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India–Africa Seed Summit 2025

Connecting Continents, Cultivating Growth for Sustainable future

The India–Africa Seed Summit 2025, organized by the Indian Chamber of Food and Agriculture (ICFA) in collaboration with the African Seed Trade Association (AFSTA), was held in Hyderabad, Telangana — the Seed Hub of Asia. Supported by the Government of India, Government of Telangana, AARDO, ICRISAT, NSAI, FSII, BIRAC, and other leading institutions, the summit served as a landmark platform for advancing agricultural cooperation between the two regions.

The three-day global summit, themed "Seeding Solutions for India and Africa," witnessed the active participation of leading seed companies, CEOs, ambassadors, policymakers, researchers, and farmer representatives from across both continents. Deliberations focused on climate-resilient seeds, sustainable seed systems, harmonization of certification standards, digital traceability, and farmer–industry partnerships.

The summit emphasized opportunities for joint research, technology transfer, policy collaboration, and trade facilitation, while also promoting eco-friendly and inclusive models to strengthen smallholder farmers. By combining India's expertise in seed technology with Africa's vast agricultural potential, the India–Africa Seed Summit 2025 laid a strong foundation for resilient farming systems, food security, and shared prosperity across both regions.

Inaugural Session

The India–Africa Seed Summit 2025 commenced with a grand inaugural session, bringing together policymakers, industry leaders, scientists, and stakeholders from across India and Africa. The session set the tone for a visionary dialogue on agricultural growth, seed sector development, and farmer empowerment, highlighting the shared commitment of both continents to food security, innovation, and sustainable agriculture.

Welcome Address by Dr. Tarun Shridhar, IAS (Retd.), Director General, ICFA

Dr. Tarun Shridhar welcomed the distinguished participants at the inaugural session and commenced the summit, highlighting its significance as an initiative by the Indian Chamber of Food and Agriculture. He emphasized the importance of collaboration among stakeholders to achieve agricultural success and ensure sustainable food production. Dr. Shridhar underlined the critical role of the agriculture sector in addressing global food and nutrition security challenges, especially as the world population is projected to approach 10 billion by 2050, creating significant pressure on food systems. He noted that half of the world's population suffering from hunger and malnutrition is concentrated in Asia, indicating an urgent regional crisis requiring immediate and coordinated interventions. Highlighting the India-Africa partnership in agriculture, he stressed that collaboration between the two regions can substantially improve food production and nutrition security, helping meet future global food demands.

Address by Dr. Yacouba Diallo, Secretary General, AFSTA

Dr. Yacouba Diallo, Secretary General of AFSTA, emphasized that a partnership between Africa and India is essential for agricultural prosperity, food security, and enhancing the dignity of farmers. He highlighted Africa's

commitment to ensuring farmers have access to quality, affordable, and climate-resilient seeds, while addressing the continent's challenges of climate change and rising populations. Dr. Diallo pointed to significant opportunities, including over 60% of uncultivated arable land, and stressed the importance of collaboration with India in technology transfer, research, regulatory harmonization, and trade facilitation. He described the seeds discussed at the summit as seeds of prosperity, health, and dignity.

Address by Shri Mahesh R. Patel, Chairman, ETG

Shri Mahesh Patel highlighted that Africa possesses a significant amount of uncultivated arable land, presenting a vast opportunity for agricultural development and boosting global food production. He cited the success story of Tanzania, demonstrating how local innovations can dramatically increase yields and serve as a model for other regions in Africa. Shri Patel

emphasized the critical role of seed innovation and technology transfer from India to Africa in improving agricultural productivity and empowering farmers. He stressed that collaboration between India and Africa is essential for agricultural resilience and enhanced food security, describing it as planting seeds of trust and partnership. Additionally, he highlighted the importance of training and support for farmers to maximize yields and sustainability, along with inclusive financing and regulatory alignment to ensure access to quality seeds and successful cultivation.

Address by Shri M. Raghunandan Rao, IAS, Secretary to the Government of Telangana

Shri M. Raghunandan Rao, IAS, welcomed participants to the India-Africa Seed Summit in Hyderabad, emphasizing the potential for India-Africa collaboration to strengthen food and nutrition security. He highlighted Telangana's remarkable economic growth over 11 years, driven largely by strategic investments in agriculture. Key initiatives include robust irrigation infrastructure with nearly 27,000 village tanks and 30 lakh borewells, direct benefit transfers (DBT) of 6,000 per acre to farmers each crop season, and a strengthened agricultural extension system with trained officers guiding farmers on climate-resilient practices, market access, and adoption of better farming techniques. Telangana has also digitized all farms and crops, allowing precise

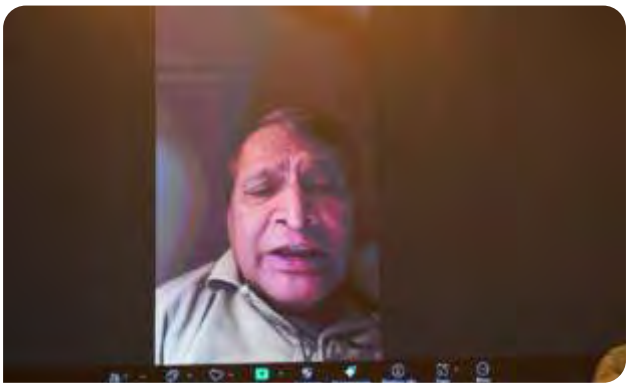
planning and real-time response at the farm level. The state's diverse agro-climatic conditions and strong seed industry, producing crops ranging from paddy to strawberries and avocados, position it as the "Seed Bowl of India". Shri Rao underscored that these interventions create the ideal ecosystem for seed development and innovation, thanked the organizers for choosing Hyderabad, and encouraged participants to leverage the summit for knowledge exchange, meaningful collaborations, and networking.

Special Address by H.E. Mr. Gilbert Shimane Mangole, High Commissioner of Botswana to India

H.E. Mr. Gilbert Mangole highlighted that agriculture is central to Africa's economy, driving food security, inclusive growth, and youth engagement in farming. He emphasized the importance of access to quality seeds as the foundation for productivity, innovation, and sustainability. Noting India's leadership in the global seed sector and Telangana's status as the "Seed Bowl of India", he stressed that the summit provides a platform for knowledge exchange, research partnerships, capacity building, and seed trade, benefiting farmers in both continents. He underscored that collaboration between Africa and India addresses shared challenges of food security, climate resilience, and rural livelihoods. H.E. Mangole concluded by affirming Botswana's full support for India–Africa cooperation in agriculture and expressed confidence that the summit will lead to tangible partnerships for a stronger, greener, and more food-secure future.

Address by Shri Suresh Prabhu, Chairman, ICFA

Shri Suresh Prabhu, emphasized the critical importance of global food security, noting that unless each country is self-sufficient, worldwide food systems remain vulnerable. He highlighted Africa's paradox of having vast agricultural potential yet being a net importer of food and stressed the need to harness this potential through collaboration with India. He pointed out India's



experience in transforming from a food importer to a food exporter, its 35 agro-climatic zones, and strong research infrastructure as key assets for supporting Africa. Prabhu also underscored the historical ties and enduring friendship between India and Africa, framing agricultural collaboration as a continuation of this legacy. He emphasized that empowering African farmers through quality seeds, knowledge exchange, and technology can drive economic growth, food security, and self-reliance across the continent.

Special Address by H.E. Lalatiana Accouche, High Commissioner of Seychelles to India

H.E. Lalatiana Accouche, High Commissioner of Seychelles, highlighted the importance of food security

as a fundamental human right and emphasized the resilience and creativity of communities in overcoming challenges. She noted Seychelles' unique vulnerabilities, including limited land, agricultural resources, and climate change impacts, and outlined the country's multi-faceted sustainability strategy encompassing ocean conservation, clean energy, climate-smart farming, inclusive entrepreneurship, and policy-driven development. She stressed that seeds symbolize growth, potential, and the promise of sustainable food systems, and underscored the need for collaboration, innovation, and knowledge sharing to empower smallholder farmers. H.E. Accouche called for collective efforts to enhance food security, promote sustainable agriculture, and implement solutions that create lasting impact for Africa, India, and the world.

Special Address by H.E. Dr. Mohammed Abdalla Ali Eltom, Ambassador of Sudan to India

H.E. Dr. Mohammed Abdalla Ali Eltom, emphasized agriculture as the backbone of Sudan's economy, culture, and future. He highlighted Sudan's vast resources, including over 200 million hectares of arable land, abundant water from the Nile, and diverse ecological zones, making it ideal for seed development and multiplication. He stressed challenges such as productivity, climate resilience, and access to modern technologies, underlining the importance of quality seeds, improved varieties, and robust seed systems. Dr. Eltom pointed to India's experience in the Green Revolution, biotechnology, and farmer-centered policies as a model for Africa, advocating knowledge exchange and partnerships. He called for collaboration to plant seeds not only for food security but also for resilience, recovery, and shared prosperity, concluding with the African proverb: “If you want to go fast, go alone. But if you want to go far, go together.”.

Special Address by Shri Thummala Nageswara Rao, Hon'ble Agriculture Minister Government of Telangana

Shri Thummala Nageswara Rao, Hon'ble Agriculture Minister Government of Telangana emphasized the transformative power of quality seeds in driving agricultural productivity, food security, and farmer prosperity. He pointed out that in many African countries, farmers still rely heavily on farm-saved seeds, which restricts yields and overall productivity. Access to high-quality seeds, coupled with efficient seed distribution systems, is essential for achieving self-sufficiency and improving livelihoods.

He highlighted Telangana as a global seed hub, supplying nearly 60% of India's seed requirements and exporting seeds to over 20 countries. The state hosts more than a

thousand seed companies, supported by advanced R&D, processing, and storage facilities, and adheres to stringent quality norms from breeding to distribution, ensuring globally recognized seed standards.

Shri Rao also underscored the importance of direct investment support to farmers, where subsidies are credited directly into their accounts. This model promotes transparency, accountability, and farmer empowerment, enabling farmers to choose high-quality seeds that suit their needs. He suggested that African governments could adopt similar mechanisms to strengthen local seed adoption and productivity.

He further highlighted the enormous potential of Africa's seed market, valued at nearly 39 billion USD, and stressed that India and Africa can unlock this potential through collaboration, partnerships, and knowledge exchange. Shri Rao emphasized that the summit goes beyond trade—it represents "seed diplomacy," building trust, fostering innovation, and sharing expertise to ensure a sustainable agricultural future.

Finally, he stressed that by combining India's experience in seed innovation and Africa's abundant arable land and favorable agro-climatic conditions, both regions can achieve mutual growth, enhance food security, and create resilient agricultural systems that benefit farmers, economies, and communities on both continents.

Launch of India–Africa Seed Trade Report and Forum

The summit witnessed the launch of the India–Africa Seed Trade Report by the dignitaries, providing key insights, trends, and opportunities in the seed sector. This was followed by the inauguration of the India–Africa Seed Trade Forum, a dedicated platform to facilitate dialogue, partnerships, and collaborative initiatives in seed research, trade, and technology transfer, underscoring the summit's focus on strengthening bilateral cooperation and empowering smallholder farmers.

