

## STDF PROJECT GRANT (PG)

### APPLICATION FORM

The Standards and Trade Development Facility (STDF) offers grants for projects that promote compliance with international SPS requirements. Eligible organizations can apply for STDF project funding using this form. Applicants can request up to a maximum of US\$1,000,000 for projects that have a duration of three years or less.

The STDF Working Group makes decisions on requests for STDF funding. The following types of projects are given favorable consideration:

- Projects relevant to the identification, development and dissemination of good practice in SPS-related technical cooperation, including projects that develop and apply innovative and replicable approaches;
- Projects linked to STDF work on cross-cutting topics of common interest;
- Projects that address SPS constraints through regional approaches; and
- Collaborative and inter-disciplinary projects focused on the interface / linkages between human, animal and plant health and trade, and benefiting from the involvement of two or more partners or other relevant organizations.

Complete details on eligibility criteria and other requirements are available in the *Guidance Note for Applicants*. The completed application should be submitted through the [STDF online application system](#).

<b>Project Title</b>	<b>Improving food safety risk analysis capacity in Latin America</b>
<b>Objective</b>	<b>Advance the implementation of a risk analysis framework in food safety decision-making: risk-based inspection, risk assessment tools and risk communication</b>
<b>Budget requested from STDF</b>	<b>\$998,674</b>
<b>Total project budget</b>	<b>\$1,273,674</b>
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## I. BACKGROUND & RATIONALE

### 1. Relevance for the STDF

Food safety is defined as “the assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.”<sup>1</sup> Safe food is a requirement for achieving healthy diets (eliminating hunger SDG2), guaranteeing health and wellbeing (SDG3), increasing market access and gain economic development.

An instrument that catalyzes economic development through the exchange of innovation and good practices and expands market opportunities across countries with shared development objectives, such as those reflected in the Sustainable Development Goals (SDGs) is South-South Cooperation (SSC). The 2030 Agenda for SDGs places weight on SSC as a means to support capacity-building and enhancing cooperation, strengthening partnerships on capacity-building, science, technology, and innovation.<sup>2</sup>

**We propose to use the SSC approach to improve food safety risk analysis capacity by sharing knowledge, generating networks and fostering partnerships among the participating countries, seeking political buy-in from the governments and resource mobilization (in-kind or other).**

Risk analysis and its components have been at the core of international agreements, such as the Sanitary and Phytosanitary Agreement<sup>3</sup> and the Trade Facilitation Agreement<sup>4</sup>. The SPS Agreement proposed the use of harmonized sanitary and phytosanitary measures between Member countries, based on international standards, guidelines and recommendations developed by relevant international organizations to ensure safe trade of food and feed. In particular, Article 5 *Assessment of Risk and Determination of the Appropriate Level of Sanitary or Phytosanitary Protection*, established the need for countries to conduct risk assessments and propose Adequate Level of Protection (ALOP) for human, animal, and plant health.

The WTO Trade Facilitation Agreement (TFA) entered into force on February 22, 2017. The WTO Committee on Trade Facilitation was also created when the Agreement entered into force. By 2021, 154 of the WTO’s 164 Members (94%) had successfully ratified the Agreement<sup>5</sup>. The TFA was adopted to ensure a common platform for the implementation and use of trade facilitation measures at the global level and to expedite the passage of goods across borders inspired by best practices worldwide<sup>6</sup>. The risk analysis component that is most manifest under TFA is risk management for control of goods at customs.

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<sup>1</sup> Codex Alimentarius. 1969. General Principles of Food Hygiene (CXC 1-1969). <https://bit.ly/3ul24sp>

<sup>2</sup> South South Cooperation (SSC) is defined as “The mutual sharing and exchange of knowledge, experience, technical and financial resources related to agriculture and food systems between two or more developing countries, as well as collective actions in pursuit of their individual and/or shared development objectives.” FAO South–South and Triangular Cooperation Guidelines For Action 2022–2025. <https://www.fao.org/publications/card/en/c/CB8176EN/>

<sup>3</sup> SPS Agreement. WTO website [https://www.wto.org/english/tratop\\_e/sps\\_e/spsagr\\_e.htm](https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm)

<sup>4</sup> WTO. [www.tfafacility.org](http://www.tfafacility.org)

<sup>5</sup> [https://www.wto.org/english/res\\_e/booksp\\_e/05\\_implementation\\_of\\_the\\_trade\\_facilitation\\_agreement\\_e.pdf](https://www.wto.org/english/res_e/booksp_e/05_implementation_of_the_trade_facilitation_agreement_e.pdf)

<sup>6</sup> WTO. [www.tfafacility.org](http://www.tfafacility.org)

The Codex Alimentarius referenced by the WTO as the international benchmark for food safety standards, has risk analysis as fundamental to the scientific basis of Codex standards developed to protect the health of consumers. The document on “Working Principles for Risk Analysis for Food Safety for Application by Governments”<sup>7</sup> provides guidance to national governments for risk assessment, risk management and risk communication regarding food related risks to human health.

The relevance of the project entitled “**Improving food safety risk analysis capacity in Latin America through a South-South cooperation approach to facilitate regional trade**” to STDF funding is directly related to the objectives, goals, and topics of interest of the STDF, its partners and international reference organizations. This specific project is built on the following cross-cutting topics:

- The realization of risk analysis capacity based on increased ability of the countries in the region to implement science-based risk analysis using the Codex Alimentarius approach to the Sanitary and Phytosanitary Agreement (SPS); and expand the ability of countries in the region to use risk-based inspection approaches promoted under the Trade Facilitation Agreement (TFA);
- Improve knowledge amongst government officials about the importance of using science-based risk analysis tools to implement regulations aimed at ensuring food safety of domestic and/or exported food products;
- Promote information exchange and cooperation among food safety competent authorities in the Latin American region;
- Harmonize risk-based inspection and sampling plans to facilitate trade both for import-export and domestic markets;

**Long-term impact: Contribute to safe trade in domestic and international (regional) markets by developing a harmonized food safety risk analysis framework in Latin America.**

**Main project outcome: National food safety competent authorities of the LAC region have improved their capacities for science-based decisions, thereby furthering the adoption and harmonization of risk analysis principles to ameliorate the application of SPS and TFA requirements.**

**Specific project outcomes:**

1. National food safety competent authorities have improved the implementation of harmonized risk-based inspection and risk-based sampling plans to improve trade and market access in the region, taking into consideration the TFA;
2. National food safety competent authorities have increased the use of scientific tools and risk assessment studies as the basis for food safety decision/rule making processes;
3. National food safety competent authorities have implemented risk analysis programs and policies aimed at ensuring food safety;

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<sup>7</sup> CAC/GL 62-2007. Working Principles for Risk Analysis for Food Safety for Application by Governments.

4. The Latin American region has strengthened a network of food safety risk analysis experts to enhance risk communication, collaboration and knowledge management and expertise sharing.

Latin America is a net exporter of agricultural products and due to language and culture similarities, the region is in an advantageous position to develop and implement the Codex Alimentarius risk analysis framework recognized under the SPS Agreement **to aid the national food control systems in the efforts to ensure food safety for domestic and import-export markets**. The adoption of standardized risk-based procedures and protocols would promote systems recognition, thus reducing the burden of additional in-country evaluations and inspections of imported products and promoting safe trade within the region. Also, efforts aimed at promoting these practices to ensure the safety of traded products could have a ripple effect, improving the production of safe food for domestic consumption thus reducing the burden of foodborne diseases. The capacity building model we propose can be extrapolated to other regions that require similar advances in food safety risk analysis.

In this project, we are promoting the adoption and pilot implementation of **risk-based approaches, including risk analysis and risk-based inspection for food safety** through training, tools, and regional expertise. This endeavor will provide robust scientific support for policy development and risk management decisions, and consequently, the ability to reach other international markets that demand a risk-based approach. The main project deliverables will be:

1. **Improve risk analysis capacity of food safety competent authorities in the region.**  
Risk analysis training for food safety competent authorities in the region requires an overall refresher to update terminology, methods and new priorities. An initial action is to conduct a general workshop on risk analysis and discuss with participating countries the preparatory activities for the full-fledged capacity building program. A hybrid e-learning capacity building program in food safety risk analysis will be developed to increase the risk analysis workforce among food safety competent authorities of participating countries. The training program will be focused on the South-South cooperation approach by sharing knowledge and expertise in adopting the risk analysis framework.
2. **Development of country roadmaps and implementation pilot case studies:**  
Countries will be coached and mentored to develop a country roadmap to improve their food safety risk analysis capacity. Countries will implement pilot case-studies according to their roadmaps and promoting the use of risk analysis principles and the adoption of a risk-based inspection system. Experiences from the region in using risk analysis to support decision making will be shared among participating countries.
3. **Risk assessment and risk-based inspection tools and guidance manuals:** A set of tools and guidance documents will be developed under the project flagship to support national authorities to design and implement import and domestic risk-based inspection programs and risk analysis studies in food chains of importance.

4. **Strengthen the food safety risk analysis network in the Latin American region (FSRisk):** Increase South-South and North-South cooperation activities fostering the work of the Food Safety Risk Analysis Network (FSRisk) that promotes collaboration and knowledge sharing among national food safety competent authorities in the region.

## **2. SPS context and specific issue/problem to be addressed**

### **2.1 Agri-food trade in Latin America**

The global food demand is forecasted to be 60% higher than it is today as the world's population is projected to reach 9 billion by 2050. Global food supply can only be achieved by the intensification of agricultural production systems, generation of new-foods and/or use of unexploited agricultural land. The last twenty years have seen significant increases in the participation of LAC countries in global agri-food markets and trade as both exporters and importers. The Latin America and Caribbean region are important net exporters with an export share of 16% of the global trade in food and agriculture specifically for soybeans, sugar, beef, coffee, bananas, corn and poultry in countries such as Brazil, Argentina, Mexico, Chile, Ecuador, Paraguay and Peru. According to OECD-FAO, soybean production is expected to be similar than in previous years whereas the bovine meat production is expected to increase by 2030<sup>8</sup>.

At the same time, South-South inter-regional agricultural imports in the LAC region are low (6%) compared to other Southern regions (24%). The top four LAC imports (cereals, meat, animal feed, and oilseeds) originate in Northern countries (64%). Of the top three cereal importers in the region (Mexico, Colombia and Brazil), Mexico and Colombia source 91% of these imports from Northern countries (mostly maize from the United States), whereas Brazil sources 90% from the LAC region (wheat from Argentina, rice and maize from Paraguay). In case of meat, 85% of the imports from Mexico, Colombia and Peru originate in the US (pork, beef, and poultry). On the other hand, 83% of meat imports are sourced intra-regionally for Brazil (beef from Uruguay, Argentina and Paraguay) and Chile (beef from Brazil, Paraguay and Argentina).<sup>9</sup>

Some LAC countries have participated in multilateral trade negotiations, and they are also participating in Regional Trade Agreements (RTAs) with countries from different continents and mega RTAs<sup>10</sup>. Examples in LAC are the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Viet Nam; and the Pacific Alliance consolidating bilateral relations between Chile, Colombia, Mexico and Peru.

