as countries review their NDCs to be submitted to the UNFCCC before 2026. Rwanda, Sierra Leone, Brazil, Cambodia, and Norway, formed an alliance that will serve as models and champion implementation of the declaration.

The declaration came hot on the heels of a Global Stock Take, whose findings released at the COP28 talks essentially reiterated prior reports by the Intergovernmental Panel on Climate Change, a UN think tank and research body, that climate action had improved, but not enough to tame global warming and save Mother Earth and lives from its destructive effects in the foreseeable future.

Mr. Aghan Daniel
Editor | AFSTA

You may wonder why these would matter to the African seed sector. First, Climate change is every country's problem, but none more so than the least responsible countries. Africa, which contributes less than 4 per cent to the global carbon emission unfortunately suffers some of the worst effects of climate change, manifested through severe drought and unpredictable rain patterns, as well as flooding, all which are detrimental to plant life and seeds quality.

The US National Institute of Health attributes some of the seed-related problems such as size, reduced number, fertility, delayed germination and reduced vigour to "Elevated temperature during early seed development". Reduced vigour in mature seeds is also attributed to heat stress, a common condition in the African continent.

According to a PubMed publication (2022) warming trends and increasing temperature variability can increase seed dormancy and reduce germination rates, especially in crops that require lower temperatures for germination and seedling establishment. Options for the seed industry to adapt to climate change include moving sites for seed production, changing sowing dates, and the development of cultivars with traits that allow them to adapt to climate change conditions.

Agriculture without proper seed management is a fallacy. And since climate plays a big role in determining the quality and vigour of seeds, which in effect affects the well-being of plant life and level of food security, stakeholders must worry about global warming and occupy adequate space at the decision-making tables globally. This is also crucial for countries in Africa, where at least 75 per cent of economies rely on rain-fed agriculture, without which hunger, poverty, access to education and good health, as well as gender equality and other tenets of the 17 Sustainable Development Goals would be a mirage in this Decade of Action.

At stake is the continent's huge potential to become the highest earner from seed production. Currently, Africa only reaps 3.21 per cent of the global seed market. Asia-Pacific takes 4.21 per cent, while Europe leads the pack at 5.28 per cent of the $73.13 billion projected for 2024, according to Mordor Intelligence (2024).

Africa's seed sector must endure to be directly involved and adequately represented in the climate talks to demand a substantial slice of funding and other support available for victims of climate change.

INTERVIEW ON KENYAN SEED INDUSTRY

Some facts on Kenya's seed sector

By Aghan Daniel I daghan@afsta.org

The 24th AFSTA Annual Congress takes place in Mombasa, Kenya, from March 6-8, 2024. The African Seed Magazine editor, Aghan Daniel, caught up with the Chairman of the National Organising Committee who is also the Chairman of the Seed Trade Association of Kenya, Mr Wellington Wasike. He shared a few pertinent issues that the global community needs to know about the country's seed industry. Below are the excerpts of the interview.

1. Tell us about five things that the world needs to know about the Kenyan seed system?

The Kenyan seed system is a leader in the East African region. We boast of a strong seed regulatory system.

Kenya is one of the lead countries in Africa that has made strides on biotechnology. This is through the efforts of the Seed Trade Association of Kenya and players in that space. These actors have played a key role in science led technology that speaks to enhancements within the seed space. These are amongst others; National Biosafety Authority, research institutions, CIMMYT, African Agricultural and Technology Foundation (AATF) and universities.

Kenya was the first country to domesticate the COMESA Seed Trade harmonization Implementation Plan while Kenyan companies are celebrated as being pioneers on listing on the COMESA catalogue.

The seed industry in Kenya is strongly moving towards expanded self-regulation. This means seed companies have been given authorization by the regulator, Kenya Plant Health Inspectorate Service (KEPHIS) to carry out field inspections and laboratory analysis through trained inspectors and analysts. This has reduced lead time for certification processes and has improved quality control.

The Kenyan seed system has a vibrant public and private breeding programmes that respond to farmer and consumer needs. For the past five years, Kenya has released nearly 60 maize varieties that are suitable for various agro ecological zones that meet specific user needs.

Through the efforts of STAK and other players, the Kenyan seed industry introduced the seed sticker label, a tool used to curb counterfeit seed. The label enables farmers to know if the seed packet bought is genuine or not.

2. What is the worth of the Kenyan Seed sector in terms of US dollars?

The value has been varying from each year to year and crop season to crop season. Conservative figures as at 2021 indicate that the market for commercial seed grew by over7.1 %, reaching an estimated value of $47,242 million.

3. What motivates the seed sector in the country?

Meeting the needs of the Kenyan farmers. This is through the provision of quality seed that is certified and has gone through the certification process. We have seen the growth and development of different seed varieties; those that are climate smart and have drought tolerant characteristics.

This is also good as it supports the Kenyan Government efforts in food security and ensuring that each home has food.

4 Please share the evolution of the seed sector in Kenya.

From a monopoly in the 1950s, the seed industry in Kenya has grown tremendously over the years to the current regime that has seen private sector involvement occasioned by the liberalization of the industry in the 1990's. This has resulted in increased variety of seeds available, seed produced and volumes of certified seed.

5. What makes the country's seed sector unique?

The Kenyan seed sector has grown in leaps and bounds as explained beforehand. As an association, we pride ourselves as the easiest reach to the Kenyan farmer; providing requisite information and in a timely manner. We carry out farmer sensitization during the two crop seasons.

6. Please talk a little bit about special programs in seed production targeting women in the country, if any.

That the formal seed sector struggles to provide women with seeds that meet their preferences and that are important to them is not in doubt. Infact, seed systems tend to prioritize higher-value cash crops dominated by men. Women often lack information and knowledge about seeds, and limitations to their mobility and social networks often shut them out of formal information channels, such as extension services. Training opportunities are often limited by household norms and roles. These limitations restrict women's abilities to use new seed technologies effectively, and when combined.

This situation is changing in Kenya with women being provided with opportunities that easily provide access to seed through field days and demos; varieties being released are taking into cognizance such attributes such as taste, cook-ability whilst there is a move towards seed being packed in packages that are small are much more friendlier for women to carry.

7. What are some of the key factors to building a successful seed business in Kenya?

A successful seed business in Kenya ought to have land for seed production. There needs to be a robust Research and Development (R&D) section with competent staff. There is also need for an effective commercialization strategy that will ensure that varieties released are not on the shelves but reach the farmers who are at the end of the value chain.

8. What are some of the milestones (success stories) that your association has resized since its formation? Liberalization of seed trade – through the efforts of the Late Dr. Nathaniel Tum and Late Nyachae, companies were allowed to participate in seed trade.

Positioning STAK at a global stage – STAK joined International Seed Federation (ISF) and African Seed Trade Association (AFSTA). The two organization's offers STAK and its members an opportunity to trade at a regional and global level.

Introducing industry self – regulation. As earlier mentioned, STAK through partnerships introduced self-authorization in the seed industry. Companies are able to train private seed inspectors and analysts who carry out processes that would initially have been carried out by Kenya Plant Health Inspectorate Service (KEPHIS).

Introduced the sticker seed label - this tool is a valuable tool in curbing counterfeit seed menace while giving farmers assurance that the seed bought is certified.

STAK continues to advocate for its members on matters policy and laws that hinder seed trade within the country.

9. Please give a comment or two about regional harmonization of seed regulations and how it impacts seed business in the East African region.

The Common Markets for Eastern and Southern Africa (COMESA) Seed Harmonization regulations in place has provided a framework that impacts positively on seed trade within the East African region. It has provided for the release of a variety in one jurisdiction if these have been released in two states thus bringing in fore efficiency and reduction in cost of seed trade within the borders.

10. Any other information that you would like to add?

With the advent of technology, farmers are now more aware of the various seed varieties in the market and can access them easily. It is important however to underscore the fact that the impact of climate change on planning and forecasting by farmers and those in agriculture in general continues to be a challenge that cannot be avoided.

We are all looking forward to celebrating AFSTA in 2025 for 25 years of service to its members and the seed sector in general!

Dr. Kulani Machaba
President | AFSTA

After leading AFSTA as President for the last two years, Dr Kulani Machaba will be passing the mantle to his vice president in March 2024 at the end of the AFSTA Annual Congress in Mombasa, Kenya. Our writer Aghan Daniel interviewed him about his perspectives on the African seed sector.

Q1: Who is Dr Kulani Machaba, and what has been your experience and involvement in the seed industry?

I have 26 years of experience in various roles in the seed industry. The experience ranges from variety development and seed production processes, seed systems development, business development, agricultural extension for the smallholder farming sector, and the regulatory policy sector. My educational background is in Plant Pathology and Agricultural Biotechnology.

I have been involved in AFSTA's activities as a member and served in various committees for about 20 years.

Q2: From your perspective, how has the seed industry in Africa evolved over this period?

The current value of the African seed market is *$3.12 Billion, and this means we have experienced about $1 billion growth in the value of the African seed market in the past 12 years.

Several factors have led to this growth being realised. They include:

- Increased investment in plant breeding and commercial release of high-yielding varieties
- Commercialisation of high-yielding biotech traits (insect/herbicide-tolerant traits and water-efficient varieties) in countries such as South Africa, Nigeria, Malawi and Kenya
- Increased seed movement within Africa due to lowering of technical trade barriers. Regional harmonised regulations are having a positive impact on seed trade
- Strengthened seed systems that lead to improved efficiencies and lowering of costs in variety registrations
- Improved Plant Variety Protection (PVP) systems due to efforts by multiple stakeholders that include ARIPO, AU-NEPAD, RECs, Government Authorities, NSTAs and AFSTA

The next 10 years are crucial, with the introduction of Plant Breeding Innovation (PBI), and faster deployment of new technologies as more African countries are now open to agricultural innovation. This is reflected by Mordor Intelligence, estimating that the African Seed Market value will be $4.18 Billion in 2023. AFSTA, as the umbrella body representing key national seed associations in Africa, will be at the centre of driving this growth with our partners.

Q3: Looking back at your tenure as the President of AFSTA, are there some milestones, events or issues that stand out for you?

Key highlights that I would like to share are:

- 23 new members joined AFSTA in the past three years, after realising the value that the organisation can bring to their businesses
- Closer collaboration of NSTAs/ AFSTA, RECs and authorities in Plant Breeding Innovation (PBI) policies, ag biotech, PVP and fast-tracked variety release processes
- Strengthening of AFSTA's SIGs and leveraging the expertise available across all member organisations for the joint purpose of improving the availability of quality seed, and a productive/conducive seed trading environment in Africa.

Q4: Do you have any special recommendations for development of the seed industry in the next 10 years?

I will highlight three key factors that may have a significant impact on AFSTA. The first one is innovation in Agriculture.

- The use of innovation in agriculture and the seed industry is happening very fast, and the regulatory frameworks can't keep up with the change. This includes utilisation of PBI and precision agriculture technologies, Artificial Intelligence (Crop and soil monitoring, pest/disease diagnostics and control, aerial surveys, and mapping, etc). As AFSTA, we need to work with NSTAs and our partners to ensure African countries do not fall behind, and our seed companies are able to access technologies that improve efficiencies and faster deployment of new high-yielding varieties.

