

# Feed the Future Business Drivers for Food Safety – Cool ‘n Clean Approach in Senegal

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Wednesday, June 9<sup>th</sup>, 2021



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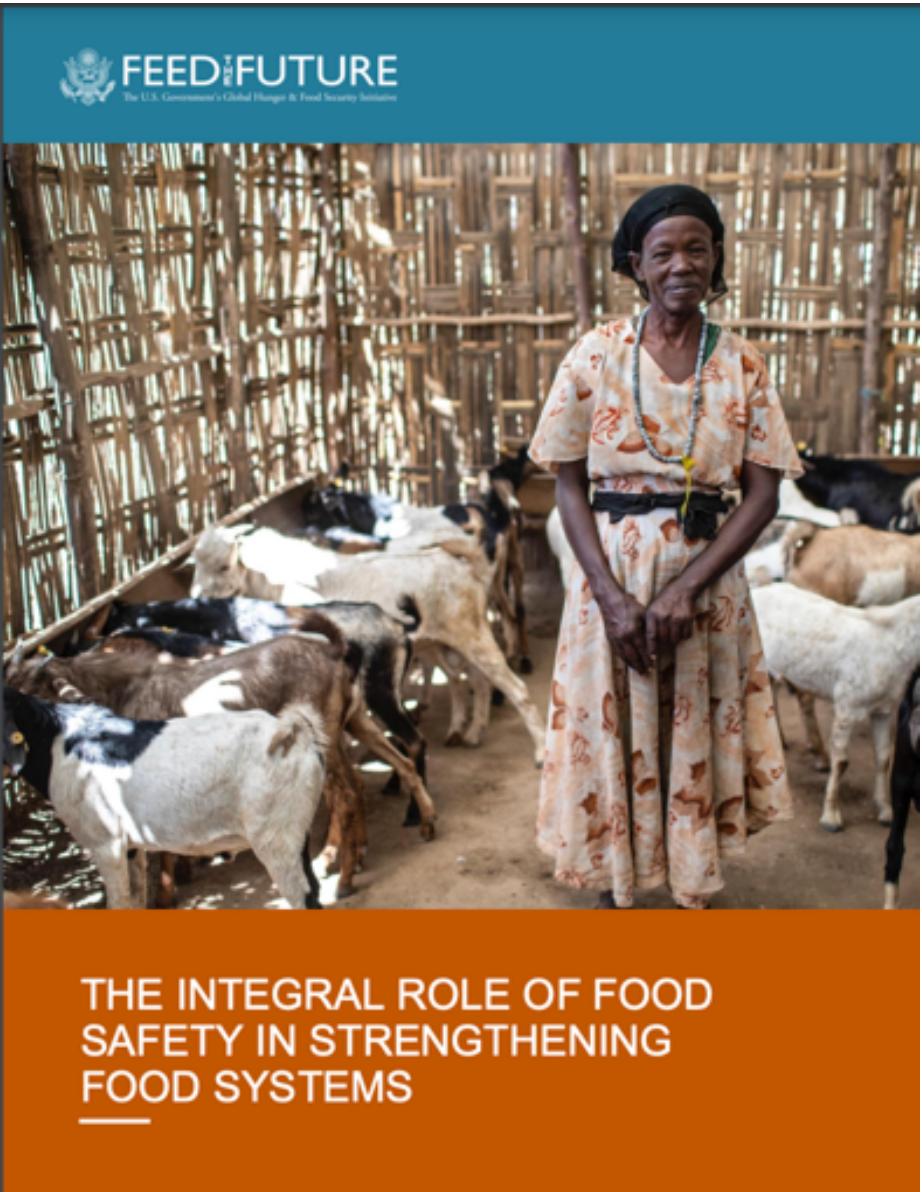
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Feed the Future ensures that food consumed around the world is safe, healthy and nutritious.

#WorldFoodSafetyDay

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**THE INTEGRAL ROLE OF FOOD SAFETY IN STRENGTHENING FOOD SYSTEMS**

**USAID Food Safety Technical Brief**

# Thoric Cederstrom, Director of Research and Learning, Food Enterprise Solutions

Thoric Cederstrom is a champion of market-driven approaches to reducing hunger and malnutrition. He is experienced in designing, implementing, and evaluating programs that engage public, private, and civil-society institutions and key actors in building sustainable, commercially-viable, safe, and nutritious food systems. A recognized research analyst and program strategist, Thoric's expertise includes developing cash-based interventions for rural livelihoods, conducting participatory food security assessments, designing stakeholder training and capacity building programs, and conducting anthropometric surveys. From his roots growing up on a family dairy farm in Missouri, Thoric went on to work extensively in Latin America, Africa, Central Asia, and South Asia. He holds degrees in Development Anthropology, Medical Anthropology, Agricultural Economics, and Archaeology.



