



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFSI9CA00001

Business Drivers for Food Safety Tools and Practices

February 2022

Overview of BD4FS Tools and Practices

Feed the Future Business Drivers for Food Safety (BD4FS), implemented by Food Enterprise Solutions (FES) and funded by the United States Agency for International Development (USAID), is a multi-country effort working to accelerate the adoption of food safety practices in local food systems. BD4FS partners with agri-food actors – growing food businesses (GFBs)¹ – in its Feed the Future focus countries to codesign and implement incentive-based strategies, thereby strengthening their capacities and enabling them to be agents of positive change in the effort to improve food safety, reduce malnutrition, mitigate pre-consumer food loss, and shrink overall hunger. BD4FS also aims to advance the state of knowledge and actionable research to educate and raise awareness about food safety among businesses, consumers, and implementers alike – who are all drivers of food safety.

BD4FS has developed a series of strategies and methodologies – also referred to as “tools” – for business-level assistance in food programs and for raising consumer awareness about food safety. This *BD4FS Tools and Practices* is a compilation of the eight “tools” outlined in the table below.

Tools	Brief Description
1. Business Engagement Strategy - Senegal	This strategy describes how BD4FS identifies, selects, and formalizes its collaboration with participant GFBs. This strategy was developed and initiated in Senegal and is being adapted and tailored for additional focus countries.
2. Food Safety Implementation Manual	This manual is part of a series of guidelines and training materials that BD4FS developed for educating and training businesses. This manual was developed in partnership with Bright House Training and Consulting.
3. Food Safety Audit and Checklist	This audit contains a prerequisites (PRP) diagnosis grid and food loss checklist, designed in part as an intake survey for baseline data collection among partner GFBs.
4. mSafeFood Mobile Messaging Guidelines	These guidelines describe how BD4FS is utilizing and testing a mobile-phone messaging system to disseminate food safety messages. The approach was designed in partnership with VIAMO.
5. Food Safety App Competition Guidelines	These guidelines describe how BD4FS is engaging youth in food safety through a competition to develop a smartphone-based food safety learning application.
6. Public-Private Dialogue: Guidelines for Cocreating Food Safety Regulations and Standards	These guidelines describe a series of activities that bring together the public and private sectors - to collectively improve the culture of food safety and business-led food safety certification.
7. Media Tracking Guidelines	The BD4FS Media Tracking guidelines describe how the program tracks and measures media outreach activities in its aim to raise the profile of food safety in the general public and contribute to improving the culture of food safety among businesses and consumers.
8. Food Safety Situational Analysis (FSSA) Guidelines	The FSSA guidelines describe how BD4FS maps food safety conditions, hazards, risks, drivers, and impacts in each focus country.

¹ 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.

Table of Contents

Business Engagement Strategy - Senegal

Food Safety Implementation Manual

Food Safety Audit and Checklist

mSafeFood Mobile Messaging Guidelines

Food Safety App Competition Guidelines

Public-Private Dialogue: Guidelines for Cocreating Food Safety Regulations and Standards

Media Tracking Guidelines

Food Safety Situational Analysis(FSSA) Guidelines



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFS19CA00001

Business Engagement Strategy for Senegal

BD4FS Tools and Practices

December 2021



USAID
FROM THE AMERICAN PEOPLE

www.feedthefuture.gov



This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.¹

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

¹ In developing this business engagement strategy, FES drew upon the Action for Enterprise (AFE) *Tools and methodologies for collaborating with lead firms: A practitioner's manual*, produced in 2014.

Table of Contents

BACKGROUND AND OBJECTIVES OF BD4FS IN SENEGAL	1
1.1. BACKGROUND	1
<i>About FES</i>	1
<i>About BD4FS</i>	1
1.2. MISSION AND OBJECTIVES OF BD4FS IN SENEGAL.....	1
SENEGAL GROWING FOOD BUSINESSES (GFBS)	1
2.1. DEFINITION OF GFBS – WHAT WE MEAN EXACTLY, AND HOW IT IS DIFFERENT FROM SMES OR MSMEs, AND AMBASSADOR FIRMS	1
2.1.1. <i>Presentation of the Senegalese agri-food sector</i>	2
2.1.2. <i>Growing food businesses and their products</i>	4
2.2. RATIONALE FOR BD4FS SUPPORT – WHY SUPPORT GFBS, GFB LINK TO INFORMAL (UNREGISTERED) ACTORS, BD4FS FOCUS ON POST-FARMGATE TO PRE-CONSUMER.....	5
2.3. TECHNICAL SCOPE OF BD4FS ACTIVITIES.....	5
2.4. GEOGRAPHIC SCOPE OF BD4FS ACTIVITIES – PRIORITY REGIONS AND FOOD CORRIDORS (PRODUCTION ZONES TO CONSUMPTION CENTERS).....	6
2.5. ROLE OF GFBS IN THE BD4FS LEARNING AGENDA	7
2.6. GFBS AND THE FEED THE FUTURE RESULTS INDICATORS	8
BD4FS PROGRAM APPROCHES	9
3.1. IDENTIFICATION OF GFB PARTICIPANTS.....	9
3.2. GFB PARTICIPANT SELECTION PROCESS – HOW THEY WILL PARTICIPATE, AND WHAT THEY WILL BRING TO THE PARTNERSHIP.....	9
3.3. GFB-LED IMPLEMENTATION OF FOOD SAFETY SOLUTIONS/INTERVENTIONS.....	10
SELECTING GFB PARTICIPANTS	10
4.1. CRITERIA FOR SELECTING GFB PARTICIPANTS	10
4.2. IDENTIFYING POTENTIAL GFB PARTICIPANTS	10
4.3. DETERMINING THE INITIAL AND TARGET NUMBER OF GFB PARTICIPANTS	10
4.4. BASIC DUE DILIGENCE OF POTENTIAL GFB PARTICIPANTS	11
INVITING GFBS TO PROPOSE FOOD SAFETY SOLUTIONS, THE CO-CREATION PROCESS	11
5.1. INVITATIONS FOR APPLICATIONS (IFAs) – GFB INITIATIVE, BD4FS TECHNICAL SUPPORT.	11
5.2. DUE DILIGENCE IN REVIEWING GFB APPLICATIONS	12
FORMALIZING THE COLLABORATION BETWEEN GFB PARTICIPANTS AND BD4FS	12
6.1. A GENERAL MEMORANDUM OF UNDERSTANDING (MOU) – TO DOCUMENT COMMITMENT WITHOUT ALLOCATING RESOURCES	12
6.2. GFB FOOD SAFETY ACTION PLAN.....	12
ANNEX 1. SAMPLE MOU	13

Background and Objectives of BD4FS in Senegal

I.1. Background

About FES

Food Enterprise Solutions (FES) is a Washington DC-based firm whose mission is to energize the global food system to better balance global needs and profit. FES leverages the powers of business, entrepreneurship, and innovation as key drivers in the global fight against hunger and malnutrition. In partnership with businesses and organizations, FES provides safe, nutritious, and affordable foods through supply chains that are commercially viable and environmentally sustainable. FES offers expertise in partnership development, market analysis, project design and management, training, and specialized technical assistance to strengthen capacities of - and linkages among - key actors within food systems.

About BD4FS

Inadequate food handling practices and poor infrastructure across supply chains increase health risks to consumers, in addition to being root causes of pre-consumer loss and waste in the overall food system. Feed the Future Business Drivers for Food Safety (BD4FS), implemented by FES and funded by the United States Agency for International Development (USAID), is a multi-country effort working to accelerate the adoption of food safety practices in local food systems. BD4FS is partnering with local agri-food actors – growing food businesses (GFBs) - to co-design and implement incentive-based strategies, thereby strengthening their capacities and enabling them to be agents of positive change in the effort to improve food safety, reduce malnutrition, mitigate pre-consumer food loss, and shrink overall hunger. By focusing on the role of GFBs in improving food safety, the FES team contributes to USAID’s knowledge base, strategies, and methodologies for business-level assistance in food systems.

I.2. Mission and Objectives of BD4FS in Senegal

The BD4FS mission is to provide **technical assistance** and **capacity building**, develop **best practices** and **lessons learned**, and generate success for entrepreneurs working to improve food safety.

The objectives of BD4FS in Senegal are to:

- Understand the basic local drivers for food safety within the food system that benefits GFBs and provide safer food for Senegal
- Support the adoption of safer food handling and management practices in accordance with Government of Senegal rules and regulations and international standards
- Raise local business and consumer awareness, promoting the culture of food safety

Senegal Growing Food Businesses (GFBs)

2.1. Definition of GFBs – *what we mean exactly, and how it is different from SMEs or MSMEs, and Ambassador Firms*

BD4FS is focused on Growing Food Businesses or GFBs. These can include:

- Young businesses with good potential for growth (in terms of volumes, innovation, among others).
- Well-established small or medium-sized firms engaged in the food sector that have branded food products with a good reputation locally.

In the course of assisting GFBs, BD4FS will engage Ambassador Firms (AFs) as agents of positive change in the private sector. Food businesses that meet all three criteria below are invited to partner with BD4FS as AFs to help smaller companies adopt food safety practices and technologies:

- Have some established food safety SOPs (standards of practice) or certifications;
- Have branded food products with a good reputation locally; and
- Interested in partnering to help GFBs who are part of their supply chain.

2.1.1. Presentation of the Senegalese agri-food sector

The agri-food sector relates to all companies in the primary (raw materials) and secondary (industries) sectors that participate in the transformation of food products into finished products. It must be differentiated from the agro-industry, which also encompasses all parallel non-food sectors for the development of agro-resources such as paper, bioenergy, leather, textiles, essential oils, and even cosmetics.

The agri-food sector is one of the most dynamic sectors of the Senegalese economy. The Senegalese industrial sector is estimated to have around 1 947 companies with 47.8% of agri-food industries (formal sector²).



Figure 1. The Senegalese industrial sector per activity in 2017.³

The overall sales revenue of the industrial sector in 2017 was 4.069 billion FCFA, of which 29% was for the food industry, or 1180 billion FCFA.⁴

² Agence Nationale de la Statistique et de la Démographie, Sénégal, 2017

³ Study of Senegalese packaging sector for the supply strengthening of small and medium agri-food companies, Astou Diop 2020

⁴ Agence Nationale de la Statistique et de la Démographie, Sénégal, 2017

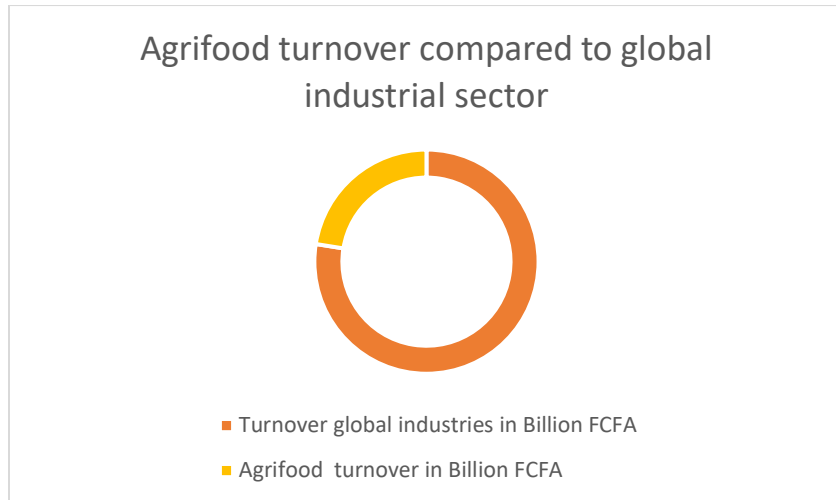


Figure 2. Global industry versus agri-food turnover in Senegal 2015.

While large companies contribute 87% of the agri-food sector’s portion of national revenue; it is notable that small- and medium-sized companies in the sector comprise 97% of the workforce.

The "Loi d’orientation n° 2008-29 of July 28, 2008" means by SME, any physical or moral entity, producing goods and/or market services, whose distinctive criteria are specified in articles 3 and 4 below.

“Art. 3 - Small Enterprises (SE) are microenterprises and very small enterprises meeting the following criteria and thresholds

- Number of employees between one (01) and twenty (20);
- Keeping of simplified or cash flow accounts, either internally or through an approved management center (CGA) or any other similar legally recognized structure, according to the accounting system in force in Senegal; and
- Annual turnover excluding taxes does not exceed the limits provided for to be taxable to the Single Global Contribution (CGU)⁵ set by the General Tax Code.

Art. 4 - Medium-sized enterprises (ME) are those that meet the following criteria and thresholds

- The number of employees is between twenty-one (21) and two hundred and fifty (250);
- Keeping of accounts according to the normal system in force in Senegal and certified by a member registered with the National Order of Chartered Accountants (ONECCA);

⁵ CGU is a Global tax system representing the following taxes: income tax based on industrial and commercial profits, minimum and commercial profits, minimum tax, contribution of the patents, value-added tax, flat-rate employer's contribution, liquor license. of drinks outlets.

Scope of application:

Natural persons whose annual turnover, including all duties and taxes, does not exceed:

- 50 million francs when they carry out operations of deliveries of goods;
- 25 million francs when they carry out operations of provision of services.

The following are excluded

- natural persons whose activity falls within the category of non-commercial profits,
- individuals carrying out sales, real estate rental or real estate management operations or real estate management.

Tariff of the single global contribution:

The single global contribution is established each year in consideration of the totality of the turnover realized from January 1st to December 31st of the previous year, after deduction of operations subject to VAT withholding.

The amount due by new companies is reduced pro rata temporis for the first year.

For traders, there are 20 turnover brackets (from CFAT 0 to 50 million) corresponding to a CGU of 5,000 to 4,200,000 FCFA. For service providers, there are 11 brackets (from 0 to 25 million FCFA) corresponding to a CGU of 10,000 FCFA to 3,000,000 FCFA. Source: APIX

- Annual turnover excluding taxes between the upper limit in article 3 above and 5 billion CFA francs.”⁶

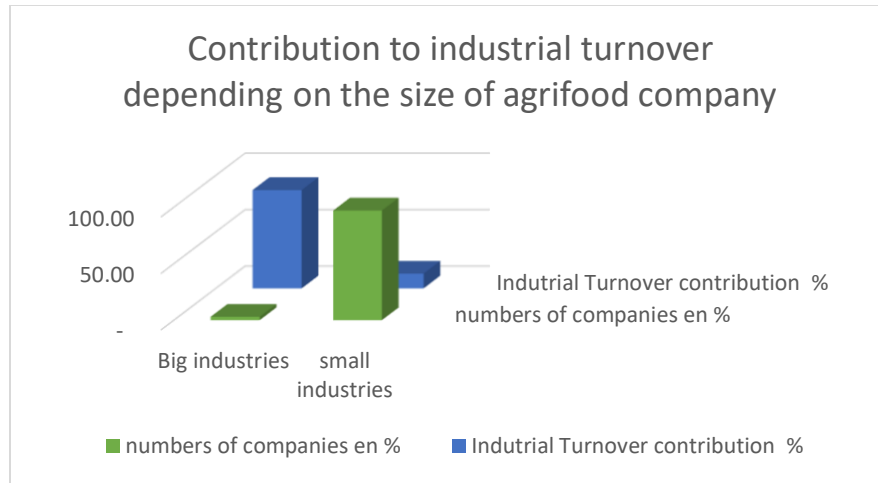


Figure 3. Contribution of industry turnover depending on the size of agri-food business.

This shows that the agri-food sector is not homogeneous in terms of size and activities.

The Senegalese food industry is originally dependent on exports for outlets and the national agricultural sector for its supply. The food industry is divided into two sub-sectors. To these two sub-sectors, we can add a third composed of Micro and small agro-food enterprises.

The first is based on the valorization of main export products. It includes the canning and freezing of fishery products, groundnut products, horticultural products. This sub-sector is essentially export-oriented.

The second sub-sector is oriented towards the domestic market to promote import substitution. It includes sweets and confectionery, drinks, flour, biscuits, etc.

The third sub-sector is composed of what we can call the “agri-food handicrafts” which are very present in all agricultural sectors. The development of private processors, craftsmen, and small companies, which target the domestic market, makes it possible to respond in part to the explosion in urban demand for local products.

They are very active in the processing of local agricultural products, in particular drinks, cereals, dairy products, etc. for food markets, urban consumers, and the diaspora. These businesses stand out for their significant growth potential, given the opportunities available for their specific offerings.

These businesses, formal or not, are developing fast and, even if they still represent a "niche", they provide jobs and contribute to the local economic network. They can be defined as growing food businesses.

2.1.2. Growing food businesses and their products

The targeted agri-food companies are GFBs that process perishable products of animal or plant origin.

Below is a table of samples of perishable plant and animal-based food:

⁶ Journal Officiel, Loi d’Orientation N2008-29 of July 2008

Local raw materials	Types of food products
Animal source foods	
Meat and poultry	Prepared fresh meat and poultry, processed meat (marinated, dried, salted, smoked, grilled, cooked)
Dairy	Pasteurized milk, fermented, yogurt, cheese, butter, ghee (diw nior)
Fish and seafood	Fresh fish, gutted, cleaned, dried, fermented, grilled, cooked, salted, smoked, frozen fish, seafood
Vegetables	
Fresh vegetables	Fresh leaves, chopped Cut vegetables chilled, frozen, marinated vegetables sauces
Leaves	Pre-cooked, frozen
Fruits	
Fruits	Juices, sodas, syrup, marmalade, jams, sorbets, jellies, compotes, chutneys

2.2. Rationale for BD4FS support – why support GFBs, GFB link to informal (unregistered) actors, BD4FS focus on post-farmgate to pre-consumer

Farm products pass through many hands on their way to consumers. Some are sold closer to the point of production in village markets, whereas some move through complex systems of aggregators, transporters, storage operators, and retailers, on their way to small towns and urban centers. As it moves through this system, food is susceptible to contamination and spoilage, resulting in serious negative impacts on health, nutrition, economic development, and general well-being.

Local businesses within this system – specially GFBs that operate post-farmgate and pre-consumer – have the potential to substantially reduce these negative effects by adopting better food safety standards and practices. BD4FS aims to strengthen the capacities of these key actors and make them agents of positive change in the effort to reduce malnutrition, pre-consumer food loss, and overall hunger.

By supporting GFBs, BD4FS contributes to safer food practices by GFBs as well as the health of producers and consumers.

2.3. Technical scope of BD4FS activities

Capacity building is the core of the BD4FS Program in Senegal. Related capacity building activities include:

- **Technical assistance and training** for supply chain, cold chain logistics in the developing economy context via Bright House.
- Facilitate **access to affordable finance** for food safety upgrading capital needs, such as for cold chain equipment. These are the financial institutions identified in the FLA as well as other global actors like CLARMONDIAL that have been identified by FES.
- Access to the **global food safety network** – certification companies, export service providers, support agencies, among others.

More specifically, BD4FS activities will:

- Undertake food safety business diagnostics
- Provide in-person training, webinars, and workshops on food safety standards and technologies
- Provide training that concentrates on our unique “cool & clean”⁷ approach for perishable foods
- Promote multi-sectorial networking around food safety (Partnering with local research organizations and relevant stakeholders, Hosting workshops that bring together consumers, business and government representatives,
- Promote affordable financial services for capital investment in cold chain logistics and innovative technologies,
- Advocate for better food safety regulations and laws
- Encourage and engage youth and women entrepreneurs in all activities in building a strong, safe, and inclusive food system.

2.4. Geographic scope of BD4FS activities – priority regions and food corridors (production zones to consumption centers)

BD4FS activities in Senegal will be implemented mainly in the **Dakar region**, which has a critical mass of food businesses and serves as a national marketing and transportation hub. Focusing on the BD4FS priority foods described in Section 2.1.1 above, GFBs that supply the Dakar region, which may be located outside of the region, are also included in the BD4FS scope. The following figure describes the regions in Senegal:

Geographical distribution of the economic units in Sénégal



Dakar accounts for more than a third of the units (160,963), or 39.5%.

The regions of Thiès (46,879), Diourbel (38,317), Kaolack (23,909), Kolda (21,188) and Saint Louis (19,834) follow respectively.

On the other hand, the regions of Tambaounda (19,261), Ziguinchor (15,749), Sédhiou (14,058), Louga (13,494), Kaffrine (10,285), Fatick (9,490), Matam (8,240), and Kédougou (6,215) represent barely a quarter of the units.

Source : ANSD

Geographical distribution of the economic units by region, 2017

Below are the main production zones for the following foods:

Fish and seafood - Dakar, Thiès, Louga, Saint Louis, Kaolack and Fatick (Saloum Islands), Ziguinchor

⁷ 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. This is due, in part, to barriers that businesses face in accessing the financing needed to implement cooling technologies and to apply cleanliness (WASH) practices. In addition, some commonly used food processing techniques, like smoking and braising fish, create chemical toxins that pose health risks to women processors and consumers. BD4FS takes a Cool 'n Clean approach to address these types of food safety challenges associated with temperature control and hygiene.

Meat and poultry - Dakar, Diourbel, Kaolack and Fatick, Saint Louis
 Fruits and vegetables - Dakar, Thiès, Louga, Saint Louis, Ziguinchor

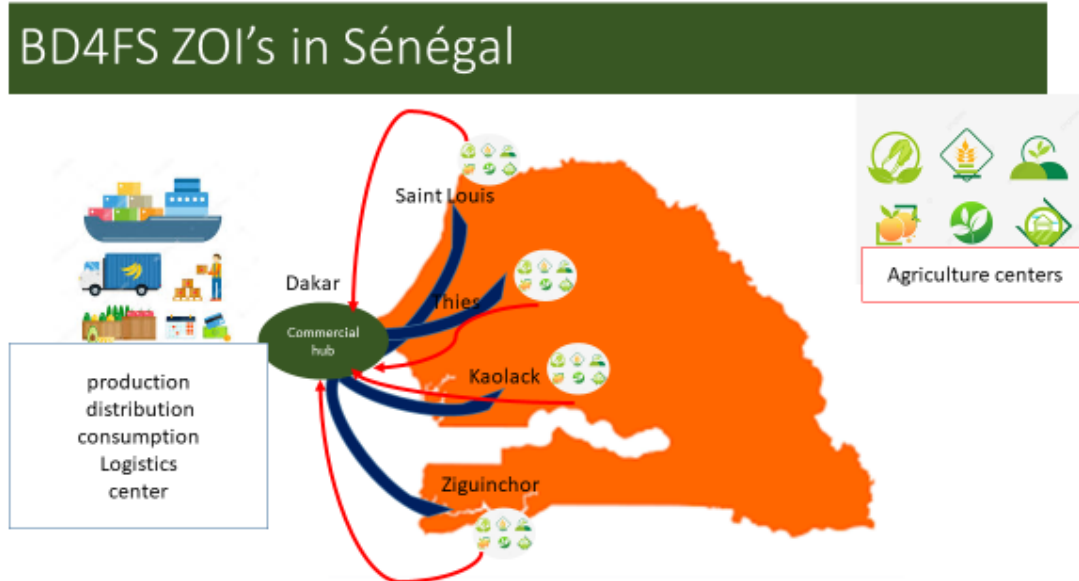


Figure 4. BD4FS ZOI⁸ in SENEGAL: interactions between Dakar and other agriculture centers

2.5. Role of GFBs in the BD4FS learning agenda

Learning is a cross-cutting and continual component of the BD4FS D-5 approach (Discover –Design-Deploy-Document-Disseminate). Starting from the FSSA aimed at mapping out the food safety landscape in the country, BD4FS will identify and document gaps and effective solutions to improving food safety within a collaborative approach involving businesses and stakeholders. BD4FS seeks to understand what motivates GFBs to adopt food safety practices, and what are the underlying drivers for them to reduce food safety risks.

GFBs will co-design with BD4FS the interventions to be implemented, and together with BD4FS use monitoring tools that are practical and adapted for GFBs. Through self-monitoring activities and supervision by BD4FS, GFBs will provide data on capacity building, food safety practices adoption, technical assistance, and performance improvement, among others, which are useful materials for the BD4FS learning agenda.

BD4FS will design appropriate tools and instruments to conduct periodic collaborative project reviews and reflections events to evaluate the project activities and milestones, document lessons learned, and mitigate any challenges identified throughout implementation.

⁸ Zone of influence

2.6. GFBs and the Feed the Future results indicators

To Monitor results and progress towards its objectives, BD4FS will use four (4) FTF indicators compiled from Feed the Future Indicator Handbook, published in 2018 and revised in 2019, and three (3) custom BD4FS indicators. Please see the BD4FS indicators table below (indicators presented in the AMELP, approved by USAID January 2022):

	Result, Indicator	Type of Indicator	Data Source	Frequency	Unit of Measure
1	IR 1.1: Safer food management practices identified and disseminated to businesses: Number of technologies, practices, and approaches under various phases of research, development, and uptake as a result of USG assistance (EG.3.2-7)	Standard	Program activity records FSSA; Intake questionnaire for baseline survey;	Annual	Number
2	IR 2.1: Businesses adopt food safety practices: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance (EG.3.2-24)	Standard	BD4FS records of participant firms, site visits	Annual	Number
3	IR 3.1: Safer food availability increased: Value of annual sales of producers and firms receiving USG assistance (EG.3.2-26) (Custom indicator)	Custom	Periodic surveys	Annual	Percentage
4	IR 3.3: Food safety awareness increased: Number of individuals among target audience who recall key food safety messages delivered with USG assistance (Custom indicator)	Custom	Periodic surveys	Periodic Quarterly surveys	Number
5	CCIR 1: Gender is incorporated into food safety activities: Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources (GNDR-2)	Standard/ Crosscutting	Activity records	Annual	Percentage
6	CCIR 2: Youth are incorporated into food safety activities: Percentage of participants in USG-assisted programs designed to increase access to productive economic resources who are youth (15-29) (YOUTH-3)	Standard/ Crosscutting	Activity records	Annual	Percentage

As the main beneficiaries of the project, GFBs will participate in BD4FS activities based on the incentives and their interest in the project.

Through the interventions co-created with the project, the participating businesses will seek to improve their knowledge, aptitudes, and practices in food safety, strengthen their organizational capacities, adopt technologies for better food safety practices and improve their performances.

Their contribution to the project objectives and indicators through these activities will be measured through monitoring activities and particularly through self-monitoring activities.

BD4FS Program Approaches

3.1. Identification of GFB Participants

BD4FS will identify GFB participants through:

- A campaign of BD4FS promotion using a diversity of channels - emails, phone calls, virtual and in-person meetings, videos, events, etc.
- Internal pre-selection according to pre-defined criteria, and invitation to submit an Expression of Interest (EOI) and/or conduct of structured interview by BD4FS
- A screening process of GFBs responding to a public call for EOIs

3.2. GFB participant selection process – how they will participate, and what they will bring to the partnership

Step 1: The business engagement process will start with the research and identification of businesses through phone calls, emails and virtual meetings, internal surveys reports, and networks.

Step 2: BD4FS will release the Request for Expression of interest through the national newspaper and by email to the previously identified potential businesses.

To encourage voluntary participation, it will be required from GFBs and Ambassador firms to submit Expressions of Interest (EOIs) to BD4FS. During that process, BD4FS will follow up by doing phone calls and emails to remind businesses to apply.

Step 3: A questionnaire will be designed and selection criteria set.

Step 4: The questionnaire will be sent to all applicants.

Step 5: Filled questionnaires will be collected and assessed according to the preselection criteria.

Step 6: if GFB is pre-selected, BD4FS will conduct basic due diligence.

Step 7: If the due diligence process turns positive, BD4FS will invite the GFB to submit an application, a key tool to facilitate identification and “co-design” of proposed initiatives.

Step 8: A request for applications will be released to BD4FS will invite the GFB for discussions to clarify, improve, and agree on the proposed initiatives, including appropriate technical support BD4FS will provide, and a timetable.

Step 9: A formal notification will be sent to selected companies with parameters for collaborating with BD4FS, and provide examples of GFB initiatives that BD4FS will be willing to provide support.

Step 10: A collaborative process begins where the GFB originates, owns, and sustains the initiatives.

BD4FS supports the GFB throughout the application process, and this is part of the technical assistance and capacity-building support of BD4FS. However, since it is the GFB that originates, owns, and sustains the initiatives, GFBs “self-select” themselves into the project. A request for applications will be released to BD4FS will invite the GFB for discussions to clarify, improve, and agree on the proposed initiatives, including appropriate technical support BD4FS will provide, and a timetable.

After completion of this process, a mutual commitment charter or an MOU between BD4FS and the GFB participant be drafted, revised, and signed by both parties. The charter or MOU will include, in general terms, among others, the proposed areas of collaboration. A sample of the MOU is included in the Annexes.

3.3. GFB-led implementation of food safety solutions/interventions

Since the GFB originates the proposed activities and owns the initiatives, the GFB sustains and leads the implementation of food safety solutions/interventions for its business benefit. BD4FS will *facilitate* support, and will heavily rely on the own initiative of the GFB as a fundamental project approach. This is key for BD4FS to understand the business drivers of food safety, and support the BD4FS learning agenda.

Selecting GFB participants

4.1. Criteria for selecting GFB participants

The approach used to identify potential participating GFBs is self-selection; however, in order to be systematic and more efficient in the selection, minimum inclusion criteria have been defined. To be selected, potential GFBs must meet the following criteria:

- Be a growing company with a significant growth potential
- Be an autonomous company
- Have a brand name or respected products in the market
- Have minimum qualifications or are ready, willing, and able to learn
- Be in the targeted ZOI, involved in the BD4FS priority foods (see Section 2.1.2)
- Have linkages with value chain actors (at various levels of production, processing, distribution, and marketing)

4.2. Identifying potential GFB participants

See Section 3.1 on the identification of GFB participants.

Potential GFB participants are selected from:

- Contacts in BD4FS studies
- Networks of the BD4FS team
- Web research and recommendations from institutional organizations
- Public advertisement – releasing a Request for Expressions of Interest (EOIs), reviewing EOIs and GFB qualifications against criteria, and conducting GFB structured interviews

4.3. Determining the initial and target number of GFB participants

From the list of 104 potential GFBs interested to work with the project, a manageable set of 50 GFBs have been selected by BD4FS, as of November 2021, as the initial group of GFB participants. The Senegal team has scheduled onsite visits to

complete all steps listed in the strategy, namely the diagnostic and food loss assessment, action plan development, and MOU signing.

4.4. Basic due diligence of potential GFB participants

Basic due diligence through the use of a questionnaire allows BD4FS to refine the GFB participant list. Key aspects of the basic due diligence include:

- Checking the GFB registration
- Verifying support received by the GFB from other donors, if any
- Verifying the accuracy of the information in the submitted EOI and/or provided during the structured interview
- Reviewing the GFB operations, their buyers and suppliers
- Conducting a site visit

Inviting GFBs to propose food safety solutions, the co-creation process

5.1. Invitations for Applications (IFAs) – GFB initiative, BD4FS technical support.

After a successful outcome from basic due diligence of the GFB, Senegal BD4FS will co-design food safety solutions with GFBs through workshops and Invitation for Applications (IFAs).