The Covid-19 pandemic evidenced the vulnerabilities of the global and regional food supply chains. As some countries in the region are highly dependent on agricultural trade, or on specific products and/or partners, addressing trade vulnerabilities is important. One way to create resilience in the region is by securing good practices along the food chain and

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<sup>8</sup> FAO. 2022. Agricultural trade in the Global South – An overview of trends in performance, vulnerabilities, and policy frameworks. Rome. <https://doi.org/10.4060/cb9120en>

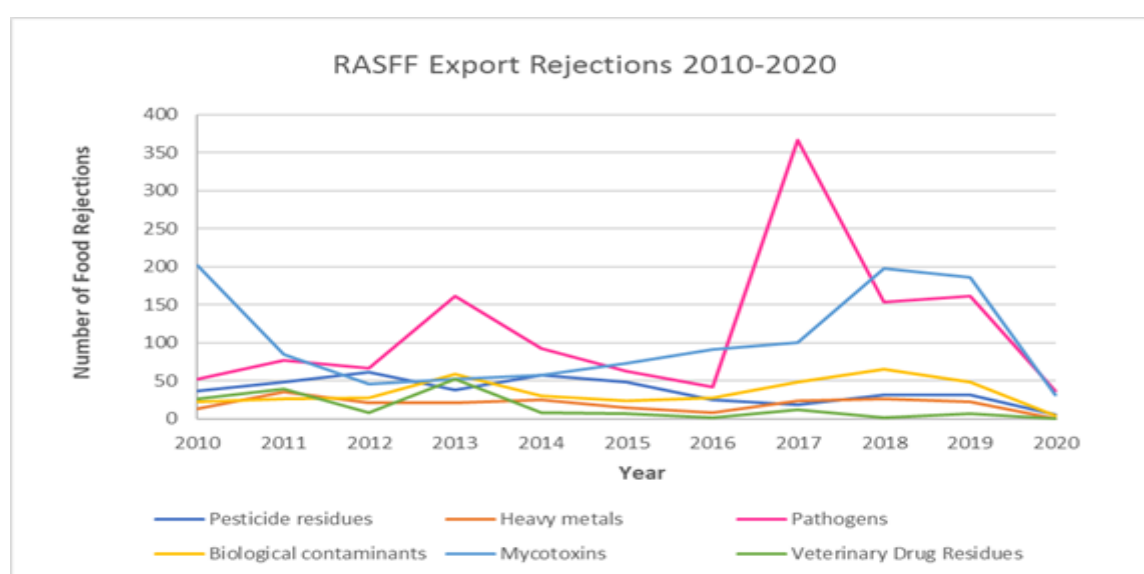
<sup>9</sup> FAO. 2022. Agricultural trade in the Global South – An overview of trends in performance, vulnerabilities, and policy frameworks. Rome. <https://doi.org/10.4060/cb9120en>

<sup>10</sup> Mega RTAs are agreements that involve countries representing major shares of world trade (FAO, 2022) see footnote 8.

building stronger food safety systems that include risk analysis and prioritization of related issues into the decision-making arena.

## 2.2. Food safety incidents during trade

As one of the main food exporters in the world, Latin America has not been exempted of market rejections. According to the Rapid Alert System for Food and Feed (RASFF) from January 2010-March 2020, Latin America received 402 notifications for pesticide residues in food commodities, 213 for heavy metals, 1.273 for microbiological pathogens, 385 for biological contaminants (decomposition), 1.121 for mycotoxins and 166 for veterinary drug residues. Based on these results some countries were temporarily banned from exporting to the EU losing their market share (Figure 1). The main food product categories facing rejection were nut, nut products and seeds, fruits and vegetables, herbs and spices and fish and fish products.



**Figure 1. RASFF Notifications for Latin America in the Caribbean from 2010 to 2020<sup>11</sup>.**

According to the US FDA data dashboard on import refusals of human food from 2010 to 2021, around 25,000 import refusals were recorded for import products from Latin American countries<sup>12</sup>. Most of the products were high value perishable products, which are known to be more susceptible to being the source of foodborne illness. Vegetables and vegetable products were the product category with the highest number of import refusals (5.693 refusals, which was 23% of the total rejections) followed by fruit and fruit products (4.042, 17% of total) and fishery and seafood products (3.681, 15% of total). These top categories accounted for more than 50% of all import refusals notified by FDA in the last 10 years. The stated reasons for import refusals varied from pesticides residues above MRLs, labeling, use of unapproved additives, presence of pathogens (i.e., *Salmonella* spp.) and quality-related refusals (i.e., filthy, unfit for consumption).

<sup>11</sup> <https://webgate.ec.europa.eu/rasff-window/screen/search>. Compiled by OPS.

<sup>12</sup> US FDA. <https://datadashboard.fda.gov/ora/cd/imprefusals.htm>.



The main food emergencies reported by INFOSAN for the Americas between 2021-2022 have been attributed to biological agents such as *Cronobacter sakazakii*, *Salmonella* spp., *Listeria monocytogenes*, hepatitis A virus and chemical agents such as heavy metals and undeclared food allergens (INFOSAN unpublished data).

For many countries in the region the sources of food contamination (chemical, microbiological and physical) might go unnoticed due to a lack of/or weak monitoring of food safety of these products as they move along the food supply chain. Unsafe food poses a risk to consumers' health. Approximately 77 million people suffer an episode of foodborne illness each year, half of them are children under the age of 5<sup>13</sup>. Food safety and quality non-compliances also affect the export potential of countries in Latin America that fail to meet requirements of importing countries. Due to inadequate food controls, Latin American products can be confiscated or rejected at destinations causing large financial losses or a loss of trust towards Latin American markets. The global costs of unsafe food are unknown, but according to a World Bank study, the impact of unsafe food costs low and middle-income economies about US\$ 7.4 billion in lost productivity and medical expenses each year in the Americas<sup>14</sup>.

### **2.3 Challenges in the region regarding the application of the risk analysis framework**

The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) of the World Trade Organization (WTO) which came into effect in 1995 promotes the use of risk analysis techniques as a basis for ensuring the safe trade of agricultural products to safeguard the health of humans, animals and plants. The SPS agreement encourages countries to develop their own risk analysis specific for their country or adopt international standards for food safety, animal and plant health from Codex Alimentarius, WOA and IPPC, respectively. The Codex Alimentarius, referenced by the WTO as the international benchmark for food safety standards, has risk analysis as fundamental tool to the scientific basis of Codex standards developed to protect the health of consumers. The risk analysis approach based on the Codex Alimentarius will be the primary focus of this proposal. Over the years, the Codex Alimentarius Commission has published several risk analysis guidelines to assist countries on the risk analysis framework outlining the roles, information and organizational structure needed to scientifically assess potential food safety risks from import and domestic production, manage the identified risks and communicate those risks adequately to industry, consumers, and trade partners.

In 2017 the Trade Facilitation Agreement (TFA) came into force to ensure a common platform for the implementation and use of trade facilitation measures at the global level, to expedite the passage of goods across borders inspired by best practices worldwide<sup>15</sup>. This will result in a reduction of trade costs at all stages of import and export operations, including transit and

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<sup>13</sup> World Health Organization. WHO estimates of the global burden of foodborne diseases: foodborne disease burden epidemiology reference group 2007-2015. WHO. 2015. Available at: <<https://apps.who.int/iris/handle/10665/199350>>

<sup>14</sup> Jaffee, Steven; Henson, Spencer; Unnevehr, Laurian; Grace, Delia; Cassou, Emilie. 2019. The Safe Food Imperative : Accelerating Progress in Low- and Middle-Income Countries. Agriculture and Food Series;. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/30568> License: CC BY 3.0 IGO."US FDA. <https://datadashboard.fda.gov/ora/cd/imprefusals.htm>.

<sup>15</sup> WTO. [www.tfafacility.org](http://www.tfafacility.org)

lowering costs to reach borders, at borders and behind borders<sup>16</sup>. The TFA has three main objectives: i) to reduce the transaction costs of international trade while maintaining efficient and effective control; ii) to improve cooperation between customs and other authorities; iii) enhance technical assistance and build capacity.

Despite the existence of these Agreements, the implementation of the risk analysis framework for food safety management and application of risk-based inspection schemes are still a major challenge for some countries in Latin America. Factors such as inadequate food safety governance, outdated regulatory mechanisms, limited knowledge/implementation of international standards, lack of financial or human resources to build/secure capacity or political instability erode and weaken the food safety system. The project reflects on the need to build expertise on food safety risk analysis in the region and develop practical tools to aid into the decision-making process and improve work productivity of risk managers, risk assessors and risk communicators in the region.

For example, in the case of **risk-based inspection**, with an increasing number of agri-food businesses in the countries, food control authorities have limited resources to cope with the inspection and monitoring of the high number of registered agri-food businesses and establishments. **The implementation of risk-based inspection schemes can optimize the existing resources** by assigning certain inspection frequencies and types of inspection (domestic and import-export) according to the food safety risk level of an establishment or import. However, the main challenge faced by countries is to **apply the risk-based approach to country field operations** (i.e., inspection and control activities). In addition, the **lack of harmonized evidence-based food control systems**, creates confusion and lacks transparency for importers, food industry and official authorities on countries' importing requirements. In other instances, the inspection systems and sampling programs are mostly reactive, unable to anticipate or prevent future risks, not aligned with the risk level posed by an importation, food product or manufacturer and disconnected from current food safety knowledge.

During an ongoing PPG "Development of a Proposal for a Food Safety Risk Analysis Capacity building program in Latin America based on South-South cooperation and an e-learning model" (STDF/PPG/716), several important issues were identified in the region related to risk analysis implementation:

#### **Risk analysis capacity-building and workforce:**

1. Absence of defined competencies for food safety risk analysts (risk assessor, risk manager and risk communicator) in a government agency.
2. Lack of a standardized curriculum in food safety risk analysis and lack of university degree programs (i.e., Diploma, Certificate, Master) in risk analysis in Latin America.
3. Deficit of official risk analysis positions (risk assessors and risk communicators) in government agencies due to issues #1 and #2.

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<sup>16</sup> [https://www.wto.org/english/res\\_e/booksp\\_e/05\\_implementation\\_of\\_the\\_trade\\_facilitation\\_agreement\\_e.pdf](https://www.wto.org/english/res_e/booksp_e/05_implementation_of_the_trade_facilitation_agreement_e.pdf)

### **Clear understanding of risk analysis terminology and methodology:**

4. Dearth of standardized terminology and methodology to develop technical documents used by national authorities to support decision making. Examples of those documents include scientific opinion, risk profile, qualitative, semi-quantitative or quantitative risk assessment, rapid risk assessment, risk ranking study, etc.
5. Lack of a standardized methodology to design a risk-based food inspection system and risk-based sampling plans for microbial pathogens and chemical residues for import-export and domestic production.
6. Paucity of guidelines to develop a national food safety risk communication plan.
7. Lack of guidelines to develop national food consumption studies comparable to a total dietary study needed to conduct risk assessments.

