

EatSafe: Evidence and Action Towards Safe, Nutritious Food



EatSafe Innovation Challenge: Final Event Report

January 2023

This EatSafe report presents evidence that will help engage and empower consumers and market actors to better obtain safe nutritious food. It will be used to design and test consumer-centered food safety interventions in informal markets through the EatSafe program.

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ACRONYMS AND ABBREVIATIONS

Below is a list of all acronyms and abbreviations used in the report.

DTU	Danish Technical University
EatSafe	Evidence and Action Towards Safe, Nutritious Food
IFSS	Innovative Food System Solutions Portal
SBN	Scaling Up Nutrition Business Network

EXECUTIVE SUMMARY

Food safety remains a major public health issue in Ethiopia and Nigeria, with consumers facing significant risks when purchasing food from traditional markets. To address this issue, the USAID-funded, Feed the Future program [EatSafe](#): Evidence and Action Towards Safe, Nutritious Food, in collaboration with partners, launched the EatSafe Innovation Challenge in April 2022. The goal of the challenge was to identify innovative ways to improve food safety in traditional markets in Ethiopia and Nigeria.

The challenge received over 750 applications from both countries and narrowed them down to 10 finalists, five from each country, who presented their concepts at the EatSafe National Innovation Challenge Pitch Event. From these events, the top three winners from Ethiopia and Nigeria were selected to participate in the Global Finale hosted by the Technical University of Denmark Food Skylab in October 2022. Of the six finalists from Ethiopia and Nigeria who presented at the Global Finale, three were awarded prizes from sponsors. Throughout the challenge, technical guidance was provided to applicants to help them refine their solutions. This report details the process of identifying the three winning concepts that offer significant opportunities for improving food safety in traditional markets.



Figure 1. Top 6 finalists at the Grand Finale in Copenhagen, Denmark

I. INTRODUCTION

Unsafe food, a preventable hazard, is responsible for one in 10 people falling ill and the death of at least 125,000 children globally every year (1). Low- and middle-income countries (LMICs) bear the largest burden of foodborne disease, which costs those countries an estimated US\$110 billion in productivity and medical expenses annually (2). In Ethiopia and Nigeria, food safety is an important public health issue across the food value chain (3). In 2019, a survey showed that 33% of Ethiopians and 20% of Nigerians had experienced serious harm from food and water, leading to illness, malnutrition, stunting and death (4).

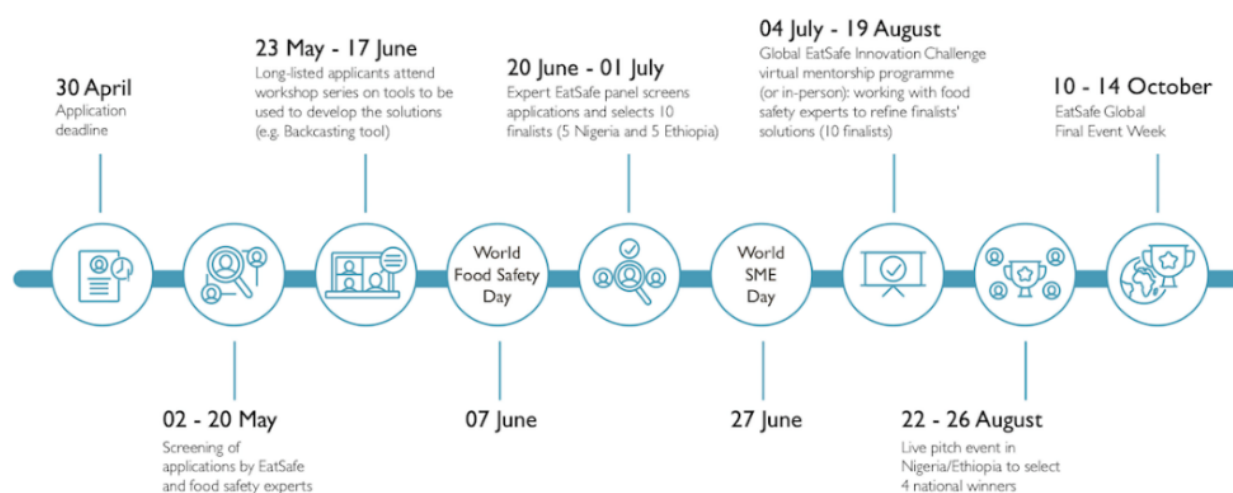
While innovations in high-income markets are used to address food safety risks from farm to market, few of these ideas reach traditional food markets and their regional value chains, where millions of consumers source their food daily and face heightened risk from unsafe food. To that end, the USAID-funded, Feed The Future Initiative, EatSafe: Evidence and Action Towards Safe, Nutritious Food (EatSafe) collaborated with the [Scaling Up Nutrition Business Network \(SBN\)](#) and the [Innovative Food System Solutions \(IFSS\) Portal](#) to organize the EatSafe Innovation Challenge. The challenge aimed to solicit ideas from students, researchers, entrepreneurs, and innovators on how existing food safety innovations along the food value chain can be adapted to increase the amount of safer food reaching traditional food markets. The Challenge, supported by several partners, awarded the first, second, and third place winners each USD \$10,000, \$5,000, and \$3,000 respectively.