The components of that IFA could be:

Provisory Components of the Senegal BD4FS IFA
1. BD4FS objectives
2. Eligibility requirements: GFB criteria that are required to participate in the BD4FS program. The criteria typically include a minimum number of GFBs that the firm buys from or sells to, the minimum age of the enterprise, etc.
3. Illustrative GFB initiatives/interventions that BD4FS could support
4. Percent of GFB activities that must involve direct interaction with GFBs (optional). Stipulates the percentage of the proposed intervention budget that must be allocated towards direct interaction with GFBs in the BD4FS's target group (such as producer training).
5. Cost-share rules: Sets the limitations of what financial support (if any) can and can't be used for. Typically, financial support, if provided, cannot be used towards the purchase of fixed assets or for working capital such as rent or salaries. This section also clarifies that a significant GFB investment is required.
6. Description of approval/implementation process: Describes the process that will take place before BD4FS gives final approval for technical and financial support (if any). This section can also include a presentation of factors that will be considered in evaluating the application, applicable contact information, and so on.
7. Instructions and format for completing an application with a detailed explanation of the expected format for the application submission, including the technical narrative and budget.
8. Conditions and confidentiality with the legal issues detailed, often including an explanation that a submitted application does not constitute a commitment by BD4FS and that company application information will be kept confidential.

In some cases, GFBs with good potential for BD4FS participation have very basic human resource capacities and may have difficulty in submitting an application. In such cases, BD4FS assists in developing the required paperwork, as long as the commitment and initiative of the GFB ownership remain high. This is part of BD4FS technical assistance and capacity-building support.

5.2. Due diligence in reviewing GFB applications

As part of reviewing GFB applications, BD4FS will conduct further due diligence of potential GFBs to supplement the basic and initial due diligence conducted pre-application to determine if they warrant follow-up. Initially, BD4FS will validate whether the GFB is a registered company and whether the GFB is receiving support from other donors.

Additional due diligence will be conducted to determine whether the information presented in the EOI and interviews is accurate, and to determine whether further follow-up is needed.

Important information to validate may include information about the GFB operations, producers they transact with, or other information relevant to BD4FS. To conduct due diligence, BD4FS or a consultant hired by BD4FS, may talk with the GFB's buyers, suppliers, and conduct site visits.

Formalizing the Collaboration Between GFB Participants and BD4FS

After a successful co-creation process – a credible GFB application and a positive outcome on the BD4FS due diligence on the GFB – the collaboration between the GFB participant and BD4FS shall be carefully structured through clear documents that spell out the responsibilities and benefits for both parties. The following sections describe each component.

6.1. A general Memorandum of Understanding (MOU) – to document commitment without allocating resources

BD4FS developed an MOU (included as Annex 1) that describes the general activities that will be promoted with the GFB, along with the necessary legal provisions to protect both parties, but without the firm commitments of technical and financial support from BD4FS. MOUs are developed even while specific details of interventions are being worked out.

Specific interventions to be undertaken, which will be owned and led by the GFB, facilitated by BD4FS, are contained in the GFB Food Safety Action Plans co-developed with each GFB.

After the signature of an MOU or charter, the implementation phase will commence with a pre-survey (diagnostics) aimed at collecting baseline information on the GFB, which also forms the basis for identifying specific activities and self-monitoring tools, leading to the co-development of a GFB food safety action plan.

6.2. GFB Food Safety Action Plan

As part of the implementation phase, BD4FS conducts co-creation activities with individual GFBs. One of the first co-creation activities is developing food safety action plans with GFBs to improve their food safety practices based on the diagnostic results. During this process, the GFB and BD4FS co-identify specific technologies, practices, or approaches that can improve food safety practices at the GFB, which the GFBs will implement.

GFBs are assessed on their uptake of food safety practices (prerequisite programs) and based on these assessments food safety action plans may be reconsidered or revised by the GFB.

Annex I. Sample MOU

MEMORANDUM OF UNDERSTANDING

FOR THE IMPLEMENTATION OF A CO-CREATION PROGRAM

FOR THE IMPROVEMENT OF FOOD SAFETY IN COMPANIES

This agreement is made between the undersigned:

Food Enterprise Solutions (FES), which implements the Feed the Future Business Drivers for Food Safety (BD4FS) – Senegal Program, with headquarters located in Point E, Rue de Kaolack, Immeuble Tanoca, and represented by Mrs. Mariama Samb DIENG, in her capacity as Senegal Program Director

And

XXX, Growing Food Business, which head office is located at represented by, in the capacity of

Together referred to as "**The Parties.**"

INTRODUCTORY STATEMENT

About FES

Food Enterprise Solutions (FES) is a Washington DC-based company whose mission is to stimulate the global food system to better balance global needs and profits. FES works in partnership with businesses and organizations to provide safe, nutritious, and affordable food through supply chains that are commercially viable and environmentally sustainable. For more information, please visit <https://www.foodsolutions.global>.

About BD4FS

Feed the Future Business Drivers for Food Safety (BD4FS), implemented by FES and funded by the U.S. Agency for International Development (USAID), is a multi-country effort to accelerate the adoption of food safety practices in local food systems.

BD4FS partners with growing food businesses (small and medium-sized agribusinesses) in Senegal to co-design, co-implement, and co-evaluate incentive-based food safety strategies.

BD4FS provides technical assistance and capacity building, and develops best practices and lessons learned to generate success for entrepreneurs working to improve the safety of their agri-food products.

The perishable product sectors targeted in Senegal by BD4FS are fruits and vegetables, meat, poultry, seafood, milk, yogurt, and eggs.

THIS STATED, IT IS AGREED UPON AND ADOPTED AS FOLLOWS:

ARTICLE 1: PURPOSE

The purpose of this agreement is to define a general framework for co-creation and co-execution between BD4FS Senegal and the company, XXX, in the design, implementation, and evaluation of a food safety improvement program.

ARTICLE 2: PLANNED ACTIVITIES

Within the framework of this agreement, a food safety diagnosis will be carried out with the company and an action plan developed and implemented. The diagnosis will focus on:

- The existing measures in place to control food safety.
- The awareness of food losses and methods used for measurement.
- The state of knowledge, attitudes, and staff practices of food safety.

In addition to the co-execution of the action plan, foreseen activities resulting from the diagnosis, the partner company will be able to benefit, according to its needs, from the training planned in the capacity building program implemented by BD4FS.

ARTICLE 3: COMMITMENTS OF THE PARTIES

The Parties to this collaborative framework agree to make commitments to improve the quality of food products.

Feed the Future Business Drivers for Food Safety (BD4FS) - Senegal is committed to:

- Provide technical assistance and capacity building.
- Participate in the diagnosis and development of the company's action plan.
- Invite the partner company to seminars relevant to the achievement of its food safety objectives.
- Invite the participating company to food quality promotion activities.
- Facilitate contacts with appropriate partners.

The XXX company agrees to:

- Designate the responsible person for the follow-up of the co-creation and co-execution process.
- Draft and sign a food safety policy.
- Facilitate access to the production site to the BD4FS team and ensure the cooperation of the staff during the visits.
- Participate in training sessions, transmit the list of participants, and inform them of the time and place of training sessions.
- Complete the self-assessment tools.
- Authorize the use of the company's name for the strict purposes of the program.

ARTICLE 4: COLLABORATION TO ENSURE THE SUCCESS OF ACTIVITIES

In addition, to ensure the achievement of common goals, both parties commit to:

- Communicate regularly with each other to ensure planning for successful implementation.
- Reach consensus on important issues such as the timing of trainings and the list and contacts of program participants.
- Encourage staff to take part in project activities.
- Provide feedback to the other party on activities.
- Collect monitoring, evaluation, and learning data.

ARTICLE 5: MODIFICATION AND TERMINATION

Any modification of the terms of the agreement must be done by agreement between the parties by means of a rider duly signed by the parties. Otherwise, it will not be enforceable.

Any major change to this agreement must be made in writing and signed by both parties by way of a rider. If either party is unable to fulfil its part of the Agreement, it hereby agrees to notify the other in writing in a timely manner.

This Agreement may be terminated by either party by giving the other party four weeks' written notice.

Either Party may terminate this collaboration. The initiating Party shall give notice by registered letter with acknowledgment of receipt or simple letter to the bearer against discharge with at least one (1) months' notice.

In the event of non-compliance by one party with its commitments, the other party may request the termination of the present collaboration. However, in the event of termination for any reason whatsoever, the commitments in progress shall remain in effect until their final execution.

ARTICLE 6: DISPUTES

Any dispute or controversy that may arise from the interpretation, validity, or performance of this agreement shall be settled amicably between the parties.

ARTICLE 7: CONFIDENTIALITY AND LIABILITY

7.1: The parties agree to cooperate in accordance with their respective responsibilities and to observe absolute professional secrecy with respect to all information and documents received from the other party, all of which are confidential and to which each party has access or knowledge in the execution of this agreement. Such information and documents shall not be disclosed by either party to any person in any form whatsoever without the prior written consent of the other party, except in cases where disclosure is made pursuant to applicable regulations.

This obligation of confidentiality shall lapse if the information becomes public knowledge without any action by the party receiving the information. The obligation of confidentiality will remain in force, even after the expiration or termination of the collaboration, as long as the data concerned remain confidential.

7.2: The parties undertake to execute the present collaboration and to refrain from any abusive or dilatory maneuvers in any form whatsoever preventing or restricting its proper execution. Each party will be responsible for the bad or non-execution of

all or part of the obligation incumbent upon it under the present collaboration framework, except in the case of force majeure or when the failure originates in the act of the other.

ARTICLE 8: DECLARATION

The Parties declare that they are aware of the various clauses contained in the agreement and undertake to comply with them.

ARTICLE 9: ENTRY INTO FORCE – DURATION

The parties share a common objective, namely the improvement of the sanitary quality of the marketed food, and have a common interest in collaborating on the activities described above.

This agreement is entered into for a period of one year, renewable by tacit agreement.

It will come into effect on the date of signature by both parties.

In witness whereof the representatives, duly authorized by the Parties, have signed this agreement, made in duplicate.

Signatories

Date _____

Feed the Future BD4FS - Senegal

Mrs. Mariama Samb DIENG, Program Director

Date _____

COMPANY XXXX

Mrs, Mr...

GFB	FES OR BD4FS
Name :	Name :
Mobile phone :	Mobile phone :
Email address:	Email address :



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFS19CA00001

FOOD SAFETY IMPLEMENTATION MANUAL: A HANDS-ON GUIDE FOR IMPLEMENTING AN APPROPRIATE FOOD SAFETY MANAGEMENT SYSTEM IN AFRICA

BD4FS Tools and Practices

December 2021

This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

FOOD SAFETY IMPLEMENTATION MANUAL



A HANDS-ON GUIDE FOR IMPLEMENTING AN APPROPRIATE
FOOD SAFETY MANAGEMENT SYSTEM IN AFRICA



FOOD SAFETY IMPLEMENTATION MANUAL

A HANDS-ON GUIDE FOR IMPLEMENTING AN APPROPRIATE
FOOD SAFETY MANAGEMENT SYSTEM IN AFRICA

2021 Edition

Phone Number:
+254 724 912 232

Email:
rlbernhard@foodsolutions.global

Address:
2311 Wilson Blvd, 3rd Floor
Arlington, Virginia 22201
United States

Website:
<https://www.foodsolutions.global>

This manual was prepared for Feed the Future Business Drivers for Food Safety (BD4FS), funded by USAID and implemented by Food Enterprise Solutions (FES), with training support from Bright House Consultancy & Training.

This manual is made possible by the support of the American People through the United States Agency for International Development (USAID) and as part of Feed the Future: The US Government's Global Hunger and Food Security Initiative. The contents of this manual are the sole responsibility of Food Enterprise Solutions and do not necessarily reflect the views of USAID or the United States Government.

Any and all references herein to actual places and procedures are for informational purposes only and are not an endorsement of or a slight against any and all parties mentioned.

1st Edition - Spring 2021

TABLE OF CONTENTS

1.0 Introduction 1

- 1.1 BRC Global Standards 2
- 1.2 Food Safety System Certification 22000 2
- 1.3 Global Red Meat Standard (GRMS) 3
- 1.4 International Featured Standards (IFS) 3
- 1.5 Global GAP 4
- 1.6 Other GFSI-Benchmarked Standards and Certification Programs 4
- 1.7 General Procedure for Certification to a Food Safety Management System 4
- 1.8 Benefits of Certification to a Food Safety Management Systems 6

2.0 Introduction 7

- 2.1 Policy, Legal and Regulatory Framework for Food Control 8
- 2.2 Institutional Framework for Food Regulation 12
 - 2.2.1 Steps to Acquire Standardization Mark 13
 - 2.2.2 Assessment Criteria for Approval 15
 - 2.2.3 Certification Fees 15
 - 2.2.4 Imported Product Inspection and Certification Process 15
 - 2.2.5 Pre-Export Verification of Conformity (PVoC) 16
- 2.3 Product Inspection/Market Surveillance 18
- 2.4 Analytical Services/Laboratory Tests 20

3.0 Introduction 21

- 3.1 Role of PRPs in Supporting HACCP 22
- 3.2 Planning, Developing PRPs 23
- 3.3 PRPs Scope 23
- 3.4 Management of PRPs 24
- 3.5 PRP Verification and Validation 24
- 3.6 Example of a Prerequisite Programs (PRP) Plan 25

4.0 Introduction 27

- 4.1 Food Safety Policy 28
- 4.2 Food Safety Culture 28
- 4.3 Appointing a Food Safety Team Leader/HACCP Admin 30
- 4.4 Investing in Training and Coaching of Line-Employees 31

4.5	Allocating Sufficient Resources	31
4.6	Periodic Management Review and Continual Improvement	32
4.7	Summary of Top Management Commitment	33
5.0	Introduction	35
5.1	Benefits and Importance of the HACCP System	35
5.2	Planning HACCP System	36
5.2.1	Preliminary Step 1: Assemble HACCP Team	36
5.2.2	Preliminary Step 2: Describe the Product Characteristics	36
5.2.3	Preliminary Step 3: Describe the Intended Use	37
5.2.4	Preliminary Step 4: Develop a Flow Diagram that Describes the Process	37
5.2.5	Onsite Verification of the Flow Diagram	39
5.3	HACCP Principles	39
5.3.2	Determination of Critical Control Points	40
5.3.3	Establish Critical Limits	41
5.3.4	Establish a System to Monitor Control over CCP	41
5.3.5	Establish a Corrective Action	41
5.3.5	Verification	41
6.0	Introduction	42
6.1	Purpose and Benefits of Documented Information	42
6.2	Establishing Food Safety Policy Statement and Objectives	43
a	Examples of Food Safety Policy and Objectives	44
b	Communicating Food Safety Policy and Objectives	45
c	Strategies for Achieving Food Safety Policy and Objectives	45
d	Monitoring, Review, and Reporting on Outcomes	46
6.3	Standard Operating Procedure (SOPs)	46
a	Contents of a Standard Operating Procedure (SOP)	46
6.4	Documented Work Instructions	49
6.5	Specifications	49
6.6	Forms	49
6.7	Records Establishment	50
6.8	Approval, Issue, and Control of FSMS Documents	50
6.9	Records Retention and Storing	51

6.10 Record Maintenance and Destruction 51

6.11 Examples of Food Safety Management System Procedures 52

7.0 Introduction 63

7.1 Assigning Responsibilities 63

7.2 Competence 64

7.3 Training 64

7.4 Records to be maintained 66

FORWARD FOOD ENTERPRISE SOLUTIONS (FES)

Food Enterprise Solutions (FES) is on a mission to energize the global food system to better balance global needs and profit. We leverage the powers of business, entrepreneurship, and innovation as key drivers in the collective fight against hunger and malnutrition. Through our Feed the Future Business Drivers for Food Safety project (BD4FS), funded by USAID, we are working in partnership with businesses to co-design and implement food safety practices that are commercially feasible and environmentally sustainable throughout supply chains in Africa, Asia, and Latin America. In this effort, we are proud to be partnering with Bright House Consultancy and Training.

FES believes that food safety is not just about public health - it is also a good business investment. Global demand for safe and nutritious foods is growing, triggering market signals for food businesses in emerging economies. With appropriate support for investment in production, infrastructure, and capacity, African agri-businesses are well-positioned to meet this demand. By adopting food safety practices and technologies, businesses can expand market access, improve product quality, and increase efficiency. Profit margins will also improve by extending product shelf-life, reducing post-harvest loss while providing safer food

BD4FS is supporting and partnering with local agri-food actors – growing food businesses (GFBs) – to strengthen food systems in Africa and globally. We offer decades of expertise in partnership development, market analysis, project design and management, and specialized technical assistance to strengthen capacities of - and linkages among - key actors within food systems. By co-designing and implementing incentive-based strategies, local GFBs are enabled and empowered to be agents of positive change in the effort to improve food safety, reduce malnutrition, mitigate pre-consumer food loss, and improve consumer access to nutritious and safer food choices.

Russ Webster
President / CEO
Food Enterprise Solutions (FES)

FORWARD BRIGHTHOUSE CONSULTANCY AND TRAINING

I founded Brighthouse Consultancy and Training to launch my vision for a technical training center for Africans led by Africans. I have had the opportunity to meet and work with some of the best consultants in the world. Over the past few decades, our pool of experts has worked in multiple developing markets and has identified an overwhelming need to provide personalized technical skills to the people. However, the gap for local instruction and educators teaching the student or business how to achieve industry standards is minute. Mainly, this gap began because consultants and trainers with western business experience teach Africans how to apply those more extensive, more developed business operating systems to a smaller market operating environment. These systems prove difficult and time-consuming to the African market. However, this is where Brighthouse excels. Our consultants work in Africa and are Africans or people who live on the continent. It gives us a competitive edge, and Brighthouse is here to help Africa compete globally.

As everyone knows, the COVID-19 pandemic has given rise to the use of virtual training, calling, and so on. Brighthouse started the virtual training center in 2017, and we are always looking- ing for innovative ways to reach our target audiences. In our technology-driven world, online media best implements my vision of reaching the people who most need training during these trying times. Brighthouse has superior access to some of today's best experts. Africa has immenserresources, and my goal as the owner of Brighthouse is to help Africa compete and garner respectfor who we are as a continent.

I envisioned this instructional manual to provide the guidelines to assist and encourage Small and Medium Enterprises (SMEs) in Africa to voluntarily follow international food safety practices, implement an appropriate food safety management system, and seek government certification.

Sarah Nyambura Kioi

Owner/CEO
Bright House Consultancy and Training



ACKNOWLEDGMENTS

Food Enterprise Solutions would like to acknowledge the staff of Bright House Consultancy and Training for their work on this manual and their dedication to building the food safety expertise on the African continent. The team is led by James “Rusty” Eason, a cold chain expert, certified Auditor, BRC Global Standard, Food Safety Expert, with contributions by Vincent Michael, a QHSE (Quality, Health, Safety & Environment) certified Auditor, and web design specialist Michael Tincher.

5S program	Sort, Set In Order, Shine, Standardize, Sustain
CAC	Codex Alimentarius Commission
CCP	Critical Control Point
CU	Customs Union
DMS	Document Management System
EAEU	Eurasian Economic Union
EC	European Commission
ELISA	Enzyme-Linked Immunosorbent Assay
FBO	Food Business Operator
FSMS	Food Safety Management System
FSSC	Food Safety System Certification
GAP	Good Agricultural Practice
GDP	Good Distribution Practice
GFSI	Global Food Safety Initiative
GHP	Good Hygiene Practice
GMP	Good Manufacturing Practice
HACCP	Hazard Analysis Critical Control Point
HRMS	Human Resources Management System
ISO	International Organization for Standardization
MRL	Maximum Residue Level
OPRP	Operational Prerequisite Program
PRP	Prerequisite Program
SMART	Specific, Measurable, Attainable (Or Achievable), Realistic, And Time-Bound
SOP	Standard Operating Procedure
SWOT	Strengths, Weaknesses, Opportunities, And Threats
TR	Technical Regulation
TS	Technical Specification

Note: All dollar amounts are U.S. dollars (\$) unless otherwise indicated.

INTRODUCTION TO FOOD SAFETY

Every year, millions of people around the world suffer from serious foodborne illnesses. Food can transmit pathogens, which can result in the illness or death of the person or other animals. The main mediums are over forty different kinds of bacteria, viruses, mold, and fungus that may occur in food that can cause foodborne illness. Food can also serve as a growth and reproductive medium for pathogens. This sickness happens because of food contamination, which refers to the presence of harmful chemicals and microorganisms in food, which can cause consumer illness.

Food can become contaminated with another substance anywhere during harvesting, slaughtering, production, transportation, packaging, storage, sales, and cooking. The contamination can be physical, chemical, and biological.

Physical contaminants are objects such as hair, pieces of glass or metal, plant stalks, pests, jewelry, dirt, and fingernails. When a foreign item comes into the food, it is a physical contaminant. If the external objects are bacteria, both physical and biological contamination will occur.

Chemical contamination happens when food is contaminated with a natural or artificial chemical substance. Familiar sources of chemical contamination can include pesticides, herbicides, veterinary drugs, contamination from environmental

sources (water, air, or soil pollution), cross-contamination during food processing, migration from food packaging materials, and presence of natural toxins, or use of unapproved food additives and adulterants. And finally, biological contamination refers to food that has been contaminated by substances produced by living creatures, such as humans, rodents, pests, or microorganisms. These contaminants include bacterial contamination, viral contamination, or parasite contamination that is transferred through saliva, pest droppings, blood, or fecal matter. Bacterial contamination is the most common cause of food poisoning worldwide.

Food is a perfect host for bacterial contamination. When an environment is high in starch or protein, water, oxygen, has a neutral pH level, and maintains a temperature between 5^o C and 60^o C (danger zone) for even a brief time (~0–20 minutes), bacteria are likely to survive.

This growth is why the safe handling, treatment, and tracking of food is essential. Key steps must be taken along the entirety of a food commodity's journey from when it is first grown to the moment it is consumed. Food Safety is just one part of this journey. Food Defense is the protection



of food products from intentional contamination or adulteration by biological, chemical, physical, or radiological agents introduced to cause harm. It addresses additional concerns, including physical, personnel, and operational security. In this way, food safety often overlaps with food defense to prevent injury to consumers.

This line of thought is that “Farm to Fork” food safety has two distinct sectors: industry and the market, and then, between the market and the consumer. In considering industry to market practices, food safety considerations include the origins of food, including the procedures relating to food labeling, food hygiene, food additives, and pesticide residues, as well as policies on biotechnology and food and guidelines for the management of regulatory import and export inspection and certification systems for foods. In considering market-to-consumer practices, the usual thought is that food ought to be safe in the market, and the concern is safe delivery and preparation of the food for the consumer.

Proper storage, personal hygiene, personal protective equipment, sanitary tools and workspaces, heating and cooling correctly, to an adequate temperature, and avoiding contact with other uncooked foods can significantly reduce the chances of contamination. First, the availability of sufficient, safe water, which is usually a critical item in spreading diseases, is crucial to prevent the spread of foodborne illnesses. Tightly sealed water and airproof containers are useful measures to limit the chances of both physical and biological contamination during storage. To help reduce the chance of all forms of contamination, use clean, sanitary surfaces and tools free of debris, chemicals, standing liquids, and other food types (different from the kind currently being prepared, i.e., mixing vegetables/meats or beef/poultry).

This manual is a practical guide aimed at food handling facilities that seek to design and improve their food safety management system. Organizations of any size, region, or any point along the food production chain can apply the manual’s rules and lessons to establish a systematic approach to the food chain.

CHAPTER ONE: FOOD SAFETY STANDARDS AND SCHEMES

1.0 Introduction

During the past several decades, the world has experienced numerous food safety crises that have tremendously eroded consumer trust concerning the safety of the food they buy, the brand, and even the food industry at large. Access to safe food is a fundamental right of the global population. The health and wellbeing of communities are highly dependent on food safety. Food safety standards and schemes, therefore, play an increasingly important role in the determination of market access in international trade. Food safety standards and systems often facilitate supply chain management within an increasingly globalized and competitive global food market.



This chapter focuses on voluntary food safety and quality standards and schemes that apply to food business operators (FBOs). The certification schemes that have been included in this chapter are those that are recognized by the Global Food Safety Initiative (GFSI). The reason for focusing on systems and standards recognized by GFSI is because GFSI is a vast, multi-stakeholder movement that has enabled extensive collaboration necessary for ensuring a safe global supply of food involving both public and private sectors. GFSI is a landmark initiative of the Consumer Goods Forum (CGF), created in the year 2000 to help deal with consumers' trust in the food they buy irrespective of its source or where they live by improving food safety management practices. GFSI provides guidance and leadership on the food safety management system in the food supply chain. It is a facilitated collaboration among food safety experts in manufacturing, retail, food



service companies, international organizations, academia, service experts, and governments.

The recognition by GFSI gives access to the market globally among recognized owners of a certification program and companies they certify. To be recognized by GFSI, owners of a certification program must meet the requirements for GFSI benchmarking. GFSI benchmarking is the most widely accepted benchmarking scheme across food safety programs. GFSI was created in 2001 and regularly updated with inputs from food safety experts globally to keep up with food safety trends. The following is an overview of food safety certification programs and standards that food business operators consider relevant to them, their customers, and consumers.

1.1 BRC Global Standards

BRC means “British Retail Consortium,” a company formed in 1996 by retailers to harmonize food safety standards across the food supply chain. BRC Global standards are a market-leading global brand that helps build confidence in the supply chain. BRC standards are implemented based on the nature of the FBO. For instance, those in food processing would implement BRC food safety standards, those in storage and distribution of food would implement BRC storage and distribution standard. In contrast, those in the design and production of packaging materials would implement BRC packaging and packaging materials standards. BRC global standards provide a framework for managing product quality, safety, legality, integrity, and control of the food chain’s operation, including processing and packaging food and food ingredients.

The focus of BRC Global Standards include the following:

- Promoting food safety culture development throughout an organization
- Emphasizing the importance of environmental monitoring throughout the food supply chain
- Food defense and site security risk assessment
- Emphasis on the requirements for high-risk, high-care, and connected high-care processing areas
- Ensure applicability globally and GFSI benchmarking

BRC global standards are used in over 130 countries with 25000 certificated sites globally.

The following BRC global standards are available:

- BRC Global Standard for Food Safety Issue 7
- BRC Global Standard for Storage and Distribution Issue 3
- BRC Global Standard for Packaging and Packaging Materials Issue 5
- BRC Global Standards for Agents and Brokers
- Consumer Products
- Retail

1.2 Food Safety System Certification 22000

Food Safety System Certification (FSSC) 22000 is a food safety management system and feed safety management system that complies with publicly available ISO 22000 requirements for any organization in the food chain and sector-specific technical specifications. FSSC 22000 is managed by the Foundation for food safety certification and controlled by a board that consists of various stakeholders and experts from multiple sectors in the food industry. This certification scheme manages food safety risks and provides a robust system that offers safe products for organizations in the food industry. The main reason why the FSSC 22000 system was designed was to give FBOs an ISO-based Food Safety Management System Certification that is recognized by GFSI. Once GFSI recognizes a scheme, it provides worldwide recognition and acceptance by food processes and retailers.

Once a facility has implemented all the requirements for FSSC 22000, they are certified. While the FSSC 22000 scheme uses ISO 22000 standard requirements, Prerequisite programs, and other general requirements, ISO 22000 is not recognized by GFSI. It is for this reason why FSSC 22000 was formed. Big retailers and manufacturers are asking their suppliers to register

with a scheme recognized by GFSI. GFSI benchmarked standard is the FSSC 22000, which, already stated above, uses ISO 22000 for the management system requirements.

FSSC 22000 is used to audit and certify an implemented Food Safety Management Systems of a food business operator (FBO) in:

- Farming for meat, honey, milk, and eggs. Farming seafood and fish
- Processing perishable animal products like eggs, milk, fish, and meat products
- Processing perishable plant products such as fresh fruits and vegetables, juices, preserved fruits, nuts, grains, and pulses
- Processing of perishable mixed plants and animal products
- Processing of ambient fundamental products with a longer shelf life at ambient temperatures

FSSC 22000 has specified criteria for establishing PRPs to control contaminating food within the food processing environment. In this regard, there are various PRPs requirements as per the food industry an organization is operating. This criterion includes:

- ISO/TS 22002-1: Food Processing
- ISO/TS 22002-2: Catering
- ISO/TS 22002-3: Farming
- ISO/TS 22002-4 Food Packaging Manufacturing

1.3 Global Red Meat Standard (GRMS)

Global Red Meat Standard (GRMS) is a certification scheme developed explicitly for the meat industry. Its foundation is based on product safety and focuses on critical areas that impact meeting requirements for essential meat safety areas. GRMS was developed in Denmark by the Danish Agricultural and Food Council specifically to regulate the meat industry. This standard covers transportation, lairage, stunning, slaughter, deboning, cutting, and handling of meat and meat products. The purpose of GRMS is to deliver an EN45011 certified standard explicitly designed for slaughtering, cutting, deboning, and marketing of red meat and meat products where the whole production is subject to an independent auditing system.

Global Red Meat Standard (GRMS) is recognized by the Global Food Safety Initiative (GFSI) and consists of all production process criteria via detailed, high-quality red meat production requirements. The main focus of GRMS is on the critical areas that impact high levels of meat safety rather than having a broad and general guide like in many other standards. As a meat industry-standard, GRMS gives its customers an invaluable tool for measuring supplier's performance.

1.4 International Featured Standards (IFS)

International Featured Standards (IFS) is a standard recognized by GFSI for certifying the safety and quality of food production processes. The focus of IFS is on developing a standardized uniform measure against which brand owners and retailers can assess their suppliers and enhance transparency in the supply chain. Therefore, IFS certification is a demonstration by certified companies that they have established processes that are suitable for ensuring food safety and that it has considered and implemented customer specifications. IFS is open to food manufacturers, brokers, hygiene product manufacturers, logistics providers, and wholesalers.

I.5 Global GAP

Global Good Manufacturing Practice (Global GAP), formerly known as EurepGAP, was developed in 1997 as a retailer initiative focusing on retail produce. Global GAP is a private standard that sets voluntary standards for agricultural product certification around the world. Global GAP is designed to reassure consumers of the integrity of the produce from the farms. The Global GAP standard focuses on Good Practices such as traceability, food safety, reducing the harm of farming operations on the environment, biodiversity, ensuring a responsible approach to worker health, reducing the use of chemical inputs, safety, and animal welfare. Global GAP is one standard with varied product applications that can interface seamlessly with the whole global agriculture pattern that includes integrated pest control, integrated crop management, HACCP, and a Quality Management System.

Global GAP certified organizations must have sufficient pre-farmgate control of hazards in the production process at the farm level, including the management of farm inputs, seedlings, and farm preparation, including all related farm activities until harvest and storage of the produce. Global GAP's Intergraded Farm Assurance Standards cover good agricultural practices in agriculture, aquaculture, horticulture, and livestock production. This module also covers other aspects of food production and supply chains like the chain of custody and compound feed production.

I.6 Other GFSI-Benchmarked Standards and Certification Programs

The following are also GFSI recognized standards and schemes for technical equivalence with GFSI technical requirements:

- The Japan Food Safety Management Association
- ASIAGAP and Japan GAP
- The Safe Quality Food Institute Standard
- The Seafood Processing Standard of the Global Aquaculture Alliance
- The PrimusGFS Standards
- Canada GAP

I.7 General Procedure for Certification to a Food Safety Management System

Step 1 – Preliminary Investigation:

When a client expresses interest in certification services, the accredited certification body determines whether the client is sufficiently prepared for the audit process. The client is requested to complete the initial questionnaire, which gives more information about the organization, including the nature of the business, number of employees, number of sites (temporary and permanent), physical address, and contacts.

Step 2 – Application:

If the client is ready, a cost quotation is done based on the application form's information and sent to the client. If this is acceptable to the client, the client pays the application fees, and the HOD-CB sends the client a commitment letter to undertake the certification services.

