Food Systems Innovation Challenge

2026 Nature-based Solutions edition



WAGENINGEN UNIVERSITY & RESEARCH

NFP Netherlands Food Partnership

SPARK THE FUTURE, JOIN THE CHALLENGE! | WUR Student Challenges

Contents

Introduction 3

About the Challenge 4
- Why a Challenge on Food Systems? 4
- Why Nature-based Solutions? 4
- Partner Universities 4
- Mentoring 4
- The Grand Finals 4

Youth Food Lab: From ideas to global impact 5

Meet the Jury 6

Meet the Teams 8
- Biocircular 10
- The Golden Loop 11
- FertiSoyaPlus 12
- GreenValor-Compost Ketou 13
- EcoPalm Nexus 14
- Kindred Ora 15
- Biochar the Black Diamond 16
- Eureka 17
- MacIsland 18
- SOILPULSE AI 19
- Ekolestari 20
- Ngramut wiji 21
- Breeze Labs 22
- FermentaFuture 23
- Solar Harvest Innovators 24
- AGRIPRO TEAM 25
- Green Miracle 26
- Shell Alchemist 27
- IronTeam 28
- Paludifuture: Precision Climate-Positive Systems 29
- Green Desert 30
- Siam Bio-Store 31
- Gancax Pro 32
- MBT's Infusana 33
- ABEL 34
- Regrain 35
- BioCoat Solutions 36
- Green Organic Harvest Canopy 37
- EverGreen 38
- Eco-Aqua Alliance 39

Acknowledgements 40
- Coordinators and advisory board members of the partner universities 40
- Experts 40
- Local jury members 40
- Organizing committee 40

Highlights from the 2025 Food Systems Innovation Challenge 42

Introduction

The 2026 Food Systems Innovation Challenge: Youth-led Nature-based Solutions for Food Systems

The challenges facing our global food systems, including climate change, biodiversity loss and food insecurity, require bold and innovative approaches. The 2026 Food Systems Innovation Challenge was launched to empower students to tackle these urgent issues by developing practical, locally grounded innovations that can help transform food systems.

Organised by Wageningen University & Research and the Netherlands Food Partnership, this year's edition once again focuses on Nature-based Solutions: approaches that harness the power of ecosystems to restore biodiversity, adapt to climate change and improve food security. By highlighting the connection between food systems and nature, the Challenge brings fresh perspectives to global discussions on sustainability.

Over six months, from April to September 2026, 30 student teams from 17 universities across four continents have worked to turn their ideas into tangible solutions. Supported by mentors, knowledge partners and their universities, the students developed projects addressing ecological sustainability, nutrition and social inclusion, all with Nature-based Solutions at their core.

More than a competition, the Challenge is a platform for youth engagement, creativity and international collaboration. We hope the teams' ideas and stories inspire you as much as they have inspired us!

2026 Impact in numbers:

17 **universities** from 4 **continents** participated

680 **students** registered with 127 **project ideas**

30 student **teams**, comprising 164 **students**, were selected for the Challenge and received **project seed funding**

6 **teams** were selected for the **Youth Food Lab incubation programme**

About the Challenge

Why a Challenge on Food Systems?

Feeding a growing population while safeguarding our ecosystems is one of the greatest challenges of our time. Climate change, biodiversity loss and rising inequality demand integrated solutions that combine science, innovation and community engagement. Food systems, spanning production, processing, distribution and consumption, are at the heart of these challenges.

The Food Systems Innovation Challenge gives students the opportunity to co-create solutions that respond to local realities while contributing to wider food systems transformation.

Why Nature-based Solutions?

Nature-based Solutions use the power of nature to address pressing challenges such as food insecurity, climate change and ecosystem degradation. From regenerative agriculture to ecosystem restoration, these approaches place biodiversity and resilience at the centre of innovation.
By focusing the Challenge on Nature-based Solutions, students are encouraged to develop projects that work with nature, rather than against it, to build more sustainable and resilient food systems.

Partner Universities

A unique strength of the Challenge is its global network. In 2026, 30 teams from 17 partner universities across four continents were selected to take part:



- Bangladesh Agricultural University, Bangladesh
- National University of Agriculture, Benin
- ESALQ-USP, Brazil
- Wollo University, Ethiopia
- University of Ghana, Ghana
- University of Brawijaya, Indonesia
- Lukenya University, Kenya
- University of Eldoret, Kenya
- Kathmandu University, Nepal
- Wageningen University & Research, the Netherlands
- University of Abuja, Nigeria
- Université du Sine Saloum El Hadj Ibrahima Niass (USSEIN), Senegal
- Seoul National University, South Korea
- Anton de Kom University, Suriname
- Makerere University, Uganda
- Can Tho University, Vietnam
- Tra Vinh University, Vietnam

Mentoring

Mentorship is one of the most valued aspects of the Food Systems Innovation Challenge. Each team is paired with an experienced mentor from a leading company or organisation. Mentors provide personal guidance, share their expertise and connect students with relevant networks, helping them take their projects to the next level.

This close support helps teams move beyond the initial idea and explore how their solutions could work in practice and create meaningful impact.

The Grand Finals

The Grand Finals on 29 September 2026 in Wageningen mark the culmination of six months of hard work. The event brings together all participating teams to showcase their projects, connect with stakeholders and celebrate the progress they have made. Selected teams will also pitch their solutions to an international jury and compete for the Audience Award.