# **Mariama Dieng, BD4FS Senegal Program Director, Food Enterprise Solutions**

Mariama Dieng is an expert in business and development with fifteen years of professional experience that consist of managing gender-sensitive development programs covering several West African countries under donor funding. She has overseen regional agriculture and fisheries micro and small enterprise programs aiming to raise revenues and better market access through quality improvements. Prior to joining FES, she served as the West Africa Fisheries Policy (REPAO) Program Manager for ENDA Tiers Monde. She also collaborated with the National Confederation of Employers of Senegal as Advisor in Business Development Services before her most recent position with the Japan International Cooperation Agency as the Program Officer for the agriculture and fisheries team and Country Officer for The Gambia.



# Tawanda Muzhingi, Adjunct Professor, North Carolina State University

Tawanda Muzhingi is a nutritionist, food scientist, and development expert based in Research Triangle Park area in North Carolina.

Tawanda is an adjunct professor in the Department of Food, Bioprocessing & Nutrition Sciences at North Carolina State University, Raleigh, NC and an Innovation Consultant with RTI, Durham, NC. He also worked in the CGIAR system with the International Potato Center (CIP) in Nairobi Kenya as a Senior Scientist and Flagship Leader in CGIAR Global Research Program on Roots, Tubers and Banana (RTB) and in his native country Zimbabwe with the International Maize and Wheat Improvement Center (CIMMYT). Tawanda is supporting Food Enterprise Solutions (FES) as a short-term Food Safety Consultant for the Feed the Future Business Drivers for Food Safety (BD4FS), USAID funded project.



# **Business Drivers for Food Safety (BD4FS) Cool ‘n Clean Approach in Senegal**

**9 June 2021, Agrilinks Webinar**  
**Thoric Cederstrom, Director of Research and Learning**  
**Food Enterprise Solutions (FES)**

## About BD4FS

**Objective:** BD4FS is building the capacity of Growing Food Businesses (GFBs) and supporting their adoption of food safety practices and technologies to reduce the risk of food contamination

**Focus Countries:** **Senegal, Nepal, and Ethiopia** (underway); **Rwanda** (pending USAID Mission concurrence)

**Project Duration:** 1 June 2019 – 30 May 2024



Photo Credit: Jake Lyell

## What are “Growing Food Businesses”?

**Growing Food Businesses (GFBs)** are small- to medium-sized local food businesses that are influential actors in the food system with a desire to grow and who embrace food safety as an integral part of their business strategy.

BD4FS aims to strengthen capacities of these key actors and make them agents of positive change in the effort to reduce the risk of food contamination, mitigate pre-consumer food loss, and strengthen the overall food system.



A BD4FS GFB partner, Oumou Ndiaye Diop – the owner of Tuti Tuti, and her fruit compote. Photo by Aminata Diop.

## Temperature Control and Hygiene for Perishable Foods

- Temperature control and food hygiene are vital for keeping perishable foods safe as they move through the food system.
- Disruption of the cold chain and poor hygiene practices during food handling at any point of the supply chain – production, processing, transport, storage, and final retail – can lead to spoilage and contamination.
- This adversely affects the safety and nutritional value of food, as well as the shelf-life, quality, and profitability of food products.



Fresh tomatoes at Mile 12 Market, Lagos, Nigeria. Photo by Roberta Lauretti-Bernhard..

## BD4FS Cool 'n Clean Approach

- BD4FS takes a Cool 'n Clean approach to address food safety challenges associated with temperature control and cleanliness.
- Our focus is on nutrient-dense, perishable foods including produce, meat, poultry, fish, dairy, and eggs.
- We have a 5-step collaborative and integrated approach in which we work with local food businesses, food safety experts, USAID Missions, and other implementing partners to co-discover barriers and co-design solutions for businesses to adopt safer food practices and technologies.



- With this collaborative process, improved practices and technologies can be tailored to local needs.
- Cooling technologies can be low tech, for example shade cooling; and cleanliness is much broader than hygiene, also including physical and chemical contamination.