Step 3 – Gap Assessment (Stage 1 Audit):

Review the client's management system documented information against the normative docu-

ment requirements:

- Evaluate the client’s site-specific conditions and undertake discussions with the client’s personnel to determine the preparedness for stage 2.
- Review the client’s status and understanding regarding requirements of the standard, in particular concerning the identification of critical performance or significant aspects, processes, objectives, and operation of the management system;
- Review the allocation of resources for stage 2 and agree on stage 2 with the client.
- Evaluate if the client’s internal audit and management reviews are being planned, performed, and are valid.
- Provide a focus for the stage 2 audit and agree with the client on the stage two audit details.
- To confirm the information given in the application form and collect information regarding the scope of the audit.

Step 4 – Certification Audit (Stage 2 Audit):

The certification audit is done on-site, and its main objective is to evaluate the implementation thoroughly as the client’s management system’s effectiveness. The audit includes an examination of at least the following:

- Information and evidence about conformity to all requirements of the applicable management system standard or other normative documents.
- Performance monitoring, measuring, reporting, and reviewing against key performance objectives and targets (consistent with the expectations in the applicable management system standard or other normative documents).
- The client’s management system and performance as regards legal compliance.
- Operational control of the client’s processes.
- Internal auditing and management review processes.
- Management responsibility for the client’s policies.
- Links between the normative requirements, policy, performance objectives, and targets (consistent with the applicable management system’s expectations and any applicable legal requirements, responsibilities, competence of personnel, operations, procedures, performance data, and internal audit findings and conclusions).
- If non-conformities are found during this audit, they should be recorded and classified as either critical (BRC), major or minor.
- Corrective action plans must be submitted for all nonconformities.
- The timeline for submitting a Corrective Action Plan (CAP) by the auditee/client depends on each standard.
- The auditor/certification body must indicate acceptance of the plan before the client undertakes the actions therein.

Step 5 – Certification:

After the follow-up audit, during which time the corrective action plan from the certification audit is confirmed to have been carried out, the audit findings and conclusions are

evaluated by a peer audit and the certification officer, who then makes recommendations to the certification committee.

The committee will then make the certification decision.

Once certified, the certificate is valid for 1-3 years, depending on each standard (e.g., 1-year BRC and 3-years ISO).

Step 6 – Surveillance Audits (ISO Standards):

Once a company has been certified, especially in ISO standards. For the contract period, surveillance audits are carried at least once a calendar year except in recertification years to ascertain continuous conformity.

Step 7 – Recertification:

A recertification audit should be conducted at least two months before the expiry of the certification contract.

Certification contract varies from one standard to the other.

1.8 Benefits of Certification to a Food Safety Management Systems

1. **Risk Management** - Implementing a food safety management system and getting certified to any food safety standard provides a food business operator with effective management of food safety hazards by creating an environment as well as techniques that are capable of producing safe food products and management systems to monitor, manage, validate and improve the system. It is important to note that all food safety management system standards and schemes are based on the Plan Do Check and Act (PDCA) principle, thus focusing on the process rather than the product.
2. **Maintaining Customers** - Being certified and maintaining certification helps you stay competitive and qualified to work with your current customers. Statistics indicate that 1 out of 4 certified companies is requesting their suppliers to achieve certification. There are markets that a food company can only enter after getting certified to GFSI benchmarked standards and schemes.
3. **Increase your Market Reach** – Global retailers and multinational manufacturers and processors are increasingly demanding for suppliers to get certified. FSSC 22000, BRC Global Standards, or any GFSI benchmarked certification is a qualification to supply international and world-class organizations or their suppliers, thus opening up a large market for their products.
4. **Prepare for New Regulations** – There are changes to food safety regulations that take place across the world. In this regard, getting certified to an internationally recognized food safety standard means you are informed of the standards' changes.

CHAPTER TWO: PRINCIPLE FOOD SAFETY REGULATIONS

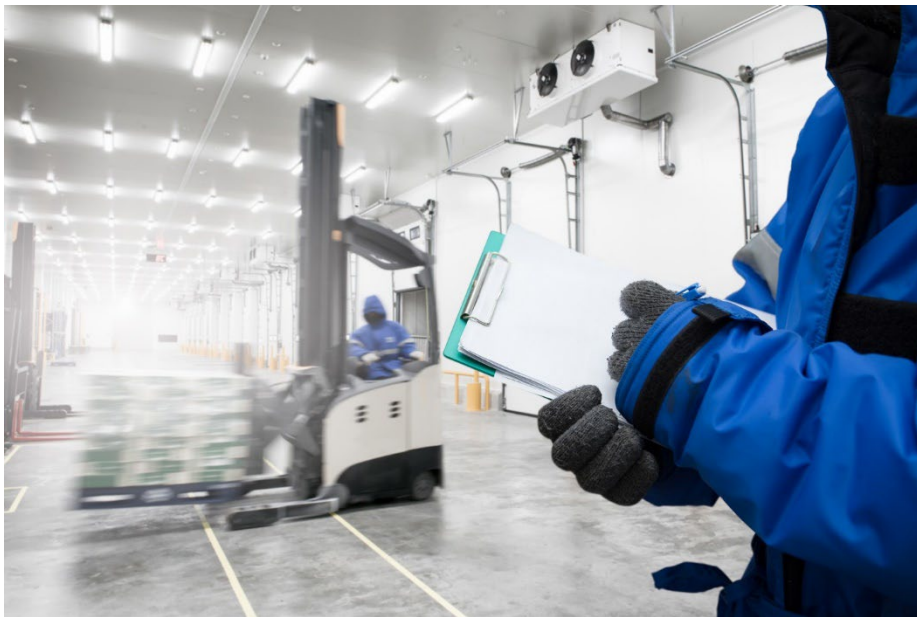
2.0 Introduction

Food safety regulation is vital. It plays an essential role in ensuring that both the customers' health and effective Food handling operations from farm and sea to the dinner table. The ability to produce safe foods and be trusted by customers is important for food producers who aim to integrate their business into international trade. Every organization and every person involved within the food chain, from farm and sea to producer, to our dinner table, shares responsibility for the safety of food. "Food Safety Systems" include producers, processors, shippers, retailers, food preparers, and, ultimately, consumers. The government plays a vital role by establishing standards and overseeing their enforcement. Note: Throughout this module, we will often refer to examples from Kenya. However, many of these rules are universal all over the world. So be assured that if you're in Tanzania, Uganda, Rwanda, Burundi, or any other nearby country in the East African Community (EAC), the laws will be very similar to those in Kenya. If they

significantly differ, we will try to explain and point out those laws specific to a country.

Even though the East African Community has many well-defined food safety laws, as a consequence, the governments' role can be complicated, fragmented, and in many ways, uncoordinated in guaranteeing the safety of the food that ends up on our plates. Universally, Governments base food safety regulations on the best reasonably obtainable scientific, technical, economic, and other information concerning the safe growth, handling, storage, and sale of food commodities. These government agencies that ensure the safety of the food we eat are also legally responsible for ensuring that the science and analysis within these regulations satisfy quality, objectivity, utility, and integrity requirements.

Many food safety regulations have been derived, and standards applicable in East Africa have been derived from Codex Alimentarius. Codex Alimentarius is a collection of internationally adopted standards that have been presented uniformly. Codex Alimentarius originated from the World Trade Organization Agreement on the use of Phytosanitary and Sanitary measures. It consists of international guidelines, standards, and recommendations upon which members of the World Trade organization are encouraged to base their sanitary and phytosanitary actions. Codex rules also apply to countries that are not members of (WTO) but want to trade with WTO





members. The objective of having codex is to protect consumers' health, promote harmonization of standards, and ensure fair food trade practices.

2.1 Policy, Legal and Regulatory Framework for Food Control

Food regulations are meant to protect. Ultimately, they are meant for the safety of and to assist consumers. Laws that promote food safety in the East African Community countries are implemented by multiple agencies in various departments and ministries. In Kenya, for instance, the central institutions responsible for enforcing food safety are:

- The Kenya Bureau of Standards (KEBS). The Kenya Bureau of Standards is responsible for preparing standards relating to food products, food product certification, and food quality inspection at entry ports.
- The Kenya Plant Health Inspectorate Service (KPHIS). The Kenya Plant Health Inspectorate Service ensures the safety of all agricultural commodities and produce.
- The Directorate of Veterinary Services (DVS). The Directorate of Veterinary Services are responsible for national livestock health, meat safety, and meat products produced locally and imported.

In Tanzania, those policies are administered by the Tanzania Food and Drugs Authority (TFDA). The TFDA is an Executive Agency under the Ministry of Health, Community Development, Gender, Elderly, and Children (MOHC-DGE). TFDA is responsible for regulating the safety, quality, and effectiveness of food, medicines, cosmetics, medical devices, and diagnostics. TFDA's primary



responsibility is stated in the Health Policy, 2007, and its mandate is stipulated in the Tanzania food, drugs, and cosmetics act (TFDCA) cap. 219. The act provides efficient and comprehensive regulation and control of the safety and quality of food, medicines, cosmetics, medical devices, and diagnostics in Tanzania.

In Uganda, the policies are administered by the National Food and Nutrition Council (NFNC). The NFNC also advises the Government to formulate the Uganda Food and Nutrition Policy (UFNP) by providing guidelines for implementing the policy, research, monitoring, and evaluation. There are Thirteen (13) members of the Council representing concerned ministries and institutions, and the private sector, as follows:



- Ministry responsible for Agriculture, Animal Industry and Fisheries;
- Ministry responsible for Health;
- Ministry responsible for Gender, Labor and Social Development;
- Ministry responsible for Planning, Finance, and Economic Development;
- Ministry responsible for Education and Sports;
- Ministry responsible for Trade, Tourism, and Industry,
- Ministry responsible for Local Government;
- Makerere University (to represent institutions of higher learning);
- Uganda National Bureau of Standards;
- A representative of Civil Society;
- The Farmers' Representative;
- A representative from the Private Sector; and
- Director of the PMA Secretariat.



In Rwanda, food safety policies are handled by Rwanda Food and Drugs Authority, hereafter designated as the “Authority,” which was established by the law N° 003/2018 of 09/02/2018 determining its mission, organization, and functioning. The Authority’s mandate is to protect public health by regulating human and veterinary medicines, vaccines, and other biological products, processed foods, poisons, medicated cosmetics, medical devices, household chemical substances, tobacco, and tobacco products. The Authority is under the auspices of the Ministry of Health.

And in Burundi, the Burundi Development Food Assistance Program has no legal authority and does not regulate the agribusiness market. But they work with USAID/FFP, WHO, and FAO to offer guidelines that may be voluntarily followed.



Let’s return to using Kenya as an example just to explain how government food policies work. As mentioned before, provisions for protecting the food in Kenya are found in several laws, but the bulk of requirements are in the Public Health Act Cap 242 and the Meat Control Act Cap 356 of Kenya’s laws.

A basic overview of the provisions in the Public Health Act Cap 242 are as follows:

- Food must be prepared and stored in establishments approved to use clean and

pathogen-free equipment and containers.

- Potable water (“Potable water” simply means water that is safe to drink) be used to prepare food.
- Food products are processed or cooked to destroy pathogenic microorganisms.
- Food products must be processed, handled, packed, stored, and transported, or shipped hygienically. And, all necessary precautions are taken to prevent recontamination.
- Food stores must be free of vermin, such as rodents, flies, and cockroaches.
- People should not sleep or eat in food stores or food preparation rooms, such as kitchens.
- Food handlers must be free of infectious diseases and must undergo regular medical check-ups.
- Materials and articles in contact with foodstuffs (e.g., packaging materials or containers must be non-toxic and innocuous.)
- Food products must not contain harmful additives or foreign substances, including microbial toxins or chemical residues in concentrations detrimental to health.
- Foodstuffs or food ingredients must be transported and stored separately from poisonous substances such as pesticides, fertilizers.

And a basic overview of the provisions covered in the Meat Control Act Cap 356 are as follows:

- Animals meant for slaughter must be free of communicable /zoonotic diseases (e.g., BSE, Avian Flu, FMD, rabies, etc.)
- There must be an antemortem inspection of slaughter animals to prevent the slaughter of sick ones.
- Carcasses/organs of slaughtered animals showing lesions (at Post mortem examination) of the presence of infectious/contagious and zoonotic diseases be condemned and destroyed to prevent them from entering the food chain.
- Carcasses are decontaminated before they enter the food chain. Plus, they must be protected from recontamination through appropriate handling and storage.
- Treated animals are slaughtered only after the recommended withdrawal periods have elapsed.



And a basic overview of other laws with provisions on food safety is:

- Fisheries Act Cap 378 - Food production environments must be free of toxic/poisonous substances (e.g., fishing environments and soil should be free of heavy metals to avoid the production of contaminated food.)
- Pig Industry Act Cap 361- Pigs should be raised in confinement and feeds free of disease pathogens like salmonella.
- Pest Control and Products Act Cap 346 - Appropriate pesticides must be used to control pests in food crops and food animals, as well as appropriate withdrawal periods allowed to prevent the accumulation of pesticide residues.
- Food, drugs, and chemical substances Act Cap 254 - Appropriate drugs and antibiotics must be used to treat animal diseases, and withdrawal periods allowed to prevent the accumulation of drug residues in animal food products.



While the policy numbers might be different, these provisions are standard over all the East African Community. While it may seem like superfluous information, food safety policies are written laws that show what safety and quality guidelines agribusinesses must follow to ensure that all food commodities are safe for people to eat. These rules are an essential tool to help businesses handle, process, or sell potentially hazardous foods. These rules are necessary to maintain safe

food handling practices and protect public health.

However, in all the East African Community countries, these laws and regulations are always subject to change. Given the size and complexity of the current multifaceted system, it is not unexpected that new information and new concerns often emerge. Many are due to advances in science or changes in food production and consumption patterns. So, even the current system itself must then change if it maintains active vigilance over the food supply's safety. While Burundi lags, the rest of the East African Commu-



nity through the East Africa Standards program has acted to strengthen the governments' role as the primary agent for integrating activities related to food safety. Many components of the national food safety systems determined by the various governmental agencies have been relatively unchanged over the last few decades, and concerns have come forward that significant changes may be required.

The laws were just enacted in a 2007 mandate in Tanzania. In Uganda, the policies were put in place in 2016. And, the RDFA Authority just took over food safety policies in 2018 in Rwanda. There is currently a bill proposed before the National Assembly called The Kenya Food and Drug Safety Authority in Kenya. This bill seeks to centralize all the various government agencies into one large department that oversees food and drug safety. But as of the summer of 2020, this system is still in the legislative phase. As far as Burundi, the country is working with the EAC and global organizations to introduce food safety regulations soon, hopefully.



The next step is getting an agribusiness inspected and certified to operate. Again, in this example below, we'll use Kenya, but these guidelines are very similar and easily transferable between East African Community nations.

2.2 Institutional Framework for Food Regulation

Food safety certification for your various East African country confirms that your management system complies with the

appropriate standards. This institutional framework improves food safety, processes and increases your market viability. With supply chains becoming increasingly globalized and sophisticated, the need for standardized, internationally accepted food safety audits has grown. Food safety audits provide transparency and traceability in the supply chain, enhancing quality and efficiency while also reducing cost and risk.

All food products sold in the East African Community countries must meet the minimum requirements as contained in various standards. Commodities traded in the region must meet specifications in East African Standards. For instance, in Kenya, for any food product to be sold in the Kenyan market, it has to be certified by the standardization body, Kenya Bureau of Standards.

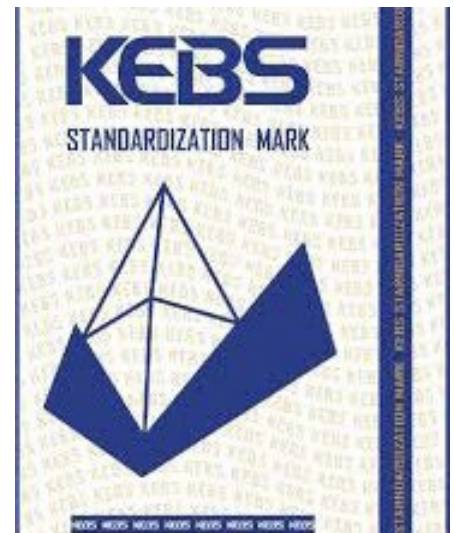
The Kenya Bureau of Standards (KEBS) is the government agency responsible for governing and maintaining Kenya's food safety standards. It was established by an Act of Parliament of Kenya's National Assembly, The Standard Act, and Chapter 496 of Kenya's Laws. The Bureau started its operations in July 1974. It has principal offices in Nairobi, and maintains regional offices in Mombasa, Kisumu, Nakuru, Garissa, Nyeri, and has import inspection offices at all the legal entry points in Kenya. Therefore, all agribusinesses in all parts of the food supply chain from farm to retail need to receive certification from The Kenya Bureau of Standards (KEBS) to operate and sell food commodities.

What is more, sharing the same mission and core values as KEBS, are the Tanzania Bureau of Standards (TBS), the Uganda National Bureau of Standards (UNBS), the Rwanda Standards Board (RSB), and the Burundi Bureau of Standards and Quality Control (BBN) that administers and promotes standardization and quality assurance in industry and commerce through standards development, certification, inspection, and testing. The aims and objectives of Standards Boards include preparation of standards relating to products, measurements, materials, processes, etc. and their promotion at national, regional, and international levels; certification of industrial products; assistance in the production of quality goods; quality inspection of imports at ports of entry; improvement of measurement accuracies and dissemination of information relating to standards.

These Standards Boards are all members of the International Organization for Standardization (ISO), the Codex Alimentarius Commission (CAC), and the World Health Organization (WHO). These organizations work in unison to research, fashion, and introduce food safety guidelines globally.

Following the above guidelines, the main functions of EAC Standards Boards are as follows:

- Promote standardization in industry and commerce.
- Provide facilities for examination and testing commodities manufactured in the East African Community.
- Test goods destined for exports for purposes of certification.
- Prepare, frame, or amend specifications and codes of practice.



The Standards Boards are the government agencies with the responsibility for national food safety control. For example, upon approval in Kenya, KEBS will issue what is called a standardization mark. Each country has a similar mark.

Here's how the process of standardization works for all the East African Community countries:

2.2.1 Steps to Acquire Standardization Mark

Local Product Certification Process:

Step 1 – Application Process:

- Complete any questionnaires and application forms relative to your various country.
- The various certification bodies will then determine whether the client is sufficiently prepared for the audit process by reviewing the completed application form and questionnaires. Provide a copy of your company's registration form for either Ltd Companies, Corporations, or pieces of evidence for registration, cooperatives societies, self-help groups, etc.
- If the client is ready, the certification agreement and cost quotation are prepared based on the application form's information and issued to the client for acceptance before effect payment. Pay the required product certification fees as appro-

priate. These fees will vary from country to country.

- Note: Payment of application fees is an indication that the client has accepted the cost quotation and has read and understood the conditions of the contract of the certification agreement to your various country's Standards Bureau.
- Show the Acquired Product Standards (specification and sector codes of practices).
- Please note that no product samples are required at the time of submitting your application.
- You can obtain links to the various Standards Bureaus after this module.

Step 2 – Assessment process:

After completing the application forms and paying appropriate fees, a quality assurance officer from your Standards Bureau will visit the production facility to:



- Carry out an industrial inspection and audit.
- Draw samples for analysis.
- Discuss and agree on the scheme of supervision and control.

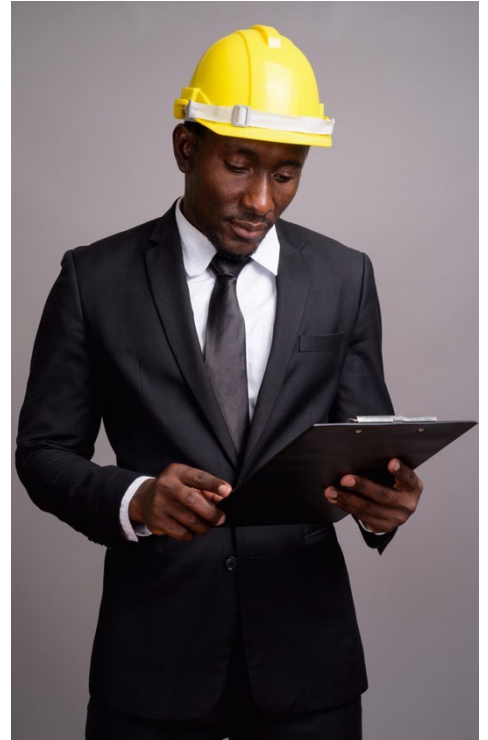
Step 3 – Evaluation:

- Samples are analyzed at approved laboratories or other accredited/designated laboratories to check for compliance with your country's standards, East African Standards, or approved specifications.
- Suppose samples comply and inspection officer's reports indicate compliance with codes of practice. In that case, a recommendation is made for the issuance of the permit to use the standardization mark to the Permit Standardization Committee for standardization Mark.
- If the Standardization Committee confirms that all requirements have been met, a permit is issued.
- If samples fail to comply in the first instance and corrective action is reviewed for appropriateness, then retesting the parameter that did not comply is done free of charge. And then, when the product complies, a permit to use the standardization mark is issued.
- If samples fail to comply in the second instance and subsequent tests, testing will be carried at the manufacturer's expense.
- If nonconformities are identified at the point of inspection, the manufacturer has the responsibility to undertake corrective action and inform KEBS to confirm the actions taken.

2.2.2 Assessment Criteria for Approval

The following criteria are essential to the successful approval and certification of any product by the standardization body:

- Evidence of quality control.
- Incoming raw material.
- In-process controls during processing and manufacturing.
- Finished products are handling packaging and hygiene levels.
- Product labeling with batches, manufacturing dates, expiry dates, composition, product characteristics, intended use, and direction of use.
- Show the storage conditions.
- Show the company procedure for handling complaints.
- Show plant housekeeping, hygiene, and sanitation.
- Environmental considerations, such as pest control and waste management.



2.2.3 Certification Fees

There are fees paid to the standardization body after successful certification of the product. Prices depend on the type of food production or manufacturing. Detailed costs will vary between the different countries, but most can be found on your country's Standards Bureau website.

To acquire the mark, a producer must meet all quality requirements specified in the various East African/Country/Approved Standards for manufactured goods. A permit to use a Standardization Mark is issued to a firm to certify that a particular product conforms to Standard requirements.

2.2.4 Imported Product Inspection and Certification Process

Food inspection can be used as a dedicated quality management tool and as a checkpoint to safeguard the quality and safety of your goods directly in your sourcing countries, at the earliest stage of the logistical step.

Globalization and advances in technology have created a complex food supply chain with numerous and diverse stakeholders facilitating the process. A lack of quality monitoring processes, complex logistics structures, food handling methods, and other factors can jeopardize food products' safety and quality.

As a manufacturer, supplier, or producer, it is crucial to monitor and maintain healthy, hygienic, and conducive environments along the supply chain to safeguard your products' quality and safety.

By implementing food inspections, you can control a given number of samples within a defined lot and follow a fixed sampling plan according to specific points of control to identify issues at their source, maintain product consistency, and ensure local and legal regulations are followed

during transportation and to enhance your company image.

Therefore, food safety begins with the inspections that your company undertakes at the earliest stages of production. If your product is imported/exported and does not meet good safety practices, it could be refused and result in costs to your company. Also, the government has the right to the inspection of imports.

The purpose of quality inspection of imports is to ensure that imports into your country comply with your country's Standards Bureau's requirements, to which locally manufactured goods are also tested. This inspection will eliminate the dumping of substandard products in the local market. Government through standardization bodies like Standards Bureaus ensures that all Imports into your country meet the requirements of your country's standards, East African standards, or any other standards approved by your country's government. You can find criteria for each product on the website of the various Standards Bureaus.

Inspection Procedure:

- The importer should inform his supplier about the Standards Bureaus' requirements covering the commodity they intend to import.
- They should enter an agreement with the supplier that if the product does not meet the requirements of the relevant Standards Bureaus when inspected at the port of entry in your country, it will be shipped back to the country of origin at the supplier's cost.
- When goods arrive at the Port of Entry, the importer should inform standardization body staff of your country's Standards Bureau on-site who will:
 - Inspect the goods, the entry form, and the packing list.
 - Take samples for testing.
 - Release the goods into the country if found to be complying with relevant Standards Bureau guidelines.
- Standardization bodies should then issue a certificate of conformity (CoC) upon payment of relevant fees.

2.2.5 Pre-Export Verification of Conformity (PVoC)

Apart from the inspection of imports at the port of entry, your country's Standards Bureau introduced the Pre-export Verification of Conformity (PVoC). The PVoC Program is a conformity assessment program applied to products at the respective exporting countries to ensure compliance with the applicable East African Technical Regulations and Mandatory Standards or approved specifications.

KEBS		KENYA BUREAU OF STANDARDS	
PRE-EXPORT VERIFICATION OF CONFORMITY (PVoC)		CERTIFICATE OF CONFORMITY	
UCR Number E1602259678	UCR201500259884	Coc No S-201/13/038665	Issue Date 08.03.2016
IRPC date 28.02.2016	Reference No. 3905792111	Importer GIRIRAJ BUILDERS LIMITED P.O. BOX 38810-00823 Nairobi - Kenya Phone # +254-3746644 E-Mail info@girirajbuilder.co.ke	Exporter WINMAX PLUS CERAMIC PVT LTD S.A. I.I.H. MATUGONJE, ATANGUJVA, TAL. WANAKAMBI - 35302 GULJARAT - INDIA Phone # +91-9727770453 E-Mail export.winmaxplus@gmail.com
Date of Inspection 29.02.2016	Place of Inspection GULJARAT, IN	Port of Destination Mombasa - KE	Shipment Mode SEA
Seal #	Quantity of Supply	Quantity Delivered (Full/Part)	TOTAL
FOB value 4211.51 USD	Invoice No. EXP0715-16	Invoice Date 01.03.2016	
Declared HS Code 6908900000	Quantity 99.63 Square Metres	Product CERAMIC GLAZED WALL TILES COLORED, SIZE : 300 X 300MM	Route Used A
6908900000	972 Square Metres	CERAMIC GLAZED WALL TILES COLORED, SIZE : 300 X 300MM	A
Gross Weight 16100 KG			
Remarks VARIOUS TEST REPORTS DATED 29.06.2015 FROM NATIONAL CERA LABORATORY. INSPECTION REPORT DATED 29.02.2016			

Prepared and authorized by SGS Nairobi Liaison Office on Date 08.03.2016

Working Office SGS INDIA PVT LTD - GIS - MUMBAI - India

SADEEP DEBHIMROH

This document is valid for three months from the date of issuance

This document is issued under the authority of the Pre-Export Verification of Conformity Programme, for and on behalf of the Kenya Bureau of Standards, KENYA

This certificate is issued according to the requirements of KEBS (Kenya Bureau of Standards) and is subject to the applicable SGS General Conditions for Product Conformity Assessment, which can be found at <http://www.sgs.com/en/conditions>. The SGS General Conditions of Service printed on the back of this certificate are not applicable.

The weight of the goods under this CoC has been provided by the parties, such as the exporter, supplier or manufacturer, is given here for reference only and by no means provides correct figure. SGS cannot be held responsible for any consequences of using this weight in commercial transactions, or by government agencies for any purposes.

This document does not discharge exporters from their contractual obligations in relation to quality and quantity of the goods referred to herein, nor does it discharge the importer or the importer from exercising all their rights and discharging all their liabilities under the Contract of Sale. Disputations in the country are not binding on SGS. This document does not evidence shipment. KEBS may reject the consignment covered by this CoC if found to be non-conforming on verification at the port of entry.

We would be happy to receive your feedback on the SGS Governments and Institutions Services (GIS), which you can do by completing the following on-line client feedback form: http://www.sgs.com/ho/customers_feedback_request or information@nib.bureau-kenya.org

29657018711

SGS INDIA PVT LTD - GIS, SGS House, 4B, Ashi Shankarjadhaya Marg, Vikhedi (W), 400083 MUMBAI, India



The creation of the PVoC is to assure East African consumers of the safety and quality of the imported goods they buy and protect local manufacturers from unfair competition.

The objective is:

- To ensure the quality of products, health and safety, and environmental protection for consumers.
- To facilitate trade by ensuring that compliant goods are given expedited clearance at the port of entry.
- To safeguard the country from unfair trade practices and the dumping of substandard goods by ensuring that imported products comply with the same requirements to which locally manufactured goods are subjected.
- To safeguard the country's national security.
- To prevent deceptive trade practices.
- Accredited third-party inspection companies operate the program on behalf of standardization bodies.
- The world is divided into nineteen (19) regions based on proximity and trade volumes.
- The program also typically provides for multiple Standards Bureau agents in most regions to enhance efficiency.
- The basis of certification is based on your government's standards or approved specifications.



All PVoC food consignments must obtain a Certificate of Conformity (CoC) issued by an authorized PVoC Agent before shipment. The CoC is a mandatory document for Customs Clearance in your country; consignments arriving at ports without this document will be denied entry into the various countries with ports.

The critical elements undertaken in the PVoC are:



- Physical inspection before shipment
- Sampling, testing, and analysis in accredited laboratories
- Quality Audit of production processes
- Documentary review of conformity with regulations
- Issuance of Certificate of Conformity (CoC) or

Non-Conformity Report (NCR) as appropriate.

Exporters and importers are responsible for ensuring that their products and shipments fully comply with the PVoC of your country's Standards Bureau and obtain the mandatory PVoC certificate of conformity.

The Responsibilities of Importers in your country are to ensure their suppliers

understand the import quality requirements and that their consignments are accompanied by a CoC from an authorized PVoC Agent.

The Responsibilities of exporters to your country are to ensure their products or goods meet the regulations and quality requirements of the PVoC before shipment by obtaining the necessary CoC from an authorized PVoC Agent for all products subject to the PVoC program.

Typical Routes of Certification are as follows:

Route A – Occasional Exports:

- No registration
- Testing and Inspection
- Issuance of CoC

Route B – Frequent Exporters:

- Product registration
- Inspection and random testing
- Issuance of CoC

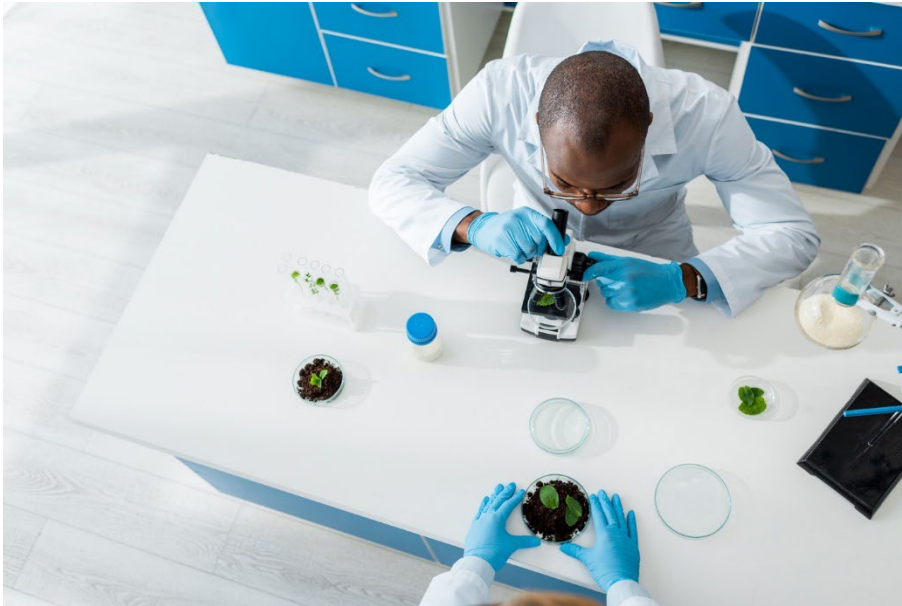
Route C – Frequent Exporters and High-Volume Manufacturers:

- Product licensing
- License review and random testing
- Issuance of CoC



2.3 Product Inspection/Market Surveillance

The Standards Bureau does not perform destination inspections for regulated product shipments arriving in your country without PVoC certificates. In Kenya, for instance, all exports covered under the Kenyan Cabinet Secretary for Industry, Trade, and Cooperatives Legal Notice 127 stipulates that exporters must have a mandatory inspection of regulated product shipments under the Pre-Verification of Conformity program. Accredited PVoC partners in the Country



of Supply must perform these inspections before the deliveries are dispatched to Kenya. This example would be similar in all East African Community countries.