The second factor is increased collaborations. AFSTA's success is intertwined with the success of our major Partners who are interested in alleviating food security challenges by affordably delivering high-quality seeds.

For the near future, we need to encourage increased collaboration between the public and private sectors, as this is important for the seed trade to thrive whilst taking along all the critical needs of commercial growers and the developing farming sector.

Photo Credit I AFSTA

Dr Kulani Machaba, AFSTA out-going President addresses a past congress. He says that seed associations need to invest more time to share with members global best-practices used in sustainable seed production.

> *AFSTA's success is intertwined with the success of our major Partners who are interested in alleviating food security challenges by affordably delivering high quality seeds.*

The last factor I will highlight is sustainable agricultural practices in the seed sector. AFSTA members experience significant changes in the way seed production is done, as consumers, authorities and the society are now concerned about the environmental impact of agriculture and processes that have taken place from the "farm to the fork". AFSTA needs to invest more time to share with our members global best-practices used in sustainable seed production, and influence regulatory frameworks that will enable our AFSTA members to be competitive whilst at the same time safeguarding the environment.

SPECIAL REPORT

AFSTA making strides to improve the seed sector in Africa

By Catherine Lang'at I catherine@afsta.org

Photo Credit I Aghan Daniel

Farmer Wenwa Eric at her maize plantation: AFSTA has been involved in discussions on the functioning of the multilateral system of access and benefit sharing as well as the implementation of farmers' rights.

Though the African seed industry faces various challenges, including climate change shocks and the emergence of pests and diseases, it remains crucial in driving the continent's economy through agriculture.

In this regard, the African Seed Trade Association (AFSTA) is at the frontline of realising the industry's potential through regional and international collaborations such as the African Union (AU).

To enhance agricultural genome editing product development in the continent, the AFSTA secretariat has been part of conversations led by the African Union Development Agency New Partnership for African Development (AUDA-NEPAD). The organisation led a series of virtual meetings in 2023, with the aim of promoting collaboration, networking and knowledge sharing among key stakeholders in genome editing technology within the African context.

AFSTA also continues to engage AUDA-NEPAD as well as the member states, particularly in drafting communication strategies of some priority countries.

The African Union Seeds and Biotechnology Programme Platform (ASBPP) was created to provide a strategic approach for the comprehensive development of the seed sector and related biotechnology in Africa.

AFSTA serves as the lead for both the private sector cluster of the programme as well as the Work Package 6: Seed storage, marketing, and distribution. During the General Assembly that took place in November 2023, AFSTA highlighted the need for more activities and engagements to be done for the private sector cluster to be more proactive going forward.

Since the phytosanitary aspect is one of the challenges facing the sector, specifically, trade, AFSTA has participated in the African Union Inter-African Phytosanitary Council (AU-IAPSC) steering committee and annual general meetings where it supported the development of activity matrix for the annual work plan identifying where the private sector can plug in.

The association has also actively participated in the workshop on harmonisation of phytosanitary regulation for prioritised commodities. Additionally, AFSTA has joined other key stakeholders to discuss the efficient implementation of the 2022-2036 African Plant Health Strategy.

To better realize the potential of the Africa Continental Free Trade Area (AfCFTA) in improving the seed industry, the AFSTA Secretariat has been holding continuous engagements and interactions with the AfCFTA Secretariat. Additionally, AFSTA participated in the AU Year of Accelerated implementation of the AfCFTA- a learning event to promote harmonized SPS policies and capacities in the continent.

Regarding Intellectual Property Rights (IPR), AFSTA sought comments from the membership on the draft protocol to the agreement establishing the AfCFTA on IPR that was released in January 2023 during the 7th extra-ordinary session of the Specialised Technical Committee on Justice and Legal Affairs (Experts meeting).

Collaboration with international bodies

To promote the African seed sector at international pedestal, AFSTA has participated in various international meetings, including the International Seed Federation (ISF) Congress that was held in South Africa. AFSTA continues to be an observer in the different ISF bodies, including the Coordination Groups Plant Breeding Innovation (PBI), intellectual property (IP), Genetic Resources (GR), phytosanitary, as well as market access and trade.

With an observer status in UPOV, AFSTA's Secretariat, on behalf of the membership, has continued to participate and follow the discussions in the different UPOV Technical Working Parties, in particular for agriculture and vegetable crops, as well as the technical committee sessions. Specifically, AFSTA has been proactive in both the working groups on harvested materials as well as the Small Holder Farmers bringing the African perspective to the discussions.

The Association's Secretariat has also continued to proactively engage in discussions at FAO's International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) sessions, particularly, discussions on the functioning of the multilateral system (MLS) of access and benefit sharing (ABS) as well as the implementation of farmers' rights (FR).

> *TThe association has also actively participated in the workshop on harmonisation of phytosanitary regulation for prioritised commodities.*

The AFSTA Secretariat is committed to making Africa's vegetable sector more competitive than it has been in the past. During the ISF meeting, the Secretary General held a meeting with staffers of the African Vegetable Breeding Consortium.

Besides being an observer of the sessions held by the 2024 technical working group (TWG) meeting of the OECD seed schemes in Zambia, AFSTA was part of the core organisational group of the policy workshop group that took place just before the start of the TWG meeting. The workshop was on the contributions of the OECD Seed Schemes to Sustainable Food systems in Africa.
AFSTA gave a keynote address and actively engaged in the panel discussion on the role of quality seeds in promoting resilient food systems and security on the African continent.

Additionally, AFSTA participated in a two-day learning event to promote harmonised sanitary and phytosanitary (SPS) policies and capacities in Africa, which attracted a wide range of both state and non-state actors. The event was organised by AKADEMIYA2063 and Texas A&M University, in partnership with the African Union Commission (AUC-DARBE) and with the support of the USDA. The Association's secretariat was part of a panel on private sector players.

Special Interest Groups

With the Special Interest Groups (SIGs) serving as a platform where members and non-members share impartial knowledge and experiences, develop initiatives together and expand networks on their subjects of interests, there has been increased participation, including from national seed trade associations.

There were quarterly meetings in 2023, with some special ad-hoc sessions held in cases of specific topics that needed immediate attention. The topic included position papers on Farmers Rights and Intellectual Property Rights, developments and discussions in the different regional economic communities (ECOWAS, SADC, EAC, UMA, and COMESA), seed statistics, updates on participation in external meetings as well as crop-specific and country-specific updates.

Photo Credit I EASEED

The role of quality seed in promoting resilient food systems and security on the African continent remains a key priority in trade deals regionally.

Part of the SIGs mandate is information collection on seed trade statistics development. As such, AFSTA has set up a portal on its website dedicated to this. Currently, the association is prioritising the data to be uploaded on this portal and where necessary, a link will be provided to the TASAI Dashboard.

The data was sourced from the national Seed Trade Associations, TASAI country reports (24 countries) with this information being on TASAI Dashboard as well as the TASAI-AUC (second Report on Status of the Seed Sector in Africa) covering 47 countries with this report foreseen to be published in 2024.

Regional harmonisation holds great promise for linking markets and achieving economies of scale, opening opportunities along value chains, and improving livelihoods across sectors, including agriculture. As such, the AFSTA Secretariat continues to engage authorities in the different Member States through the National Seed Trade Associations, advocating implementation of harmonised regulations by the Regional Economic Communities (RECs).

The AFSTA secretariat is committed to making Africa's vegetable seed sector more competitive by supporting seed companies through the African Vegetable Breeding Consortium (AVBC).

This support was confirmed with the Association's secretariat's presence at the three-day workshop held in Arusha, Tanzania in October 2023. The workshop brought together 20 representatives of seed companies from 12 countries, including for the first time, companies from Mozambique.

Additionally, as a request from the SIG members, there is a discussion on the possibility of training seed stockists in some selected countries.

The author is the AFSTA Technical Manager

RC: 134911

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Help farmers increase productivity.

To encourage the use of improved seeds to foster sustainable food security and attainment of social and economic development,

To apply modern technology and a team of highly skilled staff combined with standard ethical practice in stimulating and motiving work environment.

GOAL:

To make the farming business profitable for all farmers by increasing productivity.

VISION:

...Seeding Nigeria to feed the Nation

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Biotech committees formed as more products are commercialized

By Aghan Daniel I daghan@afsta.org

Photo Credit I Aghan Daniel

There has been progress as Malawi planted the fourth GM cotton, while Kenya and Nigeria delved into the third year of the crop. Additionally the latter grew GM food crop of Bt Cowpea.

This now 12 years since the African Seed Trade Association (AFSTA) began an awareness creation initiative about biotechnology in Africa, countering prevailing misinformation and providing balanced information on biotech to the continent's seed sector.

Over the period we have recorded many milestones. In the past year alone, several countries approved commercialisation of genetic materials. Nigeria, for instance, has approved commercialisation of a transgenic insect-resistant and drought-tolerant maize varieties known as TELA.

The maize varieties are particularly resistant to stem-borer and fall armyworm, resulting in yield advantage of up to 10 tonnes per hectare under good agronomic practices.

The release and registration of the four varieties was possible after the National Biosafety Management Agency (NBMA) granted the environmental release approval in October 2021. Implementation of the TELA Maize Project is undergoing in Ethiopia, Kenya, Mozambique, Nigeria, and South Africa.

Professor Ado Yusuf, Executive Director, IAR, expressing satisfaction with the release of the new four maize varieties, said, "IAR is proud of our scientists who are addressing the maize productivity challenges in the country and beyond. These varieties have undergone thorough research and have been developed using the tools of biotechnology over several years of continuous testing and revalidation."

Besides Nigeria, several other African countries have not been left behind, and have been moving steadily with research and adoption of the technology. There has been progress as Malawi planted the fourth GM cotton, while Kenya and Nigeria delved into the third year of GM food crop of Bt Cowpea and Bt Cotton growing.

Photo Credit I Vincent Yusuf

Sampea 20-T, the world's first GM cowpea variety – was developed afternearly a decade of research by Nigeria scientists who introduced a gene from Bacillus thuriengensis (Bt), a naturally occurring soil-borne bacteria long used in organic agriculture, into local varieties of cowpea.

Ghana, which has since 2012 approved the confined field trials (CFT) of cowpea, rice, cotton and sweet potato, which have been modified for various desired traits, had its fair share of approvals for unconfined field trials for Pod Borer Resistant (PBR) Cowpea for commercial release, and registered GM crops for food, feed, and processing in the country. They include A2074-12 Soybean (OECD Unique Identifier ACS-GM005-3), A5547-127 Soybean (OECD Unique Identifier ACS-GM006-4) and T25 Maize (OECD Unique Identifier ACS-ZM003-2). Simply put, these are soybean and maize.