2. INNOVATION CHALLENGE JOURNEY

The EatSafe Innovation Challenge ran from April to October 2022, with five key milestones along the way (**Figure 2**). Throughout the process, applicants received technical support from mentors and experts to improve their solutions. Milestones included:

- *Milestone 1 (April)*: Launch of the challenge (see [Agrilinks post](#));
- *Milestone 2 (May)*: Selection of top 40 applicants;
- *Milestone 3 (July)*: Selection of top 10 finalists (see [Agrilinks post](#));
- *Milestone 4 (August)*: Selection of six national winners at the EatSafe National Pitch Competitions; and
- *Milestone 5 (October)*: Selection of the first, second and third place winners in Denmark at the EatSafe Innovation Challenge Grand Finale (see [press release on GAIN website](#))

Figure 2. EatSafe Innovation Challenge Journey



2.1. MILESTONE 1: LAUNCH OF THE CHALLENGE

The challenge was officially launched on April 4 and closed on April 30, 2022. The call for applications was widely promoted via the [EatSafe Innovation Challenge landing page](#) and across partners' digital media platforms (i.e., websites, Instagram, Twitter, Facebook) using a [promotional toolkit](#). The challenge was promoted through women's and youth associations so as to encourage women and young people working or interested in working in the field of food safety and/or nutrition to apply. Beyond the prize money, the benefits of the competition were emphasized in promotional materials (e.g., highlighting opportunities for mentorship, technical training, networking opportunities, increased visibility on national and global platforms). Applicants were invited to submit concepts across seven categories:¹

1. **Peer Learning Platforms:** Channels for consumers to receive and share food safety information and/or provide feedback to businesses and with peers
2. **Processing:** Cost-effective innovations that enhance food safety during processing or making a raw or unrefined food into a product that meets a demand in the market
3. **Food waste technology:** Innovations that enhance food safety or detect risks in traditional markets (e.g., upcycled foods, discarded/spoiled food products, or the inedible/unsellable parts of raw foods) in traditional markets
4. **Sensors for food safety assessment:** Sensor innovations that can detect chemical or microbial hazard(s) or the symptoms of contamination (e.g., turgor, color, density)
5. **Retailing and Packaging:** Innovations that enhance food safety in retail or packaging of nutritious foods (e.g., labeling, vending machines, handling instructions)
6. **Urban rural linkages and food logistics:** Innovations that improve efficiency in communication between urban demand and rural supply (e.g., considering incentive structures related to transport or storage)
7. **Platforms for supply chain management:** Innovations that increase operational efficiency and food safety of food production/processing (e.g., automatic cleaning schedules; reminders for processing parameters like temperature, time)

2.2. MILESTONE 2: SELECTION OF TOP 40 APPLICANTS

The challenge received an overwhelming response of 751 applications from innovators in Nigeria and Ethiopia. An expert panel (**Figure 3**), selected for their diverse expertise and experience in food safety, innovation, and business, evaluated applicants across two phases: an initial selection of 42 applicants (2 extra were included due to the strength of the innovations.) These were the pool from which the final 10 were selected to proceed for further mentorship (Milestone 3 - see [Section 2.3](#)).

Table 1 contains the demographic information of applicants from the launch and during the first selection phase of 42 participants. **Table 2** contains the evaluation criteria by which the expert panel assessed each innovation.

¹ Detailed guidance shared with applicants are on [the EatSafe Innovation Challenge website](#).

Figure 3. EatSafe's Innovation Challenge Expert Panel












 <p>Dr Richard Pluke <i>Chief of Party, EatSafe</i></p>	 <p>Caroline Smith DeWaal <i>Deputy Director, EatSafe</i></p>	 <p>Dr Augustine Okoruwa <i>Head of Country Programs, EatSafe</i></p>	 <p>Genet Gebremedhin <i>Senior Country Program Manager, EatSafe</i></p>
 <p>Teale Yalch <i>EatSafe Manager, Operations / Partnerships</i></p>	 <p>Abigail Reich <i>Knowledge Mobilisation Manager, EatSafe</i></p>	 <p>Florence Mutua <i>Scientist, ILRI</i></p>	 <p>Roberto Flore <i>Founder and manager, DTU Skylab FoodLab</i></p>
 <p>Charlotte Pedersen <i>Senior Advisor, GAIN Nordic</i></p>	 <p>Françoise Cattaneo <i>Programme Associate, IFSS</i></p>	 <p>Ritta Shine <i>Global Coordinator, SBN</i></p>	

Table 1. Applicant demographic information

	APPLICATIONS N = 751	FIRST PHASE N = 42
GENDER		
Male	73 % (N=554)	58 % (N=23)
Female	26 % (N=196)	48 % (N=19)
COUNTRY		
Nigeria	93 % (N=697)	52 % (N=22)
Ethiopia	7 % (N=54) ²	48 % (N=20)
INNOVATION CATEGORY		
Peer Learning Platforms	13 %	5 %
Food Loss/Waste Technologies	15 %	36 %
Processing	29 %	33 %
Sensors for Food Safety Assessment	6 %	0 %
Retailing and Packaging	10 %	7 %
Urban-Rural Linkages/Logistics	20 %	7 %
Platforms for Supply Chain Management	6 %	12 %
INNOVATION SOLUTION READINESS		
Idea	41 %	14 %
Prototype	16 %	43 %
Gaining Traction	12 %	24 %
Moving to scale	14 %	17 %
Mainstream	9 %	2 %