Customs will refuse clearance to all shipments of regulated products arriving at East African ports and borders without PVoC shipment certificates. Therefore, what is more, it would be required to be shipped

to the Country of Supply or to the port of a nearby country where the concerned PVoC partner can carry out PVoC certification of the shipment. The Exporter/Importer should bear the cost of shipping from your country to the country of supply or the port of a nearby country.

From time to time, the government has the right to conduct surveillance inspections once the product has been allowed into the market. In exceptional cases, and at the sole discretion of your Standards Bureau, they may permit specific consignments to undergo destination inspections after receiving the appropriate application from importers. Such shipments will be subject to a penalty of 15% of the CIF value of the goods, plus a 15% bond and the testing and inspection costs. All other expenses incurred at the destination will be borne solely by the importer.

Monitoring products in the East African Community market ensures that they conform to relevant technical regulations (Your Country's Standards or Approved Specifications) concerning health, safety, and environmental requirements and ensure fair trade practices are promoted.

As a result of the ongoing East African regional harmonization of SMCA procedures and regulations, market surveillance in the East African Community is buttressed by Section 6 of the EAC SQMT Regulations 2013:

- Conducting sector-targeted market surveillance activities (Compliance Assessment) using a programmed schedule of activities and results of product risk assessment;
- They ensure that all complaints related to substandard and counterfeit products are acknowledged, reviewed, evaluated, and investigated to the conclusion.
- Initiating and implementing corrective action and preventive actions, including seizure, arrests, prosecution, and product recalls.
- Gathering and evaluating market intelligence and advising the organization on strategies to ensure compliance of products in the market.
- Developing and implementing programs to create awareness of product quality issues and consumers' rights and obligations. And
- They are partnering with other government and private sector agencies involved in product and service performance monitoring.

The following are the accredited third-party inspections agents that have been certified by standardization bodies for those importing food products from other countries:

- Bureau Veritas S.A.
- Intertek International Ltd
- China Certification & Inspection (Group) inspection Co. Ltd
- Cotecna Inspection S.A.
- SGS S.A.

2.4 Analytical Services/Laboratory Tests

Food testing is integral to the efficient production of safe, quality products. With the food industry increasingly subject to scrutiny, testing to ensure compliance with food safety regulations and protect public health is necessary.

Apart from inspection as a form of market surveillance, your country's Standards Bureau will work with other agencies to conduct surveillance through product testing. Analytical services aim to provide laboratory facilities for examining and testing food commodities, whether in raw form, semi-processed or fully processed.

Typically, government laboratories and private laboratories do all food analytical services within East African countries. For Example, in Kenya, the Kenya Accreditation Services (KENAS) is a quasi-government body with both public and private sector membership to develop a national accreditation system. The Government of Kenya recognizes KENAS as the sole national accreditation body that provides format recognition for Certification Bodies (C.B.s) and testing agencies. Other East African Community nations use the same type of system.

In Kenya, for example, in addition to KEBS, other national food testing bodies include:

- The Government Chemist (forensic testing for law enforcement agencies);
- The National Quality Control Laboratories (medical and pharmaceutical testing);
- The National Public Health Laboratories (testing of microbiological reagents);
- The Kenya Plant Health Inspectorate Service (KEPHIS) (certification of all imported plant materials as well as implementing sanitary & phytosanitary requirements);
- Private conformity assessment bodies in Kenya include SGS Kenya, Bureau Veritas, and Intertek Services, Analabs, all of which provide private consumer product-testing services.

This procedure will be the same in all East African Community countries. The details of the process for testing food products and testing fees are available on each country's website.

CHAPTER 3: PREREQUISITE PROGRAMS

3.0 Introduction



In chapter one, we looked at various food safety standards and certification schemes recognized by GFSI. Before the implementation of any food safety management system, food business operators must first establish initial controls. These controls are dictated by the segment of the food production chain in which the food business operator is active and the type of food business. The World Health Organization (WHO) defines Prerequisite Programs (PRPs) by the “practices and conditions needed before and during the implementation of HACCP [hazard analysis critical control point (HACCP)] and which are essential for food safety.” PRPs are a prerequisite to HACCP and provide a strong foundation for effective food safety and HACCP system. PRPS is facility-wide programs that are not specific to a particular product or process. PRPs play an essential role in preventing

or reducing the likelihood of occurrence of a food safety hazard. In this regard, PRPs form the primary conditions that must be met by an organization and throughout handling from receipt to dispatch to maintain food safety. Examples of PRPs include Good Manufacturing Practice (GMPs), Good Agricultural Practice (GAP), Good Distribution Practice (GDPs), etc.

International Organization for Standardization (ISO), the largest international standards source, has released various pre-requisite program standards. Contained in the guidelines for implementing PRPs are the ISO/technical specifications (TS) 22002 and are as follows:

- Part 1: food manufacturing (2009), ISO/TS 22002-1;
- Part 2: catering (2013), ISO/TS 22002-2;
- Part 3: farming (2011), ISO/TS 22002-3;
- Part 4: food packaging manufacturing (2013), ISO/TS 22002-4;
- Part 5: transport and storage (2019), ISO/TS 22002-5; and
- Part 6: feed and animal food production (2016), ISO/TS 22002-6.

PRPs are the foundation for food safety and HACCP and must be appropriately developed, accurately implemented and maintained. It is important to note that food business operator risks serious problems if PRPs are not correctly maintained. Statistics show that many outbreaks of foodborne illnesses are not caused by failure or breakdown of CCPs but by negligence in one or more PRPs. ISO/TS 22002 guidelines align specific food industry sectors with the Codex Alimentarius. This chapter focuses on PRPs and their requirements, focusing on ISO/TS 22002-1, which specifies PRPs for a food manufacturer.

ISO/TS 22002-1:2009 applies to all food manufacturing organizations regardless of their size or



complexity. It outlines the requirements for establishing, implementing, and maintaining PRPS to control food safety hazards.

These include:

1. Construction and layout of buildings and associated utilities;
2. The layout of premises, including workspace and employee facilities;
3. Supplies of air, water, energy, and other utilities;
4. Supporting services, including waste and sewage disposal;
5. Suitability of equipment and its accessibility for cleaning, maintenance, and preventive maintenance;
6. Management of purchased materials;
7. Measures for the prevention of cross-contamination;
8. Cleaning and sanitizing;
9. Pest control;
10. Personnel hygiene.

3.1 Role of PRPs in Supporting HACCP

As outlined above, PRPs are established mainly to deal with a food handling facility's good housekeeping concerns, whereas a HACCP manages specific process hazards. Food handling facilities must provide documentation for all PRPs that have been implemented. This documentation includes written programs, records, as well as results that support their HACCP plan. For example, a food handling facility may consist of *Escherichia Coli* as a hazard that is not likely to occur during the processing since the facility has a Prerequisite Program (PRP) with specifications on purchase and incoming materials that address *Escherichia Coli*. In this regard, the food handling facility must maintain documentation that shows how they made the purchase. Plus, all the required tests and records must prove that incoming materials purchased were found free

of *Escherichia coli* contamination. This documentation will demonstrate that the PRP is sufficient and that *Escherichia Coli* is not reasonably likely to occur.

3.2 Planning, Developing PRPs

The first step in planning for the development of PRPs is the consideration for regulatory and statutory requirements, codes of practice, industry standards, Codex Alimentarius Commission principles, and regulations of training and information from food safety management system standards such as BRC Global Standards, Food Safety System Certification 22000, and GLOBALGAP among others. When developing Standard Operating Procedure (SOP)s or work instructions, you must document Prerequisite Programs. A food handling facility must establish procedures to be followed when receiving materials, processing, packaging, storing, and dispatch. The policy explains what tests are needed or the criteria that the product must meet to be accepted. For instance, if it is a receiving procedure, it would include necessary tests and the criteria for accepting any product. If it is a frozen product, the system must specify the temperature requirements for receiving the product (often -150C and below). The effectiveness of PRPs is reviewed frequently to make sure they are always effective. A food handling facility must take appropriate action if they realize that the established PRPs may have failed to prevent adulteration or contamination of food products. For instance, if an organization produces an *Escherichia Coli* positive product in the previous example, this would be considered a non-conformity. Therefore, the food handling facility must take corrective action, including evaluation of the PRP, since it shows that the PRP was not effective in reducing the hazard's likelihood. While establishing PRPs, a food handling facility must consider responsibility, development, documentation, implementation, training, monitoring, recording, corrective action, verification, audit, review, and updating.

3.3 PRPs Scope

The scope of the PRPs must be clearly defined when establishing PRPs. The content should detail the product or products covered, production lines affected. The scope should also include the study team or the PRP teams and any revision history on the PRP. The content of any PRP should contain four main sections as follows:

1. PRP Study Scope - In this section, you should provide the PRP title from the standard or scheme, such as pest control. The PRP study scope also includes the standard PRP number as outlined in ISO/TS 22002-1, give facility name, product category, product, process, PRP start date, and approval date
2. History of Review- In this section, record all information about the revision history of the PRPs. Revision history should include explanation and reasons about why you did the review, including the review date, and the revision number
3. PRP team Members - For all PRPs established, the food handling facility should establish a HACCP team member with specific responsibilities and competency on a particular PRP. This section also needs to document departments and roles for each PRP team member and their competency
4. Authorization - PRP team must append their signatures to indicate that they have approved the document. The PRP team must document their names and positions in the organization. Also, the PRP team must show the approval date for the PRP.

3.4 Management of PRPs

In this section, one should identify and document hazards and place measures to control the identified threats. This section also identifies the corrective action to be taken whenever evidence proves the risk is out of control. For instance, when milk pasteurization during milk processing goes below 78°C, milk should be pasteurized. This section also includes records that need to be maintained and the verification procedures required for each prerequisite program. The following are the instructions for effective PRP management:

- The first column expresses the ISO/TS 22002-1 requirements.
- The second column describes the type of hazard agent—chemical, physical, biological, allergen, or a combination.
- The third column describes how a hazard manifests itself as a threat, including conditions for presence, survival, or increase.
- The fourth column explains the cause, source, origin, condition, or vector of the hazard.
- The fifth column describes the control measures that the food handling facility uses to control the relevant hazard.
- The sixth column explains the parameters used to measure and monitor the threat and the frequency of measurement parameters. For instance, it can be taking temperatures for a container thrice during offloading.
- Describe the job role or title of the department/function within the FBO responsible for monitoring the relevant hazard measurement parameters.
- Describe the correction and corrective action to prevent a reoccurrence of a rise above the allowable or permitted hazard measurement parameters.
- Indicate the monitoring and hazard measurement parameter records to be maintained
- Describe the verification activities necessary to confirm the accuracy of the monitoring and hazard measurement parameters.
- Describe the FBO documents and relevant external documents, for example, statutory and regulatory requirements.

3.5 PRP Verification and Validation

After describing each PRP's scope and the management plan, it's essential to verify each PRP. Verification is the confirmation process, with objective evidence specifying that each PRP's requirements concerning control of a food safety hazard have been achieved. After developing and implementing the PRP, then comes validation of the original PRP. Whenever there are changes to the PRP, the PRP team usually does unscheduled, random, or unplanned verification. Otherwise, the team plans and carries out the validation at intervals of not more than one year. Therefore, the Food Safety team leader must come up with a verification plan after successfully implementing PRP. The leader must document all verification activities and ensure a competent and authorized individual carries them out.

“ Prerequisite Programs are the practices and conditions needed before and during the implementation of HACCP and which are essential for food safety. ”

3.6 Example of a Prerequisite Programs (PRP) Plan

S/NO	PRP	Purpose	Method	Frequency	Correction and Corrective Action	Verification	Responsibilities
1.	Control of incoming Materials.	To ensure no post contamination of products from product contact surfaces, to ensure non-conforming materials are rejected.	Inspection of incoming materials, good housekeeping in the stores, pest control, swabs of product contact materials for microbial analysis.	Inspection of every incoming material, an inspection of housekeeping daily.	Rejecting all non-conforming materials.	Internal and external audits.	Warehouse Supervisor.
2.	Personnel Hygiene.	To ensure the people coming in contact with products do not pose a health risk. Control of sick personnel by restricting them, proper use of protective clothing.	The workers shall be medically examined and have their certificates renewed every six months.	The medical examination certificates shall be renewed every six months.	Organization of medical examination and treatment at the hospital. Restricting personnel without a certificate or who suffer from working in the warehouse.	Medical certificates, internal and external audits.	Quality Assurance Manager, Operations Manager.
3.	Machines and Equipment Maintenance.	To ensure machines and equipment operate within the required parameters, i.e., refrigeration units, including Ammonia compressors, fans, heaters, and thermometers.	Machines shall be attended to when maintenance is due as laid down in the machine maintenance schedule. Calibration of monitoring devices shall be done once annually.	Calibration of measuring instruments every year, maintenance as per maintenance schedule of every machine.	Dismantling of machines to confirm the effectiveness and efficiency of components. Ensuring the efficiency of machines by analyzing the temperature logs in comparison with set standards.	Calibration certificates, freezers, and cold store performance during storage time.	Refrigeration Engineer.
4.	Cleaning and Sanitation of the cold rooms and equipment.	To ensure the racks and pallets coming in contact with packed food are clean as well as warehouse facilities.	Manual cleaning for the floor, walls racks, filters, valves, and evaporator fans The cleaning and sanitation procedure manual has elaborated on the cleaning methods.	The cleaning manual has the details of the frequency of all production machinery.	Repeat cleaning in cases of machines are not well cleaned, monitor rinsing effectiveness with litmus paper.	Cleaning inspection records.	Quality Assurance Manager, Supervisors.

S/NO	PRP	Purpose	Method	Frequency	Correction and Corrective Action	Verification	Responsibilities
5.	Pest control.	To ensure the products are safe from pest contamination.	Rat baits and fumigation are done by the Rentokil company, trimming grass, cleaning of drainages, using insect screens, cleaning the compound, and removing bird nests.	Cleaning of the compound, removal of bird nests, cobwebs, cleaning of drainages done daily Pest control service done every month.	Removal of bird nests, cobwebs, cleaning of drainages. Reporting to pest control service provider if services are not effective, i.e., presence of pests observed.	Pest control reports, an inspection of the presence of bird nests, cobwebs, internal and external audits.	Quality Assurance Manager.
6.	Training.	To ensure the food safety team members are well informed on emerging trends in the market and are competent to implement and maintain Food Safety.	The education need will depend on the knowledge of staff members. Interrogating the employees will determine the training areas needed.	Every three months.	Interrogation of members of staff to determine training need.	Academic certificates, training certificates.	Quality Assurance Manager.
7.	Control of Suppliers.	To ensure no post contamination of products from the contract-ed suppliers of service and ensure non-conforming materials are rejected.	Monitoring of suppliers and good housekeeping in the stores, pest control, swabs of product contact materials for microbial analysis.	Monitoring suppliers' activities and inspection of housekeeping daily.	Rejecting all non -conforming suppliers.	Internal and external audits. Contracts and Inspection reports.	Quality Assurance Manager, Operations Manager.
8.	Inspection of glass and breakable objects policy.	To ensure there is no contamination by brittle plastics or broken glasses.	Monitoring glass.	Daily checklist.	Inspection of glass.	Use of shatter-proof objects to protect glasses.	Quality Assurance Manager.
9.	Damages, Wastes Control.	To prevent post contamination from wastes and damages by ensuring there are no wastes in the storage or distribution facilities through proper waste management and disposal.	Procedure for waste control shall be followed, and wastes detected during the inspection shall be disposed of as per the waste management procedure.	Daily.	Removal of wastes from the storage areas immediately they are detected.	Monitoring of damages and wastes in both transport vehicles and cold storage facilities.	Facility Manager.
10.	Construction and the Building's Layout.	To ensure facilities are constructed and maintained to ensure products are protected from hazards.	Inspection of facilities and buildings.	Monthly.	Repairs and maintenance work to be done for all damaged buildings and facilities.	Internal audits.	Facility Manager.

CHAPTER 4: TOP MANAGEMENT COMMITMENT

4.0 Introduction

A top management commitment refers to the framework within Food Business Operator (FBO). Top management must develop a framework to ensure food safety is implemented seamlessly at a food handling facility. This commitment means that an FBO's senior management should show clear and visible commitment to the HACCP study and Food Safety Management System. Senior management commitment is the first step in food safety implementation and the foundation of a successful and effective food safety management system. Top management facilitates employee empowerment and improved job satisfaction levels through its leadership and commitment to food safety. By developing a Food Safety Policy and communicating it to the entire organization, Top management provides direction. It creates an organizational climate that emphasizes food safety and customer satisfaction in all the organization's activities.



Senior managers' close involvement demonstrates a willingness to provide resources to overcome barriers in product integrity programs. Senior managers should recognize obstacles through time spent and participation with key teams and works to provide solutions. Solutions referred here could be continuing training, providing resources for new equipment, and supporting programs such as sanitation and maintenance. Typically, senior management must invest financial resources to solve problems. Besides providing help and giving their own time, committed senior managers also develop strong knowledge about food safety, quality, legality, and nurture food safety culture across the organization. Top management commitment can be demonstrated by showing evidence of the following activities:

- Developing and communicating a Food Safety Policy
- Developing a Food Safety Culture
- Appointing a food safety team leader/HACCP Administrator with clear responsibilities
- Investing in training and coaching of line-employees

- Allocating sufficient resources for training and implementation of food safety
- Hold periodic reviews of the Food Safety Policy and make improvements.

Senior managers' active involvement in food safety systems such as a HACCP review, internal audits, inspections, and food defense programs is a strong indication of senior management commitment because the information received is not second-hand.

4.1 Food Safety Policy

When implementing food safety, senior site management of a food business operator (FBO) is required to develop, communicate and implement a food safety policy statement that outlines at a minimum:

- The site's commitment to supply safe food
- Meet legal and regulatory requirements
- Methods used to comply with its customer and regulatory requirements and continually improve its food safety management system; and
- The site's commitment to establish and review food safety objectives.
- Signed by senior site management;
- Made available in a language understood by all staff;
- Displayed in a prominent position; and
- Effectively communicated to all staff.

It is important to note that each step in a food safety standard begins with the “policy” because it defines company values from which its actions and priority would follow. Therefore, a food safety policy statement is a holistic view that, when strategized, establishes the business's direction. And then, food safety will become just as much a part of that discussion as finance. When senior management accepts and commits to food safety as a value, it empowers departments, teams, and individuals to treat food safety as a priority in their work.

4.2 Food Safety Culture



A strong food safety culture reflects the organization's values and beliefs towards a food safety management system. This food safety management system is a critical area that plays a fundamental role in food safety implementation and continual improvement. Food safety culture plays a vital role in shaping employees' actions and attitudes concerning implementing and maintaining safe food practices. The most crucial factor in developing and shaping a food business operator's (FBO) food safety culture is senior management's commitment to producing safe foods. Middle-level managers, supervisors, and employees continually look to senior executives for leadership and goals. The following are some of the ways of creating a food safety culture:

1. Create a strong foundation of food safety policies, programs, and proce-

dures. Having annual or biannual management reviews that look into all food safety programs, including HACCP, company policy, objectives, and SOPs. Management review schedules should be followed and not let plans slide because there are competing priorities. This management review is clear communication to the whole organization that food safety is important

2. Set clear objectives and expectations, driven from top to bottom. Make it clear that everyone should follow food safety guidelines from the CEOs to visitors to plant managers to hourly employees. Having a “no exceptions” policy will drive a sustainable culture and create a “this is just how we do things” mindset.

3. Record keeping that ensures food safety culture is well documented and data collected. Data collected from records should focus on the set food safety objectives. Data must be measurable and non-subjective to help drive continuous improvement. Top management must instill the mindset that “if you collect it, you must do something with it.” Good documentation is imperative to providing evidence that you did what you said you are going to do

4. Continuous Improvement Process—Senior Management must nurture ongoing improvement processes by reviewing internal audits, customer audits, third-party audits, and inspections to identify improvement and implementation areas. It is therefore essential to note that if you are not continuously improving, you are falling.

5. Top-down communication is critical to highlighting the priorities as well as needs of the organization. An organized program that promotes interactive communication should therefore be in place. Sustaining change in an organization requires making the necessary pivots to communicate with multiple generations within their workplace.

6. Employees should have consumer awareness. Employees should be made aware of the end consumer of the product they are producing and their requirements and expectations. In this regard, top management should develop programs for reviewing consumer



complaints with the frontline workers. This awareness will help frontline workers in a food business company understand what affects consumers and how their job is critical in preventing food safety or quality issues.

7. Creating accountability across the board. All employees involved in food handling should be held accountable regardless of their position or stature. Establishing food safety responsibilities within your organization from the top down is the next step to creating a positive food safety culture. Human Resources should place these responsibilities in the job description, so employees know what to expect from their role.

4.3 Appointing a Food Safety Team Leader/HACCP Admin

Top management show commitment by appointing a food safety team leader with clear roles and responsibilities. Food Safety Team Leader/HACCP Administrator should be trained in Food Safety Implementation, be knowledgeable in HACCP principles, and acknowledged as responsible for oversight of the Food Safety Program. The Food Safety Team Leader's duties include the following:

- Manage the Food Safety Team and its work and ensure that processes needed for the FSMS are established, implemented, and maintained
- Ensure relevant training and education for all food safety members
- Ensure the promotion of awareness of customer requirements on food safety throughout the organization
- Develop the prerequisite programs and ensure that PRPs are implemented, monitored, communicated to the appropriate parties, and periodically review PRPs.
- Conduct hazard analysis and report results of an analysis to Top Management, and periodically review food safety-related processes to ensure hazards are accounted for and controlled
- Confirming the nonconformity and determining the disposition of nonconformity
- Oversee the internal food safety audit program – review results of food safety audits, ensure that corrective actions are understood, and supervise corrective actions
- Initiate and manage product recalls ensuring adequate implementation and effectiveness
- Periodically review all FSMS-related procedures and work instructions and direct the Food Safety Team through such reviews
- Report to the Top Management on the performance of the FSMS.

Skills required by Food Safety Team Leader and Food Safety Team:

The food safety team leader, as well as members, need to have a thorough understanding of:

- Performance of hazard analysis and determination of critical control points;
- Requirements for prerequisite programs
- Preparation and implementation of a HACCP plan in the establishment; and
- Verification that the HACCP plan has been successfully implemented,

including a timeframe for revalidation.

4.4 Investing in Training and Coaching of Line-Employees

Telling line-employees what to do is not enough to develop a program. Management must invest in available educational resources to ensure adaptive training. Line-employees should understand why it is essential and must be reminded regularly of the consequences of poor food safety practices. Top management should provide proper training of line-employees and floor staff to understand their specific functions and duties, how their actions can impact food safety, and how they should perform under a HACCP system/plan. At a minimum:

- Food contamination pathways and their prevention
- The importance of the critical control points for which they are responsible
- The critical limits associated with a given CCP
- The procedures for monitoring these critical limits
- The corrective actions to be taken if there are deviations from the critical limits; and
- The records that are to be kept.

While the employees must carry out food safety training, comprehensive training on each organization's HACCP system should also be carried out for all line employees to understand their role in implementing the HACCP program.



4.5 Allocating Sufficient Resources

An effective food safety management system requires top management to allocate resources to ensure sufficient knowledge and financial support. For instance, the company must provide adequate temperature control and equipment/monitoring systems, chemical supplies, training,

third-party audits, PPEs, chemical supplies, etc. Resources such as time, funding, space, technology, consulting expertise, etc., are pivotal to the development and maintenance of a management system. Committed managers balance business acumen with their understanding of risk mitigation, standard operation procedures, CCPs, and employee engagement. When done right, funds allocated to food safety and quality management are an investment and not a cost.

4.6 Periodic Management Review and Continual Improvement

Food safety is a never-finished product. From top management to line-employees, everyone must continually improve it. A Food Safety Management System goes through the PDCA cycle – Plan-Do-Check-Act. In this regard, a company can only initiate improvement after “checking.” Top management must review the organization’s FSMS with scheduled frequency; thus, a company’s leadership should develop a management review schedule. The review assures the ongoing suitability, adequacy, and effectiveness of the FSMS. This review also assesses opportunities for improvement and the need to change or update the FSMS to help the organization meet all food safety requirements and goals.

The review process involves collecting the necessary information and evaluating the data to address possible changes to food safety, objectives for the year, HACCP, and any other element within the Food Safety Management System to ensure improvement and compliance: management reviews typically include:

1. Review of Inputs

Internal audits results:

- Third-party and regulatory audits findings
- Status of corrective actions and preventive actions
- Training requirements
- Follow-up from previous Management Review implementation requirements
- New or updated food safety rules or regulations and their impact on the organization
- Changing food safety circumstances that may affect the organization (positive & negative)

2. Discussion of Outputs

- Management recommendations for improvement
- Review of any notices of violations
- Any other issues that impact the compliance and incident prevention aspect of the program
- Additional need of resources

The essence of having top management review the Food Safety Management System (FSMS) regularly is to continually ensure the entire management system is continuously improving and updated, thus demonstrating management commitment.

- By reviewing suitability, the organization assures that it is meeting all standard requirements.
- By reviewing adequacy, the organization assures that it is meeting all internal business requirements.
- By reviewing effectiveness, the organization assures that employees with “boots on the ground” understand and follow all food safety requirements documented in organizational procedures, work instructions, and checklists.

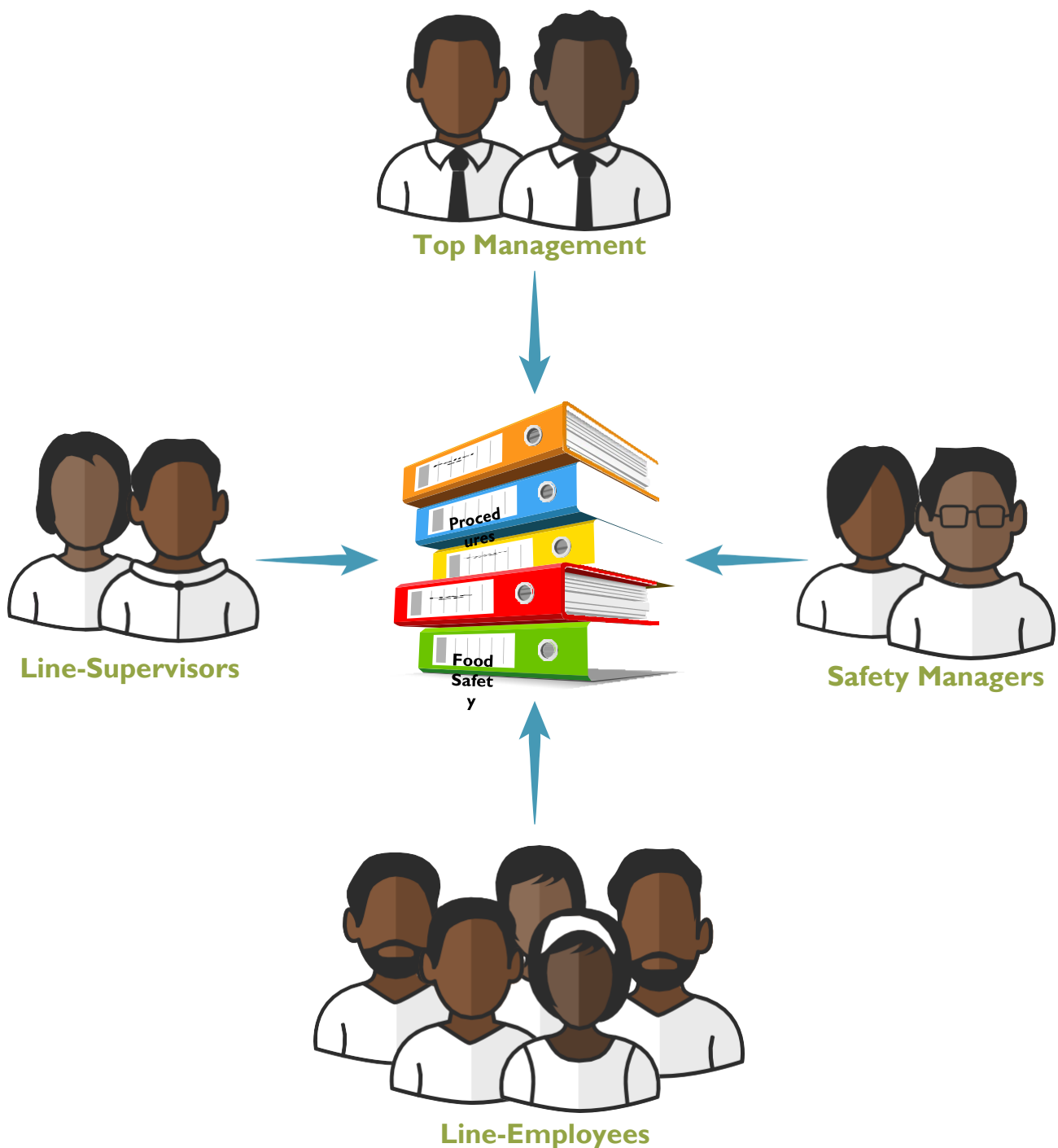


4.7 Summary of Top Management Commitment

- Develop and document a quality policy statement that is authorized, reviewed, dated, and communicated throughout the company.
- Develop a strong food safety culture that reflects the organization’s values and beliefs towards a Food Safety Management System. Food safety culture plays a vital role in shaping employees’ actions and attitudes concerning implementing and maintaining safe food practices.
- Provide the human and financial resources required to implement the Food Safety Management System and effect improvements identified through management review processes.
- Establish objectives that maintain product safety, quality, and legality per the quality policy.
- Top management appoints a Food Safety Team Leader who must have basic knowledge of food safety and must be familiar with the properties of food and its processing proce-

dures.

- Top management also appoints Food Safety Management Team, trains all staff directly involved in the implementation, and creates awareness among everyone in the organization.
- Senior managers also show commitment to food safety by investing in the training and coaching of line-employees.
- Food safety is a never-finished product. From top management to line-employees, everyone must continually improve it. The review assures the ongoing suitability, adequacy, and effectiveness of the FSMS. This review also assesses opportunities for improvement and the need to change or update the FSMS to help the organization meet all food safety requirements and goals.



CHAPTER 5: HAZARD ANALYSIS CRITICAL CONTROL POINT

5.0 Introduction

Hazard Analysis Critical Control Point (HACCP) was first developed in the 1960s in the United States by the National Aeronautics and Space Administration (NASA) to prevent food poisoning aboard the first human-crewed space missions. Codex Alimentarius commission then defined the HACCP system and guidelines for its application, which develops the Food Standards program for the United Nation's Food and Agricultural Organization and World Health Organization. During the 1990s, there was an increased need to adopt HACCP by many food business operators to prevent hazards that caused foodborne illnesses. Since then, the HACCP system has been recognized as one of the best food safety tools in managing food safety hazards. In this regard, all GFSI standards and schemes such as FSSSC 22000, BRC Global Standards, GLOBALG.A.P. Safe Quality Food Programs, and so on have identified and incorporated HACCP into the Food Safety Management System.