Photo Credit I SeedConnect, Nigeria

Al Haji Yusuf – Ado Kibiya, President of SEEDAN, Nigeria. Three seed associations have formed Biotech Committees in conjunction with AFSTA to ensure that seed companies secure correct and balanced information on the technology.

To ensure members were fully aware of the happenings in Africa on the biotech scene, AFSTA remained focused on enhancing awareness on technology adoption among seed companies for them to understand crop biotech trends. This involved constantly engaging and updating them together with farmers and other stakeholders they work with.

AFSTA worked with Malawi and Ghana to form Biotech Committees. Each Committee, with the help of AFSTA, formulated suitable terms of reference for their committee. The membership of the committees remain that of local seed companies.

Members of these committees are already in conversations with each other on the adoption and enhanced uptake of the technology to prioritise conversations at the national level. They could identify more members of locally owned seed companies and the media to form the core of the committee.

The association engaged the leadership of these National Seed Trade Associations (NSTAs), which helped in identifying local gaps in research and uptake of biotech products in their countries.

The consultations have led to the identification of who sits on these committees to be trained on specific aspects of biotech. In the end, these spokespeople would like to act as the link between the seed sector, government, and the media in providing balanced information on the technology.

For 2024, we intend to sustain the training and engagements in a bid to prepare the committees for the tasks ahead.

SPECIAL REPORT

Study: Africa has neglected vegetable breeding

By Aghan Daniel I daghan@afsta.org

Photo Credit I World Vegetable Centre 2024

The findings of the study could help governments devise regulatory systems at the national and regional levels that will enable and stimulate research in vegetable varieties adapted to local growing conditions.

No African country has vegetable breeding as a goal in their national seed policy, and only four set out specific objectives for the vegetable seed sector, a study has revealed.

The report shows how tailoring seed policies, laws, and regulations more specifically to vegetables could stimulate local variety development and seed production, and benefit smallholder farmers and consumers.

Using a regulatory value chain approach, the experts analysed written laws and regulations for 13 countries and interviewed private and public sector stakeholders.

The criterion for selecting the countries included those with an existing or emerging vegetable seed sector that also plays a leading role in regional seed trade harmonisation. Ethiopia, Kenya, Uganda, and Tanzania represented Eastern Africa in the study. Southern Africa has Malawi, Zambia, and Zimbabwe; while West Africa has Benin, Ghana, Mali, Nigeria, Senegal, and Burkina Faso.

The study dubbed *"Laws and regulations enabling and restricting Africa's vegetable seed sector"* was done in 2022 by Kathrin Kulman, Tara Francis et al, to establish the extent to which existing seed laws and regulations enable or restrict the development of a research-based vegetable seed sector in Africa. They hoped to gain an understanding of how the development of locally adapted vegetable varieties in sub-Saharan Africa is enabled or constrained by existing seed laws and regulations.

Their methodology included a systematic comparison of seed laws and regulations across sub-Saharan Africa. The study also looked at implementation and enforcement, which might have been different from written laws and regulations. The comparison aimed to identify good practices, but also shed light on problematic practices.

Photo Credit I World Vegetable Centre 2024

One key finding was that public agricultural research organisations from all focus countries, except Uganda and Malawi, were engaged in the breeding of vegetable varieties.

How would governments benefit from the study? The findings of the study could help governments in sub-Saharan Africa devise regulatory systems at the national and regional levels that will enable and stimulate research in vegetable varieties adapted to local growing conditions and local consumer demand, as such varieties help farmers earn better and more stable incomes and lead consumers to healthier eating habits.

Using a regulatory value chain approach, the authors analysed written laws and regulations for 13 countries and interviewed private and public sector stakeholders. "We generally find that countries have taken a government-centred approach to seed quality control without recognising that state agencies have little capacity to do this properly for vegetable crops," the authors say.

They say Mandatory Value for Cultivation and Use (VCU) trials and state-controlled seed certification are examples of regulatory approaches that may work for cereals, but are not well suited for vegetables.

The study focuses primarily on the formal seed sector, particularly on the role of private seed companies in supplying vegetable seeds to farmers. This focus is justified, because for vegetable crops, public institutions have little or no capacity in seed production and marketing, even in Asia, Europe, and North America (FAO, 2020), and the informal sector is not heavily involved in vegetable seed systems.

Status of vegetable breeding in the focus countries

One key finding was that public agricultural research organisations from all focus countries, except Uganda and Malawi, were engaged in the breeding of vegetable varieties.

The public sector breeding programmes target both traditional and exotic vegetables but include only a few selected crops. Respondents from the public sector generally expressed that their vegetable programmes lacked funding support.

The authors however noted that some public-private partnerships with a significant presence in the vegetable sector exist. The report highlights Zamseed in Zambia and Kenya Seed (Simlaw) in Kenya.

Zamseed is a joint venture between the Government of Zambia and several private entities and has a relatively advanced breeding programme producing hybrids and open-pollinated varieties of okra, pumpkin, and squash, among others. Kenya Seed Company (trading under the brand name Simlaw Seeds) is a parastatal seed company in Kenya with eight vegetable breeding programme. It sells varieties coming from its programme or developed in partnership with international research organisations like the World Vegetable Centre.

Others mentioned are the state-owned Ethiopian Agricultural Business Corporation, which does green pea and pepper breeding. Local private companies, they note, are also engaged in vegetable breeding in sub-Saharan Africa, including Agri-Commercial Services Limited in Ghana, Premier Seed Nigeria Limited, Farm Inputs Care Centre Limited (FICA Seed) in Uganda, Société de Production de Semences Améliorées in Mali, and Nankosem in Burkina Faso.

Among the multinational companies, East–West Seed and Rijk Zwaan have research stations in Benin and Tanzania where they do selection trials to introduce new varieties.

Specific treatment of vegetables in policies, laws, and regulations

Of the 13 countries studied, only Malawi, Nigeria, Uganda, and Zambia have set out specific objectives for the vegetable seed sector in their national seed policies, yet none has incorporated vegetable breeding in its policy goals.

This indicates a general lack of strategy for developing the vegetable seed sector. The national seed laws of seven countries contain specific provisions regarding vegetable seed, with Ethiopia potentially added as an eighth country once its draft seed proclamation is enacted.
Furthermore, seed regulations of four countries specified different treatment of vegetable seed, while four countries did not. Based on the review, it is not apparent that the remaining focus countries have differentiated treatment of vegetable seeds in legal and regulatory instruments.

Regional regulatory frameworks

While underscoring the crucial role of the harmonised seed regulations, the authors found out that their catalogues did not contain any information on vegetables.

Neither COMESA nor SADC has developed standards for vegetables. There is therefore no harmonisation of vegetable seed trade in these regional economic communities.

The report is a must-read for all enthusiasts of vegetable seed production and trade in Africa.
It contains useful information about plant breeders' rights, regulations regarding seed import and export variety registration and testing requirements, early generation seed production, seed quality assurance, counterfeit and adulterated seed, and many other aspects of the vegetable sector needs.

The report says seed laws and regulations in sub-Saharan Africa were developed with staple food grains in mind and are not generally conducive to the development of the vegetable seed sector.

Photo Credit I World Vegetable Centre 2024

The authors recommend that there is a need for efficient and transparent online systems of variety registration, with national catalogues regularly updated and available online.

The COMESA Plant Variety Catalogue contained 51 varieties of four crop species as of April 2023 but did not contain any vegetables. Similarly, the SADC Variety Catalogue contained 96 crop varieties of eight species as of April 2023, but it also does not contain vegetables.

Five areas require urgent attention: First, government monopolies over early generation seed production of vegetable seed, as found in Burkina Faso, Mali, and Tanzania, should be disbanded, with governments focused instead on simply setting minimum seed quality standards and monitoring compliance with these requirements.

Second, vegetables should be exempted from mandatory VCU trials, as these are not suitable for them. A few African countries and many others worldwide also do not require this form of testing for vegetables, based on their unique properties.

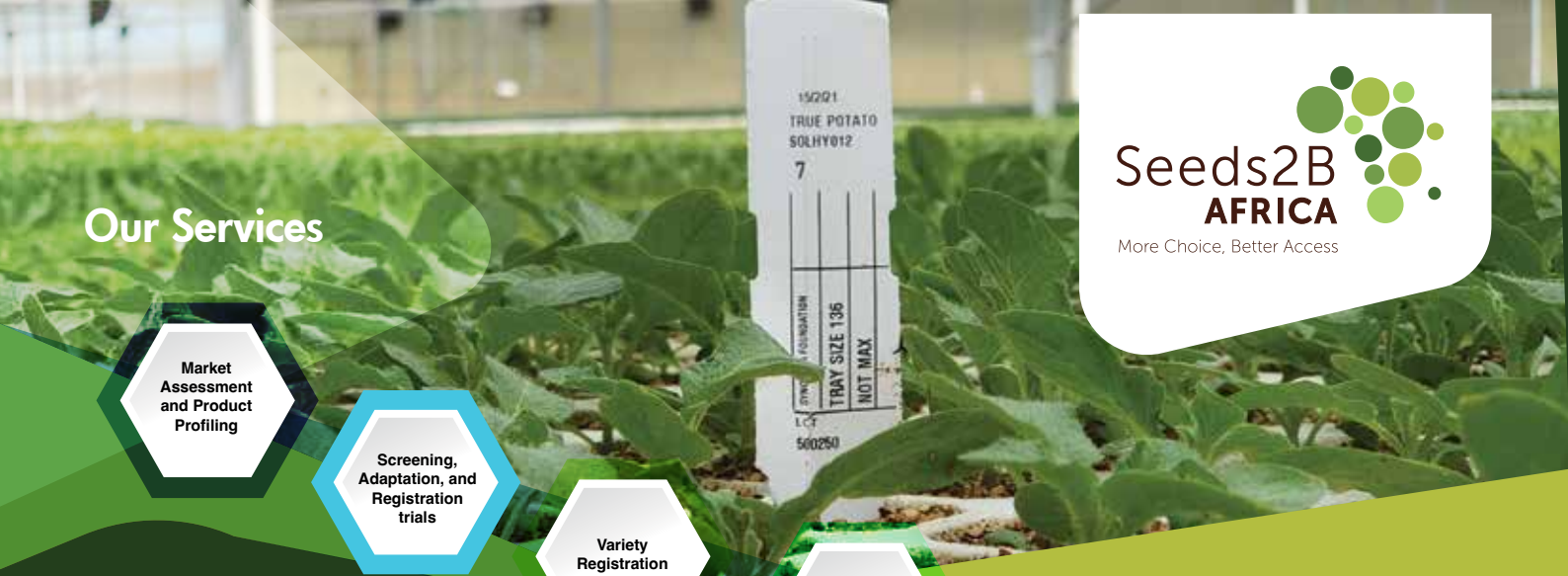
Thirdly, there is a need for efficient and transparent online systems of variety registration, with national catalogues regularly updated and available online or specialised variety catalogues for vegetables.

Fourth, mandatory certification of vegetable seed production does not work in practice, because the public system does not have the skills and capacity to maintain a compulsory certification system for vegetables. Setting minimum quality requirements and instituting truth-in-labelling or quality self-assurance may be more effective, with established seed companies and upcoming enterprises opting for voluntary certification.