### **Surveillance of foodborne illnesses, risk-based inspection, and sampling programs:**

8. Inspection and food sampling programs are not aligned to the risk level posed by food products, hazards, establishments or imported goods (risk-based) and not updated with the latest scientific knowledge due to #5.
9. Lack of quantitative check-lists for inspection of establishments or imported goods that allow to measure the degree of compliance (%) with current regulations.
10. Inspection and food sampling programs lack adequate data systematization to carry out trend analysis and trace back the root cause of a contamination event.

### **User-friendly risk assessment tools:**

11. Lack of risk assessment tools (spreadsheets and web-based, in Spanish) to carry out risk ranking studies and quantitative risk assessment models on microbial pathogens and chemical hazards. In an attempt to avoid to re-invent new tools, existing tools such as those developed by the US FDA, FAO, WHO and others, will be translated to Spanish and adapted to regional needs.
12. Lack of risk assessment/exposure assessment studies performed at a national or regional level due to issues #1, #2, #4 and #11.

**The PPG project also identified numerous strengths in the region** such as the existing scientific food safety networks and risk assessment technical groups in Argentina (Red de Seguridad Alimentaria (RSA), Colombia (Grupo de Evaluación de Riesgos en Alimentos y Plaguicidas (ERIA), and Chile (Red Científica para la Inocuidad Alimentaria chaired by the Chilean Food Safety Agency (ACHIPIA). In addition, these countries have published several scientific opinions, literature reviews, risk profiles, qualitative and quantitative risk assessments. For example, ACHIPIA in Chile has published 3 scientific opinions related to norovirus in berries and exposure assessment to edulcorants in food, Colombia has published 15 risk assessment studies, 6 scientific concepts, 9 risk analysis methodology

manuals, 7 risk profiles and 3 systematic literature reviews related to pathogens such as *E. coli*, *Listeria monocytogenes*, *Salmonella spp.*, *S. aureus*, *B. cereus*, *C. sakazakii* and chemical hazards such as aflatoxins, mercury, acrylamide, melanin, arsenic. In Argentina, the RSA has published numerous scientific reports and quantitative risk assessment studies such as *E. coli* STEC in ground beef, *L. monocytogenes* in RTE deli meats, *S. aureus* and *E. coli* in artisanal cheeses.

In addition, the PPG also identified strengths related to the implementation of risk-based inspection schemes and risk-based sampling programs in the region. For example, Uruguay implemented a risk-based inspection program for dairy under MGAP (Ministry of Livestock, Agriculture and Fisheries), Brazil implemented a federal risk-based inspection program for establishments producing animal products and Costa Rica and Honduras reported the development of several risk-based inspection programs in several value chains such as shrimp, fresh produce, and dairy products.

### 3. Links with national/regional development plans, policies, strategies, etc.

Through desk review and one-to-one meetings with participating countries, detailed information was collected on current country goals that are aligned with the proposed project goals.

The country strategic goals aligned with the project are summarized here as part of FAO's Country Programming Framework at regional and country level:

- **Argentina:** The country work Plan Area 2 is based on *"Strengthen the implementation of FNS policies/programs and promote healthy and sustainable food systems and environments to address overweight, obesity and other forms of malnutrition"*.
- **Brazil:** The National Food and Nutritional Security Plan 2012/2015 contains 8 fundamental guidelines based on the *"Promotion of universal access to adequate and healthy food"*.
- **Chile:** The country working pillar I is based on *"Promoting Healthy, Safe and Efficient Food Systems (SDG2-SDG3-SDG12)"*.
- **Ecuador:** The country workplan goals include *"Improved and updated sanitary services in the agricultural, aquaculture, fisheries and forestry sectors; and food quality and safety to ensure food security and contribute to trade flows"*. Food safety is also identified within its main indicators: *"By 2021, strategically improve the regulation, control and certification processes inherent to food safety in the animal, plant, aquaculture, fishing and forestry sectors; agricultural inputs, sustainable agriculture and food safety to maintain and improve the sanitary status of the country's agricultural and aquaculture products for domestic consumption and export"*.
- **Colombia:** The country work plan goals include *"Design of financial instruments and specific subsidies to adapt infrastructure related to food handling, processing and preservation; and the generation of incentives for small and medium-sized food processing enterprises (SMEs) to formalize and certify them"*.
- **Costa Rica:** The country workplan in area 2 includes *"Healthy and sustainable food to confront hunger and malnutrition"*. This area of cooperation has as its context the United Nations Decade of Action on Nutrition 2016-2025, and the need to transform food systems towards the reduction of all forms of malnutrition, providing sufficient,

safe, healthy and sustainable food, through improved nutrition and the promotion of sustainable food systems.

- **Honduras:** The country workplan outcome 1.1 includes: *"Strengthened public policy frameworks, programs, support instruments and institutional framework for the management of food and nutrition security"* and within its SDG2: Target 2.1 *"By 2030, ensure that all people have access to safe and nutritious food"*.
- **Nicaragua:** The country workplan Strategic Objective 4 includes *"By 2020, IPSA strengthens its technical capacities for the management of Agri-food safety processes, phytosanitary surveillance and laboratories, considering international standards"*.
- **Paraguay:** The country workplan includes Government Priority No. 2 Economic growth and political institutional development includes *"A more inclusive food system has been achieved by strengthening family farming, and a healthier one, through the generation of updated information and regulations for sustainable production and healthy food consumption"*.
- **Peru:** The country workplan includes Government Priority No. 4: *"Sustainable food system and access to safe and nutritious food, preferably for the most vulnerable population"* corresponding to FAO Strategic Objective 4: Promote inclusive and efficient agricultural and food systems. One of the main concerns in this area refers to the quality and safety of food generated by agricultural, livestock, fishing or aquaculture activities, seeking to improve quantitative and qualitative access to markets, benefiting both consumers (nutritious and safe food) and producers (placement of products in markets and niches with better prices).

Project outcomes are also aligned with PAHO's *One Health Resolution Strategic Line of Action 4: Foster multisectoral activities, including strategic planning, emergency preparedness and response, integrated disease and health surveillance and reporting, laboratory testing and networks, and best practices to drive evidence-based collaborative actions underpinned by risk analysis and encompassing risk assessment, management, and communication*<sup>17</sup> and PAHO/WHO Global Food Safety Strategy.

## 4. Past, ongoing, or planned programmes and projects

### 4. 1 Previous initiatives and STDF projects

This project builds on activities initiated by the Food Safety Risk Analysis (FSRisk) network established in 2016 and endorsed by the countries of the Americas at the 17<sup>th</sup> Reunión Interamericana, a Nivel Ministerial en Salud y Agricultura (RIMSA 17) and the 7<sup>th</sup> Comisión Panamericana de Inocuidad de los Alimentos (COPAIA) organized by PAHO in 2016, with the objectives to harmonize, develop, train, and implement food safety risk analysis in Latin America<sup>18</sup>. FSRisk is an international network of universities (U. of Minnesota, U. of Nebraska, Texas Tech, U. of Maryland, U. of Laval in Canada, and Universidad para la Cooperación Internacional in Costa Rica), and international organizations (PAHO, FAO, IICA and OIRSA) that promotes the collaboration in food safety risk analysis in Latin America.

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<sup>17</sup> PAHO, 2021. 59th Directing Council. One Health: A comprehensive approach for addressing health threats at the human-animal-environment interface <https://www.paho.org/en/documents/cd599-one-health-comprehensive-approach-addressing-health-threats-human-animal>

<sup>18</sup> Building a strategic alliance for sustainable food safety risk analysis capacity building in the Americas. Sampedro, F., Narrod, C., Sánchez-Plata, M., Flores, R.A., Wang, B., Cordero, A.M., Friaça Silva, H., Caipo, M., Perez, E.

The network's website summarizes all the past activities:

<https://www.paho.org/es/panaftosa/fsrisk-network> and <https://www.foodrisk.org/fsrisk>. Annex 1 shows the signed agreement among all the organizations. Table 1 shows the main activities carried out in risk analysis in the latest 5 years.

**Table 1. Summary of risk analysis activities developed in the Region (2016-2021).**

Year	Month	Activity
2021	December	Regional workshop on food safety risk analysis organized by PAHO together with JIFSAN for government officials of Bahamas and Guyana  The Spanish Agency for Food Safety and Nutrition (AESAN) officially joins the network
	October	Presentation of FSRisk at the risk assessment symposium for Latin America and the Caribbean-LARAS 2021
	March	Regional Workshop on Risk-based Inspection led by PAHO for government officials from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, French Guyana, Honduras, Mexico, Paraguay, Peru and Uruguay
	January-October	Virtual meetings with beneficiary countries of the STDF PPG project to learn about their current capacities and needs to improve their risk analysis system applied to food safety
2020	December	Regional Risk Communication Workshop led by PAHO for government officials from Barbuda, Bahamas, Belize, Bonaire, Jamaica, Guyana, Suriname and Trinidad & Tobago
	October	Regional Risk-Based Inspection Workshop led by PAHO for government officials from Barbuda, Bahamas, Belize, Bonaire, Jamaica, Guyana, Suriname and Trinidad & Tobago
	March	The German Federal Institute for Risk Assessment (BfR) officially joins the network
2019	December	PAHO organizes a meeting to develop a Risk-based Food Inspection Manual for the Americas at the PANAFTOSA office in Rio de Janeiro - Brazil with government officials from Argentina, Brazil, Chile, Costa Rica, Uruguay, representatives of Comité Veterinario Permanente (CVP) and FSRisk experts
	November	Notification by STDF of a grant to develop a proposal for "a capacity building program for food safety risk analysis in Latin America through South-South cooperation". The PPG refers to key activities of the FSRisk network since its inception
	October	The Standing Veterinary Committee (CVP) officially joins FSRisk and appoints the coordinator. CVP organizes a Risk Communication Workshop for Chief Veterinary Officers in Southern Cone countries (Argentina, Chile, Bolivia, Brazil,