Table 2. EatSafe Evaluation Criteria

CATEGORY	DESCRIPTION	WEIGHT
Food Safety / Nutritional Benefit	The extent to which an innovation can be used to reduce the pathogens and contaminants at strategic points in the supply chain and improve food safety for nutritious foods in upstream and downstream activities.	40%
Adaptability to LMICs	The extent to which an innovation can be widely implemented and adopted, especially in low-resource settings and traditional markets. Give special consideration of the availability of resources in country to build and use the innovation.	35%
Scalability	The ability of an innovation to be scaled to a broad population for greater impact with a focus on vulnerable populations (i.e., women and young children). This element recognizes that there could be initial costs and risks that may hinder the scalability of the innovation. Business models should consider who their primary user will be and their ability to pay for a new product	30%
Environmental Sensitivity	The impact of an innovation around ensuring climate and environmental resilience and reducing the greenhouse gas footprint of the food system.	5%

² The discrepancy in the number of applications received is attributable to the project having a significantly higher number of partnerships in Nigeria than in Ethiopia that were leveraged for promotion e.g., incubation hubs, associations etc.

2.3. MILESTONE 3: SELECTION OF TOP 10

The top 42 finalists participated in technical workshops facilitated by the IFSS Portal technical experts. The technical workshops focused on supporting finalists to use the IFSS backcasting process to identify potential barriers, essential elements, and other solutions that will help to accelerate the positive social and environmental impact of the solutions. By the end of the technical workshops, the finalists had clearly defined “pathway-to-impact” maps (*also referred to as backcasting maps*) that outlined what, when and how they could move their solution towards a desired impact, and key stakeholders that would be critical to ensure successful implementation. The recording of the backcasting sessions can be accessed [here](#).

The backcasting maps of each finalist and an explanatory video of their map were assessed by the expert panel of judges identifying the top 10 finalists (five from each country). EatSafe highlighted [the top 10 finalists in an Agrilinks post in August](#).

2.4. MILESTONE 4: SELECTION OF TOP 6 FINALISTS

During August and September, the ten finalists went through a period of mentorship to further develop their innovations ahead of National Pitch Competitions. EatSafe selected four mentors (three in Ethiopia and one in Nigeria; **Figure 4**) to ensure that applicants received mentorship appropriate to their unique food safety issues in each country. A video summarizing the journey of the top 6 can be found [here](#).

Figure 4. EatSafe's Innovation Challenge Mentors



The mentorship process comprised of a combination of one-on-one and group sessions that covered several relevant topics. The sessions began with nutrition and food safety training that aimed to improve the finalists' understanding of basic nutrition concepts including food safety concerns in local traditional food markets. Follow up sessions focused on supporting finalists to use a food safety lens to develop viable business models that could meet the demands of any investor based on the projected growth, profitability, and sustainability of the business.

The mentoring sessions were punctuated with a visit to one traditional market in Addis Ababa (Atikilt Tera) and Abuja (Goza Market). The visits aimed to ensure finalists solicited feedback from market actors, such as vendors, and provided ideas on how they might modify their innovations to make them fit for purpose in addressing food safety challenges in the market. By the end of the mentorship process, each finalist was able to sharpen their innovative ideas into scalable business models that were unpacked into several investment facilitation documents including mini business plan, investment teaser and pitch deck.

Mentors also invited innovative business owners to mentoring sessions to share their experiences commercializing their solutions, resulting in positive networking opportunities.

- Olu Awolowo, CEO of Distrifoods Nigeria Ltd, facilitated a session on the *Basic Principles of Investment Readiness*. The session provided the background analysis of the investment ecosystem for nutrition companies, detailing the steps required to source, apply and secure funding in the nutrition space. Olu Awolowo also shared first-hand experience on his journey as a nutrition entrepreneur.
- Ife Olatayo, CEO of Soupah Foods Ltd, was the facilitator of the second advisory session which focused on *The Secrets of a Winning Pitch*. Ife, winner of the 2018 SBN Nigeria Nutri-pitch competition in Nigeria and other prestigious pitch competitions, shared her pitching “secrets” with the finalists. Ife provided insights on the critical components of a pitch deck, stage management, nerve control etc. The session was also instrumental in answering many questions raised by the finalists.
- Babajide Oluwase, CEO of Ecotutu and winner of the 2019 SBN Nigeria Nutri-pitch competition, facilitated an advisory session that provided an overview of the cold chain logistics industry, using his business model as a case study.
- Finalists in Ethiopia visited Guts Agro Industry PLC, a food processing company to understand the entrepreneur’s business model and how they are adhering to food safety standards.

2.4.1. MENTORSHIP HIGHLIGHTS FROM NIGERIA (MARKET VISIT)

In this section, Professor Ogunmoyela, Innovation Challenge Mentor, and his five mentees provide a detailed description of their experience in visiting Goza Market in Abuja on August 19. To watch a video capturing the market visit, [click here](#).

The five finalists from Nigeria had the opportunity to interact with vendors in their respective areas of interest, knowing that vendors are the potential end users of their innovations. These interactions (**Figure 5**) provided a unique and more in-depth understanding of food safety risks from the vendors’ perspectives as well as the relevance of their innovations to market realities. They were able to obtain first-hand information and gauge vendors’ willingness to adopt their innovations.