HACCP:

Eliminate, Prevent,
and Reduce Food
Safety Hazards



5.1 Benefits and Importance of the HACCP System

The HACCP system can be implemented in any organization in the food chain, whether big or small, from primary production, harvesting, post-harvest management, manufacturing, processing, storage, distribution, and merchandising to preparing food for consumption. Widely used in most food safety management systems, HACCP is a risk-based system that focuses on the proactive approach. Effective HACCP plan assures food safety, reduce food safety incidences, and covers all the limitation of traditional quality control methods

The following are some of the benefits of HACCP:

- It's a preventive approach
- It increases customer trust in the safety of your products,
- Since it is a preventive system, it is cost-effective because it eliminates or reduces the likelihood of a defect in the final product,

- It demonstrates due diligence,
- It's accepted internationally, thus opens the market for manufactures and processors,
- All Food Safety Management systems incorporate HACCP,
- And it demonstrates management commitment to complying with statutory and regulatory requirements.

As a risk-based system, HACCP System provides a methodology for measuring the risk of contaminated or naturally toxic food, identifying options for controlling these hazards, and making decisions about the most effective management option to choose. HACCP, therefore, addresses the three most important concerns: Is it safe? Is it a significant and essential risk? What efforts should we make to reduce the risk?

5.2 Planning HACCP System

When designing a HACCP System, five prerequisites have to be accomplished before the application of HACCP principles. These preliminary steps in developing hazard control are the processes required for the production of safe foods. For a HACCP plan to be effective, a food handling facility must collect certain information. The fact-finding process includes five preliminary steps for managing, maintaining, updating, and documenting relevant information needed to conduct a hazard analysis. Since HACCP is a systematic preventive approach for promoting food safety, a food handling facility must operate according to codex Alimentarius commission guidelines and principles on food hygiene, appropriate codex Alimentarius codes of practice, and relevant food safety legislation.

5.2.1 Preliminary Step 1: Assemble HACCP Team

The first step in planning a HACCP system is to form a HACCP team. The HACCP team should consist of a multidisciplinary team to ensure all likely hazards and identify CCPs. The HACCP team should also consist of people with expertise and operational experience, a good understanding of the production steps and processes, and product-specific knowledge. In this regard, HACCP team members should include the following types of employees; production managers, technical staff, quality assurance managers, engineering, sanitation, and laboratory personnel. Among the HACCP team, top management appoints the HACCP team to oversee the HACCP system's design, implementation, and updating. HACCP team leader must be competent with a good understanding of hazard control and working knowledge of relevant production processes and products.

5.2.2 Preliminary Step 2: Describe the Product Characteristics

Description of the products' characteristics is essential as they give a profile that helps determine food safety hazards associated with production. One of the most critical aspect of product characteristics is collecting all information about its threats and their acceptable limits. Other relevant information that is necessary for describing product characteristics include:

- Codex Alimentarius Commission codes of practice
- Statutory and regulatory agencies,
- Scientific studies

EXAMPLE: PROCESS FLOW: PRODUCTION OF PEELED PRAWNS

FROZEN PRAWNS RECEIVING

Temp -18° to -25° C

REJECTION TO SUPPLIER/DISPOSAL

Rejection if the temperature is above -15° C/ Organoleptic(adour) test fail/ presence of Physical impurities.



QUARANTINE

Temp -18° to -25° C

STORAGE AT WAREHOUSE

Temp -18° to -25° C



Frozen whole prawns are stored at temperature between -18° and -25° C. Storage freezer temperature checks are done twice every hour.

THAWING

Temp +12° to +15° C



Frozen prawns thawed using potable water at temperature of +15° C and below.

PEELING

Temp +15° C



Peeling is done immediately after thawing and peeled prawns cleaned to remove any shell fragments using potable water at a temperature not more than +15° C to preserve quality.

CHILLING

Temp +1° to +3° C



After peeling, peeled prawns are chilled immediately to avoid deterioration in quality.

PACKAGING

Temp +1° to +3° C



Chilled, peeled prawns are packed in clean labeled boxes with clear manufacturing and expiry dates before being transferred to chillers for storage.

STORAGE AND DISTRIBUTION

Temp +2° to +4° C

Chilled prawns are stored and distributed at temperature between +1° to +4° C. Storage freezer temperature

5.2.5 Onsite Verification of the Flow Diagram

Onsite verification of the HACCP team's flow diagram is vital since it ensures the flow diagram accurately describes the production processes and steps associated with the product. During onsite verification, the HACCP team's role is to follow the production process on-site and verify the completion of the flow



diagram's actions. The HACCP team must consider the number of hours of operations, work shifts, optional ingredients, batch sizes, and non-routine steps such as equipment maintenance during onsite verification of the flow diagram.

Once a food handling facility has completed the five preliminary steps above, it gives the team a solid foundation for successfully applying the seven HACCP principles.

5.3 HACCP Principles

A Food Safety Management System is a systematic approach that focuses on the process rather than the product. It focuses on Identifying and controlling biological, chemical, or physical hazards that could threaten safe food production. In this regard, a food safety management system involves identifying what could go wrong in a food chain and creating effective plans to prevent this occurrence. An effective FSMS must support HACCP principles to enable food handling facilities to identify and control hazards before they impact food safety. The following are the seven Principles of HACCP:

5.3.1 Hazard Identification

Hazard Identification is the first principle that requires a food handling facility to examine each process or stage in the food chain, including purchasing, delivery, storage, processing, refrigeration, packaging, etc., in their food operations to identify what is likely to go wrong. For instance, in the processing of chicken, the presence of salmonella in the final chicken product due to cross-contamination with raw chicken or chicken intestines (biological), pieces of glass that have fallen into the uncovered final product (physical), or cross-contamination of uncovered meat by cleaning detergents (chemical) are examples of hazards that are likely to occur.

Consideration of the likely occurrence is usually based on experience, epidemiological data, and

technical literature information. When conducting the hazard evaluation, it is helpful to consider the likelihood of exposure and the severity of the potential consequences if the hazard is not adequately controlled.

THE SEVERITY OF THE HAZARD					
LIKELIHOOD OF OCCURRENCE		Very Low	Low	Moderate	Severe
	Very Low	1	2	3	4
	Low	2	4	6	8
	Moderate	3	6	9	12
	High	4	8	12	16

Example

The following example is Hazard analysis in fresh Milk Processing. In this step, heating of milk at 78°C is vital in killing pathogenic bacteria, E. coli, Salmonella, and Brucella, which are food poisoning bacteria present in raw milk:

Step	Potential Hazards	Hazard Assessment			Justification	CCP or Not	Critical Limits	Control Measure
		Severity	Likelihood	Significant				
Milk Pasteurization	Enteric pathogens Salmonella E. Coli Brucella	4	4	16	Salmonella, E. Coli, and Brucella pathogens have been associated with food poisoning from the consumption of raw and under-pasteurized milk in which people have died.	CCP	Heating Milk at 78°C for 15 seconds.	Effective milk pasteurization at 78°C for 15 seconds.

5.3.2 Determination of Critical Control Points

The second Principle is the critical control point, which is the point, a stage, or a process at which the food handling facility can exercise control over the hazard. For example, pasteurization

of milk at 78°C and above will kill most pathogenic bacteria such as Brucella and E. coli 0157.

5.3.3 Establish Critical Limits

Food handling facilities must set limits to enable them to identify when a CCP is out of control. For example, in a meat production line, a processing facility can set critical limits when cooking meat to be 75°C for 15 seconds for a meat burger center to ensure all pathogens capable of causing foodborne illnesses are killed.

HAZARD RATING	
Not Significant (1-5)	Significant Hazard (6-16)
Implement reasonably practicable controls and monitor regularly and periodically to ensure controls remain effective.	Requires strict controls to continuously monitor the process to ensure risks are reduced to acceptable levels all the time.

5.3.4 Establish a System to Monitor Control over CCP

When identifying critical control points and establishing critical limits, food handling facilities must have in mind a method for monitoring the CCPs. Each CCP must be monitored, and records of what is happening at each CCPs maintained. Monitoring of CCPs in food production lines often entails measuring parameters such as temperature and time. However, it is essential to note that the method and frequency of monitoring depend on the size, nature of operations, and the likelihood of hazard exceeding critical limits. The way used to monitor CCPs should be clear, simple, and straightforward. For instance, a food storage facility could have temperature monitoring devices to ensure temperatures of frozen products are maintained below -15°C

5.3.5 Establish a Corrective Action

After putting a simple, straightforward, and easy monitoring system for each CCPs, a food handling facility must then consider what to do when things go wrong. Corrective action is to be taken if monitoring shows that a particular CCP is not under control. For instance, if the pasteurizer fails to heat milk at 78°C for 15 seconds because of a technical failure in the pasteurizer, the corrective action should be to discard the milk and repair the pasteurizer and ensure achievement of the correct temperature.

5.3.5 Verification

Establish and implement a verification procedure to confirm that the HACCP system is effective. For instance, food handling facilities should review and update FSMS periodically and also whenever they change operations. This review ensures the system is still effective against potential hazards and new emerging food safety hazards.

CHAPTER 6: FOOD SAFETY MANAGEMENT SYSTEM PROCEDURES

6.0 Introduction

In chapter five, and when discussing the HACCP system principles and under principle seven, we learned that establishing effective record-keeping procedures that document the FSMS is vital for an effective HACCP plan. Effective monitoring of the food safety management system can only be achieved by completing accurate and complete records and demonstrating compliance with the food safety management



system. All food safety management system uses the same hierarchical structure. Documented information that forms part of a Food Safety Management System is controlled and maintained by a food handling facility. Recorded information is used to communicate (policies, objectives, procedures, and work instructions), provide evidence of what was planned (schedules), and all completed HACCPs. Clause 7.5.1 of ISO 9001:2015 states that quality management systems documentation should incorporate the documented information required by the international standard and established by the food handling facility as necessary for the effective operation of FSMS.

6.1 Purpose and Benefits of Documented Information

The following are the reasons and benefits of documenting the Food Safety Management System:

- Documenting food safety management is a way of describing an organization's food safety management system.
- It's a way in which top management communicates to its employees about its commitment to food safety.
- Documented information also enables employees to understand their role within the organization. This understanding offers them an increased sense of purpose as well as the importance of their work.
- It establishes a standardized way concerning how to carry out tasks to achieve specific, desired results.
- Documented information is a piece of objective evidence that shows what is necessary to meet the specified requirements.
- Documenting information is also a way of presenting a straightforward, efficient program for operations.
- Documenting information also establishes a platform for training new employees as

well as the routine training of the current employees.

- Documented information also plays a vital role in establishing a footing for order, and balance within the organization thus helps in achieving consistency in operations as a result of documented processes.
- Documented systems help in maintaining customers' confidence.
- It is also a way of demonstrating to interested parties the capability of our organizations.



6.2 Establishing Food Safety Policy Statement and Objectives

All food safety management systems require food handling facilities to document food safety policies and associated objectives. The established food safety policies and goals may be independent or included in the Food Safety Management System Manual. The requirements specified by the food safety standard or scheme of GFSI defines the food safety policy contents. Food safety objectives should be consistent with the food safety policy and the GFSI food safety scheme's primary goal: to eliminate and reduce relevant food safety hazards. When establishing food safety objectives, the food safety team should consider "SMART" objectives (Specific, Measurable, Achievable, Realistic, and Timely):

Specific – This means the use of data and evidence to target areas of improvement and areas that require action within the scope of the FSMS.

Measurable – This means the food handling facility must determine compliance through some sort of solid metric system. Actual targets must be associated with the objective.

Achievable – This means a food handling facility has ensured everything is in place, and hence if the person does not reach the set goals, they cannot blame anybody.

Realistic – This means closely aligned objectives to make food safety objectives achievable. It means they should focus on your food business, not somewhere else.

Time-Bound – A time limit ensures completed objectives. It is important to note that time restrictions are critical in propelling people to achieve their goals.

6.2.1 Examples of Food Safety Policy and Objectives

The following are examples of a food safety policy and food safety objectives for a third-party logistics company dealing with food products’ storage, distribution, and monitoring of all food

BRIGHT HOUSE CONSULTANCY & TRAINING LTD

Product Safety and Quality Policy:

Bright House Consultancy and Training Limited are committed to ensuring safe and legal storage & distribution of products that meet customer requirements and maintain their expectation for quality, safety, value, and service by effectively implementing the Product Safety Management System.

It is our policy that we:

- Comply with legal, statutory, regulatory, ISO 22000 as well as requirements of BRC Global Standard for Storage and Distribution and continually improve its effectiveness.
- Operate 3PL Warehouse activities that ensure all food products meet quality, safety, and legal requirements and maintain the cold chain throughout the process.
- Establish quality objectives, which are monitored and reviewed annually to ensure continued suitability.
- Ensure all reasonably practicable measures are taken to achieve a satisfactory standard of performance in matters of food safety and continual improvements.
- Ensure all products throughout our warehouse activities are handled safely and hygienically and to the customer’s standard.

The Management should ensure this policy is communicated and understood within the organization and reviewed for continuing suitability at intervals, not more than two years.

MANAGING DIRECTOR

Issue Date: 25-10-2018	Doc Ref: BCTL/FSP
Review Date: 24-07-2020	Revision no. 03



BRIGHT HOUSE CONSULTANCY & TRAINING LTDProduct Safety and Quality Objectives:

1. To maintain the cold chain by ensuring frozen food temperatures are kept at -180 C to -250 C; chilled food temperature at +30 to +90 degree Celsius, dry food temperature at +180 to +250 degree Celsius during storage and transportation all the time.
2. To maintain the accuracy of the TMD by ensuring internal as well as external calibration by a certified external calibration organization.
3. To ensure 99% conformity to customer requirements by the end of the year.
4. To ensure 100% investigation of customer complaints & provide written response within 7days.
5. To continually comply with the Statutory and Regulatory requirements and continuous improvement of our Food Safety Management System.

The Management should ensure these objectives are communicated and understood within the organization and monitored and reviewed for continuing suitability at intervals, not more than two years.

MANAGING DIRECTOR

Issue Date: 25-10-2018

Review Date: 15-01-2020

Doc Ref: BCTL/FSP

Revision no. 02

safety objectives:

6.2.2 Communicating Food Safety Policy and Objectives

Once a food handling facility has set its food safety policy and objectives, the facility must communicate to all staff, suppliers, and customers by displaying them on the notice boards, published on the company websites, internal intranets, through verbal discussion, and training. Departmental training on food safety objectives may be necessary if specific goals affect the broader business objectives.

6.2.3 Strategies for Achieving Food Safety Policy and Objectives

- Enhancing management and coordination in food control by applying the integrated “farm to fork” approach and PDCA (Plan Do Check and Act).
- Food handling facilities should apply validated preventive measures throughout the scope of operation, including GHPs, GAPs, GDPs, GMPs, and HACCP.
- Ensure all internal standards are transparent and align procedures to Food safety management Systems.
- Application of Codex Alimentarius Commission codes of practice and scientific basis for standards and Controls.
- Implementing Effective Traceability System.
- Implementing a Risk-based Food Safety Management System and Risk Analysis.

Training, sensitization, and creating awareness and responsibility for food safety by the producers.

6.2.4 Monitoring, Review, and Reporting on Outcomes

Once implemented, food safety objectives are supposed to be monitored. Monitoring of food safety objectives should be an ongoing process. There should be data for each month on the performance of the company on each goal. The best platform to report on a food safety objective's compliance is through the management review process. Reporting on the observation and performance of food safety objectives can also be done weekly and monthly. It is essential to use data graphs and tables to document compliance. They are a great way to represent progress visually and trigger corrective action or fix non-compliance before escalation.

6.3 Standard Operating Procedure (SOPs)

Food handling facilities are at liberty to select the documentation structure on Standard Operating Procedure (SOP)s that best fits their needs. The format and design of the documented Standard Operating Procedure (SOP)s can be in hard copy, electronic, or both. They may include flow charts, texts, tables, a combination of both, or any other contents that fit the organization's needs. Also,

they can consist of the type of food safety management system being implemented. The structure of documented SOPs should include labeling with a unique identification system and all the required information. Standard Operating Procedures (SOP) generally describe activities of an organization across various functions and address how to carry out these activities and their interrelatedness. In this regard, SOPs may refer to work instructions that outline how to perform an activity.



6.3.1 Contents of a Standard Operating Procedure (SOP)

Organizations implementing a Food Safety Management System are free to select documented content that meets their needs and a food safety management system's requirement. However, ISO 10013 outlines the contents required for a Standard Operating Procedure (SOP). We will summarize the contents of a Standard Operating Procedure (SOP) based on ISO 10013 guidelines for this training manual, the most widely used policy on documentation.

The Title:

The title of a Standard Operating Procedure (SOP) should be clear, e.g., Procedure for Control of Records, Procedure for Control of Allergen, Procedure for control of

Non-conforming products, Receiving Procedure, Dispatch Procedure, Procedure for Traceability, Procedure for Withdrawal, etc.

Purpose:

The purpose of the Standard Operating Procedure (SOP) should be clearly defined. This definition should show a minimum of what the organization is trying to achieve by having the procedure. What are we trying to achieve? The following is an example in a Procedure for Control of glass and Brittle Plastic

“The purpose of this procedure is to define controls for glass and brittle plastics, as per requirements of BRC Global Standard for Storage and Distribution and prevent contamination of Bright House Products with glass or brittle plastic” The purpose of a procedure could be one or multiple depending on what the guidelines aim to achieve



Scope:

The scope of a Standard Operating Procedure (SOP) describes all areas and activities covered by the procedure. It is also essential to explain actions and places where the system does not apply and the abuse for unintended purposes.

Responsibility and Authority:

The responsibility and authority of individuals or organizational units, in addition to the interrelationships between these individuals or teams, and the processes and activities described in the procedure, should be identified. These interrelationships should be described in the procedure through flowcharts and descriptive text as appropriate for clarity. Responsibility refers to a sub-



ordinate's obligation to perform a duty that has been assigned to him by his senior. On the other hand, authority means institutional, formal, or legal power given in a particular function, job, or position that empowers the person holding that job. It is crucial to appropriately advise the organization's employees on their roles in each Standard Operating Procedure (SOP). Thus, they understand their duties in the context of what specific Standard Operating Procedure (SOP) intends to achieve.

The Description of Activities:

The detail level may vary depending on the activities' complexity, the methods used, and the skills and training necessary for the activities to be accomplished. However, the description of activities in a Standard Operating Procedure (SOP) should cover, at a minimum, several areas:

- The needs of suppliers, customers as well as organization.
- Use of texts and flow charts on the required activities to describe the procedure.

- Why, when, what, where, how it is done, and by whom or by which unit in the organization.
- The process controls that are supposed to be adhered to on the identified activities.
- The resources such as personnel, equipment, training as well as the materials necessary for the accomplishment of the activities.
- The appropriate documentation in terms of records to be kept and documents to be created on the required activities.
- Process inputs and outputs.
- The measurements as well as an indicator to be developed.

In some instances, a work instruction can be used to effectively convey all information that affects the activities in a Standard Operating Procedure (SOP).

Records:

The records to be maintained in the Standard Operating Procedure (SOP) activities log should be described in this section. The documents may include forms, registers, checklists, etc., as determined by the organization. The methodology followed to fill, complete, file, and maintain the records should be clearly stated in this section.

Appendixes:

Appendixes are used to list the supporting evidence, including information like tables, flowcharts, graphs, and copies of forms and registers on the particular Standard Operating Procedure (SOP).

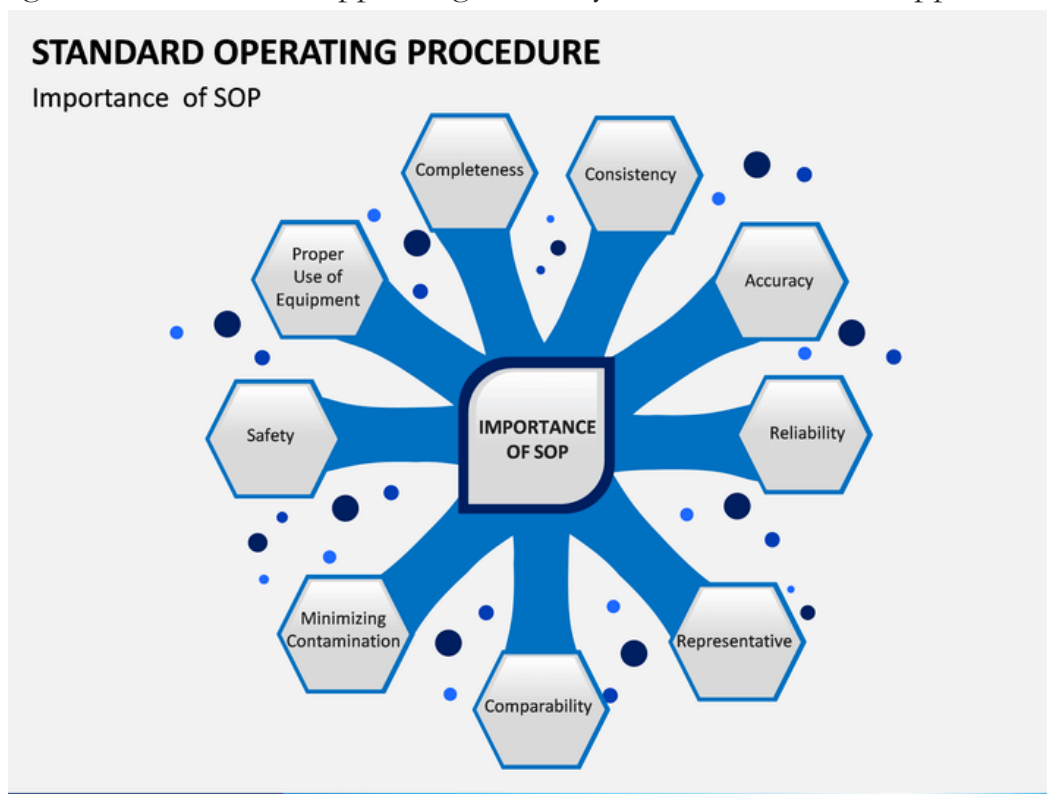
Review, Approval, and Revisions:

Every Standard Operating Procedure (SOP) must have evidence of approval by a senior manager and the status of approving authority, and the date it was approved. If the procedure has

been revised, it should also have the date the revision was done and the reason for changes made.

Identification of Changes:

Clearly describe any changes in a Standard Operating Procedure (SOP) and identify them in the document. This identification should include which section of the form was changed and the reason for making



every change. It should also include the person's name who made the changes and the dates for when.

6.4 Documented Work Instructions

Work instructions are established and maintained to describe steps followed to complete a specific task that might be adversely affected if such instructions are not included. Like Standard Operating Procedure (SOPs), work instructions should also have a unique identification number and title. The included details and the format of a work instruction should align with the organization's personnel's needs. When establishing work instructions, you must consider the task's complexity to be accomplished, the training to be undertaken, the methods used to achieve the job, and the personnel's qualification. A work instruction structure may be the same or may vary from that of a Standard Operating Procedure (SOP). Sometimes work instructions may be referenced in a Standard Operating Procedure (SOP).

6.4.1 Contents

Unlike the Standard Operating Procedure (SOPs), work instructions are more specific and should describe critical activities. In this regard, work instructions should include more details that support more control over the activities being undertaken. However, training can help employees' competence and thus reduce the need for detailed instructions. In this regard, individuals completing a task can obtain the information they need to do their jobs. Even there is no specific format for a work instruction. All work instructions should convey the objective, scope, and purpose of the work with a particular reference to the Standard Operating Procedure (SOP). A work instruction should be aligned to the operations' sequence or order and accurately reflect the relevant task requirements. Just like Standard Operating Procedure (SOPs), work instructions should be approved and reviewed regularly for their continued suitability to the activity being undertaken.



6.5 Specifications

Specifications are documents that describe incoming materials such as ingredients, raw materials, and other materials that come into contact with food products. Specifications are used to describe these materials to the extent that is necessary to conduct a hazard analysis. In this regard, this should cover biological, physical, and chemical characteristics, sources (mineral, animal, vegetable), formulated ingredients composition, additives, and processing aids, place of origin, storage conditions, methods of preparation, production, and packaging. The specifications should also have acceptance criteria, and ingredients must be appropriate for the intended use.

6.6 Forms

Forms are tools used to record and collect data during the operations of a specific activity. They are

established and maintained to record data to demonstrate compliance with the requirements of the FSMS. The forms should have a title, unique identification number, and information related to revisions and approval dates. Forms should be attached or referenced in a work instruction or Standard Operating Procedure (SOP).

6.7 Records Establishment

Food Safety Management System records are used to give information on the outcomes of the activities that are being undertaken. In this regard, records will tell whether the results have been achieved or not, and hence can be used as evidence to make changes to improve the results. Records are also providing evidence that the activities that have been described in the work instructions or Standard Operating Procedure (SOP)s have been performed. Records are, therefore, the sources of information that demonstrate that the organization has complied with the requirements of a food safety management system. It is the only reference to furnishing information on a product's history from raw materials, processing conditions, packaging, storage, and distribution. In this regard, records are indicators that can alert a food handling facility to potential problems with a product or a process before it leads to a critical limit violation. They can also serve as evidence for auditors that a proper procedure is being followed.

6.8 Approval, Issue, and Control of FSMS Documents

Review and Approval:

To ensure proper structure, accuracy, adequacy, and control, Food Safety Management Systems documents must be approved before their publication and release for use. Documents are supposed to be designed with inputs from the process owners. These inputs allow intended users to assess and comment on the usefulness and extent to which the documents reflect in practice. The management authority tasked with implementing the documents should approve the documents before they are released for use. Evidence of release authorization and that of approval of the document should be retained.

Distribution:

Pertinent documents should be made available to all personnel who need the information. In this regard, a method used to distribute documents should ensure authorized distribution of documents is achieved and records maintained. Official distribution is achieved by using serial numbers on individual copies of the document.

Inclusion of Changes to Already Circulating Documents:

A procedure for initiation and affecting of changes should be incorporated. This procedure should include how changes are initiated, developed, reviewed, controlled, and contained in the already circulated documents. This procedure can be achieved by having a management strategy for change.

However, it is essential to ensure all the elements and steps followed in the review and approval process in developing original documents should apply in processing changes. Putting control over the publication of changes to a document is essential. It ensures the contents of a document are appropriately approved by authorized personnel, and that approval is demonstrated clearly. Reviewed documents should be replaced by the latest versions to ensure non-approved docu-

ments are not in use. To ensure only the latest versions of official documents are in use, an organization must maintain a master list of documents with revision status for all documents in use.

6.9 Records Retention and Storing

- Records should be retained for a specific time, often one year, though this differs depending on the organization's requirement and FSMS being implemented.
- The retention process starts with the food safety team leader identifying the records' list to be retained guided by the retention schedule.
- The food safety team leader then lists the records to be disposed of and those to be retained.
- The food safety team leader must remove the records to be disposed of from the cabinet, leaving those to be retained.
- All hard copy forms should be maintained in a file and stored.
- All confidential files should be indexed "Confidential." After the file has been closed, it should bear a volume number starting at one and the given date's range.
- The confidential and personnel files should be stored in closed cabinets/drawers. The general and working files should be stored in open cabinets and drawers.
- The soft copy confidential records should have controlled access as per the ICT security policy.



6.10 Record Maintenance and Destruction

- All hard copy forms should be maintained in a file and stored.
- All confidential files should be indexed "Confidential."
- After the file has been closed, it should bear a volume number from one and the given date's range.

- The confidential and personnel files should be stored in closed cabinets/drawers. The general and working files should be stored in open cabinets and drawers.
- The soft copy confidential records should have controlled access as per the ICT security policy.
- Records should be accessed by authorized persons only.
- Records should be stored as detailed above.

6.11 Examples of Food Safety Management System Procedures

EXAMPLE 1: BHCTL/QMS/02 PROCEDURE FOR RECORD CONTROL

1. AUTHORIZED DISTRIBUTION

Controlled copies of this procedure to members of Executive Management and Process Owners as below:

COPY NO	HOLDER
01	DIRECTOR
02	QUALITY ASSURANCE MANAGER
03	DEPOT MANAGER
04	MAINTENANCE MANAGER
05	HUMAN RESOURCE MANAGER

2. AMENDMENT HISTORY

This 3rd issuance, Revision Status 02

DATE	SECTION	ADMENDMENT	BASIS
19.02.2019	Annex 1	Inclusion of controlled records master list	Review by Food Safety Team
26.01.2020	Annex 1	Disposition of record records to 24 months	Internal audit finding
Reference Number		BHCTL/QMS/01	
Control Status		Controlled Document	
Issue Date		15-11-2018	
Revision Date		26-01-2020	
Revision Status		02	
Copy serial number		02	
Issued to		Quality Assurance Manager	

3. PURPOSE

The purpose of this procedure is to define controls as per requirements of ISO 22000:2005 International Standard, needed and applied by BHCTL for the identification, storage, protection, retrieval, retention, and disposition of FSMS controlled records

4. SCOPE

This procedure applies to records established to provide evidence of conformity to requirements and the effective operation of the BHCTL FSMS implemented per the BRC S & D and ISO 22000:2018 International Standard requirements as listed in the *FSMS controlled records, master-list Ref. BHCTL FSCRM*.

5. TERMS AND DEFINITIONS

Table 1: Terms and Definitions of Summary:

Term/Acronym	Definition
BHCTL	Bright House Consultancy & Training LTD
FSMS	Food Safety Management System
Section Head (Process Owner)	The function responsible for the management of established BHCTL FSMS process (Warehouse and operations, Human Resource, Quality Assurance, Maintenance)

6. REFERENCES

Table 2: References summary:

No.	Document	Title	Section
3.2	BRC Storage and Distribution Issue 3	Records Completion and Maintenance	3.1.3
4.1	ISO 22000:2018, International Standard	FSMS – Requirements	4.2.3

7. RESPONSIBILITY AND AUTHORITY

Food Safety Team Leader

The Food Safety Team Leader is responsible for:

- Development, updating, and effective implementation of this procedure
- Updating and maintaining FSMS controlled records master list Ref. BHCTL/QMS/04
- Ensuring that all FSMS records in the controlled records master-list are maintained per requirements of BRC Storage and Distribution Issue 3 and ISO 22000:2018 International Standard and as per provisions of this procedure and that they remain legible, readily identifiable, and retrievable.

Heads of Sections

The Heads of Sections (*see table 3 below*) are responsible for:

- Effective implementation of this procedure in their respective functions,
- Ensuring that records are established and maintained in their respective functions to provide evidence of the effective operation of the BHCTL FSMS, and
- Ensuring that the process established records remain legible, readily identifiable, and retrievable.

Table 3: Process and Responsible Functions Summary:

PROCESS (DEPARTMENT/SECTION)	RESPONSIBLE FUNCTION
CSR and Admin	CSR and Admin Manager
Warehouse and Operations	Operations Manager
Quality Assurance	Quality Assurance Technician
Maintenance	Refrigeration Engineer
Food Safety Management System	Food Safety Team Leader

8. RECORDS

BHCTL FSCRM-FSMS controlled records master-list.