Fifth, countries need to introduce traceability systems for vegetable seeds so that farmers can check their authenticity. This would address problems of counterfeiting and seed adulteration. Across all of these aspects, prioritising flexibility and inclusion will ensure that seed systems develop in a way that recognises the particular qualities of vegetable crops and the needs of all involved in seed systems, including smallholder farmers, women, and traditional farming communities.

Making these changes would create better incentives to spur more vegetable breeding and seed production in Africa. It will also increase the competitiveness of seeds produced in Africa over the imported ones.

To make these changes, it will be important that national seed policies, laws, and regulations recognise the unique nature of the vegetable seed sector. The potential benefits of doing so would include increased income for smallholder farmers and other value chain actors and more available and affordable vegetables for populations.



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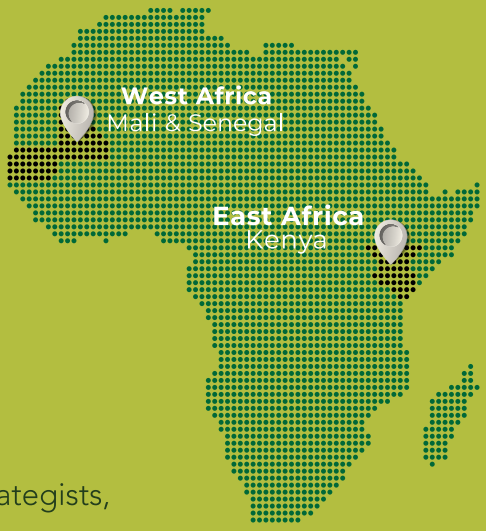

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LETTER FROM WEST AND CENTRAL AFRICA

Promoting a competitive seed market in Central and West Africa

Dr Yacouba Diallo I yacubfr@yahoo.fr

Photo Credit I Gabriel Ingubu

Farmers will gain from strong national seed systems and efficient plant breeder rights protection mechanisms capable of ensuring regular supply at the appropriate time.

Seed is responsible for carrying reproducible characteristics. It must meet certain standards for farmers' desired traits, including early maturity, high-yielding, resistance to biotic and abiotic stresses, as well as specific nutritional qualities. Therefore, high-quality seeds are crucial in improving plant varieties. Plant varieties, experts say, contribute up to 40 per cent of yields, making them a significant factor in valorising research and breeding outcomes.

However, despite advances in plant breeding, small farmers can only benefit from strong national or regional seed systems and efficient plant breeder rights protection mechanisms, capable of ensuring regular supply, at the appropriate time of quality improved varieties, in sufficient quantity and at affordable prices.

Dr Yacouba Diallo

As of June 30, 2023, African Intellectual Property Organisation (OAPI), which covers West and Central Africa, received 197 applications for plant variety protection, of which 119 (or 60 per cent) came from public breeders with the remaining 78 coming from international private applicants. The graph below illustrates the trend of applications for plant variety certificates.

Although the number of applications is lower than officially approved varieties (the West African regional variety catalogue has more than 1,500 registered varieties), the concept of plant variety protection is gaining popularity among private and public sector players.
The variety protection scheme is considered a strategic marketing tool with a possible return on investment.

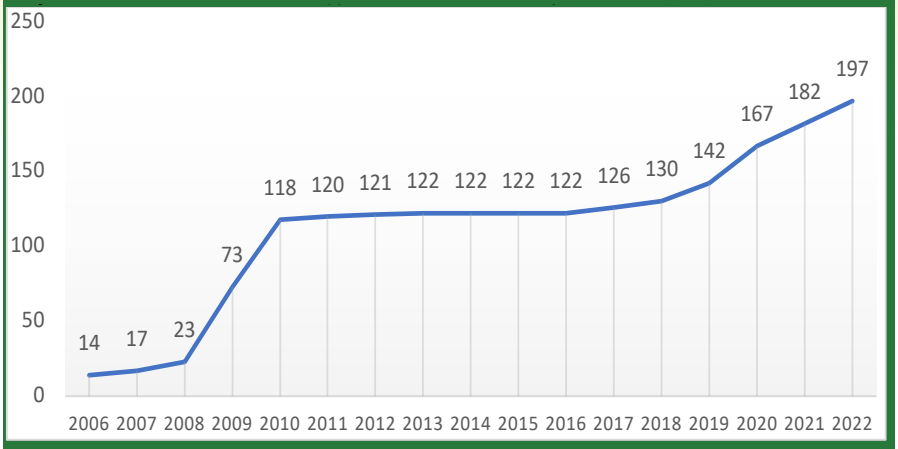
From the valorization of research outcomes and new plant varieties, major constraints prevent most new varieties from being effectively multiplied and made available. This poor performance in West and Central Africa is partly explained by the absence or non-operation of coherent and efficient policies for promoting research results, especially in plant improvement.

To address these constraints, countries must implement coherent cooperation strategies, based on scientific and technological exchanges, access to genetic resources, information sharing, and implementation of incentive and legal mechanisms for strengthening varietal selection, protecting plant varieties and promoting those with high potential (agronomic, technological and economic).

These guidelines serve as a reference and orientation framework in preparing and formulating policies and strategies to support agricultural development by creating varieties, protecting and marketing protected variety seeds, which respond to challenges of climate change as well as the needs of food self-sufficiency and the agro-industry.

The guidelines build on efforts to establish seed production schemes; and opportunities to attract investments, particularly from the private sector. They encourage the strengthening of partnerships between public and private sectors, as well as the promotion of seed entrepreneurship. They also guide the improvement of political, legal, and operational frameworks for variety selection, protection and exploitation of plant breeders' rights.

Graph 1 : Trends in the number of applications for Plant Variety Protection (PVP) to OAPI



Duvick D.N. & Kenneth G. Cassman, 1999: Post–Green Revolution Trends in yield potential of temperate maize in the North-Central United States; DigitalCommons@University of Nebraska – Lincoln; Noleppa, Stephan, 2016: **Source : OAPI,2023**

Objectives of the policy guidelines

These are guidelines for the establishment and implementation of effective national seed policies involving the public and private sectors in the creation, protection, valorisation, and marketing of plant varieties in West and Central Africa.

To achieve this, certain guiding principles such as accountability and transparency must be considered, with each actor being responsible for their actions and reporting transparently at the appropriate level.

Together with accountability comes a win-win partnership between different actors to benefit from shared values and externalities.

The third principle is international interaction and cooperation with national and international organisations, particularly ARIPO, OAPI, OECD, UPOV, ISTA and TIRPAA, among others.

The fourth is social equity, considering interests of small producers, women, young people and other disadvantaged groups. Fifth is sustainable development. This means promoting environment-friendly technologies and innovations. Last but not least is coalition and collective actions against fraudulent seeds.

Strategic orientations and actions guides

This involves the creation, protection, and promotion of new plant varieties through four strategic orientations. They include improving policies, regulations, and institutions to support the creation, protection, and commercialisation of plant varieties; development of structures and instruments to support creation, protection and valorisation of plant varieties; and capacity building of seed systems and seed actors and Information/communication - education on plant variety protection systems.

Improving instruments of governance

Given seeds' strategic role and multiplicity of actors and issues (economic, social, environmental, etc.), states must adopt a national seed policy in harmony with regional regulations, considering their priorities and development mechanism.

Development of structures and instruments

Valorisation of research results is, broadly speaking, the process of "transforming fundamental knowledge into new marketable products or services". In West and Central Africa, the seed sector's major weakness is from lack of a formal long-term contract for the private sector to exploit new varieties from national research centres.

However, with intellectual property rights, it can create a mutually beneficial partnership.

To achieve this, actions that can be implemented within public National Agricultural Research Institutions (NARIs) include establishing/revitalising a special office or service that focuses on intellectual property and valorisation; develop and implement an internal intellectual property policy or charter that provides a transparent and supportive framework for protecting new varieties and meeting rights and responsibilities of breeders; strengthen scientific partnerships and information and genetic material exchanges among breeding institutions.

Finally, create joint ventures or invest in private companies to promote and market protected varieties.

Capacity building of seed systems

Strengthening capacities of systems and actors aims to create technical and human resources to effectively address protection and commercialisation of plant varieties, in particular distinction, homogeneity, stability (DUS) testing, license contract operating and sharing of profits from the marketing of protected varieties, among others.

Actions recommended include establishment or strengthening of technical units for conducting DUS trials of new varieties following international standards (UPOV guidelines). Also recommended is strengthening mechanisms for collecting royalties and other fees on protected varieties.

A final recommendation could be strengthening the fight against illegal practices in the seed sector, including counterfeits, in cooperation with customs, police and professional organisations.

Photo Credit I SeedConnect, Nigeria

Senator Aliyu Sabi Abdullahi, Nigerian Minister of State for Agriculture and Food Security (second from right in blue) fields questions from the media last November at the SeedConnect Conference. It is imperative to implement policies and strategies for promoting new protected plant varieties by engaging all political and administrative reforms.

Communication on education on plant variety protection systems

Information, education, and communication (IEC) programmes on protection of plant varieties target public and private actors involved in the plant variety protection system. This is to enhance knowledge regarding plant variety protection and to dispel doubts and resistance from persistent misinformation about plant protection systems.

> *"Actions recommended include establishment or strengthening of technical units for conducting DUS trials of new varieties following international standards"*

Conclusion and recommendations

It is imperative to implement policies and strategies for promoting new protected plant varieties by engaging all political and administrative reforms. This will create conditions for a vibrant commercial seed sector, providing farmers with more opportunities for varieties. However, political will is key.

It is essential to provide the best spaces and conditions for formulation and processing of applications for Plant Variety Protection (PVP) mechanisms for new elite varieties, as well as for improvement of technical and administrative infrastructure, and strengthening the capacities of the Office and the NARIs and breeding institutions, particularly in terms of DUS testing, and thirdly development and release for the benefit of stakeholders and breeding institutions of bundles of technical documents including different guidelines, and varieties reference collections.

Raising awareness and training major players, including decision makers on the PVP system, comes in handy together with strengthening human resources for DUS examination in order to have a critical mass of DUS examiners.

The author works for CORAF as the Agribusiness and International Development Expert

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INTERVIEW

Managing a seed company in Africa can be a daunting task for a businesswoman, unless one is focused and backed by a very resolute and professional team. Our editor, Aghan Daniel, recently posed a few questions to Dr Sanatu Alidu, the Chief Executive Officer, Dinmbone Farm Gates Company Limited based in Ghana. The company produces certified seeds and its market is mainly West Africa. This is how it went:

Photo Credit | Dinmbone Farm Gates

Dr. Sanatu Mustapha Alidu

Q. Tell us about yourself and how you started Dinmbone Farm Gates Company Limited.

A: My name is Dr Sanatu Mustapha Alidu. I am a Senior Lecturer and Plant Breeder at the Crop Science Department of the Faculty of Agriculture, Food and Consumer Sciences, at the University for Development Studies, Nyankpala, Tamale-Ghana. My research focus is on developing cowpea varieties that will tolerate drought and climate change varieties to increase production and help improve the food security and livelihood of people in Northern Ghana, where the bulk of the crop is produced.