		Paraguay and Uruguay) with the participation of the FSRisk network in the exchange of experiences in risk communication
	January	Colombia, Uruguay, Chile, Argentina, Honduras and Costa Rica officially join the FSRisk network by sending official letters of adhesion and identifying focal points of contact in the country
2018	October	Risk Communication Workshop for government officials in Peru in charge of food safety at SENASA, DIGESA and SANIPES led by PAHO
	September	USDA FAS award to modernize the risk-based inspection model at ports of entry in Colombia to Texas Tech University and University of Minnesota  Virtual meeting with Latin American government officials to share the mission and goals of the FSRisk network with the participation of 50 participants from 13 countries
	July	Roundtable session "Building a strategic alliance for sustainable food safety risk analysis capacity building in the Americas" to present the FSRisk consortium at the IAFP symposium in Salt Lake City, Utah (USA)
2017	November	Development of a microbial risk assessment manual for Latin American governments led by PAHO
	August	Food Safety Risk Analysis Capacity Building Strategy Meeting for Latin America at JIFSAN, University of Maryland, College Park, Maryland
	May	Official launch of the FSRisk network with the participation of the University of Minnesota, University of Nebraska, Joint Institute for Food Safety and Applied Nutrition, University of Maryland (JIFSAN), University for International Cooperation (Costa Rica), Texas Tech University, Inter-American Institute for Cooperation on Agriculture (IICA), Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA), Pan-American Foot-and-Mouth Disease Center (PANAFTOSA-PAHO/WHO) and Food and Agriculture Organization of the United Nations (FAO)
2016	September	Presentation of the new food safety risk analysis capacity building strategy for Latin America at the Latin American Congress of Microbiology and Food Hygiene (COLMIC) to governmental participants from Colombia, Argentina, Chile and Uruguay in Medellin (Colombia)
	July	Official presentation of the strategy for capacity building in food safety risk analysis at the VII Meeting of the Pan American Food Safety Commission (COPAIA VII) and approval by all the Ministers of Health and Agriculture at the 17th Inter-American Ministerial Meeting on Health and Agriculture (RIMSA 17) in Asuncion (Paraguay)

	March-July	A document was drafted by the founding members of the consortium: F. Sampedro, C. Narrod, M. Sánchez-Plata, R. Flores, B. Wang, A. Cordero, H. Friaça Silva, M. Caipo, E. Perez. 2016. Building a strategic alliance for the development of sustainable food safety risk analysis capacities in the Americas: <a href="https://iris.paho.org/handle/10665.2/51179">https://iris.paho.org/handle/10665.2/51179</a>
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At regional level, FAO has worked from 2017- 2022 on risks of antimicrobial resistance (AMR) introduction and spread in the food animal production sector in six (6) animal production systems for ten (10) countries in Latin America, resulting in a baseline tool to collect necessary information on AMR risk factors.<sup>19</sup>

This project also builds on previous STDF projects awarded in the region. In 2010, a STDF project entitled “Strengthening food safety risk assessment (STDF/PG/319)” was awarded to Colombia to strengthen the food safety risk assessment unit recently established. The project created a network of national and international experts to carry out risk assessments and technical studies. The main challenge the project faced is the lack of risk assessment expertise and formal training among government officials and university researchers, lack of available risk assessment tools (spreadsheets, web-based tools), national databases (consumption, pathogen and chemical residues in food) to carry out the risk assessment studies, and translation of the risk assessment studies into tangible risk management decisions at a national level.

In 2012, another STDF project “Establishment of a regional virtual food inspection school in Central America and Dominican Republic (STDF/PG/344)” was aimed at harmonizing the food inspection schemes in the region and training of food inspectors. The main challenge the project faced was sustainability to continue with the training program beyond the duration of the project.

The current project will put a strong emphasis on the sustainability and continuity of the training program by building public-private partnerships with different stakeholders (food safety competent authorities, private sector, producer associations, universities in the region) to mobilize financial resources to support the training program and capacity building efforts in the region. Additional information about the project sustainability is included in sections 5 and 12.

Other PPG projects related to the development of total diet studies (*STDF/PG/303 Total Diet Study for Sub-Saharan Africa*) will be used as a reference to develop a guidance manual to help countries in the design of national consumption studies that can be further used in exposure and risk assessment studies.

The current project will address some of the lessons learned from previous projects by taking advantage of the experience of FAO and PAHO on technical cooperation in food safety issues, and leveraging strong collaboration with academia to:

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<sup>19</sup> World Bank Group. 2021. Landscape Analysis of Tools to Address Antimicrobial Resistance. Washington D.C.



- Provide risk analysis, data analysis and risk-based inspection training to government officials;
- Provide risk assessment, risk management, and risk communication tools and guidance manuals to enable professionals in the national food safety competent authorities to conduct risk assessment studies and risk-based inspection in support of their regulatory decisions;
- Translate the skills learned during the training into practical case studies with results that could subsequently evolve into necessary regulatory decisions in line with country and/or regional priorities;
- Foster a Community of Practice of trained risk analysis professionals from the LAC region as part of the growing FSRisk network;
- Focus on sustainability beyond this project by raising awareness and government buy-in for food safety risk analysis, establishing partnerships with academic institutions in Latin America to offer an official academic program and conducting resource mobilization activities to reach out to different stakeholders (International Cooperation Agencies and private organizations (e.g., industry associations, food industry, producer associations, others).

This project will also use the expertise gained by the University of Minnesota's Center for Animal Health and Food Safety (CAHFS) as a collaborating center for WOAHS Veterinary Services Capacity Building and FAO Reference Center for Veterinary Public Health and the Joint Institute for Food Safety and Applied Nutrition (JIFSAN) at University of Maryland, the US FDA Center of Excellence for International Food safety capacity building as well as other members of the FSRisk network.

CAHFS developed a hybrid e-learning training program for professionals working in veterinary services in Latin America focused on the WOAHS veterinary advanced competencies called PROGRESSVET: <http://progressvet.umn.edu>. The training program included the design of a project by each participant, mentorship and training courses aligned to the WOAHS veterinary advanced competencies. The training program was able to benefit 20 veterinary professionals from six countries: Argentina, Bolivia, Brazil, Mexico, Paraguay, and Uruguay. Currently, the PROGRESSVET program has been expanded to East Africa (Uganda and Kenya) and Vietnam, strengthening the veterinary workforce to improve local, national, and regional practices for animal health, and promote access to international trade markets for sustainable local development with 70 participants already benefited from the program. This project will take advantage of the overall experience gained by CAHFS to build the e-learning program in food safety risk analysis in Latin America.

JIFSAN has been offering a risk analysis training program for over 25 years training over 6,000 professionals from around the world in food safety and animal and plant health risk analysis techniques. Training has taken place in person either at JIFSAN or in the country or through e-learning programs. The training material was developed by JIFSAN and vetted through analysts in a number of US and international Agencies. Annually, depending on the year 100-150 individuals are trained in risk analysis techniques. Many trainees then use that material to replicate the training in their own countries. Starting in 2011, the program implemented a three-month intensive training and mentoring program where individuals learned the basics and intermediate steps, learned how risk analysis was used in different regulatory agencies in the U.S. government, participated in the International Association for

Food Protection meetings, and conducted risk assessment, risk management, and risk communication activities (see <https://jifsan.umd.edu/training/risk/fellowship/summer>).

This experience and the experience of other academic institutions within the FSRisk network (U of Laval, Texas Tech University, University of Nebraska, among others) will be leveraged by using experts from those institutions to help develop and deliver the course training materials and act as mentors for projects developed by the training participants. More information about the mentoring program proposed in this project can be found in activity 3.1.2.

## 4.2 Ongoing results from the PPG implementation

This project builds on the ongoing PPG project “Development of a Proposal for a Food Safety Risk Analysis Capacity building program in Latin America based on South-South cooperation and an e-learning model (STDF/PPG/716)”. In preparation for this project proposal and as part of the baseline information on risk analysis, the project team coordinators conducted an online survey to countries in Latin America on the capacity building needs and achievements in the implementation of food safety risk analysis in each country:

[https://docs.google.com/forms/d/1ySPJsMWkC8y6n5O-6lBoNiwfHopKoLfI0vYu\\_Gv-Q8Q/edit?usp=sharing](https://docs.google.com/forms/d/1ySPJsMWkC8y6n5O-6lBoNiwfHopKoLfI0vYu_Gv-Q8Q/edit?usp=sharing).

In addition, individual meetings were held with each country to obtain a more accurate assessment of their needs for capacity building. These meetings included individuals from the Ministry of Agriculture and Ministry of Health. Table 2 shows the results of the risk analysis strengths, experiences and knowledge identified in the region that can enable South-South cooperation initiatives.

**Table 2. Identified risk analysis strengths in the region.**

Country	Risk analysis component		
	Risk assessment	Risk management	Risk communication
Argentina	Red de Seguridad Alimentaria ( <a href="https://rsa.conicet.gov.ar/">https://rsa.conicet.gov.ar/</a> ) Database of food safety experts Risk assessment and risk profiles		
Brazil		Risk-based inspection system for meat products	
Chile	Risk analysis experts' network ( <a href="http://redcientifica.achipia.cl">http://redcientifica.achipia.cl</a> ) Risk assessment and risk		Risk communication campaigns ( <a href="https://www.achipia.go">https://www.achipia.go</a>

	profiles published ( <a href="https://www.achipia.gob.cl/inicio/prensa-y-publicaciones/evaluaciones-de-riesgo/">https://www.achipia.gob.cl/inicio/prensa-y-publicaciones/evaluaciones-de-riesgo/</a> )		<a href="https://www.b.cl/inicio/areas-de-coordinacion/area-de-comunicacion-de-riesgos/">b.cl/inicio/areas-de-coordinacion/area-de-comunicacion-de-riesgos/</a> )
Colombia	Risk assessment Unit (ERIA) ( <a href="https://www.ins.gov.co/Noticias/Paginas/ERIA.aspx">https://www.ins.gov.co/Noticias/Paginas/ERIA.aspx</a> ) Risk assessment and risk profiles ( <a href="https://www.ins.gov.co/Direcciones/Vigilancia/Paginas/Evaluacion-de-Riesgos-en-Inocuidad-de-Alimentos-(ERIA).aspx">https://www.ins.gov.co/Direcciones/Vigilancia/Paginas/Evaluacion-de-Riesgos-en-Inocuidad-de-Alimentos-(ERIA).aspx</a> )	Risk-based inspection model for food, medical devices, and drugs	
Costa Rica		Risk-based inspection	
Honduras		Risk-based inspection and risk-based sampling	
Uruguay		Risk-based inspection system for dairy products	

Preparatory work within STDF/PPG/716 also included a SWOT analysis based on the online survey results for Risk Analysis Capacity Building in Latin America. This analysis complements the information retrieved from the countries.

#### *SWOT Strengths*

Strengths were variable within the countries assessed. Some countries reported to have a network of food safety experts, others report specialized groups in risk analysis. A monitoring and surveillance system for chemical and microbiological hazards was reported by 50% of the countries, as well as the mandatory report of foodborne diseases. Some risk assessment studies have been developed and food inspection systems were available in every country.

#### *SWOT Weaknesses*

A paucity of reports on chemical residues in food, studies linking microbiological risks to foodborne diseases, knowledge and implementation of total diet studies was found in the participating countries. Although countries reported different types of foodborne diseases, their notification occurred without specifying the type of pathogen involved. Countries also show limited experience in risk analysis and risk-based inspection.

### *SWOT Opportunities*

The interest displayed by participating countries warrants the advances in the implementation of risk analysis within the region. It is an opportunity to establish baseline capacities at the national level for risk assessments. This will strengthen the main pillars of risk analysis: Assessment, Management and Communication.

### *SWOT Threats*

The challenges identified in the project were weak national leadership, underreporting of microbiological/chemical risks and foodborne diseases, lack of clarity of roles and responsibilities among ministries, deficit of commitment and human resources for risk analysis and difficulty to disseminate information and risk assessments.