At the Grand Finals, the top-performing teams receive further funding and the opportunity to continue their journey through the Youth Food Lab, an international incubation programme organised by the World Food Forum of the Food and Agriculture Organization of the United Nations (FAO), the International Association of Students in Agricultural and Related Sciences (IAAS), and Wageningen University & Research.

Through the programme, the teams receive further support to develop their ideas into solutions that can contribute to food systems transformation.



Youth Food Lab

From ideas to global impact

The journey of the Food Systems Innovation Challenge does not end at the Grand Finale. For the top 6 teams, it is just the beginning. These teams will secure a place in the Youth Food Lab, an international incubation programme that helps young innovators bring their food system ideas to life.

The Youth Food Lab (created by partners WUR, World Food Forum and IAAS) empowers young changemakers to transform promising concepts into impactful solutions. Over several months, participants receive hands-on mentorship, take part in expert workshops, and gain access to a global network of professionals, researchers, and entrepreneurs. The programme also provides visibility at the World Food Forum in Rome, where selected teams present their projects on an international stage.

By combining personal guidance with practical training and global exposure, the Youth Food Lab supports students in refining their innovations, scaling their impact, and growing as leaders of food system transformation. It is here that the seeds planted during the challenge can continue to grow into solutions that will shape the future of food.



Meet the Jury



Dhanush Dinesh - Clim-Eat

Dhanush is the Founder of Clim-Eat, a think-and-do tank accelerating climate action in food systems. With over a decade of experience across science, policy, business, and the non-profit sector, he works to bridge research and practice through collaboration and innovation. He also advises leading international organisations on food systems transformation and environmental sustainability.

"Change happens when people make it happen. Combining youthful energy with innovative ideas is the recipe for real transformation."



Emil John Cabrera - SEARCA

Emil is the Program Head for Emerging Innovation for Growth Department at SEARCA. He also serves as Director of Technology Transfer and Business Development at the University of the Philippines Los Baños, where he supports innovation, entre-preneurship, and the translation of research into real-world impact.

"Being a jury member is inspiring because it lets me find new agricultural solutions, spot up-and-coming talent, and support ideas that can make a real, lasting difference for farmers and their communities."



Jacobine Mannak - Global Sustainability Manager at GNT group

Jacobine is a sustainability leader passionate about food system transformation. Building on her experience in the agri-food and chemical industry, regenerative agriculture, nutrition and value chain collaboration, she leads GNT's global sustainability agenda for plant-based food ingredients, driving innovation that supports sustainable and just food systems.

"Young entrepreneurs are the best to detect today's challenges and opportunities - with fresh perspectives and latest knowledge applied."

Jean Muthamia-Mwenda - SNV

Jean is a Purpose-driven international development leader with 15+ years of experience advancing regenerative, market-based systems across agri-food, water, and energy. As SNV's Global Lead for Youth Employment and Entrepreneurship, she shapes global strategies and partnerships that create inclusive economic opportunities for young people. She has also served Pro bono as a Non-Executive Director, championing resilient, locally led systems that deliver lasting impact.



"Youth-led innovation is pivotal to transforming food systems, revitalizing traditional agricultural practices, and strengthening local food resilience."



Maria Kolesina - FAO Office of Youth and Women, Youth Food Lab

Maria works with the World Food Forum's Youth Action Initiative at FAO, driving the Youth Food Lab's efforts to support young innovators developing solutions for more sustainable, resilient and inclusive agrifood systems. Drawing on a background in international development and experience within the United Nations system, her work focuses on innovation, agrifood systems transformation and women's empowerment.

"What excites me most is the opportunity to engage with the next generation of innovators who are bringing fresh perspectives and bold ideas to address some of the world's most pressing agrifood challenges."



Pascal Murasira - African Food Fellowship

Pascal is the Executive Director of the African Food Fellowship, where he works to strengthen food systems leadership across the continent. With over 15 years of experience in innovation, entrepreneurship, and institutional development, he brings together governments, businesses, and researchers to build the networks and leadership needed for lasting food systems transformation.

Moussa Bathily - Delphy International



Moussa is the Country Representative for Delphy International in Senegal and a systems change expert with over 20 years of experience in agricultural transformation and youth employment. He works to strengthen inclusive food systems by connecting young agripreneurs with finance, markets, and climate-smart opportunities, while fostering collaboration between public and private partners to drive lasting impact.



Sharmila Pun - Welthungerhilfe

Sharmila Pun is a Technical Expert in Food Systems at Welthungerhilfe Nepal, where she works to strengthen sustainable and resilient food systems through innovative agricultural and livelihood interventions. Her work includes empowering youth entrepreneurs through appropriate horticultural interventions in Nepal.

"I am inspired by the creativity, courage, and fresh perspectives young innovators bring to reimagine food systems and turn bold ideas into meaningful action."



Bas Evers

Bas is working as Program Manager Africa for the Rabo Foundation, the impact investment arm of the Rabobank.
In this position he is committed to building access to markets and finance for (smallholder) farmers and agribusinesses across the African continent.

"Innovation thrives where knowledge meets capital. Much like a beehive, the collaboration between funders and academics transforms individual insights into collective impact."

MEET THE TEAMS

Biocircular

Bangladesh Agricultural University - Bangladesh

This project uses oyster mushroom cultivation to convert agricultural residues like rice straw into high-value edible protein, while naturally breaking down lignocellulosic waste. The remaining substrate is reused as compost or soil amendment, closing nutrient loops.

Its innovation lies in a flexible, circular system that cascades biomass from food to soil, supported by a youth-led, decentralized model. The approach delivers measurable benefits for soil health, resource efficiency, and climate impact.