DESCRIPTION OF ACTIVITIES:

Records Identification:

Records within Brighthouse Consultancy and Training Limited are of two categories:

Forms	Registers
-------	-----------

Forms used to demonstrate activities achieved in BHCTL should be indexed as follows:

- The first part should be BHCTL denoting that the record belongs to Bright House Consultancy and Training Limited, followed by a forward slash (/).
- The second part should be the initial of the department/unit where the form originates, followed by a forward slash (/).
- The third part should be the serial number starting from 01.

Registers used to demonstrate activities achieved in BHCTL should be indexed as follows:

- The first part should be BHCTL denoting that the form belongs to Bright House Consultancy and Training Limited, followed by a forward slash (/)
- The second part should be the initial of the department/unit where the form originates, followed by a forward slash (/)
- The third part should be the “R,” denoting that it’s a register
- The fourth part should be the serial number starting from 01

Records Storage:

All hard copy forms should be maintained in a file and stored.

All confidential files should be indexed “Confidential.”

After closing the file, it should bear a volume no. starting from 1 and the date’s range.

The confidential and personnel files should be stored in locked cabinets/drawers.

The general and working files should be stored in open cabinets and drawers.

The soft copy confidential records should have controlled access as per the ICT security policy.

Records Protection:

Records should be accessed by the authorized persons only.

Documents should be stored as detailed above.

Retrieval:

This procedure should start with the food safety team leader receiving a record request from any staff member.

The food safety team leader will enquire the reasons for the requisition of the specific record.

After confirmation, using the record's name, the food safety team leader should identify and retrieve the file containing that record from the cabinet guided by the file catalog.

The food safety team leader should confirm the file's status by checking the file contents and registering it in the file movement register before issuing it. The file should be borrowed and given intact. (No removal of file contents)



Staff members should return all files to the food safety team leader intact within five (5) days of borrowing.

Upon receipt of the file, the food safety team leader should confirm the file contents' folios and file physical condition.

In the event of missing folios or lousy condition of the file, the food safety team leader should return the file to the staff and ensure that missing folios are re-filed and attend to the file's state.

If the file is okay, the food safety team leader should record the time and date in the file movement register and ensure the staff signs off.

Upon confirming the file's condition, the food safety team leader should sign the file register for verification.

The food safety team leader should return the file to its specific position in the file cabinet guided by the file number on the file label.

Retention:

Records should be retained for one year.

This procedure should start with the food safety team leader identifying the list of records to be retained guided by the retention schedule.

The food safety team leader should then list the records to be retained and those to be disposed of.

The food safety team leader should remove the records to be disposed of from the cabinet, leaving those to be retained.

**Disposition:**

This procedure should start with the food safety team leader identifying the records to be disposed of guided by the disposal schedule and making a list of the same.

Disposition of records should be achieved through the following:

- Transferring the records to the archives.
- Total destruction.

Transferring the Records to the Archives:

The food safety team leader should identify the records to be transferred to the archive.

The food safety team leader should register the records in the archival register.

The food safety team leader should shelve the record on the archive shelves.

Total destruction:

The food safety team leader should identify the records to be destroyed off completely.

The food safety team leader should register the records in the total destruction register

The food safety team leader should destroy the record by shredding or burning the records.

9. RECORDS EXAMPLES

Master List of Records.

EXAMPLE 2: BHCTL/QMS/03 PROCEDURE FOR RECALL AND MOCK WITHDRAWAL

1. Authorized Distribution

Controlled copies of this procedure are distributed to members of Executive Management and Process Owners as below:

COPY NO	HOLDER
01	DIRECTOR
02	QUALITY ASSURANCE MANAGER
03	COMMERICAL MANAGER
04	REFRIGERATION ENGINEER
05	QA TECHNICIAN

2. Amendment History

This 1st issuance, Revision Status 01

DATE	SECTION	ADMENDMENT	BASIS
19/01/2020	Recall team	Exclusion of Michael Tincher	Updating recall team

3. Purpose

To put in place a procedure for the 100% traceability and recall of products suspected to be contaminated within 2 hours.

To track the products whether in a cold room, on a delivery truck, or delivered to customers (currently outside storage not used). This traceability should include all product lots, rework, any work in progress, a product on hold, or destroyed (if applicable).

To put in place a procedure to test the recall program's accuracy within 2 hours of initiation.

4. Scope

This procedure applies to all products.

5. References

Table 2: References summary:

No.	Document	Title	Section
4.1	BRC Global Standard for Storage and Distribution	Traceability & Product Recall	3.6-3.7

6. Responsibility And Authority

Food Safety Team Leader

The Food Safety Team Leader is responsible for:

- Development and effective implementation of this procedure.
- Collaborate with process owners and external parties to ensure that appropriate corrective actions address FSMS nonconformities and noncompliance.
- Maintaining corrective action records.

7. Procedure

Receiving and Dispatches:

All products are received checked for Quantity and Quality. The inventory is maintained batch-wise.

The product should be received as per the procedure for receiving products and inspected, and details of the product taken and recorded in BHCTL/SOP/03

The details of the products should include manufacturing date, expiry date and batch, product specifications, and sizes.

- The storage locations should be included and tied to the batches as well.
- Details of the truck should include the driver's name, truck number, and trailer number.

Actual Withdrawal:

The Operations Manager should ensure that all the items received and issued can be tracked 100% within two hours from the supplier they were received from through to the outlets they were dispatched to using code dates/batch numbers using internal records.

The warehouse should establish an internal system that identifies and keeps records of the date of receipts, Item code/batch number, date of expiry, name of supplier received from, transporter used to dispatch the specific batches, and date of dispatch.

A product recall team and the personnel responsible for initiating the recall process should be appointed by the Commercial Manager, including the Operations Manager, the Facility Manager, and Quality Assurance Manager.

A 24/7 contact phone numbers list for the recall team members should be maintained at the center to ensure that the team can be reached in the shortest time possible



The product recall team should meet chaired by the Operations Manager to assess the incident and if it warrants product recall and asks for approval from the Commercial Manager. The products recall team has agreed on the need for the recall, should coordinate and verify as per the

responsibility area: the recovery, reconciliation, and final disposition of the recovered product.

Together with the recall team, the Operations Manager should conclude the reconciliation of the affected product, i.e., total products distributed for that batch, the batch and quantities affected, and the distribution report, including quantities sold per outlet.

The Commercial Manager should then authorize the Operations Manager to notify customer Quality Assurance by telephone within 2 hours of incident discovery. That will be mutually agreed on the action, e.g., replenish stock with the non-contaminated product before the recall is initiated.

The commercial manager should also authorize the Operations Manager to notify all the Outlets with the affected product with the batch's exact details and ask them to remove it from their inventory waiting uplifting back to the distribution center.

Immediately remove the affected products that still on site

Once received through the delivery channels, the recalled products should be held separately from other products with a tag indicating awaiting a decision.

The held product should be subjected to a traceability system by the team, which will pinpoint the root cause of the problem and any related batches

Disposition: the nonconforming products should be disposed of as per the procedure for control of nonconforming products.

A documented reconciliation should be done, which should not be above 105%

and not below 95%. Any reconciliation above 100% should have the supporting details. The reconciliation should record the time taken. The trucking time should not exceed 2 hours

Depending on the recall's nature, the Commercial Manager should decide to report the matter to the Kenya Bureau of Standards and Public Health Department (Regulatory agency) or the media. However, the requirement is that this can only be done after consultation with BHCTL Crisis Management Team.

This program should be tested at least once per year and records maintained through a mock recall. Note: An actual recall should not replace a mock recall.

The recall team should review the effectiveness of his program on an annual basis.

Mock Withdrawal:

Frequency: BHCTL Cold Storage should initiate a mock recovery once every year for either a product within 2 hours.

Time: The test will be conducted after regular business hours, i.e., after 5 pm (normal working hours is 8 am to 5 pm Monday to Friday and 8 am to 1 pm on Saturday) and will include the following:

Summary of traceability results:

- Identification of which raw ingredient or packaging material to trace.
- Date and time test initiated and completed.
- Identification of records to be reviewed in effecting a trace.
- A summary of the calculation of the % recovery.
- A completed product information sheet (the supplier portion).
- A list of who should be notified in case of a real recovery. (Refer contacts in the product recall procedure.)
- Review of the uncovered issues or opportunities to improve the system.

Mock Recall Team:

The Operations Manager should notify the recall team of the scheduled mock recovery.

Once the recall starts, the following should happen as detailed below:

Full tracking of the batch must be done and must give the following information:

- Date of receipt of raw material.
- The supplier of the raw material.
- Date of manufacture.
- All products are manufactured on the batch.
- All products still on-premises.
- All customers supplied with the contaminated batch.
- Contact details of all customers with the affected product.

The documents used for tracking will include the following:

- Receiving records (indicating supplier, product name, quantities received with batch numbers demonstrated)
- Inventory records (bin cards)
- Dispatch records



- Disposition of damaged product log (if applicable)

Summary of Calculations:

The number of cases received into DC.

The product name, product number, code date, and supplier.

The number of cases located with a total percentage found.

Where cases were located at the store, in inventory, on route, at the restaurant, or damaged.

Date and time test initiated and completed with the total duration.

Conclusion:

A reconciliation of the batch/lot should be done to measure the mock recall/withdrawal effectiveness. A 99.9%- 100% reconciliation within 2 hours should constitute an effective recall.

The recall team should meet after the recall exercise to review the outcome and any improvement plans, and the findings will be documented.

Testing of individuals on the contact list will be conducted to confirm understanding of their responsibility during recovery at random.

Should the mock recall fail, meaning taking longer than 4 hours to complete or recovering <99.9% or >100%, a retesting should be done within 60 days.

10. RECORDS REVIEW

- Mock withdrawal Report
- Product recall report
- Crisis management report

List of Standard Operating Procedure (SOP) for Food Handling Facility:

1. Control of Documents
2. Control of Records
3. Control of Nonconforming Product
4. Hygiene Procedure
5. Internal Auditing
6. Allergen Control
7. Mock Recall
8. Correction and Corrective Action
9. Traceability
10. Identification and Evaluation of Compliance
11. Training and Development
12. Complaint Management
13. Pest Control
14. Management Review
15. Calibration
16. Product Recall and Withdrawal
17. Food Defense
18. Food Fraud and Vulnerability

CHAPTER 7: FOOD SAFETY TRAINING

7.0 Introduction

Food handling facilities, food processors, and those in primary production and distribution of food are legally required to undertake food safety training and undergo supervision according to their activity level. Thus, food quality assurance managers, supervisors, machine operators, lab technicians, production managers, drivers, and food servers should be trained in different food safety aspects. People responsible for designing, developing, and maintaining an FBO food safety management system (FSMS) must be trained in applying hazard analysis critical control point (HACCP) system principles to the Food Safety Management System.

7.1 Assigning Responsibilities

- Training is the responsibility of the Quality Assurance Manager, the Operations Manager, the Human Resources Manager, and all the supervisors within the facility.
- Quality Assurance Manager is responsible for developing the training program, coordinating training and participating in training, sensitizing and creating awareness to all staff on matters of food safety.
- Human Resources Manager is responsible for the recruitment of qualified and competent staff and induction.
- On occasions, the HR department should outsource certified consultants to



conduct training in various specialized areas.

7.2 Competence

Every section should have a job description for every task performed in each area. The process owner should come up with the job description.

The process owner should establish the required level of competence to perform each of the described jobs in all sections.

The competence setting should take into account:

- Education Level – The process owner should come up with a minimum education level for each job group.
- Experience – should be considered as an indication of the staff acquired competence and skills.
- Relevant training – Any training that has been undertaken that is relevant to the job being performed should be taken into account when establishing the competency level.
- The individual responsible for conducting tests and quality inspection must have undergone at least a certificate level training at a college, apart from the mandatory form four level entry.

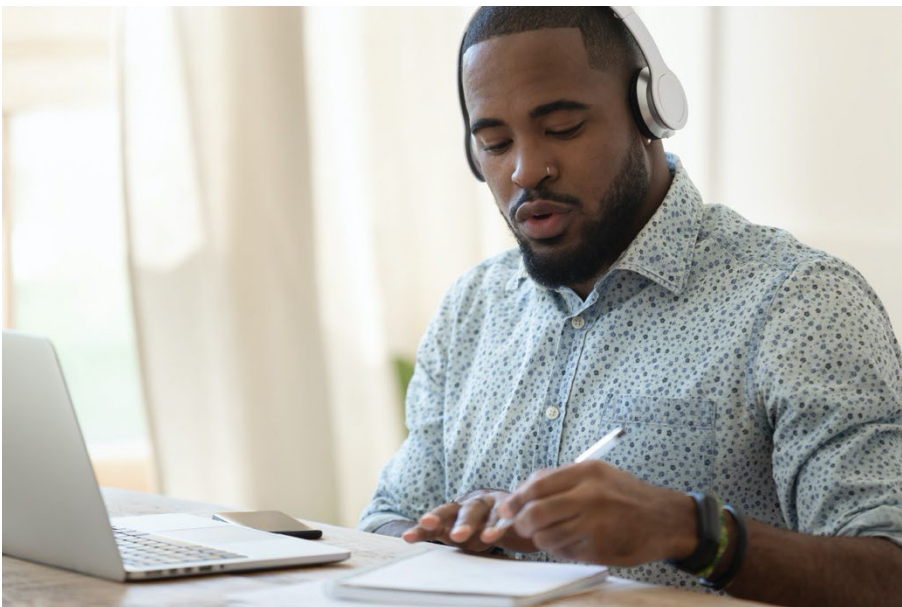
7.3 Training

Regular Staff Training:

- A new employee should be trained and comprehend their operations before they start handling their respective tasks.
- Casual employees should be educated and understand the company's standard operating procedures.
- All staff should be trained on the regular awareness of Food Safety, GMP, GDP, and Quality.
- Customer awareness training and customer specifications – Customer requirements and specifications should be done to all staff handling customer products using provided standards and specifications.

requirements and specifications should be done to all staff handling customer products using provided standards and specifications.

- Training should be continual depending on the area of work and personnel transfers from one section to another.
- The effectiveness of training should be monitored after training



through surveys.

- GMP/CCPs/Allergens/Safety/Cleaning SOP should be conducted twice a year.
- Customer specifications and requirements' training should be done when required.

Role of Internal Trainers:

- Internal trainers should be qualified in their specific disciplines.
- Should have education level that is above minimum qualification required in that section.
- Should have experience of more than three years in that section.
- Should have attended training that gives them food safety knowledge above the average staff in that section.
- Should have passed all evaluation examinations of any training attended.
- A process owner or a section supervisor should also be qualified to train the staff.
- The food safety team members and FSTL should be qualified to conduct staff training on food safety issues.



Role of External Trainers:

- Training in the organizations must be licensed, certified, and have expertise in the specific area that training is required.
- An external trainer should have trained in food safety management system.
- Must have experience of not less than two years in training and five years in food production, storage, and distribution.
- Should have attained a degree in food science and technology or food supply chain and must have experience of not less than six years in food processing hygiene.

Training needs Assessment:

- Process owner, through observation and supervision, should identify training gaps.
- Quality Assurance Manager should use the analysis results and audits to identify the training gaps.
- Through individual staff self-assessment, the food safety team leader should identify the training gaps for all staff.
- All the training gaps information should be forwarded to the Quality Assurance Manager, who should come up with a training schedule for the year.

- The Human Resources department should maintain the training schedule.

Training Evaluations:

- Records of training attendance should be maintained, and the trainers will gauge the understanding of the staff through exit exams questions and observations.
- Effectiveness of all training of critical processes, procedures, and monitoring should be evaluated one month after training.
- Once training needs have been identified, the training should be listed in the training schedule to ensure all staff has been trained for all key aspects.
- QUALITY ASSURANCE MANAGER should monitor and ensure adherence and completion of training schedule every year.
- Audit reports should form part of the tools used to check the effectiveness of training.

7.4 Records to be maintained

- Training Records
- Training Schedule for the year
- Appraisal forms
- Employment Contracts



FOOD SAFETY IMPLEMENTATION MANUAL

A HANDS-ON GUIDE FOR IMPLEMENTING AN APPROPRIATE FOOD SAFETY MANAGEMENT SYSTEM IN AFRICA

This 2021 edition of the *Food Safety Implementation Manual: A Hands-On Guide for Implementing an Appropriate Food Safety Management System in Africa* was published for educational purposes by Feed the Future Business Drivers for Food Safety (BD4FS), funded by the United States Agency for International Development and implemented by Food Enterprise Solutions (FES). It provides the guidelines and regulations for food safety certification in any African nation. The purpose of the manual is to help large, medium, and small food industry companies establish, professionally maintain, and enhance a certified food safety system in their operations.

This manual is a product of the staff of Brighthouse Consultancy and Training. It has been prepared and published thanks to our dedicated professionals' efforts, BD4FS, and FES. Presented in this manual is the best practical knowledge we have gained in supporting food business operators across the sector. It covers the most significant aspects of food safety in an easy-to-follow format.

The Food Safety Implementation Manual: A Hands-On Guide for Implementing an Appropriate Food Safety Management System in Africa offers an overview of the need for a food safety management system and certification in Africa. The manual utilizes the most widely recognized standards that a food sector company might implement to gain local and international food safety certification—aimed at protecting the health of consumers, ensuring fair practices in the food trade, and promoting the harmonization of standards. This manual addresses the East African Community's relevant regulations that can be applied across all nations of Africa. The manual also includes a summary of appropriate approaches toward food safety legislation, and it outlines how companies may demonstrate their compliance with food safety requirements. It also introduces proper food safety planning and implementation tools and techniques. Among these is an in-depth analysis of how important the role of senior management is to implementing food safety culture and another on the establishment of a food safety hazard analysis and critical control points plan and system. The methodologies described may be applied to any food product.



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

COOPERATIVE AGREEMENT NO. 720BFS19CA00001

Participant GFB Intake Survey (Baseline Data Collection) and Pre/HACCP/PRP Diagnosis Grid and Food Loss Checklist

BD4FS Tools and Practices

December 2021

This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

This baseline diagnosis document consists of three evaluation grids and three food loss checklists. The first grid is dedicated to the HACCP *prerequisites*, the two others to the “HACCP method” (*preliminary study*, HACCP method implemented in the company). It is important to remember this is NOT a HACCP certification audit, it is to help companies become HACCP ready.

Regarding the three first grids:

- If the observation of an item gives a satisfactory result, the criterion is considered as a Strong point;
- If the observation of an item gives an unsatisfactory result, the criterion is considered as a Weak point; or
- If the observation item is not applicable in the context of the company, the criterion is considered Not Applicable (NA).

LEGEND:



=Strong point



= Weak point

Name of experts:.....

Details of the intervention

Scope of Diagnosis

Target elements of the diagnosis:

.....
.....
.....

Activities of the establishment

Number of employees: Women:.....Men..... Youth (15-29):.....

Activity (production and product) :

- Transportation
- Storage
- Processing
- Marketing
- Other (please specify)

Type of raw materials :

- Fruits and vegetables
- Meat and Poultry
- Milk
- Product.....;

Production

capacity :

Volume of production N - I :

Establishment performance (to be completed at the end of the diagnosis)

Pre-requisite programs:

Number of items checked:

Number of compliant items:

Percentage of PRPs compliance:

Pre-HACCP:

Number of items checked:

Number of points in compliance:

Percentage of HACCP compliance:

Note: The items annotated in this grid reflect the observations of the experts - confirmed by the companies. They do NOT reflect the opinion of the competent authorities of Senegal or USAID. As such, this document CANNOT be considered a record of an official inspection. The information it contains will be kept confidential by FES and only used for the BDF4S program.

Grid n° 1/3: Assessment of the implementation of pre-requisites

Control of contamination sources

Considered criteria	Documents associated with these criteria	Conformity	Comments
I Building			
<p><i>1.1 Conformity of the premises: general organization:</i></p> <ul style="list-style-type: none"> - <i>Conformity of the establishment immediate surroundings.....</i> - <i>Doors insufficient number.....</i> - <i>compliance with the onward flow principle</i> - <i>separation of the clean sector and unclean sector</i> - <i>no crisscross of the production lines</i> - <i>separation of the hot zone and cold zone</i> 	<p>Plan of the establishment (1/500 to 1/1000) showing:</p> <ul style="list-style-type: none"> - drinking water supply - wastewater drain off <p>Plan of the establishment (1/100 to 1/300) showing:</p> <ul style="list-style-type: none"> - Identification of rooms. - position of workstations and the equipment..... - position of cloakroom and toilets..... - location of inputs/outputs of flows (staff, products, ...)..... - Flowchart of flows (staff, products, raw materials, waste,) 		
<p><i>1.2 Conformity of the premises: construction</i></p> <ul style="list-style-type: none"> - <i>wall coverings: smooth, light-colored, washable, impervious</i> - <i>.....</i> - <i>floor covering smooth, light-colored, washable, resistant</i> - <i>floor and walls joined by round gorge assemblages</i> - <i>floor grids and U-bends to collect wastewater</i> - <i>ventilation devices ensuring steam and smoke elimination</i> - <i>doors and windows conform.....</i> - <i>lighting bright and neutral in color.....</i> 	<p>Explanatory leaflet of materials used and techniques of constructions employed</p> <p>.....</p> <p>.....</p>		
<p><i>1.3 Conformity of the premises: equipment and furniture</i></p> <ul style="list-style-type: none"> - <i>materials: inalterable and easy to clean</i> - <i>furniture: smooth, washable, resistant</i> - <i>work surfaces: smooth, washable, resistant</i> - <i>machines made from durable materials, easy to clean and disinfect.....</i> 	<p>Explanatory leaflet of the equipment (machines...)</p>		

Considered criteria	Documents associated with these criteria	Conformity	Comments
<i>1.4 Official regulatory or normative compliance</i>	Documents proving: - a national approval - an export approval - a certification of voluntary compliance with a standard -FRA authorization for all products		
<i>1.5 Maintaining compliance, maintenance</i>	Register of preventive and corrective maintenance operations, installations		
2 Supplies			
<i>2.1 Contractual relationship with the suppliers</i>	Contracts agreed with suppliers		
<i>2.2 Raw materials specifications</i>	Criteria for acceptance of batches and planned corrective actions for any case of control loss Cards of specifications of raw materials. - Composition - Microbiological standards - Residues specified and limits - Packaging (type, volume, weight. .) - Preserving conditions - Shelf life - Organization of stock turnover		
<i>2.3 Checking of deliveries</i>	Recording cards of control of deliveries - Temperature of delivered products - Intact packaging - Compliance with consumption deadlines..... - Labeling compliance with official food safety marking rules..... - Cleanliness of the delivery vehicle.....		
<i>2.4 Water portability</i>	Analysis or certificate of water potability		
3 Implementation of a system of traceability			

Considered criteria	Documents associated with these criteria	Conformity	Comments
3.1 <i>System of upstream traceability</i>	Specimen of simulation test of upstream traceability - Recordings relating to upstream traceability: - delivery control cards - listing of raw materials stocks		
3.2 <i>System of downstream traceability</i>	Specimen of simulation test of downstream traceability Recordings relating to downstream traceability - customers purchase orders - listing of finished product stocks -customers invoices		
4 Pest control			
4.1 <i>Implementation of a pest control plan</i> - <i>management of the outdoor waste bins, absence of waste on the ground</i> - <i>management of outdoor storage materials and equipment</i>	Pest control plan Insect control plan Report forms of the pest control company (department)		
5 Control contaminations originating from staff			
5.1 <i>Medical follow-up of the staff members</i>	Individual health certificates of food		
5.2 <i>Staff training plan</i>	Handling suitability Timetable and contents of training activities Staff members vocational training certificate		

Considered criteria	Documents associated with these criteria	Conformity	Comments
<p>5.3 Clothing hygiene:</p> <ul style="list-style-type: none"> - standard work clothing supplied by the company..... - washing of clothing by the company or under its responsibility - management of clean and dirty clothing - lockers with 2 compartments..... - boots/shoes washstands in conformity with standards..... 	<p>In house management procedure for clothing, or washing supplier contract</p>		
<p>5.4 Compliance with GHP and GMP</p>	<p>Specific approved GHP and GMP guide of the production sector or in-house manual of the GHP and GMP of the company</p>		
<p>6. Hands and premises cleaning</p>			
<p>6.1 Hands</p> <ul style="list-style-type: none"> - washstands in conformity with standards or regulations <p>handwashing procedures</p>	<p>Posting of handwashing instruction near the washstands</p>		
<p>6.2 Premises</p> <ul style="list-style-type: none"> - enforcement of a cleaning plan - microbiological control of effectiveness of cleaning 	<p>Summary of written cleaning procedures comprised in "cleaning plan"</p> <p>Check-grids of good execution of cleaning tasks</p> <p>Weekly check-grid of visual cleanliness of equipment surfaces</p> <p>Reports of microbiological controls of surfaces</p>		

PRE-HACCP Audit, implement Grid n° 2/3: Assessment of the phase of preliminary HACCP study

The assessment will be conducted following the chronological continuation of the method tasks

Considered criteria	Documents associated with these criteria	Conformity	Comments
Task n°1			
<i>1.1 Management engagement</i>	Management engagement declaration letter		
<i>1.2 Pre-HACCP team formation</i> - members of the staff involved in the Pre-HACCP team..... - assignment of technical tasks and responsibilities - training of the team to Pre-HACCP method..... - engaging external experts	Organization chart of the Pre-HACCP team Individual task sheets Individual vocational training certificates		
<i>1.3 Means put at the disposal of a team (computer, photocopy, budget...)</i>	Listing of the Pre-HACCP team facilities and equipment		
<i>1.4 Activities management</i> - organization, programming..... - dissemination, updating of successive versions of Pre-HACCP documents..... <i>field of study and compiling of specific data</i>	Planning of activities Timetable, deadlines file Working sessions reports Flow chart of dissemination of Pre-HACCP documents Bibliographical collection: technical and lawful data relating to the sector of production and the type of hazards analyzed		
Task n°2			
<i>2.1 Description of the product</i> - composition, volume, packaging..... - raw materials specifications: composition, proportion in the finished product, physicochemical parameters, shelf life, preservation, pre-treatment.....	A descriptive file of the product		
Task n°3			

Considered criteria	Documents associated with these criteria	Conformity	Comments
3.1 Identification of the expected use - shelf life..... - expected groups of consumers..... - conditions of use..... - foreseeable deviations of use.....	User instructions manual Labeling - Mandatory..... - Informative.....		
Task n°4			
4.1 Draft of the flow diagram			
Task n°5			
5.1 Verify the flow diagram - the flow diagram in accordance with real field conditions..... - taking into account all productions rates (high and low)..... - contents of the diagram: nature of the stages, inputs, contacts, physicochemical parameters (T° , time, A_w , pH).....	Flow diagram(s) - for each product or each family of products - or by current elementary operations usually associated with production (cooking)..... - or by work periods.....		
Task n°6			
6.1 Hazards analysis - analysis of the considered hazards (biological, physical, chemical) based on the flow diagram a risk assessment by calculation of the index of criticality	List of identified hazards Transposition of the identified hazards on the flow diagram then on a table related to the stages of production Risks assessment report (calculation of the index of criticality)		
6.2 Preventive measures drafting	Identification and collection of the preventive measures relating to each risk Operational procedures of implementation of these measures		
Task n°7			

Considered criteria	Documents associated with these criteria	Conformity	Comments
7.1 Determination of CCPs - by the use of the Codex decision tree..... - or by the intuitive method - or by the alternative method to the decision tree - plus identification of a related quantifiable and manageable parameter(s)	List of CCPs		
Task n°8			
8.1 Determination of critical limits for each CCP - selected criteria..... - required justifications - bibliographical data on the microbial flora - results of aging tests..... - lawful obligations.....	List of the selected criteria and their required justifications		

Pre-HACCP Audit Grid n° 3/3: Evaluation of implemented Pre-HACCP plan

The assessment will be carried out following the chronological continuation of the method steps

Considered criteria	Documents associated with these criteria	Conformity	Comments
Task n°9			
<p>9.1 Implementation of a monitoring system for each CCP</p> <p>Measuring instruments calibration</p>	<p>Manual of operational procedures</p> <p>Models of recording documents for the measured values, used within the framework of the monitoring procedures</p> <p>Duration Temperature pH Aw measurement of quantities: volume, weight, formulation</p> <p>Plan of calibration of the measuring instruments</p>		
Task n°10			
<p>10.1 Draft of corrective actions to be implemented in the event of loss of control (deviation of the monitored values)</p>	<p>Table of correspondence between the observed deviations and the corrective action type that must be implemented</p> <p>Operational procedures manual of corrective actions</p>		
<p>10.2 Ensure the follow-up of the batches subjected to corrective actions</p>	<p>Model of monitoring sheet of batches subjected to corrective action (traceability of these batches)</p>		
Task n°11			

Considered criteria	Documents associated with these criteria	Conformity	Comments
<p>11.1 Establish verification procedures</p> <ul style="list-style-type: none"> - microbiological analysis of the finished products - simulations of deviations or losses of control..... - recordings audit..... - checking of compliance with the implemented corrective actions <p>validation of good cleaning practices</p>	<p>Plan of analysis of products (raw materials, in-process or finished products):</p> <ul style="list-style-type: none"> - sampling plan (number and frequency of samples) - types and standards of the microbial flora of the products - report of microbiological analysis of products 		
<p>11.2 Define practical methods for checking</p>	<p>Microbiological analysis plan of equipment surfaces</p> <ul style="list-style-type: none"> - sampling plan (number and frequency of samples) - types and standards of equipment surface microbial flora..... - report of microbiological analysis of equipment surfaces..... <p>Audit reports (in house or external)</p>		
<p>Task n°12</p>			
<p>12.1 Establish documentation and records keeping</p>	<p>All the documents are taken into account at the preceding steps</p>		

FOOD LOSS PROTOCOL CHECKLISTS

The three following checklists are intended to collect data on food loss. Depending on the business and products, one or more checklist may apply. Also, for Part 2 of each checklist, only use the appropriate section based on business activities.

A. MEAT and POULTRY

FINAL DRAFT				
PART I. GROWING FOOD BUSINESS DETAILS – MEAT and POULTRY		Responses		Comments
I.1: Setting and Business Parameters		YES	NO	
I.1.1	Does the food business operator keep records of the volume of meat/poultry being managed daily? If YES, using any records currently available, what is the estimated annual volume of meat/poultry received? (consider the number of days of operation) _____ kgs			
I.1.2	Has the Food Business Operator ever measured food losses for meat/poultry ?			
I.1.3	If yes, are there written records of food losses kept by the business? For what period of time? _____			
I.1.4	If yes, what is the estimate of the volume of annual food loss/waste disposals? _____ kgs			
I.1.5	What is the annual cost for disposal of meats/poultry loss/waste? (garbage collection) _____			
I.2: Organisational Structure, Responsibility and Management				
I.2.1	Is there an individual or team responsible for keeping purchase and sales records for the business?			
I.2.2	Have staff members been trained in proper postharvest handling for meat/poultry ?			