Born and bred in Northern Ghana, I obtained my primary, secondary and the first phase of my tertiary education in Tamale, Northern Ghana. I then obtained my Ph.D in Plant Breeding at the West African Centre for Crop Improvement, University of Ghana Legon - Accra, an MSc in Plant Breeding from Kwame Nkrumah University of Science and Technology, a BSc in Agricultural Technology Agronomy option, and a Higher National Diploma in Agricultural Engineering, with a major in soil and water option.

As a crop breeder, my interest and passion have always been supporting agricultural growth and empowering more women by training them in crop production, seed business, and its value chain. I have also been educating women on the need to own and run their own farms and follow the crop to eventually add value to sell and make more money, rather than selling harvest at the farm gate prices.

Q. Give a glimpse about your seed company.

A: Dinmbone Farm Gates (DFG), a Ghanaian Company, was registered on June 1, 2020. It is located in the Northern Region of Ghana. We produce both foundation and certified seeds of cowpea, soybean, groundnuts, maize and rice. DFG has, in the past three years, produced 600 MT of certified seed which we have sold within the country. We have a work force of ten permanent employees with many others working as casuals.

Q: Would you share a bit about special programmes targeting women in your company, if any?

A: The skilled and experienced women-led team of DFG is continuously working towards the satisfaction of its partners.

DFG aims to reach out to a large majority of producers, notably small and large-scale farmers, especially female ones, whose access to quality and accredited seeds and other inputs has been a challenge over the years. Our vision is to become the leading women-led plant breeding company, capable of producing breeder, foundation, and certify seeds and planting materials for farmers in Ghana and ensuring continuous availability of products through a customer-friendly approach to ensure success for the farmer, especially with special focus on women producers in the agricultural and agribusiness value chain.

We add value to the businesses of our customers, distributors and retailers of seeds, fertilisers, and other value-added products in agriculture.

Since its establishment, Dinmbone Farm Gates Company Limited has brought agricultural expertise and inputs to the farming community most effectively and created harmonious and fertile grounds for farmers, producers, processors, and other value additions in the agriculture and agribusiness platform. The company has created training programmes for farmers and farming groups such as workshops, demonstrations, and field days to support agriculture in Ghana.

Photo Credit | Dinmbone Farm Gates

Dr Sanatu Alidu, Chief Executive Officer, Dinmbone Farm Gates Company Limited says they support women with seeds, fertilizers at credit and free agronomic trainings for them to adopt good practices for improved yields

Q: What is unique about your seed company?

A: We offer training and free consultation to farmers, especially women groups, on the best agronomic practices as well as the quality of seed to get higher yields. Also, dry season vegetable production is a major income generating activity for women in the Northern part of Ghana.

Q: Please share on programmes targeting young women or youth in your company.

A: As a Senior Lecturer in plant breeding, and in partnership with the University for Development Studies, we offer practical training to students on internships. More focus has been on young female students in very poor rural communities, who would like to go into farming upon completion of their undergraduate and graduate studies.

Dinmbone Farm Gates Company has over the years engaged more women right from planting to processing, seed sorting, cleaning, and storage. During this period, women and youth are given more practical training and learning opportunities, as well as end income to support themselves.

The company is planning and aiming to get support to train more women in these ecologies to grow vegetables throughout the seasons.

As a female-led business, it is challenging to have access to land, equipment as well as machinery to grow your business. When the season begins it is difficult to get tractors to rent for land preparation. During subsequent harvest, getting combine harvester for rice and threshers for soya is even more frustrating, leading to wastage or reduction of the quality of the harvested produce, as your rice fields, most of the panicles would have lodged and these affects the quality of your rice seed. This leads to losses for farmers, sometimes by up to 40 per cent.

Women outgrowers are supported with seeds and fertilsers at credit and free agronomic trainings and demonstrations for them to adopt good practices for improved yields.

Q: What support do you need from government to enable your company to do better?

A: Dinmbone Farm Gates is hoping to attract government support, especially with equipment and machinery, including for irrigation; as well as infrastructure and financial support in the form of loans to expand seed production.

Q: Would you comment about regional harmonisation of seed regulations and how it impacts seed business in the West African region.

A: The Regional Harmonisation of seed regulations in the West African region, including Ghana, will help us as seed producers to have higher demands for seeds locally and internationally. This will also enable seed producers to bring in seeds from neighboring West African countries to help improve the use of quality seed.

Q: What lessons would you share with other upcoming women entrepreneurs?

A: For the past four years of my seed business I have learnt the importance of branding. Let quality and timely delivery of services be your hallmark.

Again, build trust and customer relations well. Ensure you have constant feedback from the farmers and all other value chain actors in your business. As for the upcoming women who want to join us in the seed business, I advise you to have patience. Determination, perseverance, consistency, and hard work will enable you to survive in this male-dominated seed business and farming environment.

THE BIG READ

Empower women to strengthen Africa's agrifood systems

By Enock Chikava | Enock.Chikava@gatesfoundation.org

Smallholder farmers constitute 50 per cent of the population in Sub-Saharan Africa (SSA) and South Asia (SA) - they produce 80 per cent of the food consumed in urban areas and agriculture makes up to 30 per cent of the nations' GDP, where women workforce constitutes 66 per cent and 71 per cent of the agri-food systems in SSA and SA respectively.

For me, centering women within the agri-food system is a personal mission. I was raised in a smallholder farm in Zimbabwe in a family of 11, and I watched my mother, in particular, work incredibly hard to support my siblings and I against tough challenges. Farming was a difficult life. There were always uncertainties around weather and economic downturns, and the physical labour was taxing. But through all this, my parents successfully took care of us. They sent my siblings and I to school. They put me on a path that has led me to contribute globally to the matter of strengthening the agri-food system.

Today, the challenges farmers face loom larger than ever, due to climate change. Over the last 30 years, temperatures in African countries have risen faster than the global average, and losses on African farms are now almost twice the global average. Of the 30 deadliest weather events ever recorded in Africa, five occurred in the last 18 months.

At the same time, 3.1 billion people in the world (42 per cent) cannot afford a nutritious diet, at close to $3.70/person/day. Most of those people are in SSA and SA - farmers in these regions struggle to produce enough food. They have unfulfilled needs. Therefore, if we in the seed industry and others can offer smallholder farmers appropriate support – inputs, information, and finance, through inclusive agri-food system transformation, they will manage to feed the neediest and propel economies. The bold actions needed must be gender-transformative and climate-adaptive.

Photo Credit | Simlaw Seeds Ltd

The author observes that if smallholder farmers can be offered apt support they would in turn manage to feed the neediest of their lot and propel economies.

Enock Chikava

The state of food security, and why bold action matters.

Most recently the Food and Agriculture Organisation (FAO) pulled together an important update on the status of women in agri-food systems. It is the first update on women in agriculture since 2011.

The world's biggest challenge is not just to support countries' inclusive food system transformation, but to provide women with equitable opportunities to fully participate in and benefit from that transformation. Bolder, more intentional action is needed to achieve the SDG5 – on gender equality –in all its forms, by 2030.

The power of women

While the arc of history is bending towards greater equality, it is happening far too slowly. As the FAO report states, if we do not support more transformative programming, gender equality will take too long to achieve, with dire consequences at household, community, national, regional, continental, and global levels.

Photo Credit I Gabriel Ingubu

FAO data shows that if policies and interventions were more focused on gender transformative outcomes, the entire agrifood system would benefit.

The dire consequences are already visible in cases of hunger, for instance. Globally, food insecurity disproportionately affects women. In 2021, almost one-third of women worldwide were moderately or severely food insecure compared to over one-fourth of men. This is not an anomaly. In all regions except Africa, food security among men improved since 2020. For women, it worsened in almost every region.

We should put a big focus on inclusive agriculture transformation because smallholder crop farmers and livestock keepers are over-represented in the lowest percentiles of national income distributions in low-income countries. And among those, women are poorer than men.

While we recognise that growth must be inclusive, too often opportunities are based on who you are - factors like gender, rather than your ability and aspirations.

Women's empowerment in agriculture should therefore be intentional – and affirmative action is needed to change things.

The FAO data shows that if policies, strategies, programmes, and interventions were more focused on gender transformative outcomes, the entire agri-food system would benefit. We would see increases in productivity, nutrition, and most especially, resilience to climate change.

Agri-food systems are major, important employers of women globally. The FAO's 2023 study shows that the agriculture sector is a more critical source of livelihood for women than it is for men. Yet women do not have the same agency and control over their livelihoods as men do. This is evident in the sub-Saharan Africa where 66 per cent of women are employed across agri-food systems, compared to 60 per cent of men.

However, despite their strong presence in Africa's agri-food systems, women are consistently underrepresented as decision-makers and leaders, accounting for less than 30 per cent of agribusiness ownership in Africa. (Source: Value4Her Impact Model Analysis, 2022)

National policies addressing the constraints to women's agency are critical to closing the gender gap. FAO documented that three out of every four policy documents relating to agriculture and rural development recognise women's roles and the challenges they face. Yet only 19 per cent actually include policy goals related to gender. Today this same dynamic plays out in climate negotiations. While women's presence in local climate-smart agricultural responses is associated with better resource governance, conservation outcomes, and disaster readiness, women made up less than 34 per cent of country negotiating teams at the COP27 and of the 110 world leaders who were present, only seven were women.

How we can deal with these systemic barriers? Prioritising these outcomes can make a big difference.

- Rural women adopt the latest climate-smart services, information, products, and technologies
- Women are better served by agricultural policies, programmes, and finance
- Rural women increase and control their income and assets from their farms and businesses
- One effective solution is localised gender-transformative approaches. These have great power to change the social norms and policies that hinder women from participating in crucial areas by involving men and women. These approaches can include working with community leaders to be role models in promoting gender equity and implementing measures that address rural women and promote their participation in policymaking, among many other methods.

This matters because agriculture is an effective pathway out of poverty. It stands a better chance to drive healthy and productive lives, and that is especially true for women. When women have equal access and opportunities, they flourish - and so do their communities. Women are more likely to invest in their families' well-being than men. It is proven that when female farmers have control over resources and finances, they reap greater earnings and higher farm yields.

When we invest in women, the potential is incredibly tapped. When we correct root causes of gender inequality in agriculture, and subsequently women's excess risk to factors like climate change impacts, they become drivers of inclusive agriculture transformation.
They take bold action. When women are involved in decision-making, climate change policies are practical. With equitable opportunities, they prosper. They bolster their household income and feed their communities well.

Reducing the gender gap in African agri-preneurship, for instance, can enable the creation of 12 million new jobs in the agriculture sector. This bold outcome has potential to grow revenues by more than $120 billion in Africa.