## **5. Public-public or public-private cooperation**

This project represents an innovative collaborative model where the project coordination will be shared between the international organizations working in the region (FAO and PAHO) representing the food and agriculture, and health sectors and academic institutions with experience in developing international e-learning training programs (University of Minnesota). FAO and PAHO will be focused on the overall development of guidance manuals, risk assessment tools and in-country implementation whereas the University of Minnesota will focus on the development and launch of the training program in line with Codex Alimentarius risk analysis principles. Project sustainability will be addressed by the three coordinators during the execution of the project.

The project has a robust focus on South-South cooperation (SSC) initiatives whereby existing food safety expert networks in the region (i.e., Argentina, Colombia, Chile, Brazil) and countries with more experience in implementing the risk analysis framework and risk-based inspection schemes will serve as subject-matter experts and mentors to train participants. This collaborative model will allow the training program and projects to be implemented in the region aligned with the current regional/national priorities.

The project also has a strong emphasis on sustainability to design a strategy to continue with the training program beyond the project timeline. To achieve this, we will consider the elements at the core of SSC: networks, partnerships, and resource mobilization. This project will focus on the consolidation of a network of Latin American risk analysis experts within FSRisk, to strengthen and unify the capacities gained through training and mentoring. Partnerships are envisioned with the public and private sectors to support different actions that will effectively ground the risk analysis framework in the countries and region. One relevant partnership to raise awareness and political buy-in for risk analysis is to bring together stakeholders from the public and private sectors for national/regional discussions on specific food safety issues involving risk analysis. FAO and PAHO have broad experience in conducting regional dialogues/discussions for different topics within the food system environment and under their mandates.

Another partnership proposed by U of MN to ensure continuity of the risk analysis training will be put forth with Latin American academic institutions to design an official fee-based hybrid academic degree program (i.e., Diploma, Certificate or Master) in food safety risk

analysis. The goal will be to partner with one university from each of the three distinct geographical regions in Latin America: Central America, Andean Region, and South America. The degree program will be open to any food safety professional seeking to obtain a short-term advanced degree (Certificate or Diploma) or medium-term graduate level degree (Master). Content developed in this project will be revised and tailored to the needs of future participants depending on the work positions of applicants (i.e., government of private industry). A cost analysis will be developed to estimate the total cost of an official academic program, number of participants, cost-sharing and in-kind contributions among all the institutions.

Resource mobilization for project continuity will be addressed from the start and embedded in the project by the project coordinators, with international cooperation agencies, professional and trade associations, supporting international organizations and others, depending on the breadth of the activities and different stakeholders involved.

## **6. Ownership and stakeholder commitment**

### **6.1 Project coordination**

The project will be coordinated between the FAO Regional Office for Latin America and the Caribbean (FAO RLC), the Pan American Foot-and-Mouth Disease Center of the Pan American Health Organization/World Health Organization (PANAFTOSA-PAHO-WHO) and the University of Minnesota, with ad-hoc participation of experts from academic institutions of the FSRisk partnership and risk analysis experts from the region. FAO RLC and PANAFTOSA-PAHO-WHO will work through participatory and process-oriented approaches, build on existing knowledge, methods, and capacities, ensure complementarity of actions and links with other stakeholders and actors, and focus on capacity development of stakeholders of the food chain considering gender equity. FAO and PAHO will work on establishing public-private partnerships among different stakeholders to address project sustainability initiatives. The University of Minnesota will leverage the experience gained in launching regional hybrid training programs and, in agreement with FAO and PAHO, will identify key risk analysis experts within the FSRisk network and other regional networks in the region. U of MN will also establish partnerships with other academic institutions in the region to accomplish the project sustainability actions planned.

Annex 2 shows the letters of support from each organization.

### **6.1 Government authorities**

The project will be focused on providing capacity building in food safety risk analysis and risk-based inspection in 11 countries. In each country one focal point (public official appointee) for each Ministry (Ministry of Agriculture and Ministry of Health) has already been identified. In some cases, there is also a focal point at the risk assessment unit or food safety network already established in the country [Food Safety Network (RSA) in Argentina, Chilean Food Safety Agency (ACHIPIA), and the Risk assessment Unit in Food and Pesticides (ERIA) in Colombia]. The project has been designed in such a way that as project activities develop, new countries may be incorporated to the project as participants in the training program and project development. Table 3 shows the national authorities committed

to the implementation of project activities. This list will be updated accordingly as other letters from national food safety competent authorities express their support. Support letters from the institutions/organizations are included in Annex 3.

**Table 3. National food safety competent authorities participating in the project.**

Country	Organization	Focal point	Email
Argentina	SENASA	Esteban Sampietro	esampie@senasa.gob.ar
	RSA-CONICET	Gerardo Leotta	gerardo.leotta@gmail.com
	ANMAT	Victoria Schriro	mariav.schriro@anmat.gov.ar victoria.schriro@gmail.com
Brasil	MAPA	Claudia Valeria Goncalves	claudia.valeria@agricultura.gov.br
Chile	ACHIPIA	Gustavo Sotomayor	gustavo.sotomayor@achipia.gob.cl
		Constanza Vergara	constanza.vergara@achipia.gob.cl
Colombia	Grupo ERIA	Camilo Sánchez	isanchez@ins.gov.co
	Ministerio de Salud y Protección Social	Blanca Cristina Olarte	bolarte@minsalud.gov.co
Costa Rica	SENASA	Luis Matamoros	luis.matamoros.c@senasa.go.cr
	Ministerio de Salud	Alejandra Chaverri	alejandra.chaverri@misalud.go.cr
Ecuador	AGROCALIDAD	Juan Granda	juan.granda@agrocalidad.gob.ec
	Ministerio de Salud Pública- Dirección Nacional de Control Sanitario	Tatiana Gallegos Vaca	tatiana.gallegos@msp.gob.ec
Honduras	SENASA	Mirian Bueno	mbueno@senasa.gob.hn
Nicaragua	IPSA	Karen Carrillo	karen.carrillo@ipsa.gob.ni
Paraguay	SENACSA	Jessyca Duarte	jessycaduarte@senacsa.gov.py
	INAN	Lupe Maciel	lupimaciel@gmail.com
Perú	SENASA	Miguel Portocarrero	<a href="mailto:MPORTOCARRERO@senasa.gob.pe">MPORTOCARRERO@senasa.gob.pe</a>
Uruguay	MGAP	Norman Bennett	NBennett@mgap.gub.uy
	Ministerio de Salud	Claudia Boullosa	cboullosa@msp.gub.uy
	Ministerio de Salud	Rossana Bruzzzone	rbuzzzone@msp.gub.uy

### 6.3 Supporting organizations

Several international organizations and government authorities will support the project by disseminating the project events in the different countries, providing support in event logistics and providing subject-matter expertise when needed.

### *The Federal Institute for Risk Assessment (BfR), Germany*

The Federal Institute for Risk Assessment (BfR) is part of the division of the Federal Ministry of Food and Agriculture (BMEL) and has the legal mandate to inform the public about possible, identified and assessed risks that food, substances, and products pose to consumers. The BfR assesses existing health risks and identifies new ones, developing risk mitigation recommendations and communicating them to federal ministries and other authorities for decision making. The BfR is free from economic, political, and social interest and makes their assessments comprehensible to citizens. The risk assessment is based on internationally recognized scientific assessment criteria. The BfR publishes guidelines for health assessments in consumer protection.

### *The Spanish Agency for Food Safety and Nutrition (AESAN)*

The Spanish Agency for Food Safety and Nutrition (AESAN) is an Autonomous Organism, organically attached to the Ministry of Consumer Affairs, and functionally to the Ministry of Consumer Affairs, the Ministry of Health and the Ministry of Agriculture, Fisheries and Food that promotes the collaboration and coordination of the competent Public Administrations in matters of food safety and nutrition, plans, coordinates and develops strategies and actions that promote information, education and health promotion and acts as a national reference center in the assessment of food risks and in their management and communication, especially in crisis or emergency situations.

## **II. PROJECT GOAL, OBJECTIVE, OUTPUTS & ACTIVITIES (LOGICAL FRAMEWORK)**

### **7. Project Goal / Impact**

**The overall goal of the project is to build food safety risk analysis and risk-based inspection expertise in the region by means of: i) baseline and endline surveys to assess in-country risk analysis capacity and measure overall project impact; ii) an e-learning hybrid training program targeting government officials; iii) pilot implementation of risk analysis or risk-based inspection case studies at country level based on their national priorities; iv) strengthening a regional technical collaborative hub to build food safety capacity in risk analysis and to promote domestic market access based on South-South cooperation principles.**

The foreseen impact will contribute to the adoption of a harmonized risk analysis framework and risk-based inspection approaches ensuring food safety in Latin America to foster collaboration, transparency and efficiency of national agri-food systems thereby reducing the burden of foodborne diseases, improving international market access, gaining compliance with international agreements (SPS, TFA) and contributing to the following Sustainable Development Goals related to Codex Alimentarius: SDG 1 (No poverty), 2 (Zero hunger), 3 (Good health and well-being), 5 (Gender equality), 8 (Decent work and economic growth) 12 (Responsible consumption and production) and 17 (Partnerships for the goals).

The project considers at least one case study per participating country per cohort to be developed in participating countries during the project timeline. This means that for the three-year period of the project, 3 cohorts per country (8) x 1 case study a total of 24 **piloted case studies are envisioned**. These pilot case studies include 8 beneficiary countries and 3 potential mentoring countries. Each country entering the risk analysis training program (at least 10 participants per training cohort for a total of 3 cohorts) will develop a roadmap that responds to national food safety risk analysis priorities. The identified priorities could be related to a domestic issue (i.e., risk-based inspection program for a specific food value chain, risk-based sampling plans targeting specific chemical residues, risk assessment of a specific food safety hazard or novel food, national risk communication plan, etc.) or import-export issue (i.e., risk-based import-export inspection system, inspection algorithm, import sampling program, food safety trade barrier, etc.). This strategy will assure a direct application of the skills and knowledge learned during the training program into tangible projects.

In the long term, it is expected that national food safety competent authorities of participating countries institutionalize and adopt/improve a risk analysis framework as part of their regulatory frameworks for ensuring safe food in accordance with the SPS agreement and risk-based inspection. These risk analysis approaches to food safety will provide valuable scientific evidence for decision makers to galvanize preventive measures and interventions to reduce the production and commercialization of unsafe or unwholesome food as well as prioritize national inspection processes. In addition, as countries meet these requirements, and increase their visibility and transparency on risk-based management of food safety hazards, an increase of consumer confidence and improved market access will occur thereby facilitating trade opportunities.

## **8. Target Beneficiaries**

**Primary Beneficiaries:** The project will primarily benefit the **technical personnel from national food safety competent authorities** and Ministries that will acquire the risk analysis or risk-based inspection skills and knowledge to advance in the implementation of risk analysis for food safety decision making and increase the risk analysis workforce within each institution. In addition, the development and implementation of country roadmaps will enhance the adoption of science-based approaches to reduce food safety hazards in specific value chains and the use of risk-based approaches for food safety (risk-based inspection for import-export and domestic markets, risk-based sampling programs) making current inspection and food sampling schemes more efficient and evidence-based. Outcomes of these analyses will inform risk management decisions.