I.2.3	Have staff members ever received training on food safety protocols and practices?			
I.2.4	Have staff members ever been trained in measuring food losses?			
I.2.5	<p>If yes, who provided the training?</p> <p>BD4FS Project</p> <p>Or other: _____</p> <p>When was training last provided? (Please provide dates and numbers of trainees)</p> <p>Postharvest practices: Dates _____ (# trained:)</p> <p>Food safety protocols: Dates _____ (# trained:)</p> <p>Measuring food losses: Dates _____ (# trained:)</p>			

Please complete only the sections in Part 2 that relate to your business operations. Your business may involve only one operation or up to all five types of postharvest operations related to meat/poultry.			
PART 2: FOOD LOSS PROTOCOL – MEAT and POULTRY			
2.1 Fresh Handling / Packing / Packinghouse Checklist		YES	NO Comments
2.1.1	Has the Food Business Operator established prerequisite programs (PRPs) as specified in the Food Safety Audit?		
2.1.2	Do operations include cleaning or washing? Is the wash water kept clean and sanitized regularly?		
2.1.3	Is the meat/poultry sorted before packing, storage, or processing? What percentage is sorted out and discarded?		
2.1.4	Is the meat/poultry trimmed before packing, storage, or processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimmings edible?		
2.1.5	Is fresh meat/poultry packed in the facility? What types of packages are used? _____ What size(s) are the packages? _____ _____		

2.1.6	<p>Is discarded meat/poultry collected into a bin or disposal container?</p> <p>What is the percentage of discards compared to the total daily load of meat/poultry? _____ %</p> <p>If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days)</p> <p>SEE FORM I</p> <p>Calculated average percentage of food losses _____%</p>			
2.1.7	<p>Is discarded fresh meat/poultry removed from the premises regularly?</p> <p>If yes, where does it go?</p> <p>_____ landfill (trucked away to a disposal site)</p> <p>_____ animal feeds</p> <p>_____ processing of by-products</p> <p>_____ other (please specify _____)</p>			
2.1.8	<p>Reasons for discards</p> <p>_____ decayed or deteriorated</p> <p>_____ evidence of parasites</p> <p>_____ out of market standard (damaged, poor quality, or poor appearance)</p> <p>_____ ugly or misfits (poor shape, size, or color)</p> <p>_____ trimmings (edible)</p> <p>_____ food safety hazards</p> <p>_____ other (please specify _____)</p>			

2.2: Cooling fresh meat/poultry		YES	NO	Comments
2.2.1	Has fresh meat/poultry ever been physically lost (sorted out and discarded) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
2.2.2	Has fresh meat/poultry ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
2.3: Transport / dispatch checklist		YES	NO	Comments
2.3.1	Is the loading of vehicles or shipping containers carried out in a manner that prevents damage? Are loads secured to prevent movement during transit?			
2.3.2	Has meat/poultry ever been physically lost (sorted out and discarded) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.3.3	Has meat/poultry ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.4: Processing checklist		YES	NO	Comments
2.4.1	Is meat/poultry sorted/graded before processing? What percentage is sorted out and discarded?			
2.4.2	Is the meat/poultry trimmed before processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimmings edible?			
2.4.3	Is discarded meat/poultry collected into a bin or disposal container?			

	<p>What is the percentage of discards compared to the total daily load of meat/poultry sent for processing? _____ %</p> <p>If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days). SEE FORM I</p> <p>Calculated average percentage of food losses _____%</p>			
2.4.4	<p>Is discarded meat/poultry removed from the premises regularly?</p> <p>If yes, where does it go?</p> <p>_____ landfill (trucked away to a disposal site)</p> <p>_____ animal feeds</p> <p>_____ processing of by-products</p> <p>_____ other (please specify _____)</p>			
2.4.5	<p>Reasons for discards</p> <p>_____ decayed or deteriorated</p> <p>_____ evidence of parasites</p> <p>_____ out of market standard (damaged, poor quality, or poor appearance)</p> <p>_____ ugly or misfits (poor shape, size, or color)</p> <p>_____ trimmings (edible)</p> <p>_____ food safety hazards</p> <p>_____ other (please specify _____)</p>			
2.4.6	<p>Has meat/poultry ever been physically lost (sorted out and discarded) due to lack of access to processing? If yes, estimate the percentage of losses _____ %</p>			

2.4.7	Has meat/poultry ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to processing? If yes, estimate the percentage of losses _____ %			
2.5: Storage / warehouse management checklist		YES	NO	Comments
2.5.1	For how long is fresh meat/poultry stored before dispatch? _____ Days _____ Weeks _____ Months For how long is frozen meat/poultry stored before dispatch? _____ Day/Days _____ Week/Weeks _____ Month/Months			
2.5.2	Has the food business operator put in place an effective system for identifying the location of stock within the storage area to facilitate stock rotation?			
2.5.3	Has meat/poultry ever been physically lost (sorted out and discarded) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			
2.5.4	Has meat/poultry ever suffered from quality losses (been downgraded in quality or had its market price reduced) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			
FORM I: Measurements of daily food losses				
Day Date:				
Meat/poultry upon arrival (total weight): _____				
Meats/poultry sorted out and discarded (measure total weight) _____				

<p>Day 2 Date:</p> <p>Meat/poultry upon arrival (total weight): _____</p> <p>Meat/poultry sorted out and discarded (measure total weight) _____</p> <p>Day 3 Date:</p> <p>Meat/poultry upon arrival (total weight): _____</p> <p>Meat/poultry sorted out and discarded (measure total weight) _____</p> <p>Calculate the average daily arrival weight: _____ kgs</p> <p>Calculate the average daily disposal weight: _____ kgs</p> <p>Calculate the average percentage of food losses _____%</p>		
--	--	--

B. FRUIT CROPS and VEGETABLES

PART I. GROWING FOOD BUSINESS DETAILS – FRUIT CROPS		Response		
I.1: Setting and Business Parameters		YES	NO	Comments
I.1.1	Does the food business operator keep records of the volumes of fruit crops being managed on a daily basis? If YES, using any records currently available, what is the estimated annual volume of fruit crops received? (Consider the Number of days of operation) _____ kgs			
I.1.2	Has the Food Business Operator ever measured food losses for fruit crops?			
I.1.3	If yes, are there written records of food losses kept by the business? For what period of time? _____			

1.1.4	If yes, what is the estimate of the volume of annual food loss/waste disposals? _____ kgs			
1.1.5	What is the annual cost for disposal of fruit loss/waste? (garbage collection) _____			
1.2: Organisational Structure, Responsibility, and Management		Y E S	N O	Comments
1.2.1	Is there an individual or team responsible for keeping purchase and sales records for the business?			
1.2.2	Have staff members been trained in proper postharvest handling for fruit crops?			
1.2.3	Have staff members ever received training on food safety protocols and practices?			
1.2.4	Have staff members ever been trained in measuring food losses?			
1.2.5	If yes, who provided the training? BD4FS Project Or other: _____ When was training last provided? (Please provide dates and numbers of trainees) Postharvest practices: Dates _____ (# trained:) Food safety protocols: Dates _____ (# trained:) Measuring food losses: Dates _____ (# trained:)			

Please complete only the sections in Part 2 that relate to your business operations. Your business may involve only one operation or up to all five types of postharvest operations related to fruit crops.			
PART 2: FOOD LOSS PROTOCOL – FRUIT CROPS			
2.1 Fresh Handling / Packing / Packinghouse Checklist		YES	NO
		Comments	
2.1.1	Is produce sorted before packing, storage, or processing? What percentage is sorted out and discarded?		
2.1.2	Is the produce trimmed before packing, storage, or processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimmings edible?		
2.1.3	Is fresh produce packed in the facility? What types of packages are used? _____ What size(s) are the packages? _____ _____		
2.1.4	Are discarded fruits collected into a bin or disposal container? What is the percentage of discards compared to the total daily load of fruit crops? _____ % If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days) SEE FORM I Calculated average percentage of food losses _____ %		
2.1.5	Are discarded fresh fruits removed from the premises regularly? If yes, where do they go?		

	<input type="checkbox"/> landfill (trucked away to a disposal site) <input type="checkbox"/> composting on-site <input type="checkbox"/> composting off-site <input type="checkbox"/> other (please specify _____)			
2.1.6	Reasons for discards <input type="checkbox"/> immature <input type="checkbox"/> over-mature, over-ripe <input type="checkbox"/> damaged, decayed or deteriorated <input type="checkbox"/> out of market standard (too large, too small, poor appearance) <input type="checkbox"/> ugly or misfits (crooked, poor shape) <input type="checkbox"/> trimmings (edible) <input type="checkbox"/> food safety hazards <input type="checkbox"/> other (please specify _____)			

2.2: Cooling fresh fruits		YES	NO	Comments
2.2.1	Have fruit crops ever been physically lost (sorted out and discarded) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
2.2.2	Have fruit crops ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
REMARKS				
2.3: Transport/dispatch checklist		YES	NO	Comments

2.3.1	Is the loading of vehicles or shipping containers conducted in a manner that prevents damage? Are loads secured to prevent movement during transit?			
2.3.2	Have fruit crops ever been physically lost (sorted out and discarded) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.3.3	Have fruit crops ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.4: Processing checklist		YES	NO	Comments
2.4.1	Is produce sorted before processing? What percentage is sorted out and discarded?			
2.4.2	Is the produce trimmed before processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimmings edible?			
2.4.3	Are discarded fruits collected into a bin or disposal container? What is the percentage of discards compared to the total daily load of fruit crops sent for processing? _____ % If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days). SEE FORM I Calculated average percentage of food losses _____ %			
2.4.4	Are discarded fruits removed from the premises regularly?			

	<p>If yes, where do they go?</p> <p>_____ landfill (trucked away to a disposal site)</p> <p>_____ composting on-site</p> <p>_____ composting off-site</p> <p>_____ other (please specify _____)</p>			
2.4.5	<p>Reasons for discards</p> <p>_____ immature</p> <p>_____ over-mature, over-ripe</p> <p>_____ damaged, decayed or deteriorated</p> <p>_____ out of market standard (poor quality, poor color)</p> <p>_____ ugly or misfits (crooked, poor shape)</p> <p>_____ trimmings (edible)</p> <p>_____ food safety hazards</p> <p>_____ other (please specify _____)</p>			
2.4.6	<p>Have fruits ever been physically lost (sorted out and discarded) due to lack of access to processing? If yes, estimate the percentage of losses _____ %</p>			
2.4.7	<p>Have fruits ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to processing? If yes, estimate the percentage of losses _____ %</p>			
2.5: Storage / warehouse management checklist		YES	NO	Comments
2.5.1	<p>For how long are fresh fruit crops stored before dispatch?</p> <p>_____ Day/ Days</p> <p>_____ Week/ Weeks</p>			

	_____ Month/ Months For how long are frozen fruits stored before dispatch? _____ Day/ Days _____ Week/ Weeks _____ Month/ Months			
2.5.2	Has the food business operator put in place an effective system for identifying the location of stock within the storage area to facilitate stock rotation?			
2.5.3	Have fruits ever been physically lost (sorted out and discarded) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			
2.5.4	Have fruits ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			

FORM I: Measurements of daily food losses			
Day 1 Date: _____ Fruits upon arrival (total weight): _____ Fruits sorted out and discarded (measure total weight) _____ Day 2 Date: _____ Fruits upon arrival (total weight): _____ Fruits sorted out and discarded (measure total weight) _____ Day 3 Date: _____ Fruits upon arrival (total weight): _____			

Fruits sorted out and discarded (measure total weight) _____

Calculate the average daily arrival weight: _____ kgs

Calculate the average daily disposal weight: _____ kgs

Calculate the average percentage of food losses _____%

C. FISH and SEAFOOD

FINAL DRAFT					
PART I. GROWING FOOD BUSINESS DETAILS – FISH and SEAFOOD			Responses		
I.1: Setting and Business Parameters			YES	NO	Comments
I.1.1	Does the food business operator keep records of the volumes of fish and seafood being managed on a daily basis? If YES, using any records currently available, what is the estimated annual volume of fish/seafood received? (consider the number of days of operation) _____ kgs				
I.1.2	Has the Food Business Operator ever measured food losses for fish/seafood ?				
I.1.3	If yes, are there written records of food losses kept by the business? For what period of time? _____				
I.1.4	If yes, what is the estimate of the volume of annual food loss/waste disposals? _____ kgs				
I.1.5	What is the annual cost for disposal of fish/seafood loss/waste? (garbage collection) _____				
I.2: Organisational Structure, Responsibility and Management					
I.2.1	Is there an individual or team responsible for keeping purchase and sales records for the business?				

I.2.2	Have staff members been trained in proper postharvest handling for fish/seafood ?			
I.2.3	Have staff members ever received training on food safety protocols and practices?			
I.2.4	Have staff members ever been trained in measuring food losses?			
I.2.5	<p>If yes, who provided the training? BD4FS Project</p> <p>Or other: _____</p> <p>When was training last provided? (please provide dates and numbers of trainees)</p> <p>Postharvest practices: Dates _____ (# trained:)</p> <p>Food safety protocols: Dates _____ (# trained:)</p> <p>Measuring food losses: Dates _____ (# trained:)</p>			

Please complete only the sections in Part 2 that relate to your business operations. Your business may involve only one operation or up to all five types of postharvest operations related to fish/seafoods.			
PART 2: FOOD LOSS PROTOCOL – FISH and SEAFOOD			
2.1 Fresh Handling / Packing / Packinghouse Checklist		YES	NO
2.1.1	Is fish/seafood sorted/graded before packing, storage, or processing? What percentage is sorted out and discarded?		
2.1.2	Are Fish/seafood trimmed before packing, storage, or processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimming edible?		
2.1.3	Is fresh fish/seafood packed in the facility? What types of packages are used? _____ What size(s) are the packages? _____ _____		
2.1.4	Are discarded fish/seafood collected into a bin or disposal container? What is the percentage of discards compared to the total daily load of fish and seafood? _____ % If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days) SEE FORM I Calculated average percentage of food losses _____ %		
2.1.5	Are discarded fresh fish/seafood removed from the premises regularly? If yes, where do they go?		

	<input type="checkbox"/> landfill (trucked away to a disposal site) <input type="checkbox"/> animal feed (ex. Fish meal, fish silage) <input type="checkbox"/> processing of by-products (ex. Pharmaceuticals, fish oils or fertilizers) <input type="checkbox"/> other (please specify _____)			
2.1.6	Reasons for discards <input type="checkbox"/> decayed or deteriorated <input type="checkbox"/> evidence of parasites <input type="checkbox"/> out of market standard (damaged, poor quality or poor appearance) <input type="checkbox"/> ugly or misfits (poor shape, size or color) <input type="checkbox"/> trimmings (edible) <input type="checkbox"/> food safety hazards <input type="checkbox"/> other (please specify _____)			

2.2: Cooling fresh fish/seafoods		YES	NO	Comments
2.2.1	Have fresh fish/seafood ever been physically lost (sorted out and discarded) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
2.2.2	Have fresh fish/seafood ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to cooling? If yes, estimate the percentage of losses _____ %			
REMARKS				
2.3: Transport/dispatch checklist		YES	NO	Comments

2.3.1	Is the loading of vehicles or shipping containers carried out in a manner that prevents damage? Are loads secured to prevent movement during transit?			
2.3.2	Have fish/seafood ever been physically lost (sorted out and discarded) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.3.3	Have fish/seafood ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to appropriate transport? If yes, estimate the percentage of losses _____ %			
2.4: Processing checklist		YES	NO	Comments
2.4.1	Are fish/seafood sorted/graded before processing? What percentage is sorted out and discarded?			
2.4.2	Are the fish/seafood trimmed before processing? What type of trimmings are performed? _____ What percentage is trimmed away and discarded? _____ % Are any of the trimmings edible?			
2.4.3	Are discarded fish/seafood collected into a bin or disposal container? What is the percentage of discards compared to the total daily load of fish/seafood sent for processing? _____ % If there are no records of the percentages or weights of discards, sample weight loss measurements should be taken and reported for BD4FS Project purposes. (Average of 3 days). SEE FORM I Calculated average percentage of food losses _____ %			
2.4.4	Are discarded fish/seafood removed from the premises regularly? If yes, where do they go?			

	<input type="checkbox"/> landfill (trucked away to a disposal site) <input type="checkbox"/> animal feed (ex. Fish meal, fish silage) <input type="checkbox"/> processing of by-products (ex. Pharmaceuticals, fish oils or fertilizers) <input type="checkbox"/> other (please specify _____)			
2.4.5	Reasons for discards <input type="checkbox"/> decayed or deteriorated <input type="checkbox"/> evidence of parasites <input type="checkbox"/> out of market standard (damaged, poor quality or poor appearance) <input type="checkbox"/> ugly or misfits (poor shape, size or color) <input type="checkbox"/> trimmings (edible) <input type="checkbox"/> food safety hazards <input type="checkbox"/> other (please specify _____)			
2.4.6	Have fish/seafood ever been physically lost (sorted out and discarded) due to lack of access to processing? If yes, estimate the percentage of losses _____ %			
2.4.7	Have fish/seafood ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to processing? If yes, estimate the percentage of losses _____ %			
		YES	NO	Comments
2.5: Storage / warehouse management checklist				
2.5.1	For how long are fresh fish/seafoods stored before dispatch? <input type="checkbox"/> Day/Days <input type="checkbox"/> Week/Weeks <input type="checkbox"/> Month/Months			

	For how long are frozen fish/seafoods stored before dispatch? _____ Day/Days _____ Week/Weeks _____ Month/Months			
2.5.2	Has the food business operator put in place an effective system for identifying the location of stock within the storage area to facilitate stock rotation?			
2.5.3	Have fish/seafood ever been physically lost (sorted out and discarded) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			
2.5.4	Have fish/seafood ever suffered from quality losses (been downgraded in quality or had their market price reduced) due to lack of access to storage? If yes, estimate the percentage of losses _____ %			

FORM I: Measurements of daily food losses

Day 1 Date:

Fish/seafoods upon arrival (total weight): _____

Fish/seafoods sorted out and discarded (measure total weight) _____

Day 2 Date:

Fish/seafoods upon arrival (total weight): _____

Fish/seafoods sorted out and discarded (measure total weight) _____

Day 3 Date:

Fish/seafoods upon arrival (total weight): _____

Fish/seafoods sorted out and discarded (measure total weight) _____

Calculate the average daily arrival weight: _____ kgs

Calculate the average daily disposal weight: _____ kgs

Calculate the average percentage of food losses _____%

--	--	--



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFS19CA00001

mSafeFood Mobile Messaging Guidelines to
Improve Food Safety Awareness and Practices among Businesses

BD4FS Tools and Practices

December 2021

This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

Background and Purpose

Feed the Future Business Drivers for Food Safety (BD4FS) is implemented by Food Enterprise Solutions (FES) and funded by the United States Agency for International Development (USAID). BD4FS recognizes the importance small- to medium-sized local food businesses, referred to as growing food businesses (GFBs)¹, in providing consumers with access to affordable, nutritious, and safe food and sees them as key actors in the food system. The program focuses on projects to advance the state of knowledge and actionable research to improve food safety among GFBs. BD4FS builds capacities among these local businesses within this system that have the potential to substantially reduce these negative effects by adopting better food safety standards and practices.

There are many barriers to the adoption of improved food safety practices and procedures, including access to affordable capital for equipment upgrades, better market linkages to discerning consumers willing to pay better prices for safe food, and—critically important—a better understanding of the dynamics and causation of food contamination to change behaviors and practices for better food hygiene. Consequently, **a key objective of BD4FS is to increase food safety awareness and improve food safety practices among actors in the nutrient-dense perishable foods sector** in its Feed the Future focus countries. This is accomplished through in-person and remote trainings, production and distribution of food safety guidebooks, and other educational activities. An important and complementary component of improving food safety awareness and practices among GFBs is the **BD4FS mSafeFood initiative**— a mobile messaging system that utilizes GSM (global system for mobile communication), 3G, and IVR (interactive voice response) technologies to engage and educate GFBs on food safety practices that are relevant and feasible to implement. Incorporating a mobile learning agenda with audio lessons is particularly important for maximizing reach of food safety messages as many BD4FS target actors are minimally literate.

Objective

The principal objective of mSafeFood is to increase food safety awareness and improve food safety practices (with the support of other interventions) among food business actors.

Methodology: mSafeFood Development and Approach

BD4FS developed its mSafeFood mobile messaging initiative in 2021 – an initiative that applies successful mobile outreach methods developed in other sectors such as mHealth, mNutrition, and mAgric.² mSafeFood is unique in that its content is focused on food safety and its audience is food business entrepreneurs. The BD4FS team in the US and in-country provide food safety knowledge, a keen understanding of target audience needs, and a network of entrepreneurs to receive the mobile messages. The initiative involves partnering with a social enterprise with technical expertise in mobile messaging and communications and experience working in the focus country. BD4FS initially developed mSafeFood as part of its Senegal program and through the codesign process with in-country experts, the tool can be adapted for use in other countries.

Approach

Prior to launch of mSafeFood, two important steps need to be taken: (1) Identify the target audience and region, for example, in Senegal the initiative was first launched with fish processors in the Dakar region; and (2) Develop a database of contacts who will be invited to participate in mSafeFood; the database needs to include the name, business sector, occupation, mobile number, and key demographic information such as age and gender for each contact. Development of mSafeFood content is then an iterative process among food safety specialists who develop technical content; communications experts who translate content

¹ 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.

² For information on mHealth, mNutrition, and mAgric, visit the following links:

mHealth: https://www.who.int/goe/publications/goe_mhealth_web.pdf

mNutrition: <https://www.gsma.com/mobilefordevelopment/mhealth/mnutrition/>

mAgric: <https://www.gsma.com/mobilefordevelopment/resources/digitising-the-agricultural-last-mile-in-ghana-mtn-mobile-moneys-magric/>

to short, digestible lessons; and the social enterprise that is knowledgeable in GSM, 3G, and IVR technologies and will input the scripts into the mobile messaging system.

Food safety surveys and messages are distributed through the following comprehensive and complementary mSafeFood components:

- **Mobile Surveys** - Information on consumer and processor perspectives on different aspects of food safety will be collected via mobile surveys. The surveys can be used as a baseline for measuring the progress of different activities of BD4FS and segregated by gender, age, and other variables. This information, along with utilizing local expertise and BD4FS food safety manuals, will inform the content for the hotline, game-based learning, and remote training that follow.
- **Food Safety Info Hotline** - People call into a dedicated line for up-to-date food safety information in the language of their choice using a menu-driven hotline.
- **Game-based Learning** - People can learn about food safety in the language of their choice through verbal storytelling through a self-directed menu that is updated regularly.
- **Remote Training** - Specialized technical training for specialized groups such as women fish processors on specific aspects of seafood standards around handling, storage, processing, and distribution.
- **Evaluation** - Prior to expanding mSafeFood to additional sectors and countries, messages will be field tested among GFBs to assess the effectiveness of the content and message delivery. Monitoring and evaluation of mSafeFood components will be incorporated into BD4FS metric tracking for the relevant indicator/s (eg, as part of IR 2.1, BD4FS proposed tracking knowledge, attitudes, and practices to ensure food safety along specific value chains).

Data Collection and Storage

The social enterprise with which BD4FS partners will be responsible for collecting, synthesizing, and submitting all data associated with an mSafeFood activity. BD4FS will store and use data in concurrence with its data management policy, ensuring data are validated and the any personally identifiable information are protected.

Timeline and Targets

The mSafeFood activities are typically deployed over a one-year period in a selected country. Up to two food business sectors can be selected, and up to three regions within a country. The initiative targets up to 20,000 people listening to up to 60 unique key food safety messages available in local languages. The duration, targets, and messages can be scaled up to meet a country and sector needs.

Component	Expected Coverage / Reach
Food Safety Info Hotline	Includes: 30 key food safety messages Targeted users: 10,000
Game-based Learning	Includes: 30 lessons/chapters Targeted users: 5,000
Remote Training	Includes: Five (5) trainings Targeted participants: 5,000
Mobile Survey	Includes: Two (2) surveys Target respondents: 1,000 per survey



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFSI9CA00001

Food Safety Mobile Application Competition Guidelines

BD4FS Tools and Practices

December 2021



USAID
FROM THE AMERICAN PEOPLE

www.feedthefuture.gov



This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

Background and Purpose

Overview and Context

Inadequate food security damages the health and wellbeing of hundreds of millions of people around the world every year. Poor food handling practices and poor infrastructure in supply chains increase health risks to consumers, in addition to being the root causes of pre-consumption food loss throughout the food system. Feed the Future Business Drivers for Food Safety (BD4FS), implemented by Food Enterprise Solutions (FES) and funded by USAID, aims to advance the state of knowledge and actionable research to improve food safety practices and technologies among businesses. BD4FS accomplishes this, in part, through capacity-building efforts such as in-person and remote training, production and distribution of food safety guidebooks, and other educational activities. Raising consumer awareness about food safety is also a program objective, with women and youth being important audiences. The BD4FS mobile food safety learning app development competition is one practice the program utilizes to engage youth in Feed the Future countries. The competition was designed to target qualified youth mobile application developers to give them the opportunity to be key drivers of food safety and thus contribute positively to the development of their country. The protocols for hosting a food safety mobile application competition among youth agripreneurs are described herein.

Objectives of the Competition

Recognizing the important role that young people can play in driving the future of food safety in growing economies and the prevalence of smartphone technology utilized by youth, the BD4FS food safety mobile app competition aims to:

1. Strengthen the capacities of young entrepreneurs in the digital field by engaging them in information and communication technology for development (ICT4D) through their participation in the competition.
2. Improve awareness of the importance of food safety among youth agripreneurs.
3. Strengthen the capacity of agripreneurs to integrate safer food practices into their operations through improved knowledge of food safety standards, quality systems, and rules for sanitary handling of food.

Methodology

Preparation

1. Identify potential partnerships with organizing bodies and regional youth in agriculture groups and formalize those partnerships through MOUs or MOAs. The written agreement will clearly detail roles, responsibilities, and financial contributions. In Senegal, where this competition was initiated, BD4FS partnered with Feed the Future Youth in Agriculture.
2. Determine competition rules, eligibility, submission requirements, and evaluation criteria. As needed, competition regulations shall be reviewed by an in-country.
3. Identify and invite judges who have technical expertise in app development to evaluate applicant qualifications, app concepts, and to later provide technical support to the top candidate/s for full app development.
4. Finalize the budget of the competition, including determining award amounts for the top candidate/s.
5. Develop communication materials for announcing the competition and detailing the competition rules.

Phase I – Registration and Preliminary Screening

Phase I of the food safety mobile learning app competition includes the launch and candidate registration and submission of expressions of interest (EOIs). Among the EOIs received, the panel of judges will select the top candidates (approximately 10) who they recommend for participation in Phase II of the competition. Details on this process are described below.

1. The official launch of the competition will include and not be limited to: sending invitation letters to schools and partners; posts on social media; and via newspaper, radio, and web announcements. The announcements will specify how to participate in the competition and the submission deadline.
2. Registration of candidates – Candidates submit expressions of interest (EOI) to participate in the competition by sending their Resume or CV to demonstrate their qualifications to develop an app. The EOI must also confirm that they meet the eligibility requirements of the competition. Registration is free and without obligation to purchase.
3. Applicant selection after screening – The panel of judges (identified during the preparation phase) will review all

candidates based on their qualifications and eligibility. Based on the applicant pool, they will use their expertise to propose to BD4FS which candidates to invite to participate in Phase II of the competition. BD4FS will review and agree upon the proposed candidates.

4. Invitation to applicants – Selected candidates will be notified by phone that they are invited to participate in Phase II of the competition. The phone call will be followed by written instructions detailing what they must include in their Phase II proposal.

Eligibility and Selection Criteria

Eligibility criteria are as follows:

- University students or youth entrepreneurs under the age of 30.
- The competition is open to individuals or teams. While the lead team member must be under 30, other team members may be older than 30.
- The individual/team must have experience in developing a mobile app and knowledge about food safety.

Additionally, initial competition bidders will be reviewed based on the following selection criteria:

- Education or experience in computer science by at least one team member.
- Demonstrated experience developing an app.
- Knowledge or access to appropriate information about food safety.
- Preference will be given to applicants who have developed an app intended for educational purposes.

Phase II – App Concept Submission

In Phase II, each invited candidate (or team of candidates) will submit a detailed concept of their mobile app using PowerPoint (referred to as “pitchdecks”). The candidates are instructed to consider hardware and software resources that are available in the region, and to select the most appropriate technology for the app design and reach the target audience of youth agripreneurs. They are also given the criteria by which the pitchdecks will be evaluated (listed below). The selection committee will review the pitchdecks based on the preestablished evaluation criteria and will select and recommend the top three candidates. The top agreed-upon candidates will be invited to participate in Phase III of the competition which will involve developing a full app prototype.

Food Safety Mobile Learning App Concept

The concept presentation must include the following:

1. Description of the app including:
 - a. App functionality.
 - b. The platform on which the app will be developed and why it was selected.
 - c. How it will reach the target audience of youth agripreneurs, including women and people of varying educational levels.
 - d. Its ability to educate and track user learning.
2. Visualizations to demonstrate what the app would look like and how it would operate.
3. Estimated timeline and cost to develop and roll out the full app.

Full Proposal Requirements and Evaluation Criteria

The full proposal will be reviewed based on the preestablished evaluation criteria. These may include some or all of the following, depending on the competition location, scope, and considering input from judges.¹

1. Overall concept alignment with competition objectives (x points)
2. Functionality (based on concept description and visualizations) (x points)
3. Originality, creativity, and innovation (this will be gleaned from the description and visualizations) (x points)
4. Coherence (x points)
5. Recorded User Learning (x points)
6. Feasibility (x points)

¹ For the app competition that was undertaken in Senegal, the following criteria were used based on input from the judges: Originality (4 points), Realism (5 points), Viability (5 points), Coherence (4 points), and Judge appreciation of overall project (2 points).

7. Budget (x points)
8. Inclusiveness plan – how will they ensure the app targets gender inclusivity, and people of varying educational levels (x points)

Phase III – Full App Development

Phase III of the competition involves the development of a full food safety app prototype. Prior to developing the prototypes, the top three candidates will be invited to an information session where they will learn the criteria for the prototypes and will be briefed on food safety content to incorporate into the app. They will develop and submit prototypes by a predetermined deadline and will present their concepts in front of the judges either virtually or inperson.

The selection committee will review the app prototypes and award the cash prizes previously determined for first, second, and third places. BD4FS will work with the first-place team to develop a complete, fully functional app that will be used for future programming. The app will be owned by the developer/s.

App Ownership

The mobile app concepts, prototypes, and the full application developed by the winning candidate/s will belong to the developers. The roles of BD4FS and selected partners are to review submissions, select the winners, provide food safety content, and support the winning candidate in better refining the app in alignment with the competition objectives.

The candidate selected will work in close coordination with the personnel of the organizing body, as well as regional agripreneurs and other stakeholders throughout the process.



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

COOPERATIVE AGREEMENT NO. 720BFS19CA00001

Public-Private Dialogue: Guidelines for Cocreating Food Safety Regulations and Standards

BD4FS Tools and Practices

December 2021



USAID
FROM THE AMERICAN PEOPLE

www.feedthefuture.gov



This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

Background and Purpose

Overview

Dialogue and consultation between key public and private stakeholders can help bring about collective social change, institutional alignment, and tangible public economic development and results in the face of food safety risks. Achieving these outcomes depends heavily on a cohesive relationship between the private sector and policymakers that set the regulations, standards, and attitudes that impact businesses, individuals, families, communities, civil society, and policymakers. Feed the Future Business Drivers for Food Safety (BD4FS), implemented by Food Enterprise Solutions (FES) and funded by USAID, utilizes public-private dialogue workshops to promote interaction among key food industry actors to build greater understanding among all parties of the intent and purpose of food safety regulations and how they impact growing food businesses.

Objective

The goal of creating business-government dialogue is to promote an enabling environment for businesses to adopt food safety practices and technologies. The dialogue must develop a collective understanding of the importance and the stakes of food safety within the competent authorities and among the public and private actors of the agri-food sector. A successful business-government dialogue workshop will eventually encourage the cocreation of a public-private platform to improve communication and foster an environment conducive to investment in food safety improvement.