Photo Credit I EASEED

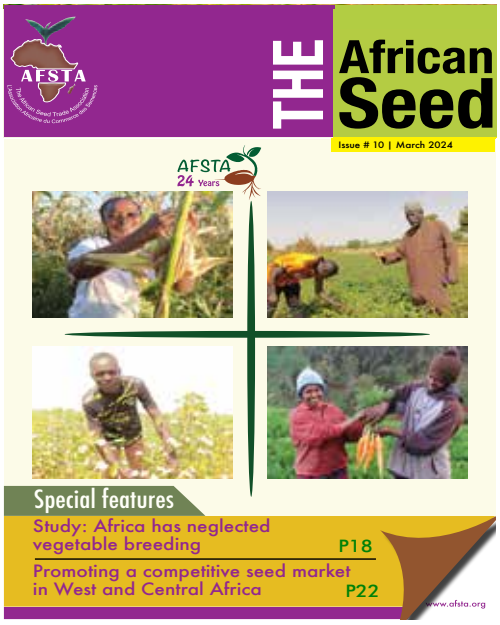
Reducing the gender gap in African agri-preneurship, for instance, can enable the creation of 12 million new jobs in the agriculture sector.

(Value4Her Impact, 2022). Globally, 45 million people would be saved from food insecurity, consequently boosting the world's economy by nearly $1 trillion (FAO 2023).

Conclusion
This is the power of women. This is the kind of transformation we need to unlock a healthier, more sustainable, and more prosperous future for our people and planet.

Women are crucial to the agricultural sector - as farmers, processors, traders, researchers, and policymakers.
Actions taken so far are incremental and have no consequence on livelihoods in the face of exponential threats. Now is the time to invest in the agri-food systems bolder than before.

We must cease to perpetuate the inequalities that hold back so many women in agriculture from their full potential so that they are free to sustain themselves, their communities, and the planet.



CALL FOR ARTICLES

The African Seed Traders Association (AFSTA) invites articles from seed people for its 11th edition of The African Seed Magazine due to be published in March 2025.

AFSTA calls for in-depth pieces on any initiative or news in your country on seed trade and seed production initiatives, policy, projects that have a direct impact on the African seed sector.

Kindly note that AFSTA being a neutral body, only publishes articles which do not promote one company's work. However joint efforts by a consortium of companies will be published.

DEADLINE FOR SUBMISSION OF ARTICLES

January 10, 2025.

Please send your articles to our communication officer, Aghan Daniel, Communication & Advocacy Officer, Whatsapp +254775327635. He can also be reached on email at daghan@afsta.org, or afsta@afsta.org.

Genome editing will improve staple crops, say researchers

By Sharon Phoebe I sharonphoebeatieno@gmail.com

Photo Credit I SeedConnzect, Nigeria

Seed people: Gene editing techniques can be used efficiently to develop disease-resistant crops by precisely knocking out the disease-carrying genes.

To enhance food security and mitigate negative impacts of climate change on agriculture, harnessing scientific innovations such as genome editing remain crucial particularly in improving production of staple crops in Africa.

This is according to a technical scientific article 'Genome Editing for Sustainable Agriculture in Africa' by Leena Tripathi, Karnwapal S. Dhugga among other prominent scientists published in the Frontiers Journal dated May 2022.

But just what is genome editing? Dr James Karanja, a scientist from Kenya Agricultural and Livestock Research Organisation, while addressing a genome editing webinar organised by AFSTA last season, defined it as a group of technologies that give crop scientists the ability to make permanent and heritable precise changes at specific sites in the plant genome to improve the crop's variety by making it resistant to diseases, improving its nutritional value, increasing yields and increasing its resilience to climate change.

According to the report, clustered regularly interspaced short palindromic repeats/CRISPR-associated protein (CRISPR/Cas)-based genome editing has rapidly become the most prevalent genetic engineering approach for developing improved crop varieties. This is due to its simplicity, efficiency, specificity and easy to use nature.

One of the commonly used technologies is the CRISPR/Cas9 mediated editing which develops an improved crop variety by modifying its susceptible gene through deletions, insertions, or substitution, or even inserting or replacing a full-length gene from the same plant species at the targeted site in a very precise manner.

The report finds that researchers are using this genome technology on African staple crops for improved nutritional quality and resistance against major environmental threats such as climate change, disease causing organisms and parasites among others.

Banana, including plantain, is one of the most important staple foods and cash crops for millions of African small holder farmers. However, the average yield for banana and plantain in the continent remains significantly low compared to their potential yield due to disease vulnerability.

The scientists further posit that CRISPR/Cas9 can be used efficiently to develop disease-resistant bananas by precisely knocking out the disease-carrying genes.

Various researchers from the International Institute of Tropical Agriculture (IITA) are using this technique to develop bananas resistant to banana Xanthomonas wilt (BXW), banana streak virus and Fusarium wilt disease.

The same technique is allowing the identification of genes associated with tolerant traits to major environmental threats and nutrition enhancement, which could be used to improve banana for enhanced nutrition and adaptation to a changing climate.

Besides bananas, the report found that the technique is also being used to develop cassava that is resistant to Cassava Mosaic Disease (CMD) and Cassava Brown Streak Disease (CBSD). The CMD disease alone can result in yield losses of between 20 to 100% while CBSD destroys roots leading to total harvest lost.

Researchers are also looking at the potential of using genome editing technology to induce flowering in cassava. This is because conventional breeding in cassava is time-intensive, taking a minimum of 6 years to get to cultivar trials and even longer to release a cultivar.

In maize, notes the scientific paper, there is ongoing work by CIMMYT using CRISPR/Cas9 technology to deal with the maize lethal necrosis (MLN) disease. The 2013 outbreak of the disease in Kenya alone, decreased maize production by almost half a million tons.

Additionally, the paper finds that there are numerous potential for using CRISPR/Cas9 technology in dealing with striga and improving nutrition quality in sorghum as well as disease resistance and improving quality and yields of wheat and yam.

However, the top scientists call for the creation of an enabling environment in the continent which allows science based regulatory guidelines for the release and adoption of the products developed using CRISPR/Cas9 genome editing technology.

> *"Researchers are also looking at the potential of using genome editing technology to induce flowering in cassava."*

Photo Credit I Milliam Murugi

Sorghum farming: A project known as Feed the Future Striga Smart Sorghum for Africa which is underway in Kenya and Ethiopia aims to come up with striga-resistant sorghum by using genome editing.

"Crop varieties edited through CRISPR/Cas9 are free from foreign gene and need not go through a complex and time-consuming biosafety regulation similar to genetically modified organisms (GMOs) for commercialization," note the authors.

Apart from Kenya and Nigeria which have published their national biosafety guidelines for the regulation of gene editing, many countries are still in the process of developing regulatory guidelines for genome-edited products.

The scientific article is part of the research topic Genome editing for agricultural sustainability, developments in tools, potential applications and regulatory policy.

The writers include Leena Triparthi, Valentine Ntui, Easter Syombua, and Jaindra Triparthi (International Institute of Tropical Agriculture (IITA) based in Nairobi Kenya, Kanwarpal Dhugga, Zhengyu Wen (International Maize and Wheat Improvement Centre (CIMMYT), Texcoco, Mexico, Steve Runo (Kenyatta University, Nairobi, Kenya), Samwel Muiruri who works for both IITA and Kenyatta University.

The authors are all known for being hands on in the field of gene editing. For example, Prof Steve Runo is one of the leading lights on a project known as Feed the Future Striga Smart Sorghum for Africa (SSSfA) which was launched in Kenya in 2022.

The project being undertaken in Kenya and Ethiopia aims to come up with striga-resistant sorghum by using genome editing. This variety will improve sorghum harvests and contribute to increased food and nutritional security while empowering African smallholder farmers many of whom are women and improve their livelihoods.

ON THE SPOTLIGHT

Seed sector performance index for Africa

By Mainza Mugoya I mmugoya@tasai.org

The Seed Sector Performance Index (SSPI) is the outcome of a partnership between the African Seed and Biotechnology Programme (ASBP) of the African Union Commission (AUC), The African Seed Access Index (TASAI) Inc., and Alliance for a Green revolution in Africa (AGRA).

The SSPI goal was to develop and pilot a single score-based measurement tool that provides a bird's eye view of the status of seed systems across Africa. In addition, the SSPI provides seed sector data for the AU's 4th Biennial Review (BR) Report.

The SSPI's 17 indicators straddle the entire seed system. Each indicator is scored out of 10, and each country has a final overall score, which is the simple average of the 17 scores (see map of Africa next page).

Data on these indicators was collected from a total of 47 countries. The eight missing countries are Algeria, Cape Verde, Equatorial Guinea, Gabon, Mauritius, Morocco, Sao Tome and Principe, and the Sahrawi Republic.

Each country dataset includes information on four country-priority crops, including cereals, legumes, vegetatively propagated crops, fruits, and vegetables. The 10 most common crops (featuring in at least seven countries each) were maize, rice, sorghum, groundnut, bean, millet, soya bean, wheat, cowpea, and cassava.

This article presents six highlights from the report.

Photo Credit: Seedco West and Central Africa

Sector Performance Index (SSPI) has developed a tool that provides a bird's eye view of the status of seed systems across Africa.

Wide variation in the health of seed systems across Africa: South Africa ranks at the top, either individually or jointly, for 12 of the 17 indicators, with an overall score of 8.62 out of 10.

Four other countries with an overall score greater than 7 out of 10 are Kenya, Tanzania, Zambia, and Zimbabwe. On the other hand, eight countries have an overall score below 3 out of 10.

They are Central African Republic, Comoros, Djibouti, Libya, Mauritania, Congo Republic, Somalia, and South Sudan. These countries are characterised by a nascent private sector, inadequate or non-functional public breeding programmes, and very weak national quality control systems.

Most countries do not meet their national seed requirements. Only South Africa and Zimbabwe met their national requirements for certified seed for all four priority crops. A further 13 countries met at least 80 per cent of their national seed requirements for at least one crop. They are Angola, Botswana, Burundi, Eswatini, Ghana, Guinea Bissau, Lesotho, Namibia, Senegal, Sierra Leone, Tanzania, Togo, and Zambia. However, a total 18 countries met less than 25 per cent of their national seed requirements for at least three of the four crops.

Fairly wide varietal choice across some countries. The number of varieties being sold for the four crops is fairly high for a number of countries, indicating that farmers have wide varietal choice in these countries. For example, by crop, the number sold to farmers was, for maize, 113 in Zambia and 100 in Kenya; for rice, Madagascar had 46and Mali 41; for sorghum Mali had 28 and Nigeria 14; for groundnut Senegal did 36 and Central

Africa Republic 8; for bean Kenya had 28 and Burundi 21; and for cassava, Cameroon had 14and Côte d'Ivoire 10. Importantly, some countries benefit from varieties available through the respective regional variety catalogues. For example, seed companies in Angola, Eswatini, and Mozambique are marketing varieties obtained through the Southern Africa Development Community (SADC) Seed Harmonised Regulatory System.