Vote of Thanks by Dr. K.S. Narayanaswamy, Chairman & Convenor, India–Africa Seed Summit

Dr. K.S. Narayanaswamy expressed gratitude to all participants, organizers, and stakeholders. Reflecting on months of preparation and interactions with farmers, seed producers, and policymakers, he emphasized that the summit aims to translate deliberations into practical solutions and meaningful partnerships. He acknowledged ICFA's guidance under Dr. Tarun Shridhar and expressed confidence that the summit would foster strengthened partnerships, innovative solutions, and a sustainable future, urging all to sow not only seeds but also the seeds of collaboration, innovation, and shared prosperity.

Panel Discussion : 1

Driving Seed Sector Growth – India–Africa Collaboration Opportunities

Panelists :

1. **Mr. Vivek Mathur,** Executive Director, ICFA (Moderator)
2. **Mr. Amos Rutherford Azinu,** Founder, Legacy Crop Improvement Centre
3. **Mr. Ajai Rana,** Chairman, FSII
4. **Ms. Rashmi Attavar,** Joint Managing Director, Indo-American Hybrid Seeds
5. **H.E. Ms. Lalatiana Accouche,** High Commissioner of Seychelles
6. **Dr. Yacouba Diallo,** Secretary General, African Seed Trade Association AFSTA
7. **Dr Dileepkumar Guntuku,** Founder and CEO of Taraba Seeds Limited

Moderator : Mr. Vivek Mathur, Executive Director, ICFA

The session opened with a welcome note from Mr. Vivek Mathur, who introduced the theme and emphasized the growing importance of India–Africa seed trade. He highlighted that while India exports about USD 121 million worth of seeds, Africa accounts for only a small share, despite its huge potential given similarities in climate, agriculture-based economies, and proximity. He underlined the need to address issues such as regulatory compliance, quality standards, payments, and credit terms, and invited speakers to share their perspectives within a limited time.

Mr. Ajai Rana, Chairman, FSII underlined the historical and cultural ties between India and Africa, calling them natural partners. He reflected on India's journey from food shortages to self-sufficiency through the Green Revolution, noting that seeds were central to this transformation. He stressed that Africa could learn from both India's successes and mistakes, and that India could support Africa in areas such as breeding programs, seed production, infrastructure, policy frameworks, and human resource training.

Ms. Rashmi Attavar, Joint Managing Director, Indo-American Hybrid Seeds spoke about the pressing challenges faced by the sector, including declining youth participation in agriculture, the impacts of climate change, and policy hurdles due to the lack of harmonized regulations between India and Africa. She emphasized the importance of harmonized seed policies, research collaborations on crops like mung bean and amaranths, and strengthening seed testing facilities and farmer education. She further highlighted opportunities in leveraging digital platforms, AI-based tools, and digital transformation to assist farmers with climate forecasting, market access, and decision-making. She concluded that education, awareness, and integrated farm management are crucial for ensuring sustainable farmer upliftment.

H.E. Ms. Lalatiana Accouche, High Commissioner of Seychelles, brought forward the perspective of small island developing states pointing out their vulnerabilities, including heavy dependence on imports, exposure to price fluctuations, and limited land availability due to conservation commitments. She suggested capacity building and knowledge transfer through experts traveling to island states and emphasized the importance of training farmers locally. Referring to India's journey towards self-sufficiency.

Mr. Amos Rutherford Azinu, Founder, Legacy Crop Improvement Centre identified two major trends shaping the seed sector: the development of climate-resilient seed varieties and the adoption of precision agriculture and digitalization. He stressed that the challenge was not only availability but also accessibility of quality seeds, as many smallholder farmers must travel long distances for even small quantities, making them costly and difficult to obtain.

Dr. Dileepkumar Guntuku, CEO, Taraba Seeds Ltd., presented his Nigeria-focused work, showing how local hybrid seed production is vital for food security. He highlighted Nigeria's annual demand of 350,000 tons of seed, with less than a quarter currently met, and proposed model farms, modern processing plants, and capacity building. He underlined that quality seeds and farm practices can raise yields by 15–20% and called for customized India–Africa solutions to build "Seed Security for a Food Secure Future."

Dr. Yacouba Diallo, Secretary General, African Seed Trade Association AFSTA, closed the session by emphasizing that Africa is a diverse continent with a fast-growing seed industry and significant opportunities. He highlighted the launch of the India–Africa Seed Forum as a major achievement of the summit, calling it a powerful platform to sustain collaboration. He underlined the need to build alliances based on four pillars: connecting stakeholders, collaborating across regions, communicating knowledge and market information, and coordinating efforts.

Panel Discussion : 2

AI & Digital Technologies in Plant Breeding & Seed Innovation

Panelists :

1. **Mr. Deepak Pareek,** Founder, HnyB Tech Incubations Pvt. Ltd. (Moderator
2. **Mr. Shane Smithee,** Global Business Head Kubtec Scientific, USA
3. **Mr. Sanjaykumar Vasoya,** Organizational Manager, Export Trading Group
4. **Mr. Phani Yarlagadda,** Co-Founder, Piatrika Biosystems
5. **Mr. Mihir Dakwala,** Business Head - Agritech and GIS, Amnex Infotechnologies Pvt Limited
6. **Mr. Rasesh Trivedi,** Executive Director, Omagri
7. **Dr. Stefan Schmitz,** Executive Director, Global Crop Diversity Trust (Online)

Moderator: Mr. Deepak Pareek, Founder, HnyB Tech Incubations Pvt. Ltd.

The session commenced with Mr. Deepak Pareek actively engaging the audience to explore the transformative role of technology in agriculture. At one point, he posed a thought-provoking question to the participants, asking how remote sensing and AI could advance processes such as plant breeding and seed innovation, likening it to a "dating-matchmaking" for crops. This analogy helped simplify complex technological concepts and encouraged the audience to reflect on the practical applications of AI in agriculture. Participants were invited

to consider how these technologies could optimize plant selection, improve crop yields, and address challenges faced in the field. Mr. Pareek acknowledged their responses with appreciation, emphasizing collaboration and collective insight. He then directed the discussion to the panelists by asking, "How do you see the role of remote sensing and AI in your organization taking this whole matchmaking forward?" This exchange highlighted the session's interactive nature and reinforced the importance of combining technological innovation with expert human understanding to drive sustainable advancements in agriculture.

Mr. Mihir Dakwala, Business Head - Agritech and GIS, Amnex Infotechnologies Pvt Limited highlighted the role of AI and digital technologies in creating climate-resilient seeds and improving crop performance. He elaborated on how AI can analyze plants at a microscopic level to enhance breeding decisions and reduce the time required for varietal development. Sharing examples from ongoing projects in collaboration with the Potato Industry and Punjab Agriculture Export Corporation, he demonstrated the use of blockchain networks, data-driven simulations, and predictive analytics for improving yield and seed quality.

Mr. Rasesh Trivedi, Executive Director, Omagri shared his organization's pioneering partnership with ISRO, highlighting the application of satellite and drone imaging for trait monitoring, stress identification, and yield prediction. He explained how AI models can accelerate seed evaluation and improve crop calendars by providing insights on biomass, maturity, and plant health. Importantly, he also addressed the challenge of affordability for small and marginal farmers, underlining how cooperative models and outreach programs can make advanced technologies accessible at the grassroots level.

Mr. Shane Smithee, Global Business Head Kubtec Scientific, USA Joining virtually, Mr. Shane Smithee introduced his innovative application of X-ray technology to evaluate seed quality. By "X-raying" seeds, his work demonstrates how advanced imaging can determine seed viability before planting, reducing risks for farmers and ensuring higher-quality outputs. His contribution underlined the value of precision technologies in improving both productivity and efficiency in the global seed industry.

Mr. Sanjaykumar Vasoya, Organizational Manager, Export Trading Group brought the practitioner's viewpoint to the discussion, emphasizing the challenges of taking innovation to the farmer. He highlighted how AI can drastically reduce the time needed to develop new seed varieties and shared how ETG has integrated digital tools to support farmers across multiple African countries. By combining AI with human expertise, he demonstrated a hybrid approach that helps farmers diagnose pests, diseases, and crop needs in real time, making technology truly practical for field-level adoption.

Mr. Phani Yarlagadda, Co-Founder, Piatrika Biosystems introduced the Genie suite of AI tools—Crop Genie, Seed Genie, and Breeding Genie, designed to accelerate varietal development through advanced predictive models. He emphasized that AI's effectiveness is directly linked to the quality and comprehensiveness of data collected, underscoring the need for better data capture systems in both India and Africa.

During the interactive Q&A session, a farmer-engineer

from Telangana raised an important question regarding AI collaboration in agriculture and the role of biochar in soil management. Panelists clarified that while AI provides intelligent recommendations, farmer expertise is indispensable for field-level implementation. They illustrated how AI simulations, combined with on-field demonstration plots, can identify optimal seed varieties and cultivation practices, creating a cycle of continuous improvement and innovation.

Dr. Stefan Schmitz, Executive Director, Global Crop Diversity Trust, joined online and delivered an inspiring perspective on conserving genetic resources. He underlined the importance of gene banks as guardians of agricultural diversity, noting that innovation in breeding must be backed by access to diverse germplasm. He spoke of the need to go beyond staple crops like rice, wheat, and maize to embrace other underutilized crops such as millets, fonio, and moringa. His remarks highlighted how genetic diversity, combined with advances in digital sciences, will be central to ensuring global food security.

From the audience, ***Mr. Sudhakar Reddy,*** an agricultural engineer turned farmer, raised a thoughtful question on the role of AI in seed development. He emphasized the importance of field-level complexities and the collaboration between technologists and farmers. His intervention brought a practical perspective to the discussion, reminding participants that while AI provides powerful simulations and models, farmer experience remains essential to validating outcomes in real-world conditions.

Panel Discussion : 3

Public–Private Partnerships (PPP) in Seed Research & Innovation

Panelists :

1. **Dr. Mandar Godge,** CEO, Grain International Pte Ltd (Moderator)
2. **Ms. Srivalli Krishnan,** Deputy Director, Gates Foundation
3. **Mr. John Derera,** Leader of Maize Breeding Innovation and the Genetic Innovations, International Institute of Tropical Agriculture - IITA
4. **Mr. Nico Wilms-Posen,** Project Coordinator, Global Crop Diversity Trust (Online)
5. **Mr. Dushyant Singh Baghel,** MD & CEO, Nucleome Informatics Private Limited

Moderator: Dr. Mandar Godge, CEO, Grain International Pte Ltd

The session began with a brief reflection on the previous discussion, emphasizing the importance of "connection" in collaborations that go beyond mere technological solutions. Dr. Mandar highlighted that public-private partnerships (PPPs) in seed research are designed to leverage the strengths of both the public and private sectors to drive innovation and ensure the timely delivery of solutions to farmers. He shared notable examples of existing PPPs, including initiatives between IC and farmers in India, the Alliance for a Green Revolution in Africa, and global collaborations such as

the Global Crop Diversity Trust and the Bill & Melinda Gates Foundation. The session aimed to explore models for building effective partnerships and to define the role of each stakeholder in advancing seed innovation.