Methodology

Interactive workshop engaging government and business representatives to share perspectives, discuss issues, prioritize actions, and co-create solutions that will promote system-wide adoption of food safety. A key to workshop success is having a good facilitator who will promote a “level playing field” where all participants are encouraged to share their views, experiences, and recommendations. BD4FS steps for organizing and implementing the dialogue workshop are outlined below.

Identify Target Audiences and Stakeholders

Facilitators should identify participants with an active stake in food safety to engage in the workshop. In private sectors, many informal associations may exist, and community outreach is helpful to engage these groups. Stakeholders from the private sector may include:

- Regional or local producers, vendors, processors, distributors, or transporters of perishable foods
- Relevant agri-food trade and product organizations
- Certification services companies
- Control laboratories
- Consumer associations

Stakeholders from the public sector may include:

- Regulatory, Enforcement, and Inspection agencies
- Policymakers in regional or local governments
- Trade authorities in Agriculture, Fisheries, Health, and Environment
- Local university agri-food academics or researchers

Organize Event

As goals and participants are being identified:

- Send invitations² to participants; include statement of purpose for the workshop, agenda, and expected benefit/outcome for participants
- Follow up to confirm attendees
- Invite journalists to cover and help get the food safety message out from the workshop to a broader audience
- Staff the workshop: Facilitator(s), note-taker(s), technical expert (as a resource if needed), someone to give the welcome address and set goals for the workshop, someone to provide brief opening remarks about the topic to help stimulate discussion (optional)

Workshop Implementation

Methods to Promote Dialogue and Active Participation

It is important to facilitate the workshop in a fashion to promote active engagement among the participants. Small group discussions, rotating workstations, breakout rooms, and panel discussions are all options to actively engage participants. For example, small groups could be organized around food safety sub-topics, with each group reporting out their recommendations.

A good way to open the workshop is with an “expert” speaker who will set the stage by presenting on a critical food safety issue or challenge, and highlighting the roles of government, business, and consumers, etc. To encourage a solution-oriented dialogue, organizers can emphasize the benefits of food safety systems to food security, disease prevention, familial health, and food utilization. Solutions in food safety may include regional to local topics such as funded training for small and medium-sized enterprises, business-led food safety certifications, improving access to foreign markets, or improved monitoring and testing capability for food-borne illnesses.

Gather Information about the Participants

It is important to document the workshop. The following data should be collected throughout the workshop:

- Participant attendance, including Name, Gender, Age Group, Organization, Type of Organization, Position, and Signature
- Journalist attendance, including Name, Gender, Age Group, Organization, Type of Organization, Position, and Signature
- Notes from each breakout group presentations and discussions
- Files such as working groups productions

Closing Dialogue and Conclusions

In closing, facilitators open the floor for general comments, questions, and any topics discussed in break-out groups that need further addressing. The next steps for each issue should be clearly defined by this point.

Dialogue Reporting

After the close of the Business-Government Dialogue Workshop, a report³ should be developed and shared among all participants, stakeholders, journalists, and donors, if applicable. The report should contain an account of the following outcomes:

- List of participants by sector
- Workshop objectives and goals
- Specific challenges discussed
- Food safety recommendations
- Industry solutions
- Next steps taken by each party

Success Indicators

Efficacy Evaluations of dialogues may include the following:

- Participation level of key stakeholders
- Number of public and private participants
- Number of sectors represented
- Gender participant ratio
- Youth participant ratio

References and Relevant Links

1. <https://foodsolutionsglobal.sharepoint.com/:w:/s/FESStaff-Senegal/EVaht585rD5Elx3SIkDOUWwBRuVIBigNHfIcFrj4mBh-hA?e=noWhDV>
2. <https://foodsolutionsglobal.sharepoint.com/:w:/s/FESStaff-Senegal/EVUKQIQo7nRCtgMn2VhLBT8Bt4rj6PqP4rNqyCTMf0wP2Q?e=9ORJ5C>
3. <https://foodsolutionsglobal.sharepoint.com/:w:/s/FESGuests-KnowledgeManagement/EfLXyJYYgZpCvI4uFHbHDFsB9T6hqWbPtbMck6ukDDpfXA?e=EcnwCd>



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

COOPERATIVE AGREEMENT NO. 720BFS19CA00001

Media Outreach for Raising Food Safety Awareness and
Knowledge: Guidelines for Capturing Reach

BD4FS Tools and Practices

December 2021



USAID
FROM THE AMERICAN PEOPLE

www.feedthefuture.gov



This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

Overview

Feed the Future Business Drivers for Food Safety (BD4FS), funded by USAID and implemented by Food Enterprise Solutions (FES), aims to strengthen food safety systems and practices among food businesses. This is accomplished, in part, through capacity-building efforts that include in-person and remote training, production and distribution of food safety guidebooks, and other educational activities. Raising consumer awareness about food safety is also a program objective, with women and youth being important audiences. In support of this objective, BD4FS transmits food safety messages through various media channels (TV, Radio, Online Press, Printed Press, social media, mobile messaging, etc.) to reach businesses and consumers. To monitor activities, measure progress towards the project objectives, and support learning opportunities through the project, BD4FS tracks on the number of food safety messages transmitted through each channel.

The data collection and use protocols described herein are to ensure consistent capturing of information by describing what information will be collected, how, and by whom.

Approach

What are “food safety messages”?

For the purposes of this tool, BD4FS defined a “food safety message” as any information transmitted to consumers and businesses to raise their awareness of food safety. BD4FS utilizes various means of media including TV, radio, printed and online press, phone, social media, and other websites to deliver food safety messages.

How does BD4FS count messages?

The methods and means used to count the food safety messages will vary depending on which type of media outlet is being used. Though it can be easy to count the number of messages released through radios and TVs, counting transmitted messages through other channels such as websites, social media can be more challenging or might require more specific technologies.

The table below outlines the types of dissemination platforms that will be utilized, how BD4FS will count the messages and the data source that will be used to obtain reliable data.

Table: Message counting and Evidence by type of media outlet.

Type of Media outlet	Number to count	Source of data/Evidence
TV	Number of times a message has been released/ broadcasted on a TV	TV report
Radio	Number of times a message has been released on a Radio	Radio report
Mobile messaging / hotline	Number of messages sent/exchanged via phone	Report from mobile messaging technical partner (for Senegal, the partner is Viamo)
Printed Press	Number of times a message has been released on Printed press media	Captures from printed press
Online Press	Number of messages released on Online media	Links to the publications
Social Media	Number of messages/posts shared on a social media	BD4FS will retain a database where we record the post date, platform, and topic NB: We count a message/post the first time it is shared through a social media platform

Type of Media outlet	Number to count	Source of data/Evidence
Websites	Number of messages released on websites	Links to the publications NB: We count a message only the first time it is released on a website

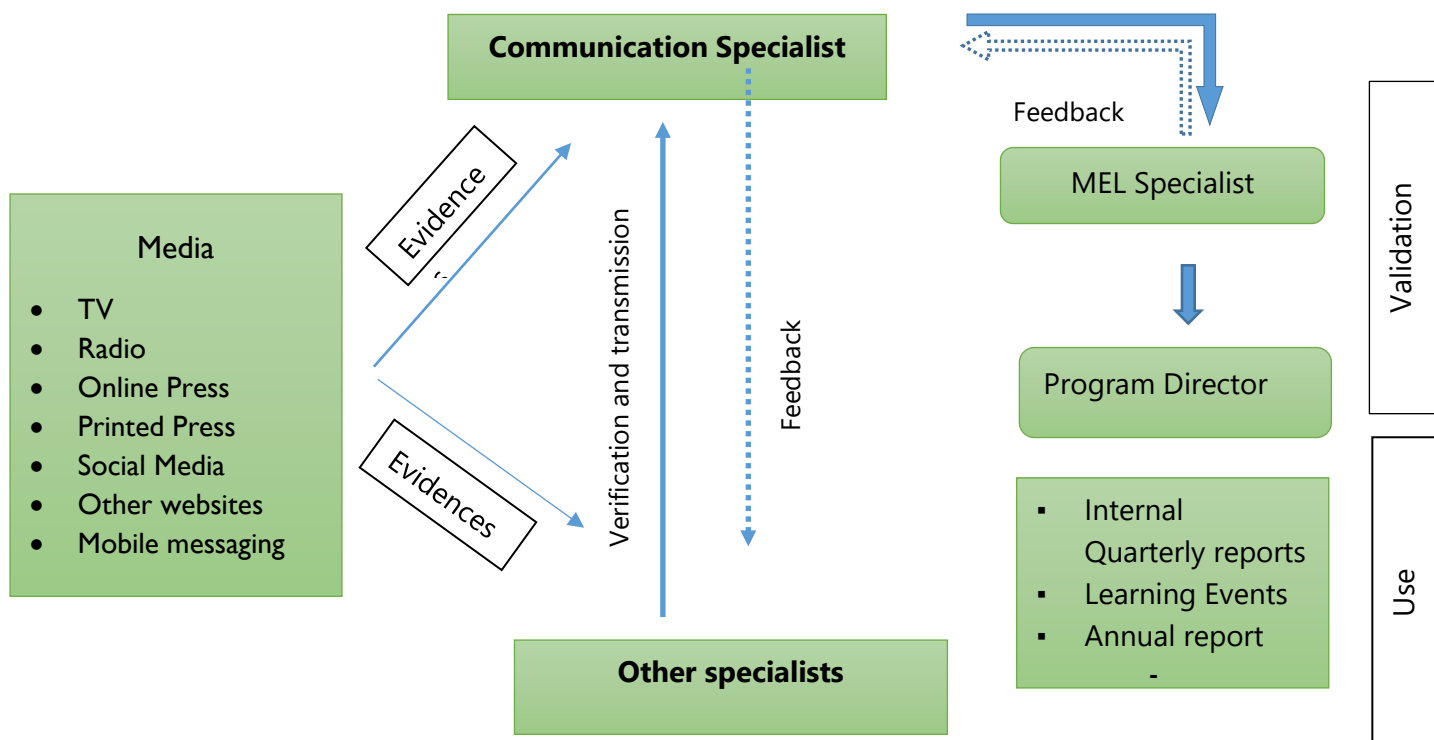
What data are collected and by whom?

The following data will be collected for each food safety message released by BD4FS:

- Date released
- Person who released the post
- Media platform
- Food safety message
- Target audience
- A link to the post or article, as applicable

The communications specialist for each BD4FS country is responsible for collecting all the data related to food safety messages. This includes collecting the information listed above from other specialists who have conducted communication activities, compiling the data, and sharing and validating it with the MEL specialist.

Figure: Communication data collection and use protocol



Data Collection Forms

Several data collection forms have been developed to support media communications and ensure BD4FS has permission to use and share photos and information. These forms include, but are not limited to, Photo Information Sheet and Photo and Video Release Forms.

I. Photo Information Sheet

To gather detailed information on the photographs collected from the field, a well-structured photo information sheet will be used for each project/even photo series. The sheet contains the following fields to be populated: (1) general information of the photographer, detailed information of photos taken (location, file name, number of photos, etc.) along with HO/SMT approval for reviewing, filtering, and editing; (2) recommended media channels to use while sharing the images for branding/marketing/communication purposes; and (3) branding, marking, and hashtag guidance to include for resulting communications products.

II. Individual and Group Photo Release Forms

BD4FS photo release forms obtain consent from an individual or group of people highlighted in any image or series of images. These forms allow FES and USAID to use the image/video in the future for branding and communication purposes by having rights to the images/videos for royalty or free of charge. These also give FES and USAID permission to release, publish, broadcast, or quote this material in public information programs and activities. The forms also ensure that the content will not be used for commercial purposes. The respective person present in the image/video must sign the forms; and in cases where audio is recorded, the form also seeks permission from any individual or group whose voice has been recorded during the image/video process.



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



FEED THE FUTURE BUSINESS DRIVERS FOR FOOD SAFETY

Cooperative Agreement No. 720BFS19CA00001

Food Safety Situational Analysis Guidelines

BD4FS Tools and Practices

December 2021



USAID
FROM THE AMERICAN PEOPLE

www.feedthefuture.gov



This report was prepared by Food Enterprise Solutions (FES) as part of its Feed the Future Business Drivers for Food Safety (BD4FS) program, funded by USAID under Cooperative Agreement CA 720BFS19CA00001.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

FOOD SAFETY SITUATIONAL ANALYSIS (FSSA) MOTIVATORS AND BARRIERS FOR MICRO-, SMALL-, AND MEDIUM-FOOD ENTERPRISE (MSMFES) TO ADOPT FOOD SAFETY MANAGEMENT PRACTICES

Background and Purpose

Foodborne diseases have enormous impacts on the health of people around the globe and are of great and increasing concern to consumers, producers, and policy-makers. In most developing countries, the gastro-intestinal disease remains in the top five causes of sickness and death and unsafe food is an important contributor to this avoidable burden.¹ The most-risky foods are livestock and fish products and fresh fruits and vegetables contaminated with animal or human waste. Yet these are also the foods of the highest potential in providing the proteins and micro-nutrients needed in impoverished communities. They are also high-value foods, well suited to production by small farmers, hence important sources of income for smallholder farmers. In many parts of the world, informal wet markets continue to be the major sources of perishable foods for low-income consumers and probably will into the near future, although formal markets are becoming increasingly important. In terms of food safety, recent research² demonstrates that food sold by the formal sector often has no better compliance with food standards than food sold in the informal sector, yet the motivators/opportunities and constraints/barriers to the adoption of food safety practices by micro, small, and medium food enterprises (MSMfEs) can be quite different according to which market system they serve.



Photo Courtesy of Getty Images, www.istockphoto.com

Given the importance of the marketplace in linking producers with consumers to provide them with affordable, nutritious, and safe food, it is vital to understand the dynamics of food safety for MSMfEs within the larger food system, especially the influence of the enabling environment. In general, we want to know what businesses are currently doing regarding food safety; where are food-borne pathogens entering the supply chain (and in which agricultural goods); what are consumer attitudes towards food safety in making purchasing decisions; what are government oversight or monitoring roles (if any); and what other donor-supported programs are working on food safety.

Development Hypothesis – “Push” and “Pull” Approaches

Feed the Future Business Drivers for Food Safety (BD4FS), implemented by Food Enterprise Solutions (FES) and funded by USAID, emphasizes the importance of markets – both formal and informal – and the critical services that businesses provide in the value chain linkages from producers to end-consumers. The principal research question is whether investments in food safety practices and technologies among formal sector small- and medium-sized food enterprises sourcing inputs upstream can accelerate reductions in foodborne pathogens found within co-located informal village markets. The Food Safety Situational Analysis (FSSA) and baseline survey will provide data to test this “pull” hypothesis versus a strategy that provides assistance directly to informal market actors (the “push” model). The key question is: “can food safety improvements in formal market channels help pull informal markets towards adopting improved food safety practices and consumer standards?”

¹ WHO estimates of the global burden of foodborne diseases. Foodborne Disease Burden Epidemiology Reference Group 2007-2015. World Health Organization.

² Food Safety and Informal Markets: Animal Products in Sub-Saharan Africa, edited by Kristina Roesel and Delia Grace of the International Livestock Research Institute (ILRI), 2015.

FSSA Objectives

As a first step in the BD4FS approach is to implement a well-targeted, comprehensive food safety situational analysis of food safety conditions—hazards, risks, drivers, impacts, etc.—using elements of ILRI’s conceptual framework and toolkit in both the informal and formal markets in target countries. The FSSA has the following objectives:

1. Map out overall food safety landscape in target countries, especially focusing on:
 - Structure and dynamics of the national food system, especially the regulatory structure and enabling environment for MSMfEs;
 - Identification of target foodsheds relevant within the Feed the Future zones of influence for the BD4FS research and development;
 - Principal food value chains most adversely affected by food safety concerns;
 - Main hazards, risks, and burden of public health outcomes from foodborne diseases;
 - Key actors/stakeholders/institutions/donors, etc. involved in food safety (including testing facilities, government agencies, private sector service providers, etc.); and
 - Relevant infrastructure critical to food safety—storage, electricity, safe water, etc.
2. Identify principal constraints—technological, knowledge, cultural, financial, infrastructure, regulatory, lack of consumer awareness, etc.—that MSMfEs face in the adoption of food safety practices. The application of tools from barrier analysis will be explored.
3. Explore motivators and opportunities—customer concerns, personal awareness, business growth, incubators, grants, etc.—that attract MSMfEs to recommended food safety practices. Appreciative inquiry techniques and other behavioral research methods will be explored.
4. Discover appropriate interventions at the MSMfE level and within the enabling environment and infrastructure to be implemented, evaluated, and scaled up. The intent is to find concrete, feasible actions that can be taken and have fairly immediate, direct, and measurable benefits to MSMfEs.

The comprehensive FSSA will utilize a variety of tools and mixed methods – such as desk reviews, qualitative and quantitative field observations, participatory risk assessment, and secondary data analysis—to achieve these objectives. The results of the FSSA will inform the participatory design and deployment of a quantitative baseline study among MSMfEs prior to the start of interventions and will provide important information on the prevalence and geographic location of problems and opportunities. The baseline survey instrument will also be applied at mid-term and project end to quantitatively measure the difference in the agreed-upon indicators, including changes in appropriate indicator organisms³ that serve as proxies of the overall food pathogen load in the food environment. The quantitative survey will be conducted within a research structure (described below) that will allow for the testing of the various hypothesis—push and pull—postulated in the original proposal to USAID. The results of the FSSA and the baseline survey will be the project base documents to guide the BD4FS five-year activities.

The ultimate aim for the BD4FS research and development effort is to test business-driven approaches to food safety that complement and build on best practices, extending sustainable, positive economic and nutritional impacts to greater numbers of stakeholders in food-deficit regions, with the goal of developing a model that can be scaled-up to other regions of the world facing those same challenges.

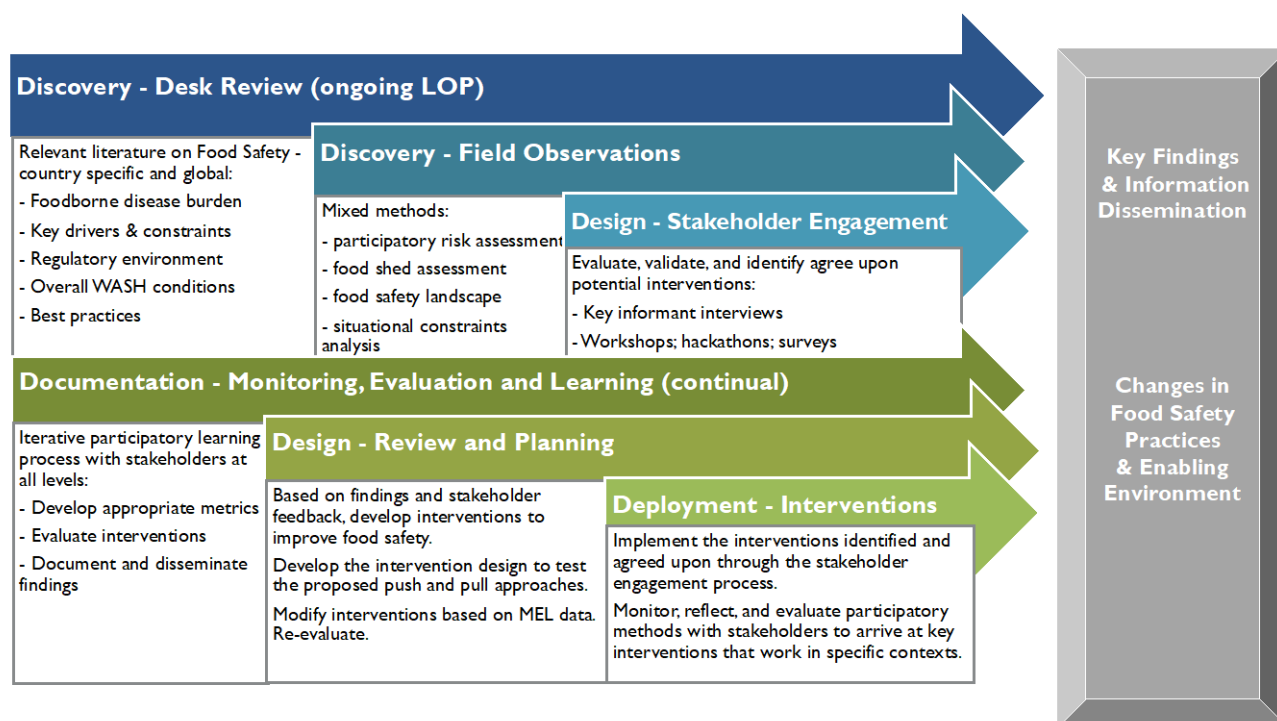
³ **Indicator organism** - An organism or group of organisms whose presence reflects the general microbiological condition of the food or environment (e.g., coliforms, Enterobacteriaceae).

Methodology

BD4FS—in close consultation with USAID Washington and the participating USAID Missions—will implement a participatory and iterative process of discovery, design, deployment, documentation, and dissemination (D-5). The D-5 process consists of the following aspects:

- Discovery (desk review; field observations; participatory risk assessment; data analysis; baseline survey);
- Design (participatory data analysis and discussion; stakeholder engagement and dialogue; interactive FSSA review with MSMfEs and USAID; and participatory activity planning);
- Deployment (implementation of identified and agreed upon food safety interventions among MSMfEs or within the enabling environment);
- Documentation (participatory monitoring, evaluation, and learning of all aspects of the D-5 process); and
- Dissemination (feedback with stakeholders and donor partner; publication of results; communications).

Graph 1: The D-5 Process Applied to Food Safety



This approach seeks out learning opportunities at every point, especially from previous and current food safety initiatives (globally and in Feed the Future countries), as well as positive deviance⁴ among MSMfEs, in order to narrow in on the set of push-pull interventions that make the most sense, are practical, and produce the greatest impact on reducing foodborne pathogens in the context of the targeted food system. Besides ongoing consultations with USAID-W and country Missions, BD4FS will work closely and collaboratively with national partners such as industry groups, business associations, universities and research institutions, food testing labs, consumer groups, etc. at every step of the D-5 process, so that results—knowledge, practice, and environment—are truly country-driven and owned. This aspect of our approach guarantees transparency promotes uptake and ensures sustainability.

Geographic selection of areas to test the development hypothesis will be done in close consultation with the USAID Missions. FSSA data will help evaluate, target, prioritize and coordinate proposed BD4FS capacity-building efforts, taking advantage of

⁴The positive deviance concept comes from the health/nutrition field and refers to positive health behaviors (and subsequent health indicators) among households of similar socioeconomic status in communities with high rates of malnutrition, etc. We would be looking for MSMfEs that are approaching food safety consciously and positively that directly impact the quality and safety of the products that they sell to the public.

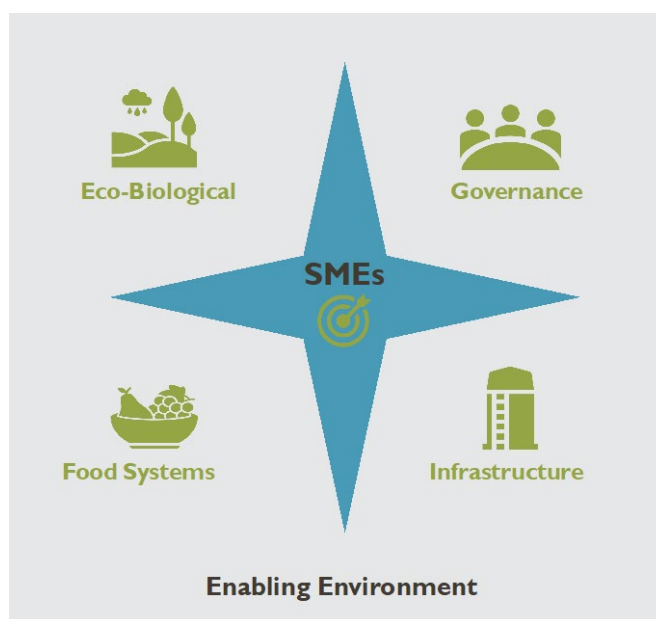
existing food safety initiatives, projects, and resources. The FSSA will use participatory risk assessment methods to examine food safety issues along the prioritized value chains of concern by the participating Feed the Future USAID countries.

Key Elements of the D-5 Process

Throughout the life of the project, BD4FS will continuously map, document, and analyze the changing food safety context in the countries of interest. Through this process, BD4FS will identify the principal drivers, track shifts in the enabling environment, and discover the principal motivators and barriers to promote a culture of food safety and facilitate the adoption of effective food safety management practices by MSMfEs in both the formal and informal sectors of the food system. Interventions will be designed and tested as appropriate within this context. As illustrated in Graph 2 below, the food safety context for MSMfEs consists of four sets of key determinants⁵:

1. Eco-biological determinants:
 - a. Food types and environmental conditions (moisture, temperature).
 - b. Bacterial, viral and parasitic hazards (*Salmonella*, *E. coli*, *Norovirus*).
 - c. Natural chemical hazards (aflatoxin, ochratoxin, cyanide).
 - d. Manmade chemical hazards (pesticides, dioxins).
2. Food system and market determinants:
 - a. Smallholder farmers and informal local markets, street vendors.
 - b. Formal urban convenience stores and supermarkets.
 - c. Formal and informal regional and international trade.
3. Physical infrastructure: Includes access to clean water, safe storage, cold chain, sanitary facilities, effective processing equipment, laboratory capacity, food service facilities, electrical power/transport.
4. Governance systems:
 - a. Organizational fragmentation (agriculture, health, trade, state/local authorities).
 - b. Food safety agencies with complex and unsustainable funding.
 - c. Misalignment of standards, lack of surveillance, no private liability.
 - d. Regional governance and harmonization complexity (i.e. Regional Economic Community—REC, African Union Commission—AUC).

Graph 2: Food Safety Context for MSMfEs



⁵ Food Safety in Africa. Past Endeavors and Future Directions. The Global Food Safety Partnership (GFSP) and ILRI.

These determinants are embedded in the enabling environment⁶ which includes a variety of elements including the food safety regulatory system. Briefly, each step in the D-5 process is discussed below.

Discovery

The key question to be addressed is: What are the key issues in food safety that most seriously affect MSMfEs and the consumers that they serve? The two discovery pathways are – desk review and field observations.

- **Desk Review:** Comprehensive review of food safety literature and landscape analysis as it pertains to practices and behaviors among MSMfEs, challenges, and opportunities in the enabling environment, key actors and stakeholders, etc. in the target countries. This activity will be ongoing throughout the life of the project as new literature comes online; therefore, the desk review will be a living document.
- **Field Observations:** BD4FS will conduct a participatory assessment of constraints and motivators among MSMfEs in the target countries within the enabling environment along with hazards and risks within the food system. The assessment will be done in consultation with USAID-W, USAID Missions, and other actors, and will draw upon the mixed methods from different experiences analyzing food safety issues with a strong gender perspective. We will be most interested in assessing food safety risks along the specific nutrient-dense value chains agreed upon with the USAID Mission. We will work with national or regional consultants and institutions to leverage their technical expertise and intimate knowledge of local food safety issues. The field observations will be the critical source of information for the discovery and design of the interventions to be tested.

Illustrative FSSA Questions

- Current food safety practices and prevalence?
- Major foodborne diseases?
- Highest risk pathogens & consumer groups most impacted?
- Food testing facilities, service area & clientele?
- International standards in force & who qualifies?
- Public food safety framework & enforcement?
- Food safety education & information dissemination?

Design

For the project outcomes to be effective and sustainable, the interventions must be designed in a participatory fashion with key stakeholders—MSMfEs, USAID, relevant government agencies, technical experts, etc. This will involve the following:

- **Stakeholder Engagement and Dialogue:** The results of the desk review and field observations will be shared with key stakeholders, especially MSMfEs and USAID Missions, to evaluate and validate the findings. MSMfEs are considered as key experts in the field, so their input and feedback will be crucial. The goal will be to reach a consensus on the key problems and drivers of food safety as well as to identify potential opportunities.
- **Review and Planning:** Once the Discovery findings have been vetted and validated, BD4FS will then engage with the key stakeholders to design and plan the activities to address the food safety issues identified. This will include the identification of practical and effective interventions that MSMfEs can test out and evaluate according to the metrics agreed upon. It may include changes to the enabling environment to remove barriers or to create needed opportunities—i.e. access to affordable financing, improvements in local infrastructure (i.e. access to handwashing stations; reliable access to affordable energy for cold chain or food processing; improved rural roads to reduce transport time, etc.). The design process will consciously assess the needs of women-owned and operated businesses in the context of food safety and proactively seek productive ways to support them.

⁶ Feed the Future Enabling Environment for Food Security Project. *Private Sector Voices: Building an Enabling Environment for Investment*, September 2018.

A gender perspective on food safety

- How do the differing roles of women and men affect their exposure to hazards?
- How does the biology of women and men, young and old, healthy and sick affect their vulnerability to different diseases?
- As food systems undergo change and evolution, how might this advantage or disadvantage women and men?
- How do women and men differ in their capacity to manage risk and how can we best enhance risk management?

Deployment

After discovery and design, it is time to take action.

- **Implementation:** Activities agreed upon with stakeholders will be carried out by participating MSMfEs and other designated actors. Part of the activities will be collecting monitoring data to be analyzed and evaluated in a participatory and transparent manner—a learning process in itself. The deployment of activities will be done in such a way as to allow BD4FS to test the different “push” and “pull” scenarios outlined in the original proposal. Prior to initiating activities, BDFS will conduct a quantitative baseline survey, described in the next section, to generate data sets to allow testing of the development hypothesis. All data on outcomes and results will be segregated by gender to allow for analysis of different responses and impacts.

Risk assessment and management with a gender perspective

- Differing roles of women and men significantly affect their exposure to hazards.
- Biology of women and men, young and old, healthy and sick affects their vulnerability, but gender is greater than biology.
- As food systems undergo changes and evolve, they tend to disadvantage women unless action is taken.
- Women may be better at managing food safety risks than men.

Documentation

All aspects of the BD4FS experience will be documented, analyzed, reviewed, discussed, and learning experiences extracted. New ideas and innovations will be put forward.

- **Monitoring, Evaluation, and Learning (MEL):** A continual, iterative, and participatory MEL process will be enacted throughout the project to test the push and pull strategies proposed in the original project document. Implementation activities will be adjusted based on feedback and results. National partners, such as universities and research institutions, will play a central role in the MEL process. Lessons learned will be a key output. An important function of the MEL will be tracking and monitoring progress on the USAID Feed the Future indicators selected, as well as the custom indicators developed for the project.

Dissemination

- **Communications:** Initial Discovery findings, Design experience, and Deployment results will be documented, critically reviewed and shared as broadly as possible, e.g., through AgriLinks and other appropriate platforms, not only with the immediate stakeholders but the larger food safety community as well. Feedback will be in as near real-time as possible.

Implementation Timeline

(FSSA development process in green)

D-5 STEP	ACTIONS	TIMELINE	CONDITIONALITIES
Discovery	Desk Review Field Observations	4 to 6 weeks 8 to 12 weeks	Required depth & previous studies Required depth & previous studies
Design	Stakeholder Engagement & Dialogue Review & Planning	3 to 6 weeks 5 weeks	Can start early during the Discovery process Strong trust from the engagement process
Deployment	Implementation	1 to 4 years	Mission interest & funding
Documentation	Monitoring, Evaluation & Learning	Ongoing	
Dissemination	Communications	Ongoing	

www.feedthefuture.gov