"We initially thought we would simply introduce our project to farmers, but we ended up learning so much from them. Their hard work and patience taught us the importance of perseverance."



Team members:

Most. Sohana Easmin Sohaney
Mst. Rashna Sharmin
Ruhul Imran Chowdhury
Shamsuddoha Apon
Partho Kumar Ghosh
Mst. Shakila Yesmin
Pujashan Chalise
Shanjida Akhter Kana



The Golden Loop

Bangladesh Agricultural University - Bangladesh

This solution introduces jute-based circular innovations for inland aquaculture, combining biodegradable geo-textiles and a biochar–periphyton system to protect pond ecosystems. Jute geo-textiles prevent erosion without microplastics, while biochar-filled bamboo structures improve water quality and support natural fish feed.

By turning jute waste into valuable resources, the project strengthens a circular economy, enhances biodiversity, and improves food security. It also creates local livelihood opportunities through accessible, community-driven production methods.

"Unpredictable rainfall repeatedly created obstacles during our project. Experiencing this first-hand gave us a deeper understanding of the struggles and losses small-scale farmers face every day, which we had previously only seen in the news."



Team members:

Ahasany Takbim Esha
Kurchi Rahaman Luba
Liton Tripura
Md. Arkanul Islam Akik
Most. Murshida Jahan Mitu
Nur Aysha Chowdhury
Sadia Islam Badhon
Saifa Saba Hossain



FertiSoyaPlus

National University of Agriculture - Benin

Soy whey and poultry manure are transformed into a bio-based fertilizer, turning waste into a resource that restores soil health and reduces pollution. The use of Hyptis suaveolens provides a natural alternative to chemical pesticides, helping protect biodiversity.

By combining locally adapted fermentation with a circular approach, the solution supports small-scale farmers while creating income opportunities for women's groups, linking environmental impact with community development.

"We learned that agricultural innovation cannot be built in isolation. Involving local market gardeners from the first trials brought valuable field expertise to our scientific approach and helped us improve the quality of our product."



Team members:

Abdoul-Dramane Claude Bio
Apauline Winragui
Gédéon Noukpo
Ezéchiel Miracle Tomassihoue
Kévin Hounnou
Nouhessèdo Osée Anago-Akouta
Olive Kinhoueyito Sokotale



GreenValor-Compost Ketou

National University of Agriculture - Benin

Locally available cassava peels and poultry manure are transformed into high-quality compost, improving soil fertility while reducing pollution and disease risks. This approach helps restore degraded land and supports more resilient food production systems.

By combining these waste streams into a circular agricultural model, the solution reduces reliance on chemical fertilizers and promotes long-term soil health. It also creates income opportunities for farmers, youth, and local processors.

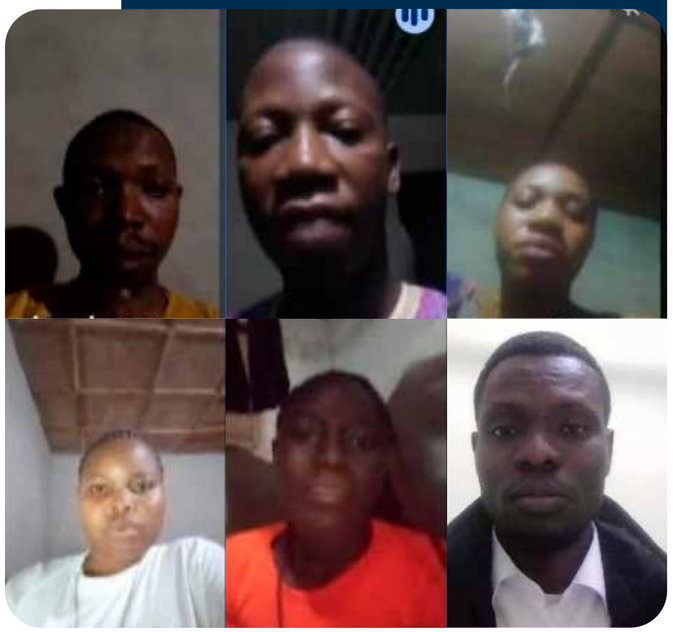
"We were surprised to discover that waste materials considered useless by communities can become valuable resources when combined with the right knowledge, technology and business approach."



Team members:

Comlan Justin Awode
Fawaz Bio Bagou
Ulrich Roland Agoi
Gnonna Valerie Dah-Djekpanon
Mahulomè Mèdéssè Anne Marie Doudjo
Sèna Pénielle Pierrette Yehounmey





EcoPalm Nexus

ESALQ USP - Brazil

A regenerative artisanal palm oil model improves food safety, environmental sustainability, and market trust. Standardized processing, safe water use, and low-cost quality monitoring help preserve nutrients while reducing contamination risks.

Through training and traceability, the approach strengthens local producers, especially women, while improving product quality and transparency. Combined with agroforestry and waste composting, it supports soil health, reduces import dependency, and builds a more resilient food system.

"We learned that before developing a digital platform or educational materials, we first needed to understand the realities of artisanal palm oil production. Empathy and active listening were essential to creating something truly useful."



Team members:

Ana Laura Bonfim Esteves
Constantino Lucas Queta
Isabela Guineza Nercolini
Luiza Pinheiro de Camargo
Marcela de Andrade da Barbosa
Maria Luisa de Toledo Ferreira
Raphaela Romeu Rosa



Kindred Ora

ESALQ USP - Brazil

A resilient native plant, Pereskia aculeata (ora-pro-nóbis), is cultivated in a biochar-enriched substrate to produce a nutrient-dense leaf flour with low water and energy inputs. The crop's natural resilience supports efficient, climate-adapted production.