Importantly, several food safety concerns were observed in the market, including:

- **Animal inspection:** Meat sold in the market is mostly from inspected, healthy animals slaughtered at the abattoir, which is located about a 3-hour drive away from location. A veterinarian or animal scientist that is posted to the abattoir is responsible for certifying meat that can be slaughtered. However, some meat vendors that were interviewed claimed that after several years in the business, they can identify and differentiate between healthy and unhealthy cows. This is an unsafe practice as this method of detection is unreliable and exposes consumers to harmful food safety risks.
- **Post- Harvest loss:** Loss and waste is an issue for vendors of perishable products, like tomatoes and green leafy vegetables. Vendors reported that much of their produce is lost to spoilage as there is no storage or processing facility. As a result, leftover produce spoils unsold or is given away to mitigate losses.
- **Crate storage:** Tomato vendors were reluctant to adopt the use of crates recommended to ensure the wholesomeness of their produce, especially for product traveling over long distances. Vendors admitted that when conveyed in baskets, the tomatoes are squashed under pressure. While crates are often underappreciated and not culturally relevant to consumers, vendors were enlightened on the advantages that the use of crates significant

benefits, including retention of product integrity, quality and price, reusability of the crates, and maintenance of hygiene.

- **Water supply:** Water is supplied to the market through the GAIN Solar powered borehole. However, there is need, which market leaders highlighted, to educate the water vendors on keeping kegs clean and ensuring better hygiene in the surrounding areas of the borehole.

Figure 5. Photographs from Goza Market Visit



The visit to the market further highlighted the importance of the innovations to address food safety and nutrition concerns in local traditional food markets. The innovations of the selected finalists were noted to be directly relevant to the challenges of preservation, storage, quality and hygiene observed in the market, and representative of what occurs in other traditional markets in the country. Below are quotes from the finalists on their experience at the market:

“[It] gave me a first-hand experience of interacting with the vendors/customers, understand their challenges and I have seen for myself how a traditional market setting looks like in reality in comparison with my innovation.” *Tijjani Ali Lawal*

“After interacting with vendors/customers, I now have a better understanding of the market and how I need to rework my innovation designs into what will fit the needs of the traditional market. This visit answered a lot of my questions on basic food safety measures and what commitment I need to make to improve or provide a better relief to help [vendors] be more cautious about safety, reduce waste and make more profit through my innovation.” *Timilehin Oluwatoyinbo*

“The market provided an opportunity to understand how to strike a balance between impact and business. This innovation is now more practical and realistic in terms of how the traditional market can adopt the solution. I was availed an opportunity to learn specific and key resources needed for the solution...Interacting with the customers at the market provided more insights into the actual challenges encountered by the farmers and traders. It further gave credence to the challenges that my innovation seeks to address.” *Oyeyemi Fadaio*

“Food safety issues are everywhere. There is a need for more awareness on the consequences of ignoring food safety and the role traders need to play to ensure [food safety].” *Idogun Jennifer*

“The highlight was being able to establish the interaction between the bio-waste and food items that were sold as well as the rate of contamination that happens in the market. Clearly observed was the quantity of bio-waste that is sent to the dumpsites daily and how an organized biowaste recovery system will enable the utilization of these waste through conversion into a product...Other initiatives that can be added to the business model that will ensure the adoption of our biowaste recovery system easy in the market were observed. For instance, there was no prior consideration for building biowaste collection bins in the plan, but this now needs to be considered.” *Ruth Ede*

2.4.2. MENTORSHIP HIGHLIGHTS FROM ETHIOPIA (MARKET VISIT)

In this section, Firew Tafesse and his mentees describe their visit to Atikilt Tera, the largest vegetable and fruit market in southern Addis Ababa. The market is conveniently located for suppliers who come mainly from the middle Rift Valley, where many vegetables and fruits are grown, 100 km from Addis. Additional photos and video interviews of the finalists are available [here](#).

Figure 6: Photographs from Atikilt Tera market visit



Like their Nigerian counterparts, the Ethiopian finalists used the market visit as an opportunity to garner insights from vendors on the applicability of their solutions to address food safety issues in a traditional market (**Figure 6**). The following food safety concerns were observed in the market, including:

- **Market Facilities:** There have been efforts to improve the market infrastructure, such as construction of partitioned shaded stalls for vendors to sell their produce. However, it appeared the number of stalls were not enough to meet the number of market vendors. As such a number of vendors were selling their products outside of the stalls in unhygienic conditions including displaying the products on the ground that is surrounded by visibly spoiled left-over produce.
- **Waste Disposal:** Although the market has waste removal workers, the market had waste that had not been safely disposed of and had accumulated in several areas around the market. Also, livestock including cattle were roaming freely in the market to access undisposed waste.
- **WASH facilities:** The capacity of the existing toilet and sanitary facilities are by far insufficient for number of consumers visiting the market and the traders.
- **Cold Storage:** The market does not have any cold storage facilities to safely store perishable products like tomatoes.