Dr. Srivalli Krishnan, Deputy Director, Gates Foundation, emphasized the critical importance of public-private partnerships (PPPs) in the seed sector. She highlighted that such collaborations are most effective when each partner's role is clearly defined and when value is created for both sides. While the private sector contributes capital, innovation, and sustainability, the public sector ensures that research outputs effectively reach farmers. Ms. Krishnan stressed the importance of the timely handoff of technology and licensing before emerging challenges such as diseases or climate-related issues are resolved, enabling the private sector to invest and create value. She also discussed the choice between exclusive and non-exclusive licensing models to incentivize private sector participation and underlined the need for smooth technology transfer processes that comply with regulatory requirements, avoiding bottlenecks and allowing rapid scale-up of solutions. Connecting the Indian and African private sectors can create valuable partnerships that leverage past experiences, fostering economic transformation and sustainable growth in agriculture and related industries.

Mr. John Derrera, Genetic Innovations, International Institute of Tropical Agriculture, discussed the crucial bridge between laboratory research and farmer adoption. He highlighted that public-private partnerships (PPPs) play a key role in reducing investment risk across the entire value chain. He described the Triple-P model, which facilitates the delivery of basic seed from breeders, the multiplication of certified seed for farmers, and the integration of market feedback to align breeding programs with actual needs. He shared examples from Africa, such as Echob Seed in West Africa and Qual Seed in East Africa, which have accelerated product delivery and resource sharing. Mr. Derrera also emphasized the role of biotechnology and precision tools, noting that public sector data infrastructure can significantly support private sector innovation. However, he pointed out persistent challenges, particularly the gap between public research outputs and private sector requirements, which often leaves valuable products unused.

Mr. Dushyant Singh Baghel, MD & CEO, Nucleome Informatics Private Limited emphasized that the establishment of public-private consortiums can greatly enhance genomic research and resource sharing, paving the way for the development of advanced breeding programs. He highlighted that such integration is crucial for unlocking the potential of underutilized genetic resources. Dr. Dushyant further underlined that public-private partnerships are essential for advancing genomic selection-based molecular breeding programs, which can significantly boost agricultural productivity and strengthen food security in regions such as India and Africa.

Mr. Nico Wilms-Posen, Project Coordinator, Global Crop Diversity Trust (Online) highlighted the critical role of gene banks in conserving crop and plant genetic diversity, noting that they support both national and international efforts. This conservation is essential for ensuring future food security. He also emphasized the rising importance of opportunity crops—previously neglected crops that hold significant potential to adapt to climate change and evolving nutritional needs—underscoring their role in addressing broader food system challenges.

Panel Discussion : 4

Role of E-commerce in Enhancing Global Seed Access

Panelists :

1. **Mr. Dushyant K Tyagi,** CEO Farmgate Technologies Pvt Ltd (Moderator)
2. **Mr. Andrew Nii Adjetey,** CEO, Qualiseed Ltd (Online)
3. **Mr. Salhat Khan,** Director, Flipkart
4. **Dr. S.C Aswatha Narayana,** Director, Vokkal Seeds Private Limited
5. **Mr. Arnaud Petit,** Executive Director, International Grains Council (Online)
6. **Mr. Kannan Thangaraj,** Head of Supply Chain & Marketplace, BigHaat
7. **Mr. Abdirisak Seid Nur,** Commercial Attaché, Embassy of Somalia, Embassy of Somalia
8. **Mr. Deepak Pareek,** Founder of HnyB Tech Incubations Pvt. Ltd
9. **Mr. Sahil Malik**, Secretary General, NIBF

Moderator : Mr. Dushyant K Tyagi, CEO Farmgate Technologies Pvt Ltd

The session commenced with Moderator Mr. Dushyant K. Tyagi, CEO of Farmgate Technologies Pvt Ltd, highlighting the transformative role of e-commerce in global seed distribution. He emphasized that e-commerce enables quick and efficient access to agricultural products, helping farmers reduce costs and improve productivity. The global agricultural e-commerce market is projected to exceed $90 billion by

2033, reflecting substantial growth potential. Adoption among rural households is already around 66.1%, indicating a rapid shift toward digital platforms. China was cited as a successful model, showing that higher income levels drive greater adoption of digital agricultural solutions.

Dr. S.C. Aswatha Narayana, Director of Vokkal Seeds Private Limited, emphasized how technology integration has transformed hybrid seed distribution by overcoming communication gaps and ensuring farmers receive seeds efficiently. Access to a diverse range of seed varieties empowers farmers to select options tailored to their regional and climatic conditions, enabling informed decision-making. Digital platforms support real-time tracking and logistics, ensuring timely delivery aligned with seasonal planting schedules, thereby boosting agricultural productivity.

Mr. Salhat Khan, Director of Flipkart, highlighted the importance of ensuring farmers receive the right price for their produce, addressing a key challenge in agriculture. E-commerce solutions play a vital role in streamlining this process by effectively matching supply with demand. He noted that program buying is an emerging trend, allowing predictions of purchasing patterns and prices months in advance, thereby integrating farming practices with supply chain efficiencies to boost productivity. The current seed purchasing landscape in India often limits farmers to small quantities, restricting their choices and affecting




agricultural efficiency. Mr. Khan emphasized that a collaborative approach between seed companies and e-commerce platforms is crucial to streamline seed distribution and expand options for farmers, advocating for a consortium-based model rather than isolated efforts.

Mr. Kannan Thangaraj, Head of Supply Chain & Marketplace at BigHaat, emphasized the integration of farmer advisory services with technology, including AI-driven disease diagnostics, to significantly improve agricultural outcomes. These innovations create a more interconnected ecosystem for farmers, supporting informed decision-making. He highlighted that the success of agricultural e-commerce platforms depends on technology-driven efficiencies and strong farmer engagement, achieving over 95% on-time delivery across 20,000 pin codes in India. Mr. Thangaraj also stressed the role of technology in enhancing supply chain efficiencies, enabling better data-driven forecasts that improve service delivery, customer satisfaction, and overall trust in the sector.

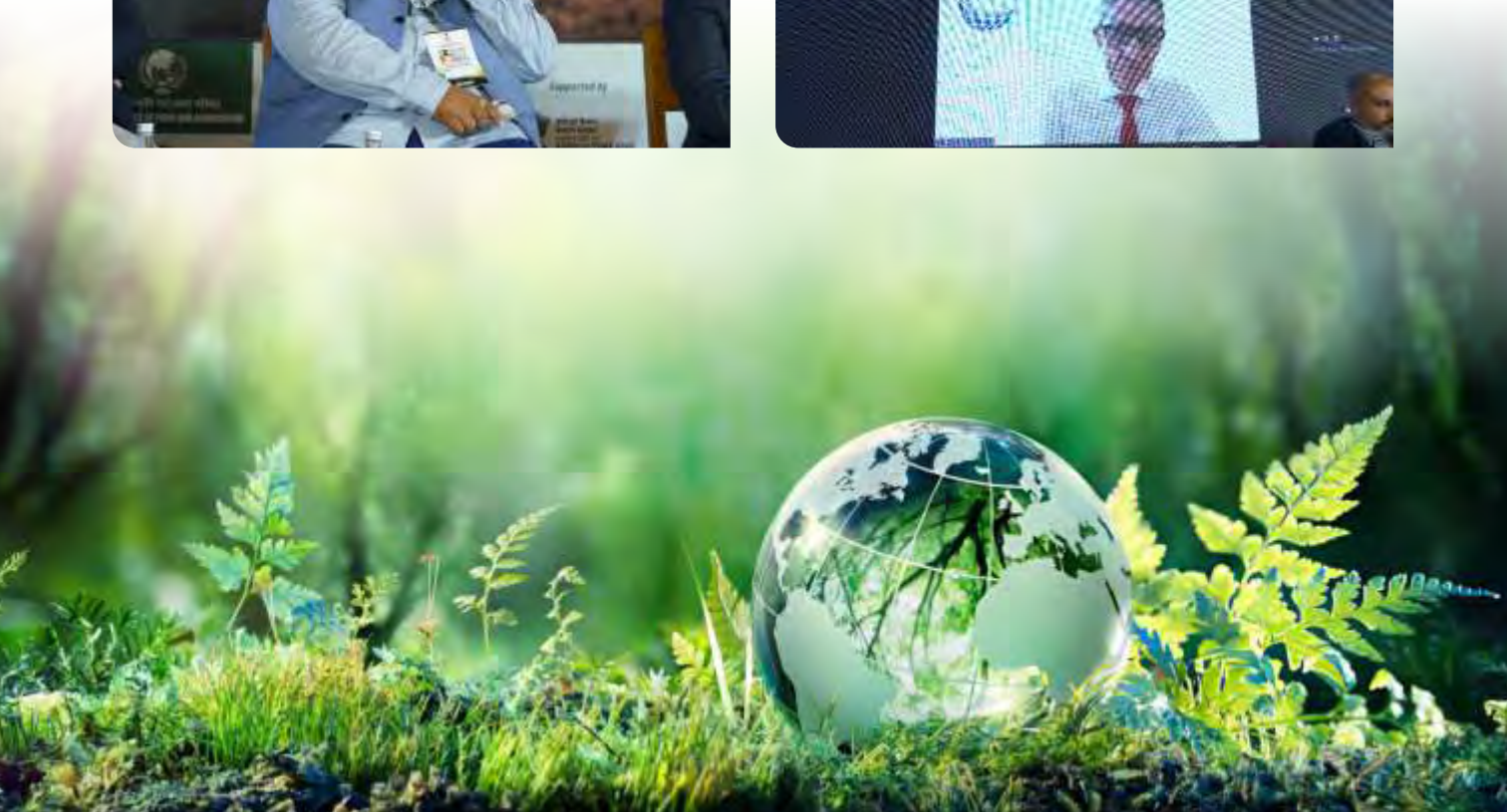
Mr. Arnaud Petit, Executive Director of the International Grains Council (Online), highlighted future challenges in agricultural e-commerce, particularly the physical trade barriers that can limit growth despite advanced technology and connectivity. He emphasized that collaborative efforts among stakeholders are essential to overcome these obstacles and ensure seamless access to seeds and agricultural inputs.

Mr. Deepak Pareek, Founder of HnyB Tech Incubations Pvt. Ltd., emphasized that farmers need to develop their own digital infrastructure to secure timely access to agricultural inputs and build trust in the purchasing process. He highlighted that e-commerce can support this transformation, but must address farmers' specific needs and challenges. Timely delivery is critical, as delays can result in significant losses, making trust between suppliers and farmers essential for successful transactions.