Inadequate implementation of seed policy instruments. Many countries (30 of 47) have seed policy instruments that are either complete or close-to-complete. However, the level of implementation of these policies in most countries is very low. In many countries, government provision of key seed services such as variety release, seed inspection, and fighting counterfeit seed, is inadequate.

Most countries have functional national seed associations. Only 33 of the 47 countries have national seed associations. The SSPI measured the associations' performance across six measurement areas with a final average score out of 10. Of the 33 national seed associations, seven scored between 8 and 10.

They are the South African National Seed Organisation (9.5), Zimbabwe Seed Trade Association (8.7), National Seed Trade Association of Ghana (8.0), Seed Trade Association of Kenya (8.0), Uganda Seed Trade Association (8.0), and Zambia Seed Trade Association (8.0).

The 15 countries with no national seed trade associations are Angola, Central African Republic, Chad, Comoros, The Republic of the Congo, Djibouti, Eritrea, Guinea (Conakry), Lesotho, Liberia, Libya, Namibia, Seychelles, Sierra Leone, and Somalia.

Scoring: 0-<2 | 2-<4 | 4-<6 | 6-<8 | 8-10 | No response

AFSTA membership coverage across Africa is fair. Of the 33 active national seed associations, 23 are members of the African Seed Trade Association (AFSTA). The nine national seed associations that were not members of AFSTA in 2023 were from Botswana, Cameroon, the Democratic Republic of Congo (DRC), Eswatini, Gambia, Guinea-Bissau, Mauritania, Mozambique, and Togo.

The SSPI report contains the data and analysis on each of the 17 indicators, as well as 3-page country briefs, for each of the 47 countries. When published, the report will be available on the websites of the African Union, AGRA and TASAI.

For more information, please contact Michael Waithaka (mwaithaka@tasai.org).

> *Of the 33 active national seed associations, 23 are members of the African Seed Trade Association (AFSTA)*

Kenya to adopt vegetatively propagated seeds framework

By Duncan Onduu | *duncan.onduu@stak.or.ke*

From a monopoly in the 1950s, the seed industry in Kenya has tremendously grown to encompass the private sector involvement following liberalisation of the industry in the 1990s. This has resulted in an increased variety of seeds available, produced and volumes of certified seed.

The Seeds and Plant Varieties Act, Cap 326 is the principal statute for regulation of transactions in seeds. The Act provides for provision for the testing and certification of seeds; establishment of index of names of plants; prevention of injurious cross-pollination; grant of propriety rights to persons breeding or discovering and developing new plant varieties; restriction on the introduction of new varieties; and authorisation to undertake regulatory functions. The seed regime in Kenya is regulated through the Kenya Plant Health Inspectorate Service (KEPHIS), a corporate body under the Ministry of Agriculture and Livestock Development. It has, however, emerged that the Seed Act and currently existing regulations have bias towards true seed, leaving gaps in addressing the concerns of high-value vegetatively propagated crops.

The ministry has consequently prioritised and is working on the development of regulations on Vegetatively Propagated Seed (VPS). This is because most VPSs are for important food security crops that can significantly impact the country's national food security. Yet farmers continually face challenges in accessing adequate quality planting material for VPSs.

Photo Credit I Mazera Ndurya

Farmers at a cassava field Kenya's Agriculture ministry has developed regulations on Vegetatively Propagated Seed.

Duncan Onduu

Besides, the demand for food from VPSs has significantly grown due to Kenya's fast-growing population, now at 53 million; which increases nutritional awareness.

Moreover, the Seeds and Plant Variety (Seeds) Regulations 2016 is biased towards true seeds and do not adequately provide procedures and standards for most VPSs. The VPMs, unlike true seeds, are sourced from various parts of the parent plants, and are uniquely dependent on the method of propagation.

The ministry has to prioritise development of regulations in this area due to the inadequate regulatory framework, which has caused phytosanitary issues in VPSs. The incentives for the private sector to invest and participate on VPSs have also been inadequate, at a time the need to document likely scenarios of climate change and other emerging issues in VPS cannot be denied.

Photo Credit I Agatha Ngotho

Lucas Olewe, a producer of cassava seed, is captured at a symposium on tropical root crops in Nairobi. To ensure proper Vegetatively Propagated Seed quality assurance, Kenya has prescribed regulations and maintenance of variety among others issues.

The scope, objectives, and purpose of the VPS regulations entail production of quality declared standard seed and certified seed of plant species for sale. This does not apply to VPSs produced by farmers for their use, sharing, and exchange.

The regulations are intended to enhance quality and improve access to VPSs by providing procedures for registration of their producers, sellers, and grafters; facilitating the production, processing, and sale of the VPSs; and enabling compliance and enforcement of measures for persons in production.

The process of development of the Seeds and Plant Varieties (Vegetatively Propagated Seeds) Regulations, which is nearing completion, has used a participatory and all-inclusive approach with input facilitated by a team of experts drawn from legal, policy agronomists, breeders and seed system experts. The stages that have been accomplished include gap analysis of existing regulatory framework; development of initial and subsequent drafts VPS Regulations, and subjecting the draft to the required due process of public participation, adoption and approvals in accordance with the Constitution of Kenya 2010 and the Statutory Instruments Act.

The process has also included undertaking a Regulatory Impact Assessment (RIA) on the draft VPS Regulations; and preparation of the draft regulations for legal drafting, gazettement and implementation.

The VPS regulations are anchored on the need to achieve greater inclusivity and broaden the range of quality seed that may be produced over and above certified seed. They seek to enable a Farmer Managed Seed System and regulation of key actors along the seed production and certification supply chain, including grafters, to ensure quality.

The ministry has since introduced a National Register of County-based Farmer Varieties to allow the production of VPS from farmers, community varieties, or those in the public domain that are no longer protected under the Plant Variety Protection law.

Also important has been the delineation of KEPHIS and county governments' roles in the regulation of VPS under the certified and intermediate seed regimes for alignment with the Kenyan constitution and enabling the devolved units to have greater reach on the ground concerning VPSs.

To ensure proper VPS quality assurance, the ministry has prescribed VPSs regulation, authorisation, inspection, and maintenance of variety and seed sources, production facilities and fields as well as seed crops. It insists on proper testing and treatment before packaging, labeling and transportation of the VPSs.

Others are the validity of certification of the VPSs and their sale, pre- and post-control plots, how to effect seizure and disposal of the seeds and the processing facilities, and finally the importation and exportation processes.

To date, stakeholder consultation has involved seed sector industry experts, CGIAR community, Policy, Legislative and Standards Sector Working Group, 45 counties, and the National Assembly Committee on Delegated Legislation.

The draft regulations were shared during the 2023 STAK Expo and Mazao Forum held between November 29 and 30, 2023 at KALRO offices in Loresho, Nairobi. Besides, the draft was subjected to a national validation exercise and has been reviewed to incorporate additional comments arising from the workshop. The outstanding stages to completion of the regulations include legal drafting by Office of the Attorney General and subsequent gazettement.

As the process rolls out, it underscores the place and contributions that these regulations will play in agricultural production and productivity, as seed constitutes the foundation of the agricultural value chain.

The writer is the Executive Officer, Seed Trade Association of Kenya (STAK)

NEW RESEARCH

Using genotyping to measure crop varietal adoption

By Aghan Daniel I daghan@afsta.org

Seed stakeholders will soon access estimated varietal adoption data from genotyped crop surveys conducted in Tanzania, Ethiopia and Nigeria.

The surveys that focus on the four main crops in each country are underway, and will be conducted in two rounds.

The first round is complete, and the data is being validated. Comparative analysis of the data from the two rounds, including previously established adoption baselines, will enable stakeholders to measure the impact of their varietal development investments.

Experts say that identification of varieties through genotyping offers the best evidence-based data on key varietal adoption indicators such as area or share of area (adoption rate) by improved and most popular varieties and key turnover indicators for example crop-specific area- weighted varietal age (AWVA).

Known simply as the IMAGE Programme, (short for Institutionalising Monitoring of Crop Variety Adoption using Genotyping Programme) the five-year initiative, led by country teams in the three countries to routinise use of genotyping, in combination with household surveys, will monitor the rate of improved variety adoption and turnover by male and female small-scale producers.

"In the end, we aim to establish, institutionalise, and scale routine monitoring of improved variety adoption and turnover using genotyping," says Resourced Programme Manager David Wainaina.

Photo Credit I EDI Globa

A visit to the farmer's field for plant sample collection and field size mapping .

The success criteria for the initiative can be seen by advancing genetic reference libraries, establishing varietal monitoring protocols, and building toward institutionalisation over five years. This is measured by generating comparable estimates of varietal adoption and turnover, and making the data available to stakeholders.

"We also aim to standardise best practices and supporting technologies, and help establish sustainable business cases while generating pilot study results on varietal identity preservation in seed value chains for each country's crop combination," added Mr Wainaina.

Lastly, they hope that the generated data will be used by key stakeholders to make key decisions with an emphasis on facilitating the use of varietal monitoring data through targeted business cases.

The project is expected to create value for many stakeholders, including the donor community, government and private investors, as it can provide first-hand information on the impact of crop improvement-focused investments and how this changes the lives of sub-Saharan Africa smallholder farmers.

"Accurate, timely, and reliable data on crop variety use by small-scale producers enables the identification of seed supply challenges, focuses seed distribution efforts, enhances resource allocation for research and seed production, and generally enables more strategic seed sector decision-making," says Mr Wainaina.

Varietal monitoring using the identification of varieties based on farmer recall or expert reporting is known to be inaccurate and with misleading results.

Studies show that misleading data can result in incorrect conclusions about determinants of adoption, and in turn cause intervention and support decisions that do not generate the expected impact.

Fortunately, genotyping (DNA information) can ensure accurate reporting of crop variety identity and produce reliable, repeatable, credible adoption estimates. Pilot work funded by the Bill & Melinda Gates Foundation (BMGF) and the Standing Panel on Impact Assessment (SPIA) has validated the viability of using genotyping for crop variety adoption monitoring.

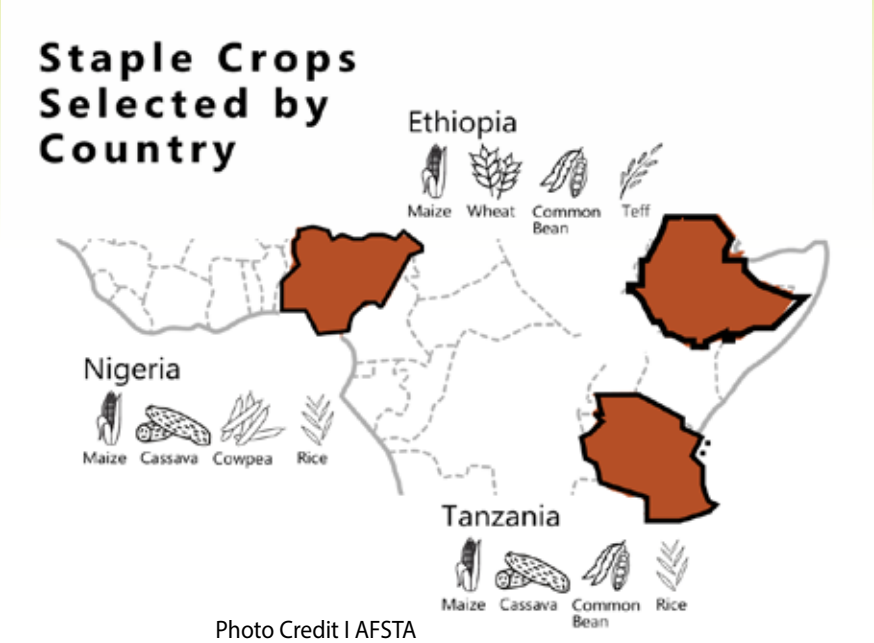


Photo Credit I AFSTA

Resourced Programme Manager David Wainaina: Our work aims, among other things, to standardise best practices and support technologies.