A solar-powered drying system enables low-energy processing while preserving nutritional quality. The innovation lies in a modular, scalable approach that combines sustainable cultivation, local food identity, and nutrient-rich production.

"The most powerful part of biochar is not just the science, but its potential for community-led climate action. We learned that social infrastructure is just as critical as the physical prototype."



Team members:

Bruno Cruz Garbelotti
Luísa Cruz Carvalho Coelho
Fernanda Ribas Oliveira de Araújo
Natalia Soares dos Santos
Tharija Lauana Borges da Silva



Biochar the Black Diamond

Wollo University - Ethiopia

Agricultural waste is converted into biochar, a nature-based soil amendment that improves soil structure, water retention, and nutrient efficiency. By avoiding open burning, the approach reduces air pollution while supporting carbon sequestration and healthier, more productive soils.

The solution combines low-cost local production with standardized quality and field testing, creating a scalable circular model. By strengthening soil biodiversity and reducing reliance on external inputs, it helps farmers adapt to drought, land degradation, and rising costs.



"We realised that for our solution to be truly sustainable, it had to be a tool for bringing our community together, rather than just a technical fix for soil health."

Team members:

Abdulhakim Mohammed
Firdwes Oumer
Mickyas Tsegaye
Nesredin Jemal
Selwa Muhammed



Eureka

Wollo University - Ethiopia

A cactus-based production system introduces a drought-resilient crop into formal farming, transforming an underutilized plant into a valuable food and feed resource. By improving soil stability and reducing pressure on water and land, it strengthens both biodiversity and climate resilience.

The innovation lies in creating diverse, locally adapted products from both fruit and pads, while integrating unused biomass into livestock feed. This circular approach supports nutrition, reduces waste, and connects cactus to local markets and food systems.



"Our biggest unexpected learning was that the cactus itself was not the main challenge, perception was. Many people viewed it only as a symbol of drought and poverty, rather than a valuable climate-resilient resource."

Team members:

Adisu Kabtyimer
Ahlam Mihrete
Elshaday Desalgn
Kalekirstos Gezahegn
Tsegenet Teferi



MacIsland

University of Ghana - Ghana

Biological nutrient cycling is used to convert fish waste into liquid fertilizer through specialized bacteria, mimicking the natural nitrogen cycle. This reduces reliance on fossil-based inputs while supporting plant health and resilience in urban environments.

The system integrates Black Soldier Fly larvae to transform organic waste into high-protein fish feed, creating a circular urban food loop. By reducing dependence on conventional fishmeal, it offers a regenerative approach to urban food production.

"We have also learned that sustainable aquaponics requires a holistic approach that balances the entire system—fish, plants, water and people—rather than focusing solely on food production."



Team members:
Dorothy Akosua Mirekua Osarfo
Elijah Buernor Accam
Emmanuel Oppong Osei
Macklin Gbafa



SOILPULSE AI

University of Ghana - Ghana

Real-time soil health monitoring is delivered through a multilingual mobile app and SMS alerts, making precision agriculture accessible even in remote, low-literacy contexts. By optimizing water and fertilizer use, the system reduces agrochemical overuse and protects surrounding ecosystems.

With predictive insights, farmers can anticipate soil stress and prevent crop failure, shifting from reactive to resilient farming. The approach also supports nature-based restoration practices, improving soil biodiversity, water quality, and long-term ecosystem health.

"Connecting with DeepLeaf through the Food System Innovation Challenge showed us how combining soil intelligence with crop intelligence can create a more complete and practical solution for farmers in Ghana."



Team members:
Alberta Aseye Akosua Agbakpe
Emmanuel Kosi Apetsi
Nathaniel Gogoe
Timothy Dzadey







Ekolestari

Brawijaya University - Indonesia

An on-farm event and market showcases how diverse rice farming systems deliver environmental, social, and economic benefits. By connecting farmers directly with consumers, it raises awareness and builds support for ecologically produced food.

Creating a visible market for diverse farm products encourages wider adoption among farmers, including those shifting away from monocultures. This growing network strengthens local economies and supports a more sustainable and resilient food system.

"We never imagined that so many farmers were actually interested in adopting regenerative farming methods, but most of them don't have land to cultivate."



Team members:

Al-Ghifari Maulana
Astrid Janaty
Faza Dzaki
Iftitakhul Hidayah
Muhammad Basri
Muhammad Wahyudi



Ngramut wiji

Brawijaya University - Indonesia

Access to diverse seeds strengthens agrobiodiversity, giving farmers the flexibility to grow crops that support both food security and sovereignty. Diverse production also provides multiple food sources and supports household needs.

By encouraging a wider range of crops, farming systems become more resilient and ecosystem-rich, supporting beneficial organisms and cultural practices. This contributes to stronger, more sustainable food systems overall.

"We learned that increasing access to diverse seeds can be a practical starting point for restoring biodiversity, strengthening food security, and building more resilient farming communities."



Team members:

Achmad Mujadid
Daniel Angin
Muhammad Harahap
Nanda Fadilla
Rachmalia Shiva
Stefanus Sipayung



Breeze Labs

University of Eldoret - Kenya

Breeze-Bag uses biodegradable plant-based fibres and natural essential oils to extend the shelf life of dry produce without chemicals or electricity. This reduces food waste, plastic use, and post-harvest losses while supporting more sustainable storage practices.