Mr. Sahil Malik, Secretary General of NIBF, highlighted the importance of building a strong advisory system alongside e-commerce platforms. He emphasized that farmers need guidance on product selection and usage, which can improve agricultural outcomes and foster greater trust in suppliers. He also noted that combining advisory services with digital platforms can empower smallholder farmers and enhance overall productivity in the agricultural sector.

Mr. Abdirisak Seid Nur, Commercial Attaché at the Embassy of Somalia, emphasized that improved access to quality seed technology is crucial for agricultural productivity and food security. He highlighted the potential for a strong seed partnership between India and Somalia to achieve mutual benefits. Additionally, he noted that e-commerce in agriculture can transform access to quality seeds and enhance distribution networks, but regulatory challenges must be addressed to enable its growth.

Mr. Andrew Nii Adjetey, CEO of Qualiseed Ltd (Online), highlighted the role of technology in building a nationwide distribution backbone for seeds, demonstrating how e-commerce can streamline logistics and improve accessibility. He also emphasized the challenges of counterfeiting and unregulated sellers on online marketplaces, noting that addressing these issues is essential to maintain consumer trust and market stability.



Panel Discussion : *CEO's Panel on India & Africa Seed Trade*

Panelists :

1. **Dr. K.S. Narayanaswamy,** Chairman & Convenor India Africa Seed Summit 2025 (Moderator)
2. **Ms. Konta Kande,** CEO, Afrisem Ventures Suar
3. **Mr. Sreekanth Chundi,** Executive Director & Business Head- Shriram Bioseed Genetics
4. **Mr. Ashish Lakhotia,** CEO, Fertilizer and Agri Inputs, ETG, Dubai
5. **Mr. Ram Kaundinya,** Former DG, FSII
6. **Mr. S. Senthilnathan**, Executive Chairman, Acsen Hy Veg
7. **Mr. Gubba Kiran,** CEO, Gubba Cold Storage

Moderator: Dr. K.S. Narayanaswamy, Chairman & Convenor of the India Africa Seed Summit 2025

Moderator Dr. K.S. Narayanaswamy, Chairman & Convenor of the India Africa Seed Summit 2025, commenced the session, highlighting the growing importance of India–Africa seed trade and the need to capitalize on opportunities in African nations. The session emphasized the role of companies in supporting local farmers and building meaningful partnerships while addressing regulatory challenges that hinder faster business development. The discussion underscored the significance of integrating markets and fostering collaboration to strengthen trade relations and benefit both regions. Additionally, the importance of

technology and climate-resilient breeding was highlighted as essential for enhancing agricultural productivity and positively impacting smallholder farmers in Africa.

Mr. Sreekanth Chundi, Executive Director & Business Head of Shriram Bioseed Genetics, emphasized the importance of thoroughly understanding Africa's diverse geography and cultures, noting that the continent comprises 54 countries with unique challenges. He highlighted that initial misconceptions about market requirements led to difficulties in product acceptance, underscoring the need for local knowledge and targeted strategies. Building awareness and trust was stressed as essential for forming meaningful partnerships, which must be tailored to specific regions rather than adopting a one-size-fits-all approach.

Ram Kaundinya, Former DG of FSII, emphasized the critical importance of understanding local market conditions in Africa, noting that tailored approaches are necessary for large farms versus smallholders. He highlighted that long-term commitment is essential, as results from agricultural ventures may take years to materialize. Regulatory challenges in seed movement across African countries require navigating complex policies and aligning regulations. Strategic partnerships and joint ventures are vital for building local capacity, mitigating risks, and promoting sustainable growth. Investment in infrastructure, technology, and digitization is necessary to enhance storage, research, extension services, and traceability.




Mr. Ashish Lakhotia, CEO of Fertilizer and Agri Inputs, ETG, Dubai, emphasized the importance of localizing agricultural solutions to meet specific regional needs and support local farmers. He highlighted that understanding local ecosystems enhances the effectiveness of agricultural practices. Additionally, he stressed that collaboration with experienced companies is vital for building sustainable agricultural systems, with long-term partnerships fostering knowledge transfer and strengthening the entire agricultural ecosystem.

Mr. Gubba Kiran, CEO of Gubba Cold Storage, highlighted that India's investment in agriculture is as strategic as its defense sector, emphasizing the need for robust agricultural strategies to ensure food security and economic stability. He stressed the importance of building ecosystems around seed storage and processing facilities, like those in Hyderabad, to promote local economies and enhance agricultural productivity.

Ms. Konta Kande, CEO of Afrisem Ventures Suar, emphasized that access to credit facilities is crucial for farmers to sustain and expand their agricultural practices, particularly in seed production. She highlighted that small farmers often struggle to obtain adequate financing and require support not only from governments but also from private investors. Such investments are essential to help farmers develop their activities effectively and ensure food security.

Mr. S. Senthilnathan, Executive Chairman of Acsen Hy Veg, shared the company's journey. Acsen Hy Veg, originally part of Rasi Seeds, has operated independently as a vegetable seed company for ten years. While direct operations in Africa began only last year, the company spent a decade studying the African market, attending AFA events, sending trial seeds, and learning from early challenges. In September last year, they incorporated their Tanzanian arm in Arusha, conducted trials with their own team, and started commercial invoicing in recent months. Trials have shown strong performance for crops such as cabbage, carrot, and tomato, currently selling 8–9 crops in Tanzania.

Panel Discussion : 5

Policy & Regulation in Seed Trade – Fostering India–Africa Collaboration

Panelists :

1. **Mr. Raghavan Sampathkumar,** Executive Director, FSII (Moderator)
2. **Dr. Iyad Takrouri,** Head, ETG Agri Inputs
3. **Mr. Rajvir Rathi, V**ice Chairman, FSII
4. **Dr. Narendra Dadlani,** Former Technical Director, APSA Seeds
5. **Dr. Jitendra Kumar,** Managing Director, BIRAC

Moderator: Mr. Raghavan Sampathkumar, Executive Director, FSII

The session commenced with Mr. Raghavan Sampathkumar, Executive Director, FSII, leading the discussion. The panel focused on the challenges in policy frameworks impacting business between India and Africa, with particular emphasis on the agricultural sector. Key themes included the need for regulatory harmonization, addressing breeding requirements, and strengthening intellectual property rights to foster smoother collaboration and sustainable growth.

Dr. Iyad Takrouri, Head, ETG Agri Inputs, emphasized the regulatory challenges arising from multiple jurisdictions in Africa, where each country enforces its own laws governing agricultural imports. He highlighted the importance of harmonizing these regulations to facilitate smoother trade between India and Africa. Dr. Takrouri

further noted that breeding efforts must be adapted to the unique agricultural needs of African nations, as existing Indian crop varieties may not always suit local conditions. He pointed out that unclear property rights and ownership issues discourage Indian companies from investing in Africa, underscoring the need for bilateral agreements to safeguard such rights. Another concern raised was the complexity of documentation and certification, particularly in the transfer of living organisms, which often slows down exports; harmonization could significantly streamline these processes and strengthen international trade relations.

Mr. Rajvir Rathi, Vice Chairman, FSII, emphasized that collaboration in agricultural innovation is vital for developing new seed varieties that are accessible to farmers and responsive to local agricultural challenges. He highlighted the importance of balancing intellectual property rights with farmers' rights to ensure sustainable agricultural practices. According to him, resource collaboration can drive advancements in agricultural innovation, enabling farmers to benefit from improved and high-quality seed varieties. He further noted that intellectual property rights play a pivotal role in safeguarding the interests of both breeders and farmers, making it essential to strike a balance that fosters innovation while addressing farmers' needs. Drawing on the experiences of various countries, particularly in Africa, .

Dr. Narendra Dadlani, Former Technical Director, APSA Seeds, underlined that developing seed markets in Africa requires more than simply exporting seeds; it calls for a collaborative approach focused on long-term capacity building. He stressed the importance of strengthening local capabilities so that African countries can eventually emerge as exporters themselves. Dr. Dadlani highlighted that creating strong partnerships between exporters and local stakeholders is essential for ensuring mutual growth, as such collaborations allow both sides to benefit from technological advancements, knowledge sharing, and emerging market opportunities. He further emphasized that collaboration between India and Africa in the seed industry can significantly improve agricultural practices, trade, and crop diversity. Sharing knowledge and developing specialized programs would not only enhance productivity but also help address local agricultural challenges. Dr. Dadlani also noted that understanding regional concerns and incorporating them into collaborative initiatives is vital for long-term success, while active engagement with local and regional groups can greatly enhance the effectiveness and sustainability of these efforts.

Dr. Jitendra Kumar, Managing Director, BIRAC, emphasized the importance of creating a supportive ecosystem for startups to drive innovation in the agricultural sector. He highlighted the role of incubation centers in offering mentorship, funding, and networking opportunities that can empower local entrepreneurs. Dr. Kumar noted that fostering grassroots innovations and engaging with local communities are essential to developing sustainable solutions tailored to specific regional challenges in Africa. He also proposed building linkages between incubation centers in India and Africa, which would strengthen collaboration, enable mutual market exploration, and provide soft lending options to help startups navigate complex markets. Establishing a dedicated platform for startups, he added, would facilitate regular exchanges, allowing African startups to explore Indian opportunities and vice versa, thereby fostering deeper international collaboration and long-term growth.

Panel Discussion : 6

Harmonizing Seed Standards & Certifications for International Trade

Panelists :

1. **Dr. Manisha Negi,** Regional Manager Regulatory Affairs in Asia, East West Seeds International (Moderator)
2. **Dr. Keshavulu Kunusoth,** President, ISTA
3. **Dr. Dinesh Kumar Chauhan,** CEO & Head Agribusiness and Innovation Platform, ICRISAT
4. **Mr. Muhammed Fatuhu,** Director General, National Agricultural Seeds Council, Nigeria
5. **Dr. K. Madhusudan,** Special Officer Seeds- University of Agriculture Sciences, GKVK Bengaluru
6. **Dr. Ajay Panchbhai,** Seed Systems and Product Management Lead and Region Lead for Breeding for Africa, IRRI (Online)
7. **Ms. P. G. Srividhya,** Joint Director of Seed Inspection, Government of Tamil Nadu

Moderator: Dr. Manisha Negi, Regional Manager, Regulatory Affairs in Asia, East-West Seeds International, commenced the session by highlighting the importance of harmonized seed systems in strengthening agricultural collaboration between India and Africa. She opened the discussion by addressing IRICET's pivotal role, noting its position at the forefront of seed systems. Dr. Negi posed the first question: "How is ICRISAT working with the private sector, both in India and Africa, to ensure that harmonized standards actually translate into real seed availability for farmers?"

Dr. Dinesh Kumar Chauhan, CEO & Head, Agribusiness and Innovation Platform, ICRISAT, highlighted ICRISAT's pivotal role in promoting collaboration between research institutions and the private sector in India and Africa. He emphasized developing high-quality, climate-resilient, and nutrient-dense seeds, strengthening seed hubs, and facilitating dialogue on seed sector standards. Dr. Chauhan also noted ICRISAT's focus on agribusiness incubation, supporting research teams to translate innovations into products that benefit local communities and farmers. He underlined the importance of co-creation models with private industry to advance sustainable agricultural practices and address challenges such as climate change and food security.