Previous attempts to measure adoption using DNA fingerprinting have been project-based studies aimed to demonstrate the validity of the approach.

The IMAGE partnership aims to move away from project-based approaches to establish a programme that institutionalises genotype-based monitoring within national institutions to enable routine capture of valuable adoption and turnover data through sustained programmatic implementation.

Country institutionalisation pathways will vary with every the country's context, and countries can learn from each other's experiences.

The challenges of misleading data are parts of a formidable problem that can only be resolved by programmatic work involving dedicated, skilled personnel in-country.

The programme, which has a multi-pronged approach to achieve accurate data collection and processing, is hailed for establishing dedicated organisational capacity in-country for undertaking monitoring work using the best-in-class technologies and methods. This is a resource addition beyond this programme, strengthening the human capital within each country.

Second, by creating business models built on monitoring data value propositions, each country can generate sustained demand for and monetary support for monitoring activities. This is reinforced through building a robust network of vetted service providers and technical experts.

Also, IMAGE generates the case for policy buy-in that leads to organisational mandates to conduct monitoring allowing policy makers to track their progress on Sustainable Development Goal 2 (Zero Hunger) through the instrumentality of improved seeds.

In 2024, after results validation, data sharing and publications will be done governed by the Open Access and FAIR Principles. These publications and the drafted national investment plans are expected to support impact assessments and crop improvement priority decisions for policy makers and other investors.

KENYA SEED COMPANY LTD.

Top Quality Seed

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About Kenya Seed

Kenya Seed Company was formed on 1st July 1956 to promote the use of improved strains of Pasture seed that were developed then by the National Agricultural Research Station in Kitale.

The company produced more varieties later with Sunflower then introduced hybrid seed maize production following the first hybrids by the Government Research Centre.

The Company has made substantial growth since then through the development, production and provision of a wide range of high-yielding varieties and high-quality seeds for various crops adaptable to different agro ecological zones. This is with the production of seed variety of more than 60 different crops varieties ranging from maize, wheat, pasture, sunflower, sorghum, millet and a wide range of horticultural seeds and indigenous vegetables suitable for different climate conditions ranging from the highland to dry land zones.

These seed varieties are availed to our farmers throughout the country and the region by our network of subsidiaries (Uganda, Tanzania, and Rwanda), branches and identified seed suppliers in the region.

Wheat variety- Njoro II
Resistant to Lodging, Tolerant to acidic soil High yielding, Hard wheat

Maize variety -H6213
High yielder
Tolerant to lodging
Excellent milling qualities
Resistant to lodging, ear rot, rust , G.L.S, Stem and leaf blight

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ANNIVERSARY CELEBRATIONS

Rwanda welcomes delegates to the 25th AFSTA annual congress

By Aline Uwineza I aline@nsar.rw

The 2025 AFSTA Annual Congress will be held in the iconic city of Kigali, Rwanda. According to the host, the National Seed Association of Rwanda (NSAR) the fair will kick off on March 3 and close its doors on March 5, 2025.

But what do we need to know about the seed sector in Rwanda? For starters, the country boasts of a robust Public Private Partnership which has been critical in developing the future of Rwanda's seed industry with inputs and support from the Government, the Private Sector and others major Role-players.

The government of Rwanda has taken various initiatives to improve the enabling regulatory environment for seed trade, which has resulted in a noticeable change in the use of improved seed varieties by small-scale farmers, according to data from the National Institute of Statistics of Rwanda.

These efforts include permitting private seed companies to sell seed directly to farmers, rather than requiring them to sell through government entities; the creation of the seed certification agency, the Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA); increased funding for public research to develop of improved varieties of key staple food crops; and the creation of a government subsidy program that increases farmers' access to improved seed; thus the Public Private Partnership has been critical in developing the future of the seed industry with inputs and support from Government, Private Sector and others major role-players.

Innocent Namuhoranye, President of National Seed Association of Rwanda: The country's initiatives have enabled regulatory environment for seed trade, which has resulted in increased use of improved seed by small-scale farmers.

The private sector remains committed to support the government's vision to enhance agriculture in Rwanda and support a well-coordinated effort to implement such a plan on all levels.

"We would like to make sure that all role players do this in a coordinated effort to achieve the goal of an improved environment," says Innocent Namuhoranye, the President of National Seed Association of Rwanda.

In essence, the roadmap to the seed industry in Rwanda not only envisions a prosperous future for the agriculture sector but also aligns with the broader sustainable development goals of the nation.

By investing in seed research, production, and distribution, Rwanda can strengthen its position in the regional and global agricultural market, create job opportunities, and improve the overall well-being of its citizens.

"As you plan to attend the AFSTA Congress 2025, also make a date with us at the 2nd Rwanda National Seed Congress to be held on 29th-30th July 2024," added Innocent.

"This Congress will serve as a catalyst for change, uniting industry leaders, policymakers and experts to address the challenges facing the seed sector in Rwanda and across Africa. Through insightful discussions and shared expertise, the congress will contribute to the laid foundation for a new era of progress and collaboration," he concluded.

The author is the Executive Secretary, National Seed Association of Rwanda

Picture Speak

1 AFSTA Vice President Amadou Sarr and President Dr Kulani Machaba listen attentively at the opening ceremony of the Congress 2023 in Dakar. 2 A section of attendees during the proceedings of the 23rd congress, 3 A delegate makes a point at the Congress' plenary. 4 Bruno Tinland of Burkina Faso based Semence Fort Afrique, contributes to a discussion in Dakar.

Picture Speak


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5 Ushers in Dakar Congress pose for a photograph after a hard day's work. 6, 8 Trading tables are very popular as a means of connecting with other business colleagues during the congress. 7 Mamati Tembo Head of Public Affairs Science and Sustainability Africa, Bayer makes a presentation at the main plenary of the trade fair. 9 A section of the West African delegates at the Congress in Dakar.

Picture Speak

10 *Andy Watt of QualiBasic Seed, Betty Kiplagat and Barbra Muzata of Corteva follow proceedings of the 2023 congress.* 11, 13 *Delegates at the trading tables discuss trade opportunities at the Dakar Congress.*
12 *Delegates follow the proceedings of the congress in Dakar.*

Picture Speak

14 *AFSTA Secretary General (centre) takes a moment to pose with delegates from India.*
15 *Dr Ibitoye Oyewale of Premier Seeds, Nigeria at the Congress in Dakar.*
16 *Ushers sort out registration details of delegates as the congress opened on March 6, 2023.* 17 *Ms Gugulethu Mahlangu, a young farmer from South Africa poses for a photo on the sidelines of the ISF Congress held in Cape Town last June.*

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AFSTA Members 2024

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AFSTA Congress 2024

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Why join AFSTA?

Joining AFSTA is a long term investment and the benefits of becoming a member include:

1. **Visibility:** Member company's logo is listed on AFSTA website and linked to the website of the members.
2. **Directory listing in the African Seed Magazine:** All members' contact addresses are published annually in the African Seed Magazine distributed during the annual congress and is also available on line.
3. **Provision of up to date information on seed matters:** You will have information on the seed industry in Africa regularly through our quarterly electronic newspaper (E-Review) and Flash News sent from time to time when important news on the seed industry come up.
4. **Access to our website:** All AFSTA members are given a user account with username and password to access the AFSTA website. Once logged in using these credentials (username and password), you will be able to offer seed items for sale.
5. **Low Congress Fees:** Members pay lower rates when registering to AFSTA annual congresses.
6. **Official introduction:** New members are officially introduced at the AFSTA General Assembly which gives them a lot of visibility, given Membership Certificates and have an opportunity to make a short speech during the event.
7. **Networking:** AFSTA offers members more opportunities to network with the African seed business people and companies hence opportunity to expand own business in the continent.
8. **Platform to share experiences:** Members use AFSTA as a platform to share experiences, show case their products and discuss issues that improve their businesses and trade in high quality seeds.
9. **Knowledge:** AFSTA members get the opportunity to appreciate the various linkages and use them to improve their seed businesses.
10. **Integration:** The annual congresses venue rotates among the member countries and this offers members an opportunity to interact and learn from the diverse cultures in Africa.

AFSTA Special Interest Groups (SIGs)

What are the SIGs?

There are two SIGs one for Field Crops (SIGFC), with one being for vegetables (SIGV). They are made up of AFSTA members and the secretariat. They meet at least twice a year and are run by a steering committee, elected from members for a two-year term. The secretarial services are provided by AFSTA. They have an annual work-plan with deliverables and report back to the AFSTA membership at each annual congress with regular briefings to the AFSTA Board.

What can the SIGs do for you?

- Provide a platform for discussion and exchange of ideas on issues affecting seed trade as well as providing a ready network within and outside Africa to support the development of seed trade
- Act as a Think Tank to provide technical support of Africa seed industry and serve the interest of AFSTA members and farmers
- Collect information, engage in research, and develop strategies to promote trade in quality seeds in Africa
- Focus on key issues and support members in solving problems affecting their business and actively promote new ideas, technologies and seed-based stories using AFSTA resources
- Address policy, regulatory and standards issues and lobby for change

Which issues are being considered by the SIGs? (List not-exhaustive)

Field crops:

- Changing climate and market requirements
- Biotechnology in maize, cotton and soybeans
- Low market attraction in sorghum and millet, few-varieties, no hybrids registered
- Slow varietal release processes and seed certification
- Slow implementation of regional harmonisation
- Low farmer productivity and purchasing power

Vegetables:

- Lack of quality seed availability and production issues; both biotic and abiotic
- Postharvest management and marketing
- Hazardous contaminants and food preparation methods
- Slow implementation of regional harmonisation

How do I join AFSTA's Special Interest Groups?

The SIGs are open to all AFSTA members. Contact Catherine Langat, AFSTA Technical Manager (catherine@afsta.org), cc info@afsta.org. AFSTA will then send you a form to fill so you can start to receive information and updates about SIG meetings and any other relevant information.

KNOWN-YOU SEED

Known-You Seed is a professional seed company engaging in breeding, production and marketing of hybrid vegetable seeds for more than 55 years. Our crop range covers most of cucurbit, solaniceae, sweet corn, papaya and also crucifers. Our sales network covers around 90 countries around the world.

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