By offering a low-cost, off-grid solution, it helps farmers and vendors preserve crops like onions and potatoes, improving income stability during disruptions. The approach supports a more resilient, circular food system based on natural materials.

"During our community demos, young farmers asked most questions about storage and were first to test the prototype. If we train young upcoming farmers, the whole community adopts faster."

Team members:

Emily Bochabery
Emmanuel Korir
Farooq Shaaban
Mellisa Gitonga
Venah Kwamboka



FermentaFuture

University of Eldoret - Kenya

Surplus cabbage and market waste are converted into a fermented, high-protein livestock feed, addressing feed shortages in urban and peri-urban systems. Through microbial fermentation, the solution creates a nutrient-dense and highly digestible feed that supports increased animal productivity.

By turning waste into value, the approach reduces food loss, emissions, and pressure on conventional feed crops. It also builds an inclusive value chain for farmers and waste collectors, strengthening both environmental and economic resilience.



"Great success happens through collaboration with like-minded people who carry the same weight of an innovation despite interdisciplinary differences."

Team members:

Jescah Moraa
Marystella Injete
Molvine Sakwa
Peter Mwangi



Solar Harvest Innovators

Lukenya University - Kenya

A mobile solar-powered grain dryer uses renewable energy to safely dry crops, reducing reliance on firewood and fossil fuels. With a controlled drying chamber and monitoring tools, it helps lower food waste and aflatoxin contamination while cutting emissions.
Its portable, affordable design allows use across multiple farms, making it well-suited to rural conditions. By combining clean energy with practical functionality, it offers a scalable solution for safer and more resilient post-harvest systems.

"We discovered that talking to farmers, validating our assumptions, and refining our solution based on their feedback were just as important as the technical design."



Team members:

Alexander Mutisya
Erick Ziro
Ivyoune Chebet
Janet Isaac
Jill Muthomi
Ronoh Jonah
Victor Kyalo
Vincent Arisi



AGRIPRO TEAM

Lukenya University - Kenya

Bioregen Pods restore soil fertility by delivering slow-release nutrients, beneficial microbes, and biochar in a compact, easy-to-use format. This improves soil structure, water retention, and resilience to drought and heat, while supporting biodiversity and long-term productivity.

Designed as a simple, farmer-friendly solution, the pods require no new equipment and combine soil restoration, climate adaptation, and carbon sequestration in one product. By working with natural soil ecology, they offer a scalable, nature-based alternative to conventional inputs.

"We learned that improving soil structure, microbial activity, and organic matter can have a greater long-term impact on crop productivity than relying solely on chemical fertilizers."



Team member:

Ann Kimanthi
Augustine Muthama
Christine Mwende
Lawrence Okoti
Shadrack Abukuse







Green Miracle

Kathmandu University - Nepal

A single plant, Moringa oleifera, is used to create a range of nutritious food products, alongside bio-based coatings, bio-stimulants, and bio-pesticides. This integrated approach links nutrition, post-harvest innovation, and sustainable farming in one system.

By combining climate-smart cultivation with community-based production and green entrepreneurship, the solution supports rural livelihoods while improving resilience. It offers a scalable, nature-based model that strengthens both nutrition and food system sustainability.





"The experience has helped us see community problems not as obstacles, but as opportunities for innovation and positive impact."

Team members:

Ashlesha Pandey
Bini Shrestha
Manish Kumar Chaurasiya
Sagar Budha





Shell Alchemist

Kathmandu University - Nepal

Discarded eggshells are converted into a locally produced calcium supplement for poultry feed, restoring nutrients back into the food system. This reduces reliance on mined inputs while creating value from an abundant waste stream.

The innovation lies in a low-cost, standardized processing method and a circular waste-to-feed model that can be scaled through community-based production, linking waste management directly to livestock nutrition.

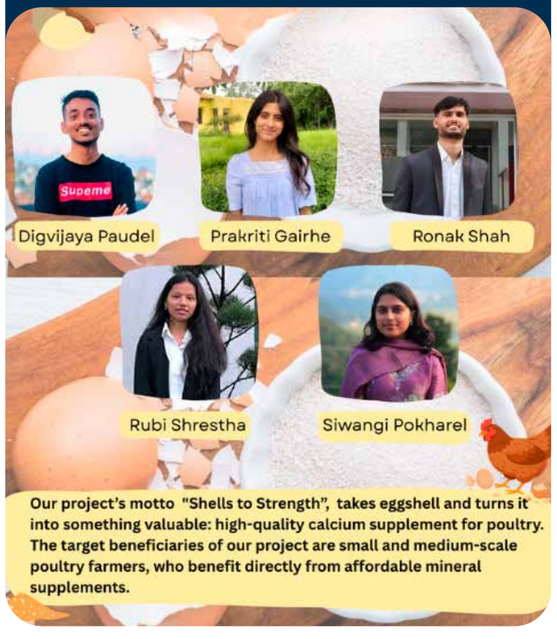


"The Challenge showed us that by combining scientific research, teamwork, and community needs, simple ideas like recycling eggshell waste can contribute to more sustainable food systems."

Team members:

Digvijaya Paudel
Prakriti Gairhe
Ronak Shah
Rubi Shrestha
Siwangi Pokharel





IronTeam

Wageningen University & Research - The Netherlands

Ironbloom transforms seaweed into iron-rich gummies, offering a natural and sustainable alternative to conventional supplements. This reduces reliance on mining-based inputs while addressing iron deficiency with a safe, accessible product.