The finalists examined their innovations and how they could be enhanced by considering the food safety challenges present in traditional market environments. Below are quotes from the finalists on their experience at the market. Please note these quotes have been edited for clarity:

“Food safety is a significant concern in traditional markets, and any solutions must take into account the market conditions, including unsanitary handling practices and inadequate market infrastructure.” *Helen Weldemichael*

“Regardless of the size of the operation, it is important to follow best practices for food safety. Adhering to food safety standards can also be a selling point for businesses that make it a key part of their business model.” *Binyam Kassa Engidasew*

“It was illuminating to see the extent of the food safety challenges that exist globally, and particularly in our country. This experience has motivated me to work even harder on this issue. By working together and striving to improve practices, we can make the food supply safer and contribute to a better world.” *Yezichalem Tessema*

2.4.3. NATIONAL PITCH COMPETITIONS IN ETHIOPIA AND NIGERIA

The National Pitch Competition of the EatSafe Innovation Challenge were convened in Ethiopia and Nigeria during the same week (**Table 3**). During both events, two speakers provided introductory remarks about EatSafe and the Innovation Challenge. A moderator then described the mentorship process and introduced both the finalists and expert judging panel (**Figure 7**). Each finalist presented their 10-minute pitch, after which a panel of expert judges conducted a question-and-answer session. Thereafter, the judges deliberated and used the competition evaluation criteria to assess the presentations. The overall winner, and 1st and 2nd runner up, are presented in **Table 4**.

Table 3. Details of the National Pitch Competitions in Nigeria and Ethiopia

	ETHIOPIA	NIGERIA
DATE	September 1	August 31
VENUE	Radisson Blu Hotel, Addis Ababa	Providence Hotel, Lagos
ATTENDEES	Physical attendees (40); Online attendees (3)	Physical attendees (37); Online attendees (27)
VIDEO	LINK	LINK
SPEAKERS	Hana Yemane, Senior Program Manager, GAIN Genet Gebremedhin, EatSafe Senior Project Manager, GAIN Dr. Firew Tafesse, Food Safety Expert, Vision Food and Agricultural Policy (F.A.P)	Dr. Abass Yusuf, Deputy Country Director/Head of Programs, GAIN Dr Augustine Okoruwa, Head of Country Programs, EatSafe Tomisin Odunmbaku, Acting National Coordinator SBN
MODERATOR	Seble Feleke, SBN Programme Associate	Mercy Olorunfemi, Project Manager, Business Support, GAIN

Figure 7. EatSafe's Innovation Challenge Judges








ETHIOPIA			
			
Delia Grace <i>Professor, Food Safety Systems, National University of Ireland / Appointed Scientist, ILRI</i>	Engidu Legesse <i>Founder of GUTS Agro Industry & SBN Ethiopia member</i>	Dr. Endale Amare <i>Researcher, Ethiopia Public Health Institute</i>	Fisseha Merawi <i>Senior Project Management Specialist, USAID</i>
NIGERIA			
			
Hadiza Joy Marcus <i>Chief of Party USAID Advancing Nutrition Project</i>	John-Paul Iwuoha <i>CEO & Visionary-in-Chief Smallstarter Africa</i>	Jane Omojokun <i>Managing Director, Nugata Consults Limited</i>	

Table 4. Top Six Finalists for EatSafe’s Innovation Challenge

COUNTRY	1 st PLACE	2 nd PLACE	3 rd PLACE
NIGERIA	Ruth Ede , Business Lead for Scratop Nigeria Limited, a company that utilizes and converts bio-waste into healthy and safe fertilizer.	Tijjani Ali Lawal , Founder of Farmspace Tech, an SME that supports smallholder farmers and fresh food produce vendors in keeping their produce fresh using cold chain innovations.	Oyeyemi Fadairo , Research Associate for Simplicx Consulting. Their innovation uses tunnel solar dryers in removing excess water present in food to reduce spoilage.
ETHIOPIA	Helen Weldemichael , Associate Professor at the Wolkite University. Her innovation seeks to advance the processing of a traditional Ethiopian dish, Kocho, by the design and development of a new hygienic and efficient processor.	Yezichalem Tessema , Managing Director of Theday Agro Industry PLC, which produces papaya powder using new fruit drying technology that reduces contamination during drying and minimizes nutritional loss.	Eyoel Legesse Arega , Director of the Food Manufacturing Business Unit at Ethio-Gabana Trading PLC. His innovation processes whole egg into a safe, nutritious powder, which can be applied in local Ethiopian stews.

During the events in both countries, additional networking opportunities arose. For instance, the Nigeria Climate Innovation Centre (NCIC) offered Ruth Ede, the first-place winner in Nigeria, an opportunity to compete for a grand prize of USD 10,000 in the ‘embryo incubation programme’ that targets young innovators operating in renewable energy space.

Figure 8. National winners being awarded in Nigeria (left) and Ethiopia (right)



In Nigeria, certificates and awards were presented by Laurie Rushton, Reproductive, Maternal, New-born and Child Health and Nutrition Division Director USAID Nigeria; in Ethiopia awards were presented to winners by Genet Gebremedhin, EatSafe Senior Project Manager, GAIN. (Figure 8).

2.5. MILESTONE 5: SELECTION OF TOP 3 FINALISTS

In partnership with the Danish Technology University (DTU), EatSafe organized a four-day immersive learning experience in Copenhagen for the top six finalists in October. The finalists were connected with technical experts that could support them in preparing for the Global Finale and providing technical feedback on how they could improve their solutions. Finalists were invited to keep a journal to record their thoughts and ideas throughout their time in Copenhagen.