## BD4FS Cool 'n Clean Approach in Senegal

### STEP I – Co-Discovery:

- Held co-creation meetings with USAID Mission to prepare and undertake food safety assessment.
- Established a team of on-the ground experts in project oversight, communications, business engagement, and food safety.
- Completed a food safety situational analysis (FSSA) to identify food corridors, food safety challenges, and business constraints and opportunities.
- Undertook subsequent focused studies based on FSSA findings to better understand challenges and to identify potential Growing Food Businesses partners.



## Senegal Discovery: Food Safety Situational Analysis

**Activity Dates:** March – July 2020

**Methods:** Desk study, site visits, and interviews

### Key Findings:

- The FSSA revealed that in Senegal, like in many Feed the Future countries where USAID is working, food systems lack adequate temperature control and cleanliness technologies and practices throughout the supply chain.
- The key factors impacting food safety in Senegal include:
  - Cleanliness (including toxic contamination)
  - Cold Chain Logistics
  - Access to Finance



Sardinella crates being loaded into a truck in Joal, Senegal. Photo by Juan Vilata-Simon

## Senegal Discovery: FSSA Follow-on Activities

BD4FS undertook the following activities to learn more about **cleanliness, cold chain logistics, and access to finance** challenges identified from the FSSA:

- Characterization of Senegalese perishable food markets and their cool and clean conditions through crowd-sourced data
- Evaluation of Water, Sanitation and Hygiene (WASH) conditions at seafood processing sites through site visits and interviews
- Assessment of traditional fish smoking practices that produce polycyclic aromatic hydrocarbons (PAHs), a toxic contaminant, through focus groups with women fish processors
- Financial landscape assessment to understand barriers that food businesses face in accessing financing to implement better food safety practices
- Consumer survey to understand awareness of PAHs in smoked fish products
- Evaluation of consumer perceptions of food safety and storage through crowd-sourced data

## Senegal Discovery: GFB Key Constraints to Food Safety

- There is strong food safety capacity in Senegal concentrated in the export sector, driven by profit and markets that have import regulations for food safety.
- There are significant food safety challenges around knowledge, awareness, and implementation including a lack of:
  - Access to clean water, electricity, and sanitary work conditions
  - Hygienic and safe practices for food handling and processing
  - Adequate cooling practices and technologies throughout the food system
  - Access to affordable financing for GFBs to implement cool and clean practices
- There is a wide range of GFBs; and challenges depend on the type of businesses, size and scope, and where they are in the food system.

## Summary and Next Steps

- BD4FS focuses on perishable, nutrient-dense foods and Cool 'n Clean practices and technologies to improve food safety of these perishable foods.
- Through our co-design and co-creation approach with USAID, GFBs, and other local partners, we are collectively finding relevant and applicable solutions for food safety challenges in Senegal.
- Findings from studies presented today are summarized in *Technical Learning Notes* that can be found on the BD4FS Agrilinks page.
- We are now exploring with GFBs how we can adapt and disseminate existing Senegalese food safety capacity for export markets to local and regional markets.

# **Business Drivers for Food Safety (BD4FS)**

## **Cool ‘n Clean Business Co-Design**

### **Strategy in Senegal**

**9 June 2021, Agrilinks Webinar**  
**Mariama Samb Dieng, Senegal BD4FS Program Director**  
**Food Enterprise Solutions (FES)**

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A BD4FS GFB partner, Oumou Ndiaye Diop – the owner of Tuti Tuti, and her fruit compote. Photo by Aminata Diop.

## What are “Lead/Ambassador Firm”?

**Lead/Ambassador Businesses** are larger firms that are interested in partnering with BD4FS to support smaller companies that are part of their supply chain.

## BD4FS Cool 'n Clean Approach in Senegal

### STEP 2 – Co-Design:

- BD4FS is working with GFBs to co-design solutions to food safety challenges in Senegal that were identified in the Discovery Phase.
- We are doing this by inviting Senegal's GFBs and Ambassador firms to engage in a culture of food safety during this challenging Covid19 pandemic and beyond.