Dr. Keshavulu Kunusoth, President, ISTA, discussed the importance of aligning India's seed trade with the existing regional and continental seed regulations in Africa, including ECOWAS, COMESA, and SADC. He emphasized that seeds are not only critical for agriculture but are central to food systems and civilization, yet global seed standards, regulations, and certification remain inconsistent in many region. Dr. Kunusoth categorized seed systems into three broad types: advanced systems (e.g., US, Europe, New Zealand, parts of Latin America) led by private industry with strict regulation; moderately advanced systems (e.g., India, Thailand, Vietnam) with a mix of public and private sector involvement; and weaker farmer seed systems, which are prevalent in many parts of Africa and Southeast Asia. He stressed that harmonization of standards is essential to facilitate seed trade, enable access to improved varieties, support plant breeders and biotech firms, and empower smallholders with better-quality seeds for food security.

He highlighted that regulatory sovereignty, infrastructure gaps, and biodiversity preservation are key challenges in harmonizing systems, as each country seeks to protect its own seed policies, germplasm, and local varieties. Dr. Kunusoth pointed to successful global examples of harmonization, including the European Union's unified seed regulatory system and the OECD Seed Schemes, which provide international certification for seed quality.

Mr. Muhammed Fatuhu, Director General, National Agricultural Seeds Council, Nigeria, addressed the challenges of counterfeit and substandard seeds, emphasizing that seed quality is central not only to farmers' livelihoods but also to national security and global trust in the seed sector. He highlighted that seeds account for 50% of the agricultural sector, making their quality critical for food systems and sustainable agriculture.

Mr. Fatuhu explained that a robust seed certification system is essential to safeguard farmers. It ensures genetic purity, physical and physiological quality, and traceability, providing a level playing field for both consumers and seed companies. He described Nigeria's efforts to strengthen regulation through the

establishment of a Seed Certification Department, with dedicated seed inspectors, compliance monitoring, and enforcement units, aligned with OECD standards. He also mentioned the successful introduction of a seed tracker system, launched in 2022 with support from an Indian company, which has helped reduce counterfeit seeds by 60–70%.

In conclusion, he emphasized that effective certification, regulatory oversight, and cross-border collaboration are key to ensuring seed quality, empowering smallholders, and strengthening India-Africa agricultural partnerships.

Ms. P. G. Srividhya, Joint Director of Seed Inspection, Government of Tamil Nadu, highlighted the transformative impact of digital certification systems on seed trade. She explained that Tamil Nadu has implemented the SPECS portal since 2016, which fully digitizes the process from seed registration to inspection, tagging, and tracking. The system provides separate logins for growers, regulatory officers, and accredited companies, enabling all stakeholders to monitor each stage in real time. Digital certification ensures faster verification and trade clearance by reducing paperwork and delays at customs, while enhancing transparency and traceability through QR code and blockchain technologies. These tools create tamper-proof certificates and allow farmers, traders, and regulators to track seed origin, testing results, and movement instantly. Additionally, digitalization reduces transaction costs, minimizes manual processing, and accelerates decision-making for import and export approvals.

Dr. Ajay Panchbhai, Seed Systems and Product Management Lead and Region Lead for Breeding for Africa at IRRI, discussed the practical challenges facing the seed sector in Africa and ways to address them. He noted that while Africa is performing well overall, the policy environment for private sector engagement and investment in seeds could be improved in some countries. He emphasized that private sector involvement is critical for delivering improved varieties to farmers. Dr. Panchbhai highlighted the importance of operationalizing regional policy frameworks, such as those from COMESA and EAS, to ensure they are practical and do not create bottlenecks. He pointed out that the varietal release process in Africa is often lengthy and costly compared to other continents, particularly the requirement for DUS (Distinctness, Uniformity, and Stability) data, which is tightly linked to commercialization. He suggested that the process should be more data-driven and logical to facilitate research and development while maintaining fairness and protection.

He also stressed that learning from experiences in Asia, Europe, and Latin America could help make Africa's seed processes more efficient and conducive to innovation. Furthermore, he noted that private sector participation is essential to building trust, scaling innovation, and supporting mutual recognition of certification systems.

Panel Discussion : 7

Climate-Resilient Seed Development: Sharing Best Practices Between India & Africa

Panelists :

1. **Mr. Binu Cherian,** Country Manager, HarvestPlus (Moderator)
2. **Mr. Obai Khalifa,** Deputy Director, ECS Africa, Agricultural Development, Gates Foundation
3. **Mr. Kater Davis Hake,** CEO of Resilient Ag Systems, Davis
4. **Mr. Raja Vadlamani,** President, SeedWorks International Ltd.
5. **Dr. G. Radhakrishnan**, President – Crop Science, Sathguru Management Consultants
6. **Mr. Moussa Konate,** Senior Advisor, EPC SAC, Burkina Faso

Moderator: Mr. Binu Cherian, Country Manager, HarvestPlus

The session commenced with Binu Cherian, Country Manager, HarvestPlus, emphasizing the importance of climate-resilient seed systems and the sharing of best practices between India and Africa. The discussion highlighted strengthening food systems in the context of climate change and showcased the contributions of commercial, nonprofit, philanthropic, and private sector stakeholders across the seed value chain. It noted the progress in biofortification, with hundreds of improved crop varieties delivered across multiple countries, benefiting millions of smallholder farmers. Key points

included enhancing collaboration between India and Africa, promoting climate-resilient agricultural practices, supporting farmers through improved seed systems, and the need for practical innovations to ensure food security and resilience in agricultural production.

Mr. Obai Khalifa, Deputy Director, ECS Africa, Agricultural Development, Gates Foundation, highlighted the critical role of agriculture in alleviating poverty, particularly for small-scale farmers in rural Africa and South Asia, who are disproportionately affected by climate change. He emphasized that climate change is no longer a future threat but a present reality, evident through repeated droughts, increased climate shocks, and pest outbreaks such as fall armyworm, CBSD in cassava, and pod borer in cowpea, which severely impact food security and rural livelihoods.

He noted the strong link between agriculture, food security, and macroeconomic stability, as crops like cassava provide both staple nutrition and economic opportunities. Addressing these challenges requires climate-resilient seeds, innovative agricultural solutions, and improved access to inputs. Field trials have shown that improved seed varieties can significantly increase yields and farmers' incomes, demonstrating the potential of scientific innovation to transform livelihoods.

He also pointed out that successful implementation depends on addressing broader constraints including fertilizer costs, working capital availability, farmer access to extension services, and maintaining trust in new innovations. Scaling climate-resilient and locally adaptable seed varieties requires integrating farmer feedback, leveraging AI and technology for decision support, and fostering collaboration between private sector partners, research institutions, and governments.

Overall, he emphasized that climate-resilient seed systems are essential for sustainable agriculture, economic growth, and improving nutrition, and their success hinges on holistic, locally informed, and scalable interventions.

Mr. Kater Davis Hake, CEO, Resilient Ag Systems, emphasized that climate resilience in agriculture is increasingly critical due to the unpredictable expansion of pests, diseases, and extreme weather events. He explained that breeding programs must integrate both genetic potential and real-world farmer feedback, allowing small-scale farmers to test new genotypes on a portion of their land to identify varieties that perform well under local conditions. This farmer engagement expands environmental exposure of genotypes and strengthens resilience to climate and disease pressures.

He also highlighted the role of technology in accelerating plant breeding, citing the use of XRF (X-ray fluorescence) machines to analyze micronutrient content in crops. Originally used in mining, XRF has been adapted for nutritional breeding, allowing plant breeders to rapidly evaluate and select superior varieties, significantly improving efficiency and impact in breeding programs over the past decade.

Dr. G. Radhakrishnan, President – Crop Science, Sathguru Management Consultants, highlighted that biotechnology and advanced breeding technologies are critical for climate-resilient agriculture. He noted that innovations such as GMOs, doubled haploid technology, gene editing, genomic selection, and speed breeding allow breeders to introduce valuable traits more quickly and develop varieties adaptable to diverse climates.

He emphasized that the choice of traits and technologies in breeding programs is determined by companies based on multiple factors, including regulatory frameworks, policy guidelines, target markets, and customer needs. These strategic decisions ensure that breeding innovations are practical, market-driven, and aligned with climate resilience goals.

Mr. Raja Vadlamani, President, SeedWorks International Ltd. explained that climate extremes are becoming unpredictable, making it essential for seed developers to balance resilience with performance. He noted that farmers seek improved genetics, higher yields, and climate-hardy seeds, but also value marketability and nutritional quality.

He highlighted the importance of breeding for wider adaptability rather than region-specific varieties, sharing examples of rice and cotton varieties that performed well across India, the Philippines, Indonesia, and Vietnam. He emphasized that embedding multiple traits—such as drought tolerance, submergence tolerance, and disease resistance—in a single variety is a major challenge.

Mr. Vadlamani also stressed that while developing such complex varieties, yield must not be compromised, as it is critical for farmer adoption. Another key point was that supply chain challenges are significant, since some parental lines may be sensitive, affecting seed production at scale.

He concluded that research and supply chain management must go hand in hand to deliver viable, scalable, and farmer-centric products, ensuring long-term success and adoption in diverse agricultural markets.

Mr. Moussa Konate, Senior Advisor, EPC SAC, Burkina Faso introduced himself as a professional with experience in private sector seed production and distribution, as well as with organizations like EAD, FAO, and UNDP in Burkina Faso. He currently works with APCA, a private company focused on seed production.

He emphasized that the India-Africa Seed Summit provided an excellent opportunity to engage with Indian companies, recognizing India's advancement in technology and seed innovation.

Mr. Konate highlighted the critical role of collaboration between governments and the private sector in improving seed systems. He stressed the need for government policies that create conducive conditions for investment, ensure security, and enable private sector involvement.

He also pointed out the importance of training and capacity building to improve seed quality and production. Through partnerships between government, private sector, and other stakeholders, he expressed optimism that seed production in Africa could be significantly enhanced.