Journals submitted by two finalists, Ruth Ede and Oyeyemi Fadairo, chronicle each day of their time in Copenhagen and are featured in [Appendix 1](#).

Day 1: Finalists visited [Food Nation](#), a non-profit, public-private partnership focused on innovative, sustainable and effective food production in Denmark. They learned about the notable advancements in food safety in Denmark including the [Danish Smiley Scheme](#) that informs customers on the compliance of food establishments to food safety regulations. Finalists were then paired with peers from other countries to explore the city and talk to business owners about their experience with the Danish Smiley Scheme. **Figure 9** contains photographs from these experiences.

Figure 9. Photographs from Day 1 of the immersive learning experience



Mie Ole Lauritzen, Head of Business Development and Partnerships at Food Nation, explaining the history of food safety in Denmark



Smiley Rating for Food Stall at the Torvehallerne Food Market

Day 2: Hosted by [DTU Food Skylab](#), finalists were matched with technical experts working in the area related to their innovation (**Figure 10**). The experts assessed each of the finalists' solutions and provided recommendations to improve their technical design. The entrepreneurship coaches, Peter Ottesen, Katrine Maarlev, and Michael Lauridsen from DTU Skylab, gave one-hour coaching on pitching techniques, to help the finalists practice for the next day's competition. During lunch, the finalists also attended a talk by one of the experts, Francesco Rosati, focusing on developing [sustainable business models](#). In the afternoon, finalists practiced their pitches, which were professionally filmed. [Video pitches](#) could also be used by finalists as part of their promotional materials. **Figure 11** showcases photographs from the day.

One finalist spoke about the experience, saying:

"...I learned from Beatriz about the present research on controlled composting for organic fertilizer production, and she sent me documents and research papers for an in-depth study. My session with Thomas was outstanding; I learned a lot about managing the nitrogen in my production process and keeping my quality high and results consistently. He also told me what to ignore and sent me books to study to gain more knowledge..."

Figure 10. Business Coaches and Technical Experts



Peter Conrad
Ottesen

*Innovation Partner,
DTU Skylab*



Katrine Kamph Slott
Maarlev

*Innovation Partner,
DTU Skylab*



Michael Stuer
Lauridsen

*Innovation Partner,
DTU Skylab*



Dr. Beatriz Gómez
Muñoz

*Assistant Professor,
University of Copenhagen*



Dr. Aberham Hailu
Feyissa

*Assoc. Professor, DTU
National Food Institute*



Dr. Sebahattin Serhat
Turgut

*Post Doc, DTU National
Food Institute*



Dr. Egon Bech
Hansen

*Professor, DTU
National Food Institute*



Dr. Thomas Højlund
Christensen

Professor, DTU



Dr. Fredrik Haglind

Assoc. Professor, DTU



Dr. Francesco Rosati

Assoc. Professor, DTU

Figure 11. Activities at DTU



Dr. Sebahattin Serhat Turgut in coaching session with finalists



Helen Weldemichael being filmed for her video pitch



Dr. Francesco Rosati giving a lunch time lecture on sustainable business models



Finalists receiving a tour of the DTU Sky Lab








2.6. MILESTONE 6: SELECTION OF 1ST, 2ND AND 3RD PLACE FINALISTS

Day 3 of the immersive learning experience in Denmark was the EatSafe Innovation Challenge Global Finale event. It was a hybrid format, with 57 people in attendance representing academia, the private sector, governments, and NGOs, and 335 people who joined virtually. Richard Pluke, Chief of Party, EatSafe, provided [opening remarks](#). Caroline Smith DeWaal, Deputy Chief of Party, EatSafe introduced three experts, Dr. Tine Hald, Dr. Sara Monteiro Pires and Dr. Simon Botwig, who presented their expertise and participated in a panel discussion (**Figures 12 and 13**). Photos from the event can be found [here](#), and the event video is available [here](#).

Figure 11. Expert panel discussion



Figure 12. Guest presenters and judges at EatSafe Innovation Global Finale Event

JUDGES			
 <p>Dr Richard Pluke <i>Chief of Party, EatSafe</i></p>	 <p>Roberto Flore <i>Founder and manager, DTU Skylab FoodLab</i></p>	 <p>Delia Grace <i>Professor, Food Safety Systems, National University of Ireland / Appointed Scientist, ILRI</i></p>	 <p>Amie N'Dong <i>Director and co-founder, Social Vanilla</i></p>
GUEST PRESENTERS			
 <p>Dr. Tine Hald <i>Professor, DTU National Food Institute</i> <u>The Burden of Unsafe Foods in the Global Food System</u></p>	 <p>Dr. Sara Monteiro Pires <i>Sr. Researcher, DTU National Food Institute</i> <u>Risk-Benefit Assessment and Its Application in Food Safety Policies</u></p>	 <p>Dr. Simon Bolwig <i>Assoc. Professor, Roskilde University</i> <u>Implementing Circular Bioeconomy and Digital Solutions for Resilient Societies</u></p>	

After a highly competitive pitch session, judges (see **Figure 13**) convened to select three winners, with the first-place winner set to receive USD \$10,000, and second and third places being awarded USD \$5,000 and USD \$3,000 respectively. Helen Weldemichael was announced as the first-place winner for her mechanized processing innovation that improves the safety and increases efficiency of processing enset, which is a staple food to about 20 million Ethiopians. EatSafe published a [press release](#) announcing her win. Upon her win, Helen said:

“It has been a great opportunity to represent my country at such a global event. I would like to express my gratitude to those who led the event and support providers for giving me a chance to deliver safe food to my community by reducing the workload of women.”
Helen Weldemichael

In second place was Oyeyemi Fadairo, whose innovation was an inflatable solar tunnel dryer to prevent food spoilage, while Ruth Ede came in third for her innovation that converts bio-waste from traditional markets into high-yield organic fertilizer.