The project will also benefit stakeholders involved within the food supply chains, including local agri-businesses, national as well as international firms engaged in the trading and export of food items, and food processors. The use of risk analysis techniques will lead to the identification of cost-effective risk reduction measures to reduce foodborne illness along various value chains in the countries. Transparent communication of results of the analysis and the inclusion of the private sector will lead to a better understanding of effective risk reduction leading to behavior change between stakeholders along specific value chains. The adoption of risk-based inspection systems will provide clearer guidelines and performance



outcomes during official inspections for the domestic market and more transparent import requirements, risk levels and types of inspections at ports of entry. Regional exporters and importers would also benefit from the project as they will prevent potential rejections, loss of market share or disruption of production.

**End-beneficiaries:** The final beneficiaries of the project would be the consumers. The population will benefit from more efficient food controls that will prevent food contamination and reduce the burden of foodborne diseases.

Non-beneficiary countries such as Brazil, Chile, and Uruguay, will serve as mentors for risk analysis country activities and will participate in the e-learning capacity building program.

**Table 4. Project beneficiaries and benefits quantification**

Primary beneficiaries	Number	Primary benefit	Quantification means
All beneficiaries (Food safety national authorities, private sector, academia, industry and producers, consumers)	At least 1 baseline and 1 endline survey to assess in-country risk analysis capacity and measure project impact	Baseline: The participating countries will obtain a situation analysis on the status of the risk analysis framework currently in use in the country, identifying gaps to address.  Endline: The impact of the training will be assessed	National reports validated by the participating countries  A report of a post-project meeting with participating countries
	5 technical guidance manuals (publicly available)	Provide technical guidance in the design and implementation of i) Risk-based domestic and import-export inspection schemes; ii) Methodology for national risk-based sampling plans for pathogens and chemical residues; iii) National food safety risk communication plan; iv) Methodology to conduct a national food consumption study; v) Food safety data analysis.	Number of Institutions from participating countries that validate the guidance manuals  Number of manuals and risk assessment tools published and publicly available at the FSRisk website.
	5 risk assessment tools (publicly	Provide web-based tools and user-friendly spreadsheets conduct risk assessments in: i)	We envision ample use of the materials developed in this

	available)	Quantitative risk assessment models (Spanish version of FDA-IRISK); ii) Risk ranking of microbial and chemical hazards; iii) Pesticides quantitative risk assessment tool (acute and chronic exposure); iv) Chemical residues quantitative risk assessment tool (acute and chronic exposure); v) Risk-based sampling for microbial pathogens and chemical residues; vi) Risk algorithm for risk-based inspection.	project by national authorities, food businesses, and academia.
National authorities (focal points, 2-3 per country)	<p>11 countries and 2-3 authorities per country: 25 national authorities</p> <p>10 officials per cohort and 3 cohorts; 30 officials</p> <p>At least one project per participating country (11 projects)</p> <p>Create a regional food safety risk analysis branch of the FSRisk network</p>	<p>Increase the risk analysis expertise and future risk analyst positions within each organization</p> <p>Development of a national risk analysis roadmap in response to national food safety risk analysis priorities</p> <p>Harmonization of risk-based inspection systems and adoption of risk analysis principles in food safety in the region</p> <p>Increased collaboration and sharing among national authorities in the region</p>	<p>Number of government officials trained in risk analysis and risk analyst positions</p> <p>1 project per participant country per training cohort</p> <p>Number of risk-based inspection systems and sampling programs developed in the region</p> <p>Number of national authorities included and collaborating within the FSRisk network and events, documents, Q&amp;A shared</p>
Food industry and industry organizations  Importers and exporters	Food industry and importers/exporters in the region	<p>Clear and transparent food inspections and import-export requirements</p> <p>Access to international markets that demand efficient risk-based inspection schemes</p>	Number of risk-based inspection schemes and sampling programs developed in the region

In addition, during the PPG development the project coordinators gathered additional insights of potential case studies to be developed in each country by training participants. Table 5 shows the identified national food safety priorities by country in the areas of risk assessment, risk management and risk communication. We foresee that the countries will prioritize one of these case studies to develop and implement during the current project.

**Table 5. List of potential case studies identified by national food safety competent authorities to consider for implementation during the project.**

Country	Project		
	Risk assessment	Risk management	Risk communication
Argentina		<p>Technical support in integrating risk analysis into regulatory processes</p> <p>Technical support in strengthening the country's Integrated Control Plan (PIF): review of the programs that make up the plan based on risk: prioritization and monitoring of hazards, investigation and management of outbreaks and alerts</p>	Technical support in the consolidation of a National Food Safety Risk Communication Plan
Colombia	Advanced quantitative risk assessment tools		National food safety communication plan
Costa Rica	<p>Review and implementation of procedures and assessment tools for chemical hazards in fresh vegetables (pesticide residues)</p> <p>Case studies of regional risk profiles and risk management of pesticide residues in fresh vegetables</p>	<p>Risk-based inspection matrix in retail establishments (butchers, fishmongers, cheese makers, among others)</p> <p>Risk-based inspection matrix for food industries (except for food of animal origin)</p> <p>Risk-based inspection matrix for fresh</p>	Socialization campaign on the adoption of good manufacturing practices among producers and purchase of food products from authorized establishments

	<p>Chemical hazard prioritization calculation matrix (pesticide residues in fresh vegetables)</p> <p>Prioritization calculation matrix for chemical and microbiological hazards (food available at point of sale)</p>	<p>vegetables (Pesticide residues)</p> <p>Inspection model for sampling at the border for aflatoxin control in imported foods</p> <p>Risk-based microbiological monitoring matrix for ready-to-eat (RTE) products</p>	
Honduras	<p>Risk profiles and quantitative risk assessment tools in <i>Salmonella</i> spp. in chicken meat, aflatoxins in maize, brucellosis and tuberculosis in fresh cheeses and pesticides in fresh produce</p> <p>Dietary studies on the exposure to pesticides in fresh produce and additives in RTE meat products</p> <p>Tool to calculate acute exposure to a pesticide or veterinary drug in case an import exceeds the MRL level but conflicts with food security and food waste</p>	Risk-based monitoring of aflatoxins in imported food products	National food safety risk communication plan
Nicaragua	Risk profile of <i>Campylobacter</i> spp. in chicken meat and its derivatives	Risk-based sampling of microbiological hazards in dairy products	National food safety risk communication plan
Paraguay		Risk-based inspection of fresh meat and meat products	

		<p>Risk-based inspection of yerba mate producers and processors</p> <p>Risk-based monitoring of heavy metals and mycotoxins in finished yerba mate</p>	
Peru	<p>Risk assessment/ Risk profile in aquaculture contaminants such as Oxytetracycline, crystal violet in trout, shrimps, etc.</p> <p>Risk profiles of the most representative pathogens (<i>Salmonella</i>, <i>Shigella</i>, <i>Campylobacter</i>, <i>Staphylococcus aureus</i>, <i>Listeria monocytogenes</i>)</p> <p>Risk profiles of pesticides and heavy metals in foods of national and imported origin, which have been identified in the annual monitoring plans and/or for which international Health Alert Notifications have been received</p>	<p>Implement a risk-based process control model at the extraction (artisanal vessels) and landing (artisanal fishing landing sites) stages for the "perico" and "pota" resources.</p> <p>Development of a risk-based inspection matrix for food production</p>	

## 8. 1 Gender-related issues

According to the Economic Commission for Latin America and the Caribbean, women in agriculture and livestock have higher levels of education in 3 of 4 countries analyzed and they are more concentrated in high-skills occupations than men. In Central America (6 countries) and the Dominican Republic the percentage of women working in the agro-industry is 19.2% while men 22.5%. Also, ECLAC reported a high presence of women in the

agriculture and livestock (14.8%) sector and 15% in the food, beverages and tobacco sector.<sup>20</sup>

Achieving safe food for everyone requires a gender sensitive approach, addressing restrictive cultural norms that prevent women to access capacity building and extension services; as well as finance, technologies, and markets, when they need to respond to food safety requirements and operationalize food safety measures. FAO supports governments and food chain actors starting from primary production and including associated industries, academia, consumers, and other stakeholders, in adopting gender responsive and inclusive programs of preventative food safety control and management.<sup>21</sup>

Likewise, PAHO formally integrates gender equity considerations into all facets of its work, including technical cooperation, national policy development, and human resource management. PAHO's gender equality initiatives will be used as an effective and attractive snapshot of the gains and challenges to achieve gender equality in health in the Americas and help ministries to improved commitment and responses for better health outcomes for women, men, and children of the Americas<sup>22</sup>.

This project plans to strengthen the role of women in the food safety sector, providing a greater technicality to women and developing inclusive approaches to address food safety challenges affecting trade and public health.

## **9. Project objective, outputs and activities (including logical framework and work plan)**

**Long-term impact: Contribute to safe trade in domestic and international (regional) markets by developing a harmonized food safety risk analysis framework in Latin America.**

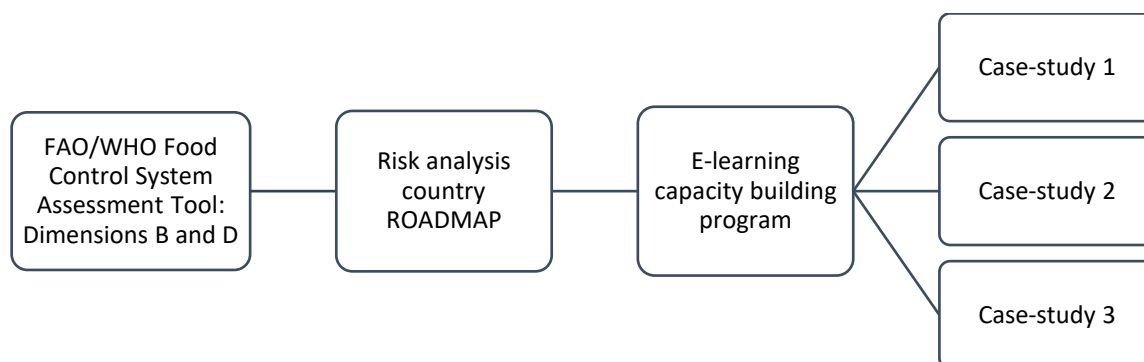
**Main project outcome: National food safety competent authorities in Latin America have improved their capacities for science-based decisions, thereby furthering the adoption and harmonization of risk analysis principles to ameliorate the application of SPS and TFA requirements.**

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<sup>20</sup> Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official information in Durán (2021) "Impacts of the COVID crisis on regional integration in Latin America and the Caribbean.

<sup>21</sup> Committee on Agriculture, 28<sup>th</sup> Session, 18-22 July 2022. FAO Strategic Priorities for Food Safety within the FAO Strategic framework 2022-31. <https://www.fao.org/3/nj005en/nj005en.pdf>

<sup>22</sup> Out-of-Pocket Expenditure: The Need for a Gender Analysis. Washington, D.C.: Pan American Health Organization; 2021. License: CC BY-NC-SA 3.0 IGO. <https://doi.org/10.37774/978927512354>.