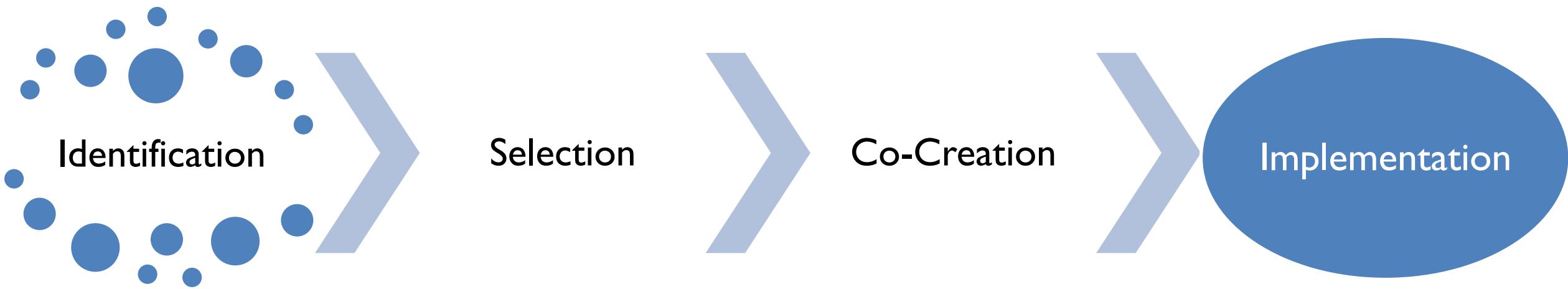




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## Cool 'n Clean Business Co-Design Strategy



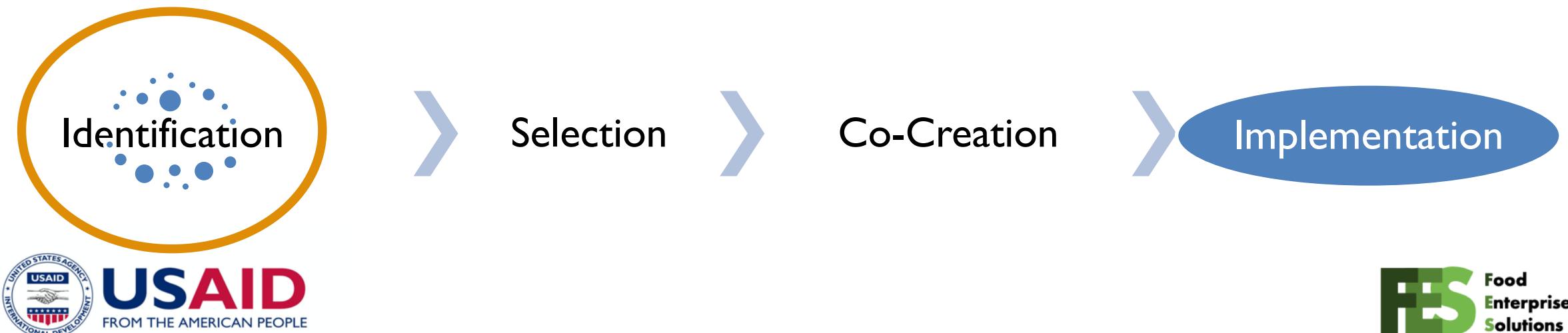
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## BD4FS Cool 'n Clean Business Co-Design Strategy

### Identification:

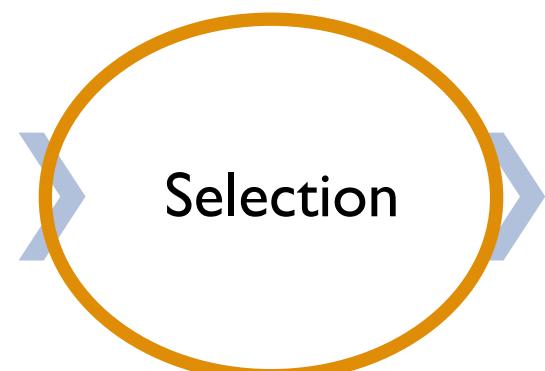
- BD4FS food safety situational analysis (FSSA)
- FSSA subsequent focused studies (WASH, PAH, and FLA)
- BD4FS Senegal team network



## BD4FS Cool 'n Clean Business Co-Design Strategy

### Selection:

- Request for Expressions of Interest (EOIs)
- Selection Criteria (business structure, production, marketing, quality management, innovation, reputation, etc.)
- Due diligence
- MOU