By centring women across the value chain, the approach supports health, income generation, and empowerment. It combines nutrition and social innovation to create a more inclusive and resilient food system.

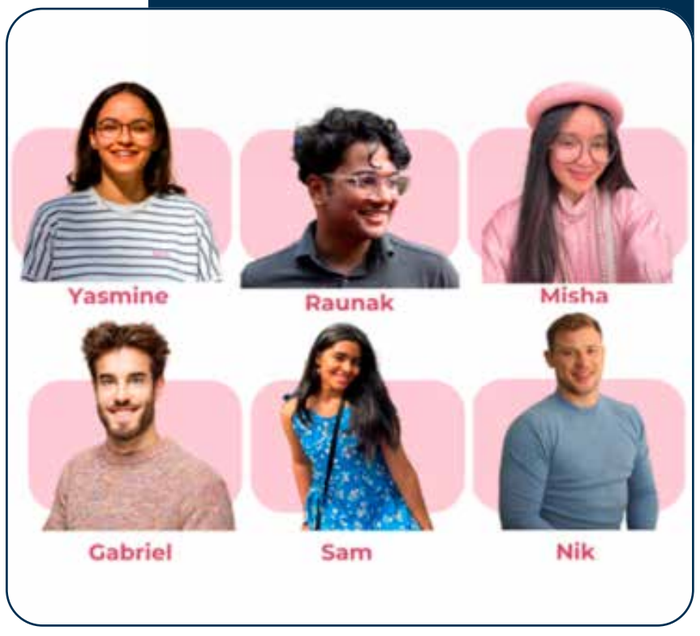
"We discovered that innovation is just as much about understanding people and working together as it is about finding the right solution."



Team members:

Gabriel Spanu
Nhat My Vu
Niklas Blöchl
Raunak Gupta
Samrakshni Meera
Yasmine Azafzaf





Paludifuture: Precision Climate-Positive Systems

Wageningen University & Research - The Netherlands

A targeted sulphate application system reduces methane emissions in restored wetlands and peatlands, enabling climate-positive farming systems such as paludiculture. This helps turn marginal land into productive landscapes while improving long-term resilience.

By using locally sourced sulphates and precision delivery within existing water systems, the approach closes nutrient loops and lowers emissions. It also supports farmers in transitioning to sustainable wet-farming models, balancing environmental impact with economic viability.

"Bringing together students from different backgrounds helped us approach challenges from new angles and reminded us that the best solutions are built through collaboration and always tailored to the specific context in which they're applied."



Team members:

Ainhoa Etxebarria Azanza
Alex Alvarez Beato
Dani O'Brien
Devika Pramod
Hannah Ritterhoff
Stefania Bernardi



Green Desert

University of Abuja - Nigeria

This team transforms desert date waste into a wide range of valuable products, including food, biofuel, animal feed, and organic fertilizer. By utilizing discarded seeds, it reduces waste while supporting local production and resource efficiency.

Through simple, accessible processing techniques, the approach enables communities to create multiple income streams. This circular model strengthens livelihoods and promotes sustainable, nature-based solutions across the food system.

"Where we have challenges, new opportunities abound, but it takes the conscious mind of the team to unravel them."



Team members:

Ahmad Olalekan Oyerinde
Grace Oluwaseun Ojewole
Habeebullahi Akintunde Marufudeen
Ibrahim Ishola Abdulsalam
Idowu Eletu Saka
Nafisat Ohunene Abubakar
Rodiat Olatorera Folaranmi
Shahida Ismail Abubakar



Siam Bio-Store

University of Abuja - Nigeria

An invasive plant, Chromolaena odorata (Siam weed), is repurposed into a natural grain protectant, offering an eco-friendly alternative to synthetic insecticides. Its proven insecticidal properties help reduce post-harvest losses in staple crops like maize, rice, and beans.

By turning a widespread weed into a bio-based preservation solution, the approach lowers health risks, reduces environmental impact, and supports safer storage practices. This circular use of invasive species contributes to more resilient and sustainable food systems.

"This experience brought us to the fact that impactful solutions succeed when they are simple, accessible, and trusted by the people who use them."



Team members:

Bello Garba
Bridget Eniola
Ganiyu Onanuga
Jesse Maxwell Ogunlade
Mubarak Atiku
Oluwaseun Adepoju
Peace Jane Ogwuiche
Taiwo Ayomide Oyeleke



Gancax Pro

USSEIN - Senegal

A syntropic agroecological system restores saline soils by combining crops like groundnut, cowpea, and maize in a biodiversity-rich design. With compost use and drip irrigation it improves soil fertility, reduces salinity, and strengthens climate resilience.

By linking production with local processing and circular resource use, the approach boosts farmer income and reduces import dependence. It also ensures safe, high-quality crops through biological aflatoxin control.



"Innovation does not necessarily mean creating solutions that have never existed before. Instead, it means understanding what people genuinely need but still lack."

Team members:
Mame Mbayame Sene
Marie Berthe Dione
Marieme Ba
Nogoye Diouf



MBT's Infusana

USSEIN - Senegal

Locally grown plants such as lemongrass, ginger, and white hibiscus are transformed into natural infusion blends enriched with honey powder, adding value to underutilized crops. This reduces post-harvest losses while responding to the demand for healthy, locally produced products.

By building a short, local value chain, the approach increases farmer income and promotes sustainable use of natural resources. The innovation lies in a 100% natural, additive-free product rooted in local biodiversity and nature-based production.