Panel Discussion : 8

Seeds Without Borders & South-South Cooperation (Jointly with IRRI & MoA&FW, GoI)

Panelists :

1. **Dr. Vikas Singh**, Regional Breeding Lead, International Rice Research Institute (Moderator)
2. **Dr. Swati Nayak,** South Asia Lead- Seed Systems and Product Management, International Rice Research Institute (Moderator)
3. **Dr. Sudhanshu Singh**, Director, International Rice Research Institute- South Asia Regional Centre (ISARC)
4. **Dr. Yacouba Diallo,** Secretary General, African Seed Trade Association (AFSTA)
5. **Dr. Malavika Dadlani,** Senior Seed Sector Expert and Advisor
6. **Dr. Damaris Achieng Odeny,** Theme Lead and Genomics Scientist, International Crops Research Institute for the Semi Arid Tropics (ICRISAT)
7. **Dr. L. V. Subba Rao,** Ex-Principal Scientist and Breeder at IIRR,
8. **Mr. Manzoor Dar,** Principal Scientist and Global Head of Seed Systems at ICRISAT

Moderator : Dr. Swati Nayak, South Asia Lead - Seed Systems and Product Management, International Rice Research Institute

Dr. Swati Nayak, South Asia Lead – Seed Systems and Product Management, International Rice Research Institute (IRRI), emphasizing the importance of remaining attentive. She introduced the initiative as a model for cross-border collaboration among public-sector entities and institutions, aimed at achieving joint recognition of varietal evaluation data and expediting the release of modern crop varieties. While several Asian countries are already members of the initiative, African countries have not yet participated, presenting a significant opportunity for intercontinental collaboration. The session aims to create awareness, foster discussion, and institutionalize the participation of African countries in the Seeds Without Borders initiative. She highlighted that IRRI's South Asia Regional Center in

Varanasi hosts world-class infrastructure for seed breeding and trials and serves as the Secretariat for Seeds Without Borders, a policy innovation signed by nine countries.

Dr. Sudhanshu Singh, Director, International Rice Research Institute – South Asia Regional Centre (ISARC), highlighted the pivotal role of ISARC, established in Varanasi as the first full-fledged research facility outside IRRI's headquarters, inaugurated by Prime Minister Modi in 2018. The center hosts three main units: the Center of Excellence for Grain Quality, focusing on rice quality and traditional varieties; the Capacity Development Unit, emphasizing South-South collaboration; and the Center of Excellence for Sustainable Agriculture, working on innovative science and scaling interventions. Over the last eight years, ISARC has reached over two million farmers through direct projects and collaborations. The center also houses NFPL-accredited laboratories and the first rice speed breeding facility, inaugurated in 2021, alongside advanced GIS and remote sensing systems supporting crop monitoring in Africa.

Dr. Singh elaborated on ISARC's contributions to seed systems and breeding, noting that the center has released over 1,450 rice varieties, including 50 directly through its efforts, and has been instrumental in disseminating stress-tolerant varieties to millions of farmers. He emphasized the Seeds Without Borders initiative as a transformative policy instrument that shortens the release period of important varieties across countries. The initiative began when Bangladesh sought to adopt India's flood-tolerant variety Sana Saban, prompting a collaborative agreement between India and Bangladesh, later expanded to Nepal, Southeast Asian countries, and African participants. Dr. Singh cited successful introductions such as varieties Bina 11 and Bina 17, which now cover over four million hectares in India within a few years. He concluded by reiterating the initiative's broad potential to scale across crops and countries, fostering South-South cooperation and enhancing global seed systems.

Dr. Swati Nayak, South Asia Lead – Seed Systems and Product Management, International Rice Research Institute (IRRI), delivered an overview technical presentation on Seeds Without Borders policy, emphasizing its role in South-South cooperation and global seed sector collaboration. She highlighted the importance of crop varieties as low-cost, high-impact technologies for smallholder farmers, noting that climate-resilient, biofortified, and high-protein rice, along with improved cereals, pulses, and millets, can significantly enhance productivity and livelihoods. Dr. Nayak explained that conventional breeding and release processes often take over a decade, duplicating efforts across countries with similar agroecological conditions, and that Seeds Without Borders optimizes resources by enabling data-backed germplasm exchange, reducing redundant R&D, and accelerating varietal access.

She outlined the policy's development, starting with the 2013 India-Bangladesh agreement and later expanding to Nepal, other Asian nations, African countries, and private sector participation. The mechanism allows early-generation seed sharing with recipient countries responsible for seed maintenance, using dual nomenclature to credit breeders. Public varieties can be released with minimal additional testing, while private varieties undergo one-year validation, expediting seed chain integration.

Dr. Vikas Singh, Regional Breeding Lead at the International Rice Research Institute, emphasized the significance of the Seeds Without Borders initiative in promoting South-South collaboration and science-based diplomacy in the seed sector. He highlighted that while developing new crop varieties is a resource-intensive process, multi-location testing and national release procedures often add several more years before varieties reach farmers. The initiative allows countries to adopt improved genetics developed by other nations or CGIAR centers, significantly reducing the time required to deliver impactful varieties. Dr. Singh introduced the panel discussion, focusing on the role of African and Indian experts in facilitating varietal sharing, re-release, and seed exchange.

Dr. Malavika Dadlani, Senior Seed Sector Expert and Advisor, shared her reflections on the evolution of seed collaboration in the region. She recalled that in 2009, the first SAR Seed Conference was organized, which later led to the formation of the SARK Seed Forum in 2012. The forum was initially intended to facilitate rapid sharing of seeds during natural calamities or socio-political disturbances, allowing neighboring countries to support each other with short-duration or gap-filling crop varieties. This early initiative eventually evolved into the Seeds Without Borders program, with the Government of India designating the National Seeds Corporation as the nodal agency.

Dr. Dadlani emphasized that while the ideological approach of freely sharing seeds is valuable, working with living organisms requires careful attention to quality, certification, and regulations to protect both the local environment and the recipient country. She noted that most varieties exchanged are notified varieties, having undergone multilocation trials and official release. However, the scope can also include private-sector varieties, following OECD certification guidelines. Phytosanitary requirements are determined by the recipient country, and certified seed standards are strictly followed to ensure safety and quality.

She concluded that as Seeds Without Borders expands beyond Asia to Africa, there is a need for stringent adherence to quality and regulatory standards while maintaining the initiative's goal of sharing knowledge and genetic resources.

Dr. Damaris Achieng Odeny, Theme Lead and Genomics Scientist at ICRISAT, highlighted the importance of sharing knowledge, tools, and facilities across countries to enhance seed utilization. She explained that advanced technologies and environmental characterization enable comparisons between regions, such as Africa and India, helping to identify which crops and varieties will perform well in specific agroecologies. She emphasized the value of data sharing for making recommendations on variety releases across regions.

Dr. Damaris also discussed the development of genomic toolkits to track released varieties, enhancing transparency, traceability, and confidence in initiatives like Seeds Without Borders. These tools allow stakeholders to trace a seed's origin, improve varieties, and acknowledge contributors. Additionally, she highlighted the importance of cross-regional training and protocol sharing, enabling teams from Asia and Africa to learn from each other's successes. She mentioned the launch of the South Asia Hub for Breeding Resource Support, which provides access to experimental design, breeding support, and genotyping




tools across crops and regions, thereby strengthening capacity and facilitating the global use of seeds.

In summary, Dr. Damaris stressed that data-driven environmental analysis, innovative tools, and capacity building are key to enhancing seed utilization and collaboration across continents.

Mr. Manzoor Dar, Principal Scientist and Global Head of Seed Systems at ICRISAT, discussed the origins and rationale of the Seeds Without Borders initiative. He explained that the idea emerged during a project targeting the release of new varieties and reaching millions of farmers, particularly focusing on flood- and drought-tolerant rice in countries like India, Bangladesh, and Nepal. The initiative aimed to fast-track adoption and release of varieties by creating a common platform where a variety released in one country could also be released in others, leveraging similar ecologies and reducing duplication of breeding investments.

He also highlighted the importance of emergency seed availability, where certification from one country could be accepted by another to quickly supply seeds during crises. Mr. Dar emphasized the role of government engagement, especially in India and Bangladesh, and acknowledged the contributions of key individuals in sensitizing governments. Initially focused on rice, the initiative has since expanded to other crops and countries, providing a significant benefit to farmers and demonstrating a model for potential global replication.

Dr. L. V. Subba Rao, Ex-Principal Scientist and Breeder at IIRR, shared his perspective on the release and exchange of varieties under the Seeds Without Borders initiative. He explained that the initiative facilitated the release of several varieties between India, Bangladesh, and Nepal, significantly reducing the usual release time. Typically, varietal release involves 3–4 years of multi-locational national testing, but by leveraging already well-developed climate-resilient varieties, one season of testing in a similar agroecological system was sufficient to approve the varieties for neighboring countries.

He highlighted that this approach allows quick access to high-performing varieties, including drought-tolerant, submergence-tolerant, lowland, and biofortified rice, while still respecting the phyto-sanitary regulations of the importing country. Dr. Subba Rao emphasized that the initiative cuts down several years of testing and regulatory hurdles, enabling faster dissemination of improved seeds and benefiting farmers. He concluded that the Seeds Without Borders model is particularly valuable for accelerating varietal adoption in Africa and other regions, provided the ecological similarity and regulatory compliance are ensured.

Dr. Yacouba Diallo, Secretary General of the African Seed Trade Association (AFSTA), emphasized the critical importance of importing and supplying relevant genetics in Africa. He noted that Africa's diverse agroecologies, cultures, and food habits mean that priority crops vary by region. For instance, rice remains a priority in West Africa, with programs like the ECOWAS-led Rice Offensive aiming to strengthen the rice value chain. Other important crops include cassava for sub-humid regions, wheat, and various local and traditional vegetables.

Dr. Diallo highlighted several bottlenecks in seed policy and movement, including cross-border regulations, phytosanitary requirements, documentation procedures, and logistics challenges due to inadequate road networks. He concluded by stating that Africa can learn from India's experience to facilitate initiatives like Seeds Without Borders, ensuring quality seeds and technologies reach farmers efficiently.

Panel Discussion : 9

Role of R&D in Advancing Seed Technology

Panelists :

1. **Mr. Manzoor Dar,** Principal Scientist I - Global Head- Seed Systems, ICRISAT (Moderator)
2. **Ms. Tara Satywati,** Director General, Indian Institute of Millets Research
3. **Ms. Bharti Malhotra,** Research Manager- Analysis Lead | Crop Science | Agribusiness - S&P Global (Online)
4. **Dr. Prabha Shankar Shukla,** Vice-Chancellor, NEHU
5. **Dr. Mandar Godge,** CEO, GRAIN International Pte Ltd

Moderator : Mr. Manzoor Dar, Principal Scientist I – Global Head, Seed Systems, ICRISAT

Mr. Manzoor Dar, Principal Scientist I – Global Head, Seed Systems, ICRISAT commenced the session on the role of R&D in advancing seed technology. He began by introducing the panel members and welcomed the audience, emphasizing the significance of seeds as the foundation of agriculture. He noted that seed quality directly impacts resilience, productivity, and food security, especially in the context of climate change, land degradation, and evolving market demands.

Dr. Manzoor highlighted that the session would focus on how R&D can accelerate breakthroughs in seed technologies, while emphasizing the role of scientific innovation, policy collaboration, and partnerships in translating laboratory discoveries to farmers' fields in India and Africa. He encouraged the panelists to build on each other's insights to ensure a rich exchange of ideas.

He then posed the first question, inviting the panelist to share her perspective on how R&D in seed technology has evolved over the last few decades and the emerging innovations in the sector.

Ms. Tara Satywati, Director General, Indian Institute of Millets Research emphasizing the R&D in the seed sector has evolved significantly, encompassing both varietal development and seed technology as an integral part of

breeding programs. She highlighted the All India Coordinated Research Improvement Programs, which use multi-location, multi-year testing to identify genotypes suitable for different agroecological conditions.