**Figure 1. Project structure and main outputs.**

### **Outcome 1: Increase awareness of Food Safety Risk Analysis (FSRA) in Latin American Countries**

In a first phase, the project will increase awareness on best practices on food safety risk analysis among government representatives from participating countries through virtual trainings to refresh their knowledge on the basic principles of risk analysis. During the first year of the project, countries will be invited to assess their risk analysis capacities aiming to set country baselines to later assess the impact and progress made after project interventions. For this purpose, Dimensions B and D of the FAO/WHO Food Control System Assessment Tool that cover the main topics related to Food Safety Risk Analysis will be applied.<sup>23,24</sup>

The initial baseline will help the countries to identify in detail country needs to improve national food safety risk analysis frameworks and systematize implementation at country level. It is envisaged that countries develop a roadmap for implementation based on the results of the baseline survey and virtual trainings conducted during the first year of the project. Through a hybrid e-learning program and mentoring activities starting in year 2 of the project, country professionals working in food safety will be able to implement pilot case studies aligned to the roadmap to improve country risk analysis framework based on country-specific needs.

Existing technical manuals and new guidance documents developed during the project will also guide national food safety competent authorities to define their activities under a food safety risk analysis framework and implement risk-based food inspection schemes (domestic and import-export). In addition, public officials will be trained in the three risk analysis pillars (assessment, management and communication) and it is planned that at least 30 professionals are trained to improve the operations of national food safety competent authorities, which in turn will improve the safety of food for national consumption and for export.

<sup>23</sup> FAO and WHO. 2019. *Food control system assessment tool: Dimension B – Control Functions*. Food safety and quality series No. 7/3. Rome. <https://www.fao.org/documents/card/en/c/ca5346en>

<sup>24</sup> FAO and WHO. 2019. *Food control system assessment tool: Dimension D – Science/knowledge base and continuous improvement*. Food safety and quality series No. 7/5. Rome. <https://www.fao.org/documents/card/en/c/ca5404en>

The project, in accordance with the recommendations of international guidelines, the *Codex Alimentarius* and the WTO, will facilitate the updating of country frameworks on the application of risk analysis principles. On one side, the training provided by the project on risk management, risk assessment and risk communication will reinforce the work of the national food safety competent authorities and agencies of participating countries. On the other side, participating countries will commit themselves, with the support of the productive and agri-food sector, to provide the necessary support to implement the national roadmaps prepared by the project for the institutional and technical-administrative strengthening of risk analysis capacity at country level.

**Output 1.1. The FSRisk network is strengthened with the introduction of Latin American risk analysis focal points.**

***Activity 1.1.1: Inception workshop: Two-day regional conference on the implementation of a risk analysis framework for Latin America.***

*Coordination: FAO and PAHO*

Following project approval, FAO and PAHO will launch a two-day Inception Workshop to present the project and prepare a detailed operational plan for the project in close collaboration with participating countries. The workshop will bring together project stakeholders and will provide an opportunity to review the objectives, activities and expected outputs of the project and ensure compatibility with ongoing initiatives implemented by countries, FAO and PAHO. The workshop will be attended by representatives of participating countries, and other stakeholders that will be involved in the project as well as project support partners such as AESAN and BfR.

An inception report that includes the overall work plan and budget, and a draft M&E plan including indicators covering the project timeline will be developed. During the inception workshop, a discussion on a project visibility plan will also be facilitated to improve awareness on food safety risk analysis at country level.

***Activity 1.1.2: Back-to-back one-day meeting of the Food Safety Risk Network (FSRisk Network).***

*Coordination: FAO, PAHO and U of MN*

A back-to-back meeting of the FSRisk Network will be organised following the inception workshop, with the participating Latin American countries. This one-day workshop will organize the initial operational basis of the network, including joint work activities and the communication arrangements that will be further developed during the project timeline. This first physical FSRisk Network meeting will be used to discuss and draft the terms of reference (ToRs) and a list of competencies for risk analysts. Both ToRs and competencies will undergo review during virtual meetings held with focal points and regional experts until the final ToRs and competencies are agreed. This list of core competencies will become the Core competencies for the training program and the basis for the formulation of the program learning objectives. National food safety competent authorities will be encouraged to use the Core competencies as the basis for hiring or promoting risk analysts in their institutions.

***Activity 1.1.3 Development of the ToRs and competencies for food safety risk analysis in collaboration with participating countries.***

*Coordination: FAO, PAHO and U of MN*



During activities 1.1.1 and 1.1.2 participating countries and the FSRisk network will draft the ToRs an initial list of competencies for an official risk analyst position in a government agency. Then, a series of virtual meetings will be organized with the participating countries and FSRisk experts to further develop the competencies for a risk assessor, risk manager and risk communicator. This will be the basis for the training program learning objectives.

### **Output 1.2. Risk Analysis environment of national food control systems assessed.**

During the first year of the project the risk analysis framework of target countries will be evaluated with the FAO/WHO Food Control System Assessment Tool. Particularly Dimension B that analyses risk management functions including inspection and monitoring and surveillance functions and, Dimension D that assesses if decisions by competent authorities are made on relevant scientific and technical information as a foundation for risk analysis. The Tool builds on Codex guidelines and aims to support countries to self-review their national food control systems to identify gaps for continuous improvement.

Follow-up, face-to-face meetings will be conducted with participating countries that will identify key stakeholders and staff to respond to the FAO/WHO Food Control System survey.

Once the tool has been applied, the countries will have a final diagnosis of their current gaps that will be useful to further outline country roadmaps. It is envisaged that the same or a simplified questionnaire will be conducted at the end of the project to assess the impact of the project's interventions.

#### ***Activity 1.2.1: Virtual trainings on the FAO/WHO Food Control System Assessment Tool. Emphasis on Dimensions B and D.***

*Coordination: FAO and PAHO*

A regional virtual training on the FAO/WHO Food Control System Assessment Tool will be launched to inspire countries to self-assess their food control systems in every one of the dimensions suggested by the tool. Two virtual trainings will specifically target participating countries and will present Dimensions B and D of the FAO/WHO Food Control System Assessment Tool. Dimension B reviews the control functions during export and import of food products and domestic market. It also evaluates the monitoring, surveillance, and response functions within the national food control system. Dimension D of the tool primarily analyses the access of competent authorities to scientific and technical information, their capacity to collect and analyze data for risk analysis purposes, as well as examines the use of the risk analysis framework by competent authorities. This dimension also analyses the capacity of competent authorities to monitor their performance for continuous improvement.

#### ***Activity 1.2.2: Application of Dimensions B and D of the FAO/WHO Food Control System Assessment Tool to determine risk analysis needs, strengths and weaknesses in participating countries***

*Coordination: FAO and PAHO*

Dimensions B and D will be rolled out first to reflect the need for appropriate information (methods for risk ranking and prioritization, risk categorization, research, others) and data (monitoring, surveillance, attribution, other sources) for risk-based decision making. For this purpose, participating countries will receive support to apply Dimensions B and D of the FAO/WHO Food Control Assessment Tool through the organization of strategic meetings with stakeholders from different competent authorities involved in food safety. As

participating countries are at different levels of advancement in risk analysis, dimensions B and/or D will be applied on a case-by-case basis. Non project beneficiary countries such as Chile, Uruguay and Brazil will be encouraged to conduct their self-assessments.

***Activity 1.2.3: Country assessment reports validated by one virtual meeting/country.***

*Coordination: FAO and PAHO*

A report, generated by the results from Dimension B and/or D, will be shared in draft form with each country and further discussed in a virtual meeting to agree on the gaps found and validate the findings. The report will indicate the current status of food safety risk analysis in the country and will serve as significant input to country roadmaps.

**Outcome 2: National food safety competent authorities have developed their risk analysis country roadmaps**

On the basis of the assessments conducted initially under Output 1.2, and prior information collected during 2020-2021 as part of the PPG project (STDF/PPG/716), each participating country is required to build a risk analysis country roadmap before entering the capacity building program. This roadmap will evolve through continuous improvement during the life of the project as countries implement their selected pilot case studies.

Country roadmaps will be developed by participating countries to identify capacity building needs based on the food safety priorities in risk assessment, risk management and risk communication. From the priorities conveyed in the roadmap, the country will identify case studies that participants from the national authorities will develop during the training program.

One of the foundations of a risk analysis framework is the implementation of risk-based food inspection plans. Inspection plans need to be connected with scientific evidence and information to categorize food businesses based on risk. The implementation of risk-based inspection plans can optimize the existing inspection and control national resources by assigning certain inspection frequencies and types of inspection (domestic and import-export) according to the food safety risk level of an establishment or import. In addition, the development of harmonized evidence-based food safety control systems will help importers to comply with import requirements and food establishments to abide by current GMP and HACCP requirements in official inspections. The implementation of the piloted case studies will not only support countries to set the basis of harmonized risk-based inspection plans but also to build country capacity in other priority areas within the risk analysis framework.

The adoption of standardized risk-based procedures and protocols will also promote systems recognition, thus reducing the burden of additional in-country evaluations and inspections of imported products and promoting safe trade within the region. Also, efforts aimed at promoting these practices to ensure the safety of traded products could have a ripple effect, improving the production of safe food for domestic consumption thus reducing the burden of foodborne diseases.

## **Output 2.1. Regional virtual trainings on risk analysis principles for key personnel (inspectors, extension officers, research/laboratory testing personnel)**

Food Safety Risk Analysis (FSRA) is *a structured internationally accepted framework that provides national food safety competent authorities with a systematic and disciplined approach for making evidence-based food safety decisions*. The three interactive components of FSRA, risk assessment, risk management and risk communication, *estimate the risks to human health and food safety, identify and implement appropriate measures to control the risks, and communicate with stakeholders about the risks and the measures applied*.<sup>25</sup>

Risk analysis training for food safety competent authorities and other personnel involved in the different components of FSRA in the region requires an overall refresher to update terminology, methods and new priorities. Regional virtual training for FSRA will be conducted during the first year seeking to update key personnel on risk analysis principles, Codex texts and other related international standards. Though the topics are put forward as general, these trainings will be tailored to country needs identified at regional or subregional level and will provide basic technical background for the e-learning program. The intended participants are primarily from the participating countries, but the refresher training will be open to the countries in the region. This training will include updates on risk analysis, such as new texts from Codex Alimentarius, FAO, WHO/PAHO among others.

### ***Activity 2.1.1: Refresher in General Principles of Food Hygiene***<sup>26</sup>

*Coordination: FAO and PAHO*

The latest Codex update (2020) of this document outlines the general principles that should be understood and followed by food business operators (FBOs) at all stages of the food chain and provides a basis for competent authorities to oversee food safety and suitability through GHPs and HACCP guidance.