"Through workshops, mentoring, and collaboration with other teams, we strengthened our ability to transform an idea into a practical, scalable, and impactful solution."

Team members:
Assane Lo
Awa Aminata Diop
Fatou Ndiaye
Yacine Pene













ABEL

Seoul National University - South Korea

A spoilage-responsive film detects decomposition in meat by reacting to volatile compounds and providing a clear visual warning. This helps consumers make safer, more informed decisions, reducing both food waste and health risks.

By improving the distinction between edible and spoiled products, the solution increases resource efficiency across the meat value chain. As a fully natural, low-tech material, it can be easily integrated into packaging without additional infrastructure, supporting more resilient food systems.

"By working on the meat spoilage indicator film, I was able to see that even a small invention has the capacity to make contributions towards food waste reduction and food safety."



Team members:
Daeun Jung
Kanghee Han
Woobin Choi
Wooseok Jung



Regrain

Seoul National University - South Korea

Wet okara, a by-product of soybean processing, is directly transformed into gluten-free pasta without energy-intensive drying. By developing a stable binding structure, the process preserves nutritional value while reducing energy use.

A localized, circular model enables on-site processing near production facilities, minimizing transport and waste. This approach reintegrates by-products into the food system, improving resource efficiency and supporting more sustainable production.

"To turn fresh okara into a real product, we had to consider not only taste and texture, but also shelf life, regulations, production costs, scalability, and even how to approach companies and manufacturers."



Team members:
Jisoo Kim
Mina Shin
Seokwon Jeong
Sunjae Lee
Yeeun Lee



BioCoat Solutions

Makerere University - Uganda

A bio-based coating from cassava peel waste is developed to extend the shelf life of tomatoes by regulating moisture loss and respiration. Designed as a semi-permeable, flexible film, it protects the fruit without affecting quality, appearance, or consumer acceptance.

The solution combines a waste-to-value approach with affordable, locally producible technology, enabling small-scale production while reducing food waste, synthetic packaging, and reliance on non-biodegradable materials.

"Our biggest take-away is that high-impact innovation doesn't require over-engineered technology; it requires deep local relevance."



Team members:
Joshua Ongom Apitta
Joshua Ssemirembe
Racheal Namata
Sean Muwonge



Green Organic Harvest Canopy

Makerere University - Uganda

Green Organic Harvest Canopy introduces a multi-strata agroforestry system in Kagadi, combining indigenous trees, nitrogen-fixing species, and crops to restore soil health, boost biodiversity, and improve climate resilience. By adding fruit trees, the system diversifies food and income while reducing reliance on synthetic inputs.

Its innovation lies in a precision agroforestry approach and a "Lighthouse Farmer" model, where early adopters showcase the system and enable peer-to-peer learning, supporting wider community adoption.

"We discovered that our Lighthouse model is less about top-down knowledge transfer and more about co-creation, with local farmers adapting technical innovations to the realities of their own plots."



Team members:
Akello Faith Rebecca
Asiimwe Herbert
Eperu Allan
Natukundda John



EverGreen

Tra Vinh University - Vietnam

Using luffa as a versatile, nature-based crop, this project promotes low-chemical farming while adding a nutritious ingredient to local diets. By supporting farmer adoption, it strengthens both sustainability and food diversity.

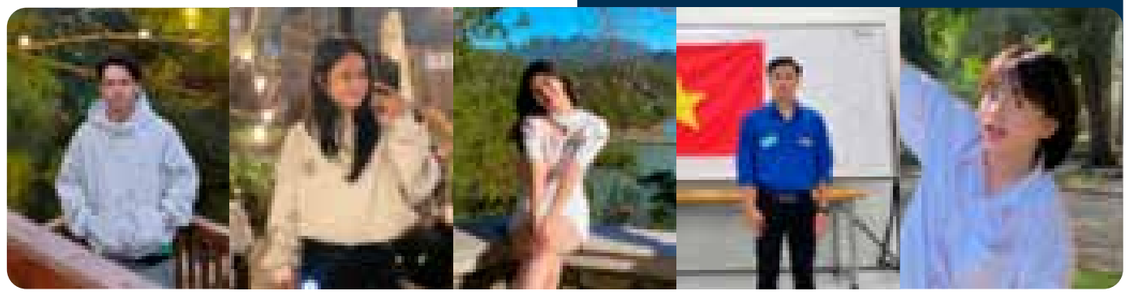
Overripe luffa is repurposed into eco-friendly products and natural filtration materials, creating additional income streams. This circular approach supports green livelihoods and reduces agricultural waste.

"This experience gave us the confidence to believe that young people in the Mekong Delta don't have to wait for opportunities - we can create them."



Team members:

Nguyen Dinh Thai
Huynh Thi Cam Tu
Ngo Trong Hau
Vo Hanh Nhung
Nguyen Minh Nghia







Eco-Aqua Alliance

Can Tho University - Vietnam

Combining subsurface drainage, drip irrigation, and smart water storage, this solution helps farmers manage salinity and drought more effectively. By optimizing water use and improving field conditions, it strengthens climate resilience in vulnerable agricultural areas.

The approach reduces reliance on chemical inputs by limiting waterborne diseases and improving crop health. This supports safer production while promoting a more sustainable and resilient farming system.

"That challenge forced me to learn to think flexibly, always have a backup plan, and understand that a successful solution requires not only creativity but, more importantly, sustained execution."