Co-Creation



## BD4FS Cool 'n Clean Business Co-Design Strategy

### Co-Creation:

- Dialogue
- Seminars
- Surveys
- Workshops

### Aiming to:

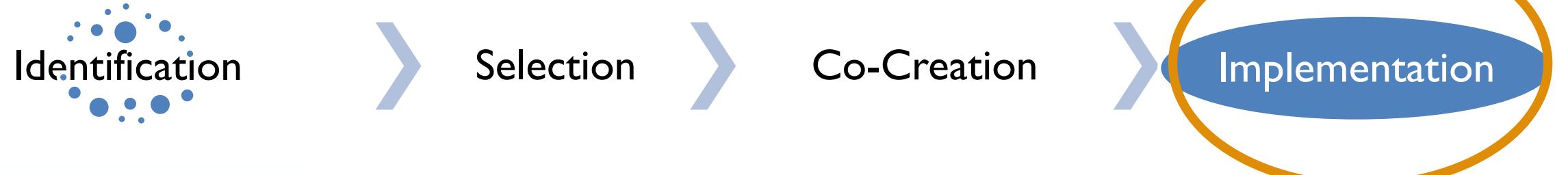
- Identify barriers and enablers to adopting improved food safety practices
- Co-create effective solutions ensuring the supply of safe and nutritious food to the domestic market



## BD4FS Cool 'n Clean Business Co-Design Strategy

### Implementation:

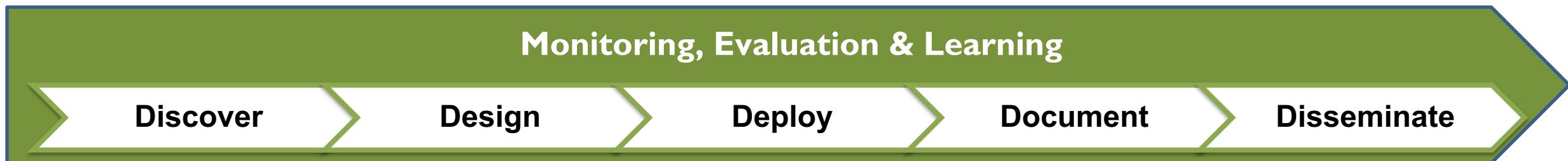
- GFBs implement agreed upon food safety solutions
- BD4FS:
  - Provides trainings geared to GFB needs
  - Facilitates technical, business, and financial partnerships, among other services



## BD4FS Monitoring, Evaluation & Learning (MEL)

MEL is integrated throughout the BD4FS 5-Step process, including during Co-Design as follows:

- Identify food safety indicators and metrics that are relevant and of interest to GFBs
- Share self-monitoring tools with GFBs
- Collect data and monitor progress
- Document our Learning agenda
- Adjust



## BD4FS Cool 'n Clean Awareness Campaign

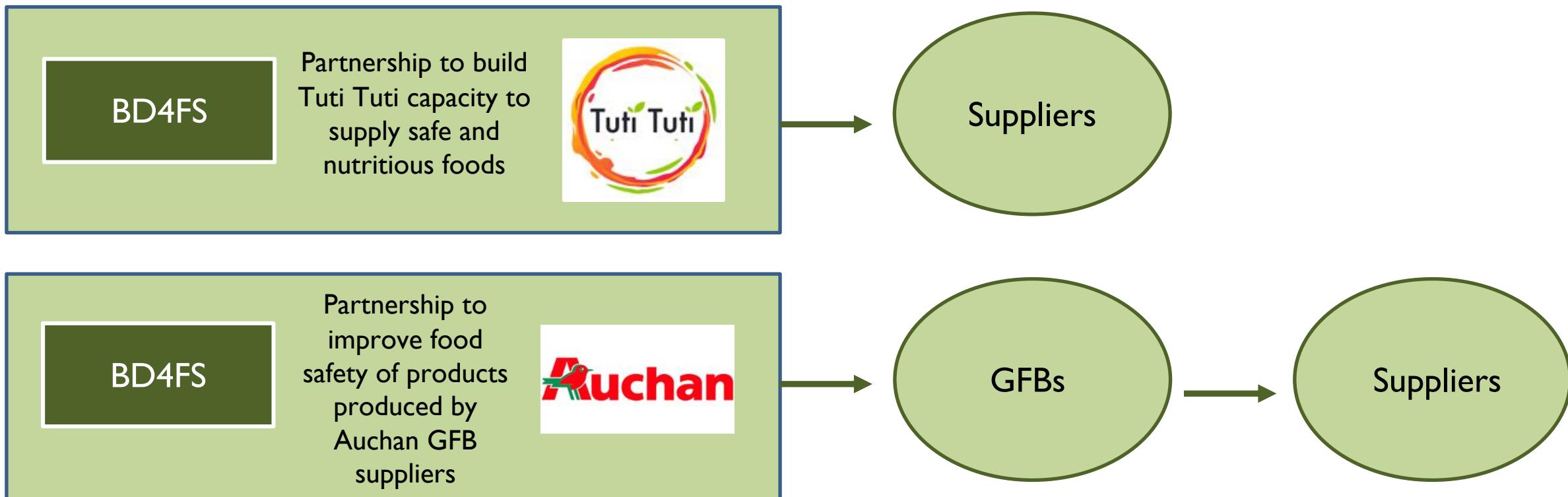
BD4FS is raising food safety awareness among businesses and consumers in Senegal so that they can drive a culture of food safety.