Day 4: On the final day of the four-day experience for the Innovation Challenge finalists, all were invited to attend the “Healthy, Safe, and Sustainable Foods of the Future Conference” hosted by DTU National Food Institute. The conference convened 300+ researchers, students, food businesses, and industry organizations. The finalists presented their innovations as posters, which they had developed during the week. The posters can be found [here](#) (**Figure 14**).

Figure 13: Presentations at Healthy, Safe, and Sustainable Foods of the Future Conference



Yezichalem Tessena (Ethiopia)



Oyeyemi Fadairo (Nigeria)



Ruth Ede (Nigeria)



Eyeol Legesse Arega (Ethiopia)



Tijjani Ali Lawal (Nigeria)



Helen Weldemichael (Ethiopia)

3. CONCLUSION

The EatSafe Innovation Challenge was successful in sparking the engagement of entrepreneurs and innovators, who are eager to use their skills and resources to create scalable, sustainable solutions that will improve food safety in traditional markets. With the right support and funding, these ideas have the potential to make a real impact and bring about positive change. GAIN and SBN are committed to helping the challenge winners take the next steps in their journey, providing technical assistance and connecting them with additional resources. The winners will use the technical guidance and funding they received through the challenge to invest in their ideas and turn them into a reality.

- **First Place Winner**, Helen Weldemichael will invest USD \$10,000 toward initiating the commercial production of her processing equipment by developing four Enset processing machines that can be utilized by community associations including local women's groups.
- **First Runner Up**, Oyeyemi Fadairo will invest USD \$5,000 toward locally fabricating an improved model of the Inflatable Tunnel Solar Dryer that maximizes the drying efficiency of the equipment and food safety of dried agricultural produce sold in traditional markets.
- **Second Runner Up**, Ruth Ede will invest USD \$3,000 in purchasing a composter for converting biowaste into organic fertilizer, which is essential in improving the waste conversion capacity of her solution.

EatSafe is excited to continue building on the success of the EatSafe Innovation Challenge and to explore opportunities with partners to bring even more innovations to life.

4. REFERENCES

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5. APPENDICES

5.1. APPENDIX 1: TRAVEL JOURNALS OF SELECT PARTICIPANTS

	RUTH EDE	OYEYEMI FADAIRO
GOAL SETTINGS	<p><i>What goals have you set out for the week?</i></p> <ul style="list-style-type: none"> • I will see how open markets where fresh food crops and vegetables are sold looked like • I will understand the biowaste recovery and utilization system outside Nigeria • I will see research technological innovations around organic fertilizer and food crop production • I will learn practical business activities in food safety focused enterprises • I will keep beautiful memories in pictures and videos with everyone who came to Denmark for the Eatsafe Global Challenge • I will win the prize and invest in Scratop 	<ul style="list-style-type: none"> • Effective participation in activities lined up in travel itinerary • Gain new insights on how food safety is achieved in the Danish markets • Share my solution and learn from technical experts on areas to improve.
DAY 1 ACTIVITIES (10TH OCTOBER)	<p><i>What are the key takeaways from the visit to FoodNation?</i></p> <p>My visit to the food nation will not be forgotten in a hurry, the intentional actions, the growth rate, and consistency in maintaining and improving the food system in the country was a very impressive takeaway. I understood that it took more than regulations to make food safe, the people or citizens play a vital role in making those regulations functional and a culture for everyone who wants to be reputable in the food business. The smiley face evaluation was very interesting too and the meticulous documentation of the country's growth process is very commendable</p>	<p>The power of collaboration: Collaboration among farmers was a key driver in Denmark becoming a Food Nation.</p> <p>Consumer awareness: The awareness of the consumers about food safety, in addition to food regulations, make food businesses obliged to imbibe and maintain a healthy food safety culture to stay in business.</p>