Team members:

Võ Minh Toàn
Nguyễn Kim Trọng
Lê Ngọc Vân Nhi
Phạm Minh Hiếu







Acknowledgements

The Food Systems Innovation Challenge would not have been possible without the dedication, guidance, and generosity of the many people who supported the student teams along the way. We are deeply grateful to the advisory board members and the coordinators of each partner university, who have been passionately guiding the challenge; to the mentors, who walked closely with the teams throughout their journey; and to the experts, who shared their time and knowledge in focused sessions. Their advice, encouragement, and belief in the students made a world of difference.

Coordinators and advisory board members of the partner universities

- Dr. Judith Wafula and Dr. Esther Muli
  Lukenya University - Kenya
- Dr. Seid Hussen Muhie and Dr. Birhan Asmame
  Wollo University - Ethiopia
- Usha Satnarain and Dr. Kimberly Fung-Loy
  Anton de Kom University of Suriname - Suriname
- Dr. Mohammad Matiur Rahman and Dr. A. K. Fazlul Haque Bhuiyan
  Bangladesh Agricultural University - Bangladesh
- Dr. Akeem Abolade Oyerinde and Dr. Hakeem Fawehinmi
  University of Abuja - Nigeria
- Dr. Daniel Adu Ankrah and Dr. Eric Kwesi Nartey
  University of Ghana - Ghana
- Dr. Uma Shankar Panday and Dr. Bal Krishna Bal
  Kathmandu University - Nepal
- Mirjam Troost, MSc and Dr. Sigrid Wertheim-Heck
  Wageningen University & Research - The Netherlands
- Ivo Demmers
  Netherlands Food Partnership – The Netherlands
- Dr. Edison Sempiira and Dr. Julia Kigozi
  Makerere University - Uganda
- Dr. Aline Cesar and Dr. Thais Vieira
  University of São Paulo - Brazil
- Dr. Uma Khumairoh and Dr. Sujarwo
  University of Brawijaya - Indonesia
- Dr. Ho Hong Lien
  Can Tho University - Vietnam
- Dr. Tran Thi Ngoc Bich
  Tra Vinh University - Vietnam
- Dr. George Ariya and Dr. Julius Onyango Ochuodho
  University of Eldoret - Kenya
- Dr. Menouwesso Hounhouigan and Dr. Flora Chadare
  Université Nationale d'Agriculture - Benin
- Malick Sarr and Prof. Cheikh Thiaw
  Université du Sine Saloum El Hadj Ibrahima Niass USSEIN - Senegal
- Dr. Heeyeun Yoon and Byoung-cheorl Kang
  Seoul National University - South Korea

Experts

Abaseen Ashraf, Asikaralu Okafor, Assegid Gedamu, Bastiaan Brouwer, Bollam Srinivas, Bram de Groote, Daniel Ogunsola, Dr. Judith Wafula, Gordon Obonyo, Ingrid Gevers, Kehinde John Afuye, Marlene Roefs, Radwa Donia, Randa Bazzi, Souleymane Boni, Wim Goris, Xhonatan Sinaj

Local jury members

Upama Ashish Koju, Sharmila Pun, Paul Mbutu, Harrison Mwololo, Josphart Kimatu, Erick Otieno, Kevin Karim, Rahmayani Rahmayani, Ratih Sandrakirana, Eka Novia Endriany, Ayalew Kassahun, Yeshimebet, Mulugeta, Ines Déléké, Edna Zannou, Christian Konfo, Carmel Djissou, Yvette Bankolé, José Belasque Júnior, Ana Claudia dos Santos Luciano, Harunur Rashid, Kazi Kamrul Islam, Mohammad Mofizur Rahman Jahangir, Anisur Rahman Mazumder, Mohammad Matiur Rahman, Bukenya Richard, Julia Kigozi, Nsubuga Denis, Denis Semyalo, Allan Komakech, Namara Mercy, Abu Seidu, Danley Aidoo, Abu Seidu, Danley Aidoo, Abdullahi M. Orire, Taibat A. Atoyebi, Shakirat O. Ajenifunjah-Solebo, Ismail A. Aderolu, Adiat Arogundade, Babette Bodlaender, Trang Nguyen, Phong Nguyen, Jin Hoe Huh, Chanmi Kim, Jongguk Yun, Sunwoo Lee, Marième Dieng, Cérès Brouwer, Ousmane Sarr, Pape Amadou Diop, Malick Sarr

Organizing committee

Mirjam Troost, Bente Meindertsma, Rio Pals, Maria Theodoridou, Rebeka Bílik

The organizers of the 2026 Food Systems Innovation Challenge - Nature-based Solutions edition:

WAGENINGEN UNIVERSITY & RESEARCH

NFP Netherlands Food Partnership

WUR Student Challenges

2026 Wageningen University & Research

All rights reserved: no part of this document may be reproduced, stored in an automated database, or published in any form or by any means, be it electronic, mechanical, by photocopying, recording or otherwise, without the prior written permission of the publisher.

Publisher: Wageningen University & Research (studentchallenges@wur.nl)
Texts: Rebeka Bílik
Editing: Rebeka Bílik
Photos: Guy Ackermans, and photos by the student teams
Design: Tim Jacobs, identim
Printing: Zalsman B.V.

We thank our partners and sponsors for their generous contributions. Their support has been invaluable in making the Food Systems Innovation Challenge - Nature-based Solutions edition an unforgettable and inspirational event, empowering the young pioneers of change in our food systems and contributing to innovations for a sustainable future.

Partner Universities

Supporting Partners

Highlights from the 2025 Food Systems Innovation Challenge