Some activities to raise awareness include:

- Cross-sector workshops that involve GFBs, regulatory agencies, and other relevant organizations on food safety topics such as HACCP, access to financing for food safety, etc.
- Food Safety mobile messaging (mSafe-Foods)
- Mobile app competition among youth for the development of a food safety learning app
- Communication about BD4FS



## Case Studies: Tuti Tuti and Auchan



## BD4FS acknowledges the following collaborators:



**Thank you for your attention**

# Achieving Food Security in Senegal by Addressing Food Safety Concerns among Growing Food Business

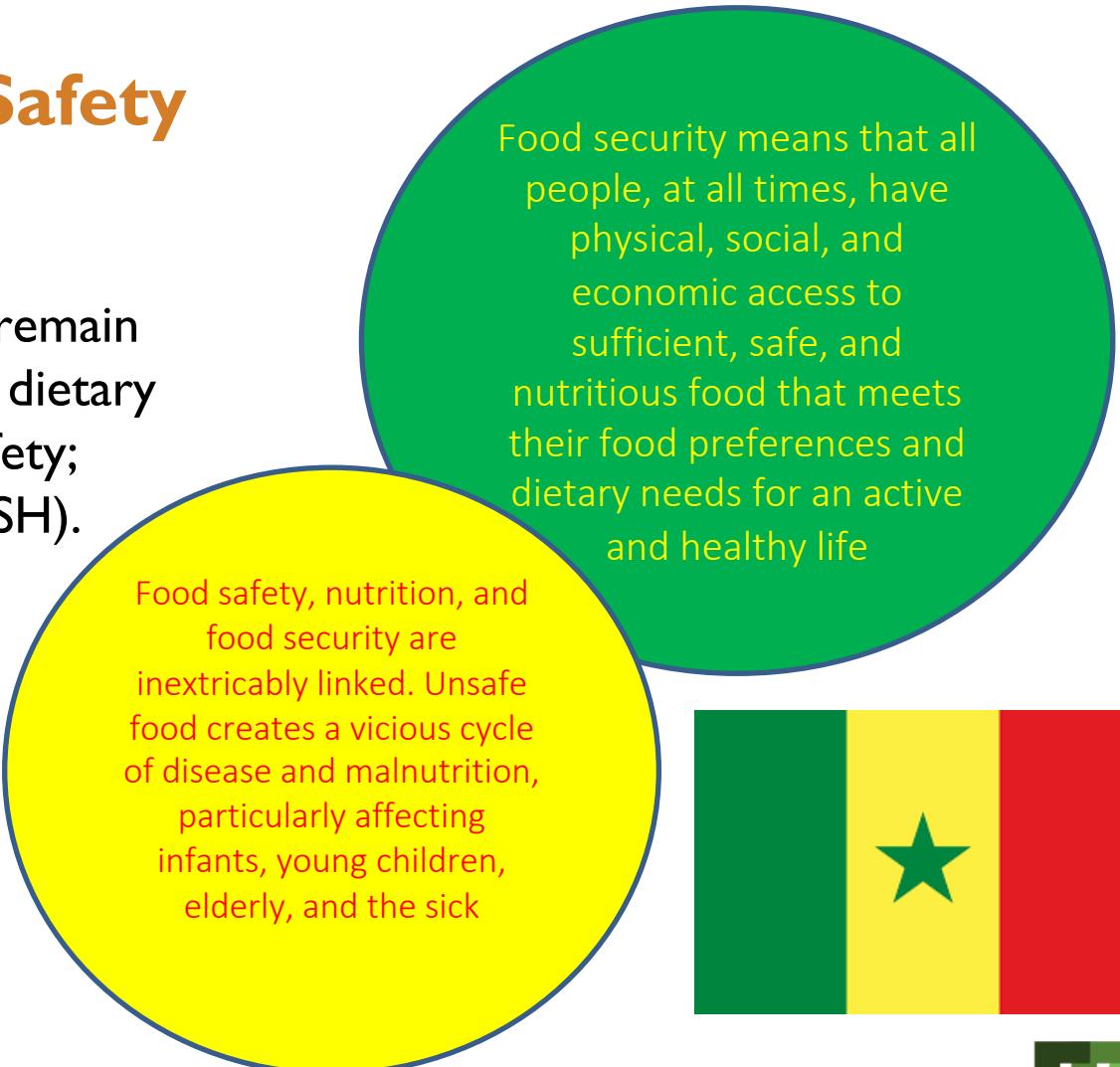


9 June 2021, Agrilinks Webinar  
**Tawanda Muzhingi, MS PhD**  
Consultant for Food Enterprise Solutions (FES)



## Importance of the Food Safety Issue in Senegal

- **Food insecurity and undernutrition** remain critical challenges, exacerbated by lack of dietary diversity and failure to adhere to food safety; poor water, sanitation, and hygiene (WASH).