	<p><i>Any interesting highlights from the city you would like to share?</i></p> <p>The city was beautiful and hygienic, I admired the measures that were put in place for proper waste collection and how food was handled in the open market.</p>	<p>The drive for a cleaner and better environment can be felt; the use of eco-friendly packaging materials, efficient waste disposal facilities as well as the lanes, parks and facilities that makes the use of bicycles an effective and major means of transportation are very laudable.</p> <p>The conspicuous positioning of the smileys by the food vendors and many interesting sights (e.g., the little mermaid) during the boat ride were very pleasant experiences.</p>
<p>DAY 2 ACTIVITIES (11TH OCTOBER)</p>	<p><i>What key concepts did you learn during training and how will you incorporate them into developing your innovation?</i></p> <p>I learnt two key concepts during the general training, one was the traditional business model and the sustainable business model. For sustainability to be achieved, the business must operate with the future in mind, and this applies to the future environment, raw materials used, and business processes involved in the business and how today's operational activities affect it. From the personal training with the three mentors, it was specific about organic and bio fertilizers, I will be incorporating a nitrogen saving technique Professor Thomas explained using my controlled fertilizer formula and our raw materials (biowaste) and I'll go through the papers and research from Prof. Thomas and Dr. Beatrice. I will keep in touch with Mr. Peter as we keep trying his marketing and sales advice for our Go to market strategy.</p>	<p>My engagement with the technical experts made me consider possible areas of improvement in my innovation, such as the incorporation of micro-filters to prevent contamination of the foods being dried and effect of bio-properties of certain foods on the rate of drying.</p> <p>The business development session gave insights on how to relate and effectively communicate impact of the solution to potential investors.</p>
<p>DAY 3 ACTIVITIES (12TH OCTOBER)</p>	<p><i>What did you learn from conference? Who did you meet?</i></p> <p>I learnt of the present heavy chemical presence in the African soil and water Bodies, specifically Nigeria and how it affects Nutrition. I also learnt of the various interventions and research for Nutrition and food safety going on in the world. The section on systemic approach to solving world problems was a great one, I learnt that everyone has a quota in the achievement of the set societal goals and the SDGs</p> <p>I met a Plant and Environmental scientist and we spoke of the possible causes of the heavy metals and what could be done to systematically eradicate them</p>	<p>There were many learning points today, some of them include: The need for more innovative approaches in sourcing reliable surveillance data from LMICs to inform realistic solutions to the problems in the food systems. [Another one is] the importance of bridging the gap between scientific findings and acceptance by the target consumers, through effective communication and motivation as discussed in the presentation on "Risk-Benefit Assessment and its Application in Food Safety Policies" and the panel session. [I also saw] the need to address possible food safety implications which may arise as we transition into more sustainable diets, was</p>

		<p>also emphasized. [I learned] about different green and digital innovations used in Denmark to mitigate the challenges with food surpluses and waste.</p> <p>I also had an interesting conversation with one of the judges, Dr Delia Grace from ILRI, on how digital technologies are being employed to transform food systems.</p>
<p>DAY 4 ACTIVITIES (13TH OCTOBER)</p>	<p><i>How was your pitching session?</i></p> <p>The pitching session was good, and I appreciated the quality of questions that were posed by the judges</p> <p><i>What did you learn from conference? Who did you meet?</i></p> <p>I learnt a lot from the conference, from the paper presentation on insects and their edibility, to the way the University is harnessing innovative ideas of students and growing it into businesses and companies. The transition into entrepreneurship was amazing but most importantly was the solution these students brought to real time and life challenges and the innovations they make available for their society. It shows that with adequate mentorship, sponsorship and management, students will study for impact.</p>	<p>I would say it's an experience I am grateful for. I had the opportunity to share my solution, improve on presentation and public speaking and connect and interact with the audience.</p> <p>The importance of improving sensory parameters, particularly taste, of sustainable diets and plant-based foods through processes, such as fermentation to increase their appeal and acceptability to consumers. This was emphasized by the professor, Tim Hobley in his speech on "Surfing the wave of possibilities". I also found the speech on "Green technologies-based approaches for the food processing" interesting, where Ohmic heating by foods was shown to achieve similar results as energy-intensive HTST process. It is interesting to see from many of the presentations how we are now discovering solutions in places that have always existed with us all along.</p>
<p>ADDITIONAL INSIGHTS</p>	<p><i>Did you receive any feedback from visitors to your exhibition?</i></p> <p>We interacted on the benefits of my product to agriculture and the environment in addition to how the solution contributes to chemical-based food crop production and reduce the direct introduction of heavy metals through chemical fertilizers.</p> <p><i>Do you feel you accomplished the goals you set at the beginning of the week?</i></p> <p>About 60% of the goals, I set was achieved, and the remaining 40% came as lessons and areas for improvement that I was exposed to and will apply to my innovation on my return to Nigeria.</p>	<p>Most of the visitors received at my exhibition stand were curious about the application of the solution and one of them suggested its usefulness in the Caribbean where the climate conditions may be comparable to some parts of Africa.</p> <p>Yes, I participated actively in the scheduled activities, learnt about how food safety is achieved in Denmark and learnt a lot from the experts.</p>

What did you learn this week that will help you to improve food safety through your innovation?

I learnt of the precision organic fertilizer production process and was introduced to the on-demand bio- fertilizer production and sales model in the country. I was motivated to do in-depth research on heavy metals in food crop production and write a paper on it, this is to improve the production of safer and healthier food in Nigeria.

I learnt about more ideas that can be implemented in other steps of the food chain that are linked to my innovation, such as the integration of micro filters in the design and the selection of appropriate packaging material for the dried products.

Please share any other highlights from your week.

The tour we had in the DTU Skylab was very educational, it exposed me to the possibilities that exist in a functional school system and how easy business and innovation can thrive when passion has support. I commend the Denmark Technical University and the government for the amazing learning platform.

I found the “Too good to go” model fascinating. Unfortunately, I couldn’t get to test it. I see it as a win-win solution for the business owners, the customers, and the environment. It’s a very commendable innovation that I will explore on my return.