

HARNESSING AI FOR GLOBAL FOOD SECURITY



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ABOUT VOICES OF SUSTAINABILITY

Voices of Sustainability is a thought leadership platform launched by the Zayed Sustainability Prize to explore the challenges and opportunities of the global transition to an inclusive and

prosperous future. Each month, the series hosts the world's thought leaders to discuss the latest trends and themes in the sustainability agenda.



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INTRODUCTION

On 30 May, the Zayed Sustainability Prize aired its 36th episode of the virtual fireside chat series 'Voices of Sustainability.' This episode featured Allison Kopf, Founder of ArtemisAg and CEO of TRACT, Christopher Chileshe, Co-founder and CTO of AIPONICS and HRVST and Satyam Bose,

CEO of Virenxia. The panel delved into how AI is revolutionising farming practices to address global food and nutritional demands as well as climate challenges, offering a key solution to global food insecurity.



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SUMMARY

In the 36th episode of 'Voices of Sustainability,' titled 'Harnessing AI for Global Food Security,' Charlotte Kan moderated a discussion featuring Allison Kopf, Christopher Chileshe and Satyam Bose. The episode examined the transformative impact of AI on agriculture, highlighting its role in meeting global food and nutritional needs while also addressing climate-related challenges.

The conversation began with each guest introducing themselves. Allison Kopf, Founder of ArtemisAg and CEO of TRACT, described her role in aligning the supply chain industry around sustainability metrics and developing technology to share this information. Satyam Bose, CEO of Virenxia, explained how his company creates evidence-based frameworks with tamper-proof metrics to transition from chemical-based farming to regenerative and sustainable practices. Christopher Chileshe, Co-founder and CTO of AIPONICS and HRVST, shared his work on building a digital marketplace to position Africa as a global breadbasket by solving data asymmetry issues and providing innovative solutions to supply gaps.

When asked about the main nodal points along the agri-food value chain where AI could make a significant impact, Allison highlighted practical applications such as using AI for autonomous greenhouse control and data collection. She emphasised the potential for AI to improve data validation and traceability in large supply chains.



The optimist in me sees a lot of exciting potential when it comes to making technology cheaper, more scalable and to make it so that anyone can fundamentally get into this industry

Allison Kopf

Founder of ArtemisAg
CEO of TRACT



Christopher then described how AI could be utilised in the food industry, which is not typically associated with high-tech applications, by driving operational efficiency and maintaining affordable food prices. He explained how AI can help in decision-making and scaling operations without increasing costs. Satyam detailed the application of AI in agriculture, outlining how Virenxia uses AI models to deliver customised, dynamic farming practices that improve crop outcomes and minimise environmental impact. He described their digital diagnostic system, AgriTMS[®], which provides real-time soil and water analysis, helping farmers make informed decisions to enhance productivity and sustainability.



AI is going to be instrumental in helping us to bridge, not just the digital divide, but also the data divide and data asymmetry.

Christopher Chileshe

Co-founder & CEO
AIPONICS and HRVST



AI can address data asymmetry, making the sector more efficient and sustainable. Satyam emphasised AI's role as a decision support system for farmers, stressing the need to make these tools accessible and affordable, particularly in developing nations and marginalised communities.

The episode demonstrated AI's potential to improve the resilience of food systems by addressing data asymmetry and providing valuable insights. This technology can enhance productivity, ensure sustainability, and ultimately contribute to global food security, showcasing AI as a crucial tool for the future of agriculture.

Addressing potential fears around AI replacing jobs, Allison acknowledged that while AI will automate certain tasks, it will also augment roles, shifting labour to higher-value functions. She emphasised the importance of pairing technology with expertise and aligning industry efforts. Christopher added that the food industry could benefit from the open-source AI models developed by large companies, which can be applied cost-effectively to improve agricultural practices and reduce food prices.

Finally, the panel discussed how AI can bridge the digital divide in agriculture and improve food system resilience. Allison emphasised that AI could enhance technology accessibility, making it cheaper and more scalable, democratising entry into the agricultural industry. Christopher added that



We must focus on making these tools accessible and affordable for everyone, especially developing nations and marginalised communities that produce a lot of our food.

Satyam Bose

CEO of Virenxia



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BIOGRAPHIES



Allison Kopf

Founder of ArtemisAg
CEO TRACT

Allison Kopf is a prominent agtech entrepreneur with over a decade of experience building and scaling companies. Allison is a pioneer in the controlled environment agriculture industry in the United States. Early in her career, she was the Real Estate and Government Relations Manager at BrightFarms, responsible for scaling up projects and improving operational performance. In 2015, she founded the company, Artemis, which built traceability, compliance and risk software for the fresh produce industry. Artemis scaled to become the largest enterprise software company in the greenhouse industry and was acquired by IUNU, the leading artificial intelligence company in the industry in 2021. Allison scaled commercial growth for the business leading to the company's highest growth years in history.

Allison was named one of Forbes 30 Under 30 as well as the 2021 Global Women Fresh "Woman of Impact," and has spoken on the future of agriculture at TEDx, Forbes 30 Under 30 Summit, Forbes AgTech Summit and the Alltech Ideas Conference. She is also an Investment Partner at XFactor Ventures, has mentored over 100 startups, and sits on the Boards of Santa Clara University's College of Arts and Sciences and the Ciocca Center for Entrepreneurship.



Satyam Bose

CEO
Virenxia

Satyam Bose is a prolific technopreneur with over 25 years of business experience and several successful ventures to his credit. He founded and currently leads Virenxia Group – A deep technology organisation that has created a framework for Digitally-Driven Climate Smart Sustainable Agriculture with their BioAg and AgTech Interventions. Virenxia promulgates their "Rapid Regenerative" system of farming, following the principles of holistic regenerative farming combined with cutting-edge technologies improving ease of adoption, efficiency and effectiveness.



Christopher Chileshe

Co-founder and CTO
AIPONICS and HRVST

Christopher Chileshe is a Zambian-born technology professional who has worked at companies like Goldman Sachs, Russell Investments and Microsoft. He has expertise in building operations technology, integration systems, cloud enterprise architecture and AI. He's passionate about using his technical background to solve challenging and impactful problems like food insecurity. Chris is excited about all the groundbreaking innovations that are taking place today and the transformative potential they have for the Global South.

The conversation was moderated by:



Charlotte Kan

Journalist

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OUTCOMES



Implementing AI for autonomous greenhouse control and data collection can significantly enhance efficiency and sustainability in farming practices



AI can improve data validation and traceability in large supply chains, leading to better resource management and reduced food waste



Using AI in the food industry can enhance operational efficiency and maintain affordable food prices, benefitting producers, retailers and consumers



AI models can deliver dynamic, customised farming practices that improve crop outcomes and minimise environmental impact, enhancing overall agricultural productivity



AI will automate certain tasks but also augment certain roles, shifting labour to higher-value functions and pairing technology with expertise for optimal results



AI can address data asymmetry in agriculture, providing valuable insights and making advanced tools accessible and affordable, democratising entry into the agricultural industry

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