- **Micronutrient deficiencies**
- **Poor complementary feeding**
- **Poor maternal nutrition**
- **Double burden of malnutrition**



## The Burden of Food Borne Diseases (FBD) in Low Income Countries (Senegal)

- An estimated 600 million – almost 1 in 10 people in the world – fall ill after eating contaminated food and 420 000 die every year, resulting in the loss of 33 million healthy life years (DALYs).
- Biological hazards cause 97% of the total FBD burden in LMICs.
- Fresh foods such as fruits, vegetables, and animal-source foods are among the most nutrient-rich foods; mounting evidence suggests that they are often the most contaminated foods (Hoffmann 2017).





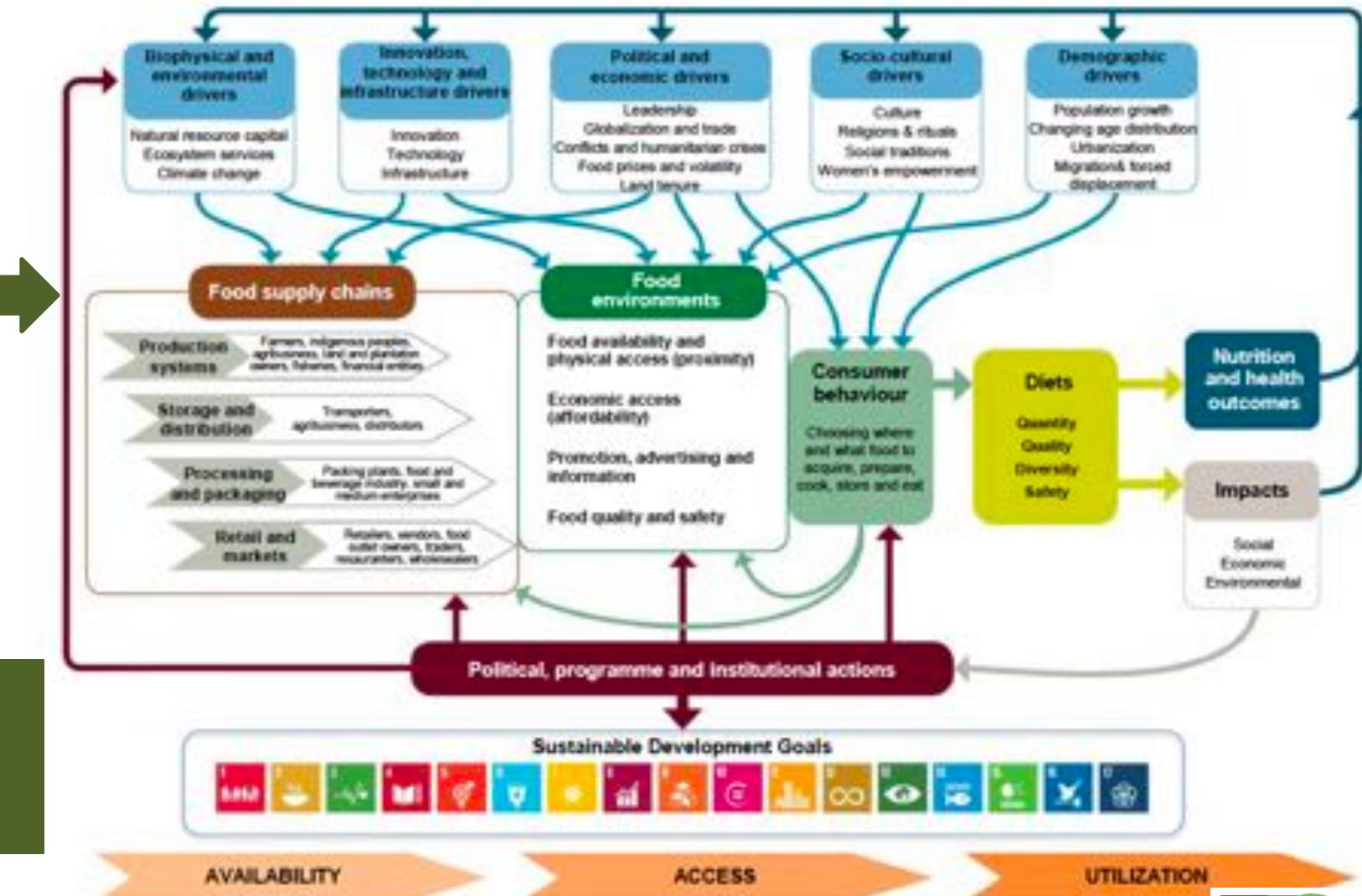
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A food system is the full set of processes, activities, infrastructure, and environment that encompass production, processing, distribution, waste disposal, and food consumption.