She explained that breeding has progressed from pure line selection to hybridization, and now to modern approaches like genomic selection and molecular breeding. She emphasized the importance of product profiles for different segments of crops, ensuring that breeding programs focus not just on yield but also on suitability for specific agroecologies.

Ms. Satyawati provided the example of pearl millet, where the hybrid HHB67 was improved using molecular breeding to enhance disease resistance, resulting in newer versions like HHB67 Improved and HHB 67 Improved 2021. She noted that these efforts involve collaboration between state agricultural universities and central institutes, tested through national systems, highlighting the collective and multi-institutional nature of modern breeding programs.

Ms. Satyawati also highlighted the need to adapt breeding objectives in response to emerging diseases, citing the rise of blast in pearl millet as an example. She noted the role of the private sector in complementing genetic resistance with seed treatments, such as coating seeds with protectants to safeguard seedlings against

harsh conditions and soilborne diseases.

She concluded by emphasizing that these advancements reflect the changing priorities in R&D, integrating yield, nutrition, disease resistance, and seed technology to support farmers effectively.

Dr. Mandar Godge, CEO, GRAIN International Pte Ltd highlighted that the seed industry has evolved beyond just genetics, now integrating cloud technologies, artificial intelligence (AI), and machine learning. He emphasized that seeds are no longer a product of chance but of precision, where human intelligence and AI work together to accelerate breeding outcomes. He explained that digital technologies have significantly reduced the time required to develop new varieties from 8–12 years to 5–7 years. Examples include Corteva Agrisciences in Singapore, which uses millions of datasets combined with AI to optimize maize productivity; Bayer's Climate FieldView platform, which integrates satellite and sensor data for crop management; and ICRISAT's digital seed catalog, providing African seed companies access to data for research and development.

Dr. Godge outlined four key verticals where AI and machine learning are transforming breeding: phenotyping, from breeder seed to commercial seed, using AI to acquire and analyze data including disease diagnostics; biological data-driven crop functional genomics, integrating tools like CRISPR with AI for advanced genetic improvements; AI-based breeding combinations and detection, enhancing precision in selection; and intelligent design breeding, combining

human expertise with AI for optimized outcomes. He emphasized two major applications: intelligent hybrid breeding using big data and breeding modules, and intelligent biological breeding, where synthetic and biotechnological tools are coupled with AI for next-generation breeding experiments. Dr. Godge concluded that these advancements will transform breeding over the next two to five years, enabling faster, more precise, and data-driven improvements in crop productivity.

Dr. Karunakaran Maruthachalam, Corteva Agriscience emphasized the importance of modern breeding technologies to meet the growing global population, projected to rise from 8 to 9.5 billion by 2050, with India and Africa experiencing similar increases. He clarified that CRISPR technology differs from traditional genetically modified crops, as it allows precise, targeted edits without introducing foreign DNA. Recent examples include two climate-resilient rice varieties in India: DR Dhan 100 Camala, which yields 20–25% more, and DSTA 1, which grows in drought and saline conditions.

At Corteva, CRISPR technology is integrated with big data and AI for internal research and is licensed to other companies. Dr. Karunakaran also mentioned funding partnerships, such as a $25 million investment in Parvise to enhance CRISPR capabilities. He highlighted other modern breeding approaches, including marker-assisted selection, which has been used since the 1980s to transfer desirable traits from wild plants to elite breeding lines.

Speed breeding is another key advancement, significantly reducing the time needed to develop male and female pools for hybrid production from 5–7 years to about 1–1.5 years. Techniques such as controlled environment growth, hydroponics, and rapid cycling allow multiple breeding cycles per year, accelerating line and varietal development. These technologies enable faster introduction of new, high-performing, and climate-resilient varieties to the market, transforming the breeding landscape.

Dr. Prabha Shankar Shukla, Vice-Chancellor, NEHU highlighted that seeds are living entities, not merely small, inert units, emphasizing their intrinsic value and potential. He referenced traditional Indian philosophy, noting that a seed contains the essence of the infinite within its apparent smallness, illustrating the depth and complexity of this biological entity.

He stressed that while modern breeding tools—such as CRISPR, mass selection, and pure line selection—offer advanced solutions, their success ultimately depends on farmers. Stable and adaptable varieties are critical because farmers cannot change crops every year; adoption depends on the consistency and performance of the seed in real-world conditions.

Dr. Shukla also noted the role of certified seed across generations—mentors, breeders, and students—in maintaining quality and ensuring reliable outcomes for farmers. While modern technologies can address genetic challenges, they cannot replace classical breeding, which provides long-term stability and reliability in the field. He emphasized that all breeding efforts must prioritize farmer-centric adaptability and yield enhancement per unit area.

Concluding Ceremony of the India–Africa Seed Summit 2025

Closing remarks of the India–Africa Seed Summit 2025

The Concluding Session was opened by Mr. Vivek Mathur, Executive Director, ICFA, who welcomed the dignitaries, including His Excellency Dr. Muhammad Abdullah Ali Eltom, Ambassador of Sudan to India; His Excellency Mr. Gilbert Shimane-Mangole, High Commissioner of Botswana to India; Mr. D.S. Chauhan, IPS, Principal Secretary and Commissioner of Civil Supplies, Government of Telangana; Dr. Himanshu Pathak, Director General, ICRISAT; Shri Mahesh R. Patel, Chairman, Export Trading Group; and Dr. K.S. Narayanaswamy, Chairman and Convener of the Africa–India Seed Summit.

Mr. Vivek Mathur highlighted that the India–Africa partnership carries immense potential owing to the agribusiness-driven economies of both regions, their similar climatic conditions, and India's cost and logistical advantages in supplying seeds to Africa.

He further emphasized that the deliberations over the two days had comprehensively addressed all critical aspects of the seed trade. The discussions, he noted, brought out the need to strengthen policy and regulatory frameworks, hold regular meetings and conferences, and facilitate buyer–seller interactions. He highlighted the importance of fostering collaborations, joint ventures, and investments, while also addressing quality concerns, payment mechanisms, and credit challenges faced by both sides.

Mr. Mathur also underlined the role of innovative solutions such as digitization, QR coding, and other advanced systems in improving efficiency and transparency. As a way forward, he mentioned that ICFA will consolidate and document the issues raised during the summit and continue engaging with stakeholders to strengthen India–Africa agricultural cooperation.

Address by Shri Mahesh R. Patel

Shri Mahesh R. Patel commended the remarkable success of the India–Africa Seed Summit 2025, describing it as a platform that has created commitments, forged collaborations, and ignited a shared vision for global agriculture. He highlighted that by focusing on seed systems, the summit also addressed food security, rural livelihoods, and sustainable growth for future generations.

He emphasized that India and Africa form a natural alliance — India bringing skills, technology, and experience, and Africa offering vast arable land and resilient farmers. Citing the Empowering Farmers Foundation's success at Kapunga, where yields rose from 700 kilos to 12 tons per hectare, Shri Patel underlined the transformative power of knowledge transfer, innovation, and farmer confidence.

He noted the significant opportunities for Indian seed companies to invest in Africa, establish research hubs, and introduce climate-resilient varieties, creating a win-win partnership that empowers African farmers while meeting India's demand for pulses and oilseeds.

Looking ahead, Shri Patel called for the creation of India–Africa seed innovation platforms, farmer training programs, inclusive investment models, and aligned regulatory systems to ensure trust and quality. He concluded with a strong message: with Indian technology and African soil, the partnership can ensure nutrition security for India, prosperity for Africa, and food security for the world.

Special Address by Mr. D.S. Chauhan

Mr. D.S. Chauhan, Principal Secretary and Commissioner of Civil Supplies, Government of Telangana, joined the summit at short notice and emphasized the importance of Indo-African cooperation in agriculture. Building on the points raised by Mr. Vivek Mathur and Shri Mahesh Patel, he noted that both regions share common needs and surpluses, and that regular interactions among agricultural dignitaries can strengthen mutual cooperation.

Highlighting Telangana's achievements in paddy cultivation, he shared that the state produces 25 million metric tons annually, ranking second in India for both production and procurement. He underscored the importance of quality alongside quantity, citing the introduction of mechanized procurement systems, standard operating procedures for harvesters, and modern equipment such as automatic vacuum paddy cleaners and dryers, which have significantly reduced below-rejection-level stocks from 15,000 MT to just 255 MT—a 98.3% reduction.

Mr. Chauhan also highlighted Telangana's five-star ISO 9001:2015 certification and growing demand for its rice across India and abroad. He noted successful export agreements, including an MoU with the Philippines for 8 LMT of rice, reflecting rising global interest. He concluded by urging that the efforts initiated through the summit be continued and expanded to achieve sustainable agricultural cooperation between India and Africa.

H.E. Mr. Gilbert Shimane-Mangole, High Commissioner of Botswana, reflected on the summit as a platform that

celebrated the progress of the seed sector while strengthening bonds of friendship and cooperation between India and Africa. He emphasized that high-quality seeds are fundamental to productivity, food security, and prosperity, and highlighted the role of innovation, research, and trade partnerships in empowering farmers.

Dr. Yacouba Diallo, Secretary General , African Seed Trade Association (AFSTA), described the summit as a "seed planted today" for future India–Africa cooperation. He urged participants to nurture this collaboration so that it flourishes into tangible outcomes benefiting farmers and communities across both regions.

H.E. Dr. Mohammed Abdalla Ali Eltom, Ambassador of Sudan, underscored the summit's role in reaffirming the deep partnership between India and Africa. He highlighted the need to strengthen seed research partnerships, build sustainable seed systems, and ensure quality seeds reach remote farmers, while leveraging science, innovation, and indigenous knowledge to enhance resilience and rural prosperity.

Dr. K.S. Narayanaswamy, Chairman and Convener of the summit, summarized the key takeaways, noting that access to quality seeds, modern technologies, and farmer training are cornerstones of progress. He highlighted India's strengths in research, climate-resilient varieties, and digital solutions, and Africa's potential for scaling seed systems. Dr. Narayanaswamy also announced that the India–Africa Seed Summit 2026 will be held on 9–11 September 2026, reinforcing the vision of a continuous, action-oriented platform for collaboration, knowledge sharing, and capacity building

ICRISAT–ICFA MOU Signing Ceremony

Following the closing addresses, an MOU signing ceremony was held between ICRISAT and ICFA to formalize their collaboration in advancing seed research and India–Africa agricultural cooperation. The MOU was exchanged by Dr. Himanshu Pathak, Director General, ICRISAT, and Mr. Vivek Mathur, Executive Director, ICFA, marking a significant step toward strengthening joint initiatives in seed systems, research partnerships, and knowledge sharing across both continents. This ceremony underscored the commitment of both organizations to foster innovation, enhance farmer productivity, and create sustainable agricultural solutions in Africa and India.