A4NH CGIAR, Flagship I: Food Systems for Healthier Diets

FES  
Focus  
Area



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HLPE. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

**FES** Food Enterprise Solutions

## Good Collaboration Between Governments, Producers and Consumers Helps Ensure Food Safety

**Traditional food systems**, consumers rely on minimally processed seasonal foods, collected or produced for self-consumption or sold mainly through informal markets.

**Mixed food systems**, food producers rely on both formal and informal markets to sell their crops.

- Highly-processed and packaged foods are more accessible, physically and economically, while nutrient-rich foods are more expensive.
- Food safety and quality standards exist but may not always be followed by producers.



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## Challenges in Senegal to Improve Food Safety among GFB

- GFBs are highly involved in the production, processing, and retailing of fruits and vegetables, animal-source foods, and cereals and legumes in Africa.
- Food system across Senegal are largely informal and unregulated, pinpointing the source of food illness, critical to its eradication, is challenging.
- Complying with national food regulation requirements in export markets can be challenging for smaller producers in developing countries and emerging economies.
- Many GFBs in Senegal, involved as middlemen, import a significant share of their population's food supply.
- GFBs may be intimidated by the implementation of HACCP systems or its pre-requisite program.

## Innovations in Food Safety Management Systems for GFB

### Safer Food, Better Business (SFBB)

SFBB is an innovative and practical approach to food safety management. It has been developed to help small businesses comply with food hygiene regulations in the UK and to put into place food safety management procedures.

A food safety management pack has been developed by the Food Standards Agency to help restaurants, cafés, takeaways, and other small catering businesses implement and train staff on SFBB, helping businesses to comply with food hygiene regulations.

- Comply with food hygiene regulations
- Make food safely
- Train staff
- Protect business' reputation
- Improve your business, such as by reducing food waste



## Utilizing Mobile Phone Technology in Senegal

- BD4FS is undertaking an mSafe-Foods mobile messaging campaign that will target food safety messages towards women fish processors in Senegal
- BD4FS initiated a competition in Senegal to develop a food safety mobile learning app – the app will be developed by youth entrepreneurs and will target youth.
- IFC Partners with Twiga to Boost Food Safety in Kenya, to connect smallholder farmers in rural areas to informal retail vendors in cities.



## Effect of Food Safety Training on Behavior Change of Food Handlers

- Food handlers in GFBs often have low level of knowledge on personal hygiene, food contamination, foodborne illnesses, cleaning and sanitation.
- Frequent food safety training is needed to improve knowledge and hygienic practices of food handlers.
- Food safety training is an appropriate tool for enhancing microbial safety and quality of processed foods in GFBs.





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## Gender and Youth Empowerment, Inclusion, and Food Safety among GFBs in Senegal



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