Seed Business Awards Ceremony

S.No.	Category	Recipient / Organisation
1.	Seed Innovation Excellence	Kubtec India
2.	Icon of Seed Conditioning, Processing & Packaging	LLP Prasad Seeds Pvt. Ltd.
3.	Best Emerging Business in Africa	SeedWorks International Ltd.
4.	International Seed Leadership Award	East West Seeds International – India
5.	Seed Brand Leadership Award	Savannah Seeds
6.	Best Emerging Seed Enterprise	JAM JAM Group
7.	Outstanding Contribution to Seed Trade	Indo American Hybrid Seeds (India) Pvt. Ltd.
8.	Climate Resilience Champion	Legacy Crop Improvement Centre Limited (LCIC)
9.	Best Seed Research Institution	ICRISAT
10.	Seed Education & Capacity Building Award	University of Agricultural Sciences, Bangalore
11.	Seed Council Leadership Award	National Agriculture Seed Council, Nigeria
12.	Seed Testing & Certification Excellence	International Seed Testing Association (ISTA)
13.	Emerging Agritech Leader	ETG Agri Inputs
14.	Lifetime Achievement Award	Rasi Seeds
15.	Seed Knowledge Leadership Award	Indian Institute of Millets Research (IIMR)
16.	Global Seed Alliance Award	African Seed Trade Association (AFSTA)
17.	Seed Industry Leadership Award	Advanta Seeds
18.	Regional Seed Leadership Award	Ganga Kaveri Seeds Pvt. Ltd.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Special Address by Dr. Himanshu Pathak, Director General, ICRISAT

Dr. Himanshu Pathak delivered the Special Address at the Valedictory Session, commending the organizers for choosing seed—the most vital input in agriculture—as the central theme of the Summit. He emphasized that good quality seed alone can increase productivity by 20–25%, underscoring its unparalleled role in ensuring food security.

He congratulated the organizers for focusing on India–Africa collaboration, highlighting that the summit coincided with the United Nations Day for South–South Cooperation and was held in Hyderabad, the seed capital of India. He further invited participants to ICRISAT to witness the institute's ongoing work.

Dr. Pathak explained that modern seed is not merely an input, but a bundle of technologies—carrying climate resilience, biofortification, nutrient-use efficiency, drought tolerance, and disease resistance. He stressed that with tools such as genome editing and advanced breeding techniques, seeds today embody cutting-edge science that directly impacts farmers' livelihoods.

Elaborating on ICRISAT's role, Dr. Pathak highlighted its unique position in bridging India and Africa, with headquarters in India and eight regional stations across Africa. These centers, equipped with land, laboratories, and gene banks, provide platforms to foster collaboration and fast-track technology transfer. He called upon stakeholders to leverage ICRISAT's resources for advancing seed innovation and capacity building.

He also spoke about climate analogs between India and Africa, where varieties tested in India could be successfully grown in similar agro-climatic zones in Africa, opening pathways for rapid scaling. Sharing recent breakthroughs, he announced the development of a new pigeon pea variety—short in height, photo-insensitive, machine-harvestable, and tolerant to high temperatures—that promises to transform productivity and support both Indian and African farmers. He also referred to ongoing work on forage varieties of sorghum, pearl millet, and groundnut, aimed at supporting both livestock and human needs.

In conclusion, Dr. Pathak reaffirmed ICRISAT's full commitment to promoting India–Africa cooperation in agriculture. He invited governments, private sector enterprises, and research institutions to join hands under the ICRISAT South–South Center of Excellence for Cooperation in Agriculture (ISCCA), ensuring that technologies, resources, and expertise are shared widely. His remarks highlighted that such collaboration is not only about business but also about food security, livelihoods, and humanity's shared future.

Field Visit: Grand Finale of the Summit

On the concluding day of the **India–Africa Seed Summit 2025**, a largest-ever delegation of 100+ leaders from India and Africa embarked on transformative field visits, marking a fitting finale to the Summit.

The distinguished delegation explored some of India's leading centers of agricultural research and seed innovation:

- **ICRISAT –** A global hub of agricultural innovation, showcasing cutting-edge laboratories, advanced crop research, and pioneering work in climate-resilient crops.
- **Prasad Seeds Pvt. Ltd.** – Demonstrating world-class infrastructure and next-generation seed technologies with a focus on scale and precision.
- **Sri Rama Agri Genetics (I) Pvt. Ltd.** – Presenting advanced breeding programs and futuristic R&D driving India's seed innovation ecosystem.

The African delegates expressed deep appreciation for India's scale, innovation, and technological leadership in the seed sector. Their enthusiasm and active engagement made the visit a memorable highlight of the Summit.

This 100+ member delegation was led by Mr. Syed Areesh Hussain, Deputy General Manager, ICFA. The milestone visit not only celebrated India's growing leadership in agriculture but also laid the foundation for unprecedented Indo–African collaborations in seeds, technology, and food security.

ICRISAT – Recognized as a global hub of agricultural innovation. The first stop of the field visit was at ICRISAT, the International Crops Research Institute for the Semi-Arid Tropics, widely acclaimed as a global hub of agricultural innovation. Delegates from India and Africa were introduced to its state-of-the-art laboratories, advanced crop research facilities, and pioneering programs on climate-resilient crops, pulses, and millets. The visit offered a first-hand experience of how ICRISAT is shaping the future of sustainable agriculture and driving India–Africa collaboration in seed science, research, and technology.

Prasad Seeds Pvt. Ltd. - The second visit took the delegation to Prasad Seeds Pvt. Ltd., one of India's leading seed enterprises. The delegates witnessed its world-class infrastructure, large-scale processing units, and next-generation seed technologies that reflect the company's strong commitment to innovation and quality. With its vast capacity and modern facilities, Prasad Seeds showcased how India's private sector is driving advancements in seed production and contributing to global food security.

Sri Rama Agri Genetics (I) Pvt. Ltd - The final stop of the field visit was at Sri Rama Agri Genetics (I) Pvt. Ltd., a dynamic seed company known for its advanced breeding programs and futuristic R&D initiatives. The delegation explored its cutting-edge research facilities and innovative approaches to crop improvement, highlighting how the company is pioneering next-generation solutions for farmers. The visit reflected India's strength in combining scientific expertise with practical innovation to address the evolving needs of agriculture.

Prelude to the Summit: CEO Roundtable & Networking Dinner

One day before the main conference, a high-level CEO Roundtable and Networking Dinner was organized as part of the India–Africa Seed Summit 2025. The exclusive gathering brought together CEOs and senior leaders from prominent seed companies, research institutions, and allied sectors, providing a platform for strategic dialogue, collaboration, and exchange of ideas.

The event also encouraged participants to build connections and strengthen networks in a meaningful and interactive setting. This prelude added momentum to the Summit and laid a strong foundation for the deliberations, sessions, and field visits that followed.

India-Africa Seed Summit Exhibition

The India-Africa Seed Summit Exhibition was graciously inaugurated by ***Shri Tummla, Agriculture Minister, Government of Telangana,*** with the ceremonial opening of the Government of Telangana Pavilion. Following the inauguration, he visited the various stalls, engaging with representatives of leading companies and exploring innovations shaping the future of agriculture and seed research. A wide array of companies participated in the India-Africa Seed Summit Exhibition, showcasing innovations in agriculture and seed technology. Notable participants included KisanKraft Limited, Ecosense Labs Biotech Division, Benchmark Marine and Agro, Sathguru Management Consultants, Tulasi Seeds, Yaduka Agrotech Limited, INDO US BIO-TECH LIMITED, HYTECH SEED INDIA PVT. LTD, Gubba Cold Storage Pvt. Ltd., Rubizon Private Limited, Anmol Industries, KURNOOL SEEDS PRIVATE LIMITED, ETG World, BioSeeds, KUBTEC, Foragen Seeds, Indo American Hybrid Seeds (India) Pvt. Ltd., Jam Jam Group, and the University of Agriculture Sciences & Karnataka State Seeds Corporation. These exhibitors provided a platform for knowledge exchange, business networking, and showcasing cutting-edge solutions for the seed industry.

Recommendations from India - Africa Seed Summit 2025

Based on the deliberations of ministers, ambassadors, policymakers, CEOs, researchers, and farmer representatives from India and Africa, the following recommendations were agreed upon to advance seed sector cooperation and strengthen agricultural partnerships:

Policy & Regulation

- Harmonize seed standards and certification systems between India and Africa, building on regional frameworks like ECOWAS, COMESA, and SADC, aligned with ISTA and OECD norms.
- Facilitate Seeds Without Borders – India–Africa Extension to fast-track varietal release across similar agro-climatic regions.
- Simplify customs, phytosanitary, and documentation procedures to enable faster movement of quality seeds.
- Strengthen intellectual property rights while balancing breeders' rights and farmers' rights.

Trade & Investment

- Launch the India–Africa Seed Trade Forum as a permanent platform for B2B and policy dialogue.
- Encourage long-term partnerships and joint ventures between Indian and African seed companies.
- Expand trade by addressing payment systems, credit, and risk-sharing mechanisms.
- Explore E-commerce platforms and digital marketplaces for wider seed access, particularly for smallholder farmers.

Research, Technology & Innovation

- Promote joint research and breeding programs focused on climate-resilient, biofortified, and nutrient-dense seeds.
- Scale up AI, digital tools, blockchain, and remote sensing for plant breeding, seed traceability, and precision agriculture.
- Establish India–Africa Seed Innovation Hubs in partnership with ICRISAT, BIRAC, and African research institutions.
- Conserve and utilize genetic diversity by linking gene banks and promoting underutilized crops (millets, fonio, moringa, amaranths).

Farmer-Centric Models

- Ensure last-mile seed delivery systems to make quality seeds affordable and accessible for smallholder farmers.
- Promote direct benefit transfer models (as in Telangana) to empower farmers in choosing quality seeds.
- Strengthen capacity building and extension services through farmer training, digital advisories, and field demonstrations.
- Encourage youth and women participation in agriculture and seed entrepreneurship.

Climate-Resilient Agriculture

- Prioritize climate-resilient seed development to address drought, submergence, pests, and diseases.
- Integrate biofortification and nutrition into seed innovation to address food security and malnutrition.
- Promote sustainable and eco-friendly seed systems that combine productivity with resilience.
- Strengthen policy support for adoption of resilient varieties across both regions.

Institutional & Diplomatic Cooperation

- Establish a permanent India–Africa Seed Secretariat hosted in India, in collaboration with AFSTA.
- Institutionalize ministerial roundtables and CEO panels as regular features of future summits.
- Foster South–South cooperation through exchange programs for scientists, breeders, and policymakers.
- Build linkages between incubation centers, startups, and entrepreneurs in both regions.

Implementation & Way Forward

- Translate summit deliberations into MoUs, pilot projects, and field collaborations.
- Monitor progress through an annual India–Africa Seed Report and follow-up meetings.
- Position the India–Africa Seed Summit as a flagship biennial platform for agricultural diplomacy, trade, and innovation.
- Promote the concept of "Seed Diplomacy" as a driver of food security, farmer prosperity, and sustainable global growth.

ICFA

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