### ***Activity 2.1.2: Refresher virtual training in Risk assessment***

*Coordination: FAO and PAHO*

Risk assessment is a broad topic, with many areas of increasing complexity. This virtual training would touch on the basics for risk assessment outlined in Codex texts as background to the subject matter within the e-learning program and provide an update on recent texts and manuals available. The training will include general concepts for risk ranking and prioritization, different types of risk assessments (e.g. qualitative, semi-quantitative, quantitative etc.).

### ***Activity 2.1.3: Refresher virtual training in Risk management***

*Coordination: FAO and PAHO*

Risk management decisions are not only influenced by public health and consumer wellbeing but also by other issues such as consumption patterns, production processes, trading patterns, among others. Setting food safety priorities and selecting risk management

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<sup>25</sup> FAO and WHO. 2005. Food safety risk analysis part i: an overview and framework manual. Provisional edition

<sup>26</sup> General Principles of Food Hygiene. CXC 1-1969. Adopted in 1969. Amended in 1999. Revised in 1997, 2003, 2020. Editorial corrections in 2011. *Codex Alimentarius*. FAO, Rome, Italy  
<https://www.fao.org/fao-who-codexalimentarius/codex-texts/codes-of-practice/en/>

options are an important part of risk management decisions and activities that should guarantee the implementation of appropriate control measures.<sup>27</sup>

#### **Activity 2.1.4: Refresher virtual training in Risk communication**

*Coordination: FAO and PAHO*

One of the relevant, and often overlooked, challenges within the food safety control system is located in risk communication. Government institutions usually have a communications unit, but not a defined risk communications unit with the necessary tools to address emergencies, recalls, and other related activities effectively to deal with stakeholders at different levels (e.g., government, private sector, consumers). One topic to include in this general training is the importance of food safety culture and the ensuing behavior change that needs to be present.

### **Output 2.2. Design and development of country risk analysis roadmaps**

The understanding and use of risk analysis is the basic framework for an evolving and effective food safety control system. Risk analysis improves food safety decision-making processes by providing a route to *establish realistic, science-based targets to reduce the incidence of foodborne disease, plan and implement tailored interventions, and monitor the outcomes (both successful and unsuccessful) of these interventions*.<sup>28</sup>

Implementation of the risk analysis framework requires an environment (institutions and infrastructure) that values and supports the risk analysis paradigm. Risk analysis is just one part of an effective food safety control system. The improvement of the components of the food safety control system such as food safety policies, food legislation (food law, regulations and standards), food inspection, laboratory analysis, FBD surveillance, among others, is critical.

An effective food safety control system upholds consumer confidence and provides an adequate regulatory foundation for domestic and international trade in food, supporting economic development and increasing food security.

Activity 1.2.2 uses dimensions B and/or D of the FAO/WHO Food Control System Assessment Tool to assess risk management functions (such as inspection, monitoring and surveillance functions) and analyzes decision making by competent authorities as the groundwork for risk analysis activities. The subsequent report, generated by the results from Dimension B and/or D, will indicate the status of food safety risk analysis in the country and will serve as a significant input to country roadmaps. The construction of these roadmaps are a pre-requisite to identify and prioritize in-country case studies leading to the start of the e-learning capacity building program.

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<sup>27</sup> FAO. 2017. Food safety risk management: evidence-informed policies and decisions, considering multiple factors. Rome, Italy. 91 p.

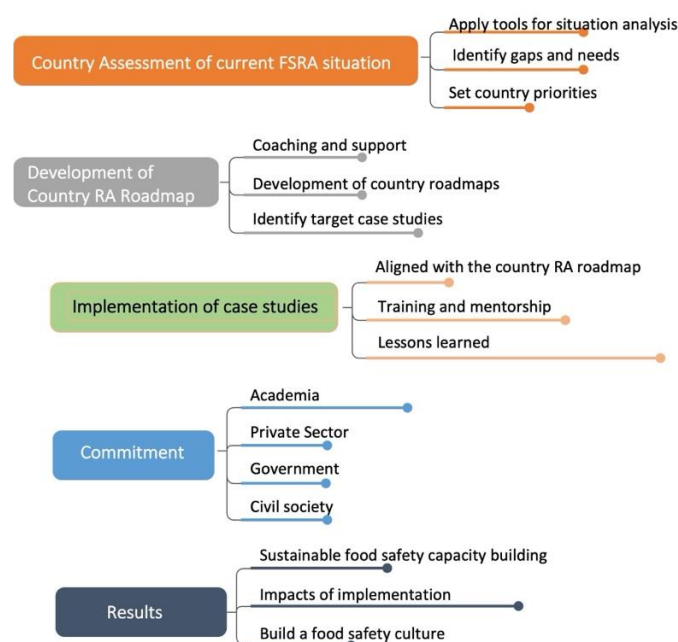
<sup>28</sup>Food safety control system: The combination of control measures that, when taken as whole, ensures that food is safe for its intended use. CAC/GL 69-2008. Page 14 in FAO and WHO. 2019. *Food control system assessment tool: Introduction and glossary*. Food safety and quality series No. 7/1. Rome.

Virtual meetings will be held with participating countries to build the risk analysis roadmap based on country assessment reports and open discussion.

### **Activity 2.2.1: Definition and design of country roadmaps**

*Coordination: FAO, PAHO and U of MN*

A list of criteria will be developed for the identification of in-country case studies. Among the criteria, it will be important that projects respond to a national food safety priority, have the political will, and have a short-term implementation and feasibility plan. A prerequisite to enter the e-learning training program is that each country identifies a suitable case study. A wide range of case studies will be sought that cover the three risk analysis areas (risk assessment, risk management and risk communication). It is expected that for the duration of the project at least one case study per country and per cohort (at least 24 case studies) will be developed.



**Figure 2. Addressing FSRA through the development of a country roadmap**

### **Activity 2.2.2: Country roadmaps developed and validated.**

*Coordination: FAO, PAHO and U of MN*

It is important that developed country roadmaps are shared and validated with FSRisk Network experts and government representatives. The roadmap development needs to integrate work of different government representatives and improved communications and data sharing mechanisms. Roadmaps should be sufficiently flexible to adapt and change if obstacles are encountered during the implementation. Countries can “learn by doing” and this approach is included in the project design.

### **Activity 2.2.3: Collect in-country lessons learned and evidence on good practices in risk analysis.**

*Coordination: FAO and PAHO* Countries will be encouraged to share their case studies during the project as a tool to inspire other countries to further develop their risk analysis

framework and share their experiences. It is important that lessons learned from the project reflect both positive and negative experiences, as both experiences can prevent other countries from making some mistakes and provide shortcuts to improve their processes and procedures.

**Outcome 3: National food safety competent authorities have gained the skills, knowledge, and scientific tools to support their food safety decision-making process**

On the basis of the assessments conducted initially under Output 1.2 and 2.2 and prior information collected during the PPG project (STDF/PPG/716) where country needs in FSRA capacity building were outlined and risk analysis country roadmaps were identified to advance in the implementation of risk analysis for food safety decision making, each country will identify specific case-studies related to the roadmaps in the areas of risk assessment, risk management and risk communication. An e-learning training program will be designed and launched to provide the national food safety competent authorities with the skills, knowledge and tools based on the Codex Risk Analysis framework. Several guidance manuals and risk assessment tools will be developed for countries to conduct risk profiles or risk assessment studies to guide food safety decision making. The training program will also provide mentoring to participants to advance in the development of case studies in response to food safety national priorities. Finally, it is envisioned that the training program will increase the workforce of risk analysts within the national food safety competent authorities and the use of RA for decision-making.

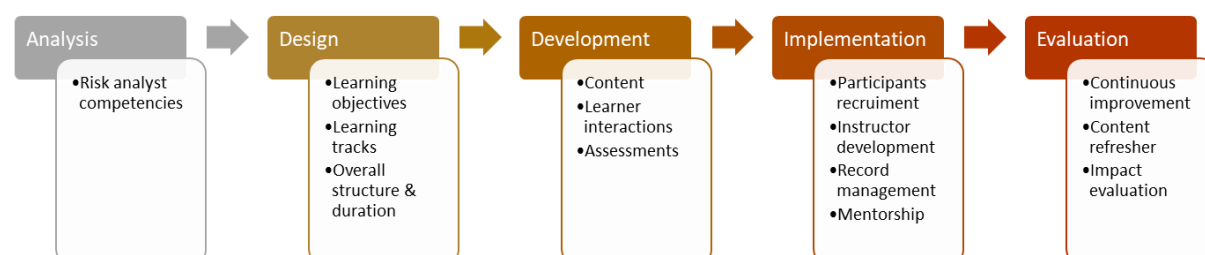
**Output 3.1. Development of a hybrid e-learning program in food safety risk analysis**

A hybrid e-learning food safety risk analysis program will be developed by identifying the learning objectives, learning tracks and overall structure and duration. A list of training courses along with content, related materials (videos, infographics), case-studies, individual and group activities and knowledge and skills assessments will be developed. Each participant in the training will identify a case study to develop that is aligned with their country risk analysis roadmaps.

***Activity 3.1.1: Preparation and design of a hybrid e-learning program in food safety risk analysis***

*Coordination: U of MN*

The training program will be developed in five consecutive steps (Analysis, Design, Development, Implementation and Evaluation) as shown in Figure 3.



**Figure 3. Steps to develop the food safety risk analysis and risk-based inspection training program**

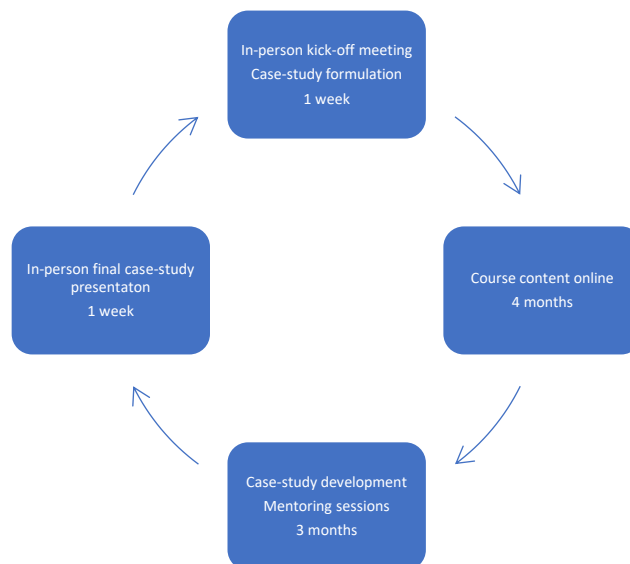
During the analysis phase, the list of core risk analysis competencies and competencies for a risk assessor, risk manager and risk communicator will be developed based on activity 1.1.3. Next, the design phase will identify a list of learning objectives based on the core competencies and the learning tracks will be identified based on the risk analysis components (assessment, management and communication). The overall structure of the learning program will be based on the foundational risk analysis courses to provide an overview of SPS measures and risk analysis principles and then the participants will specialize in a learning track depending on the specific case study to be developed. This will avoid participants taking courses that are not related to their projects or future job roles within their organizations. Examples of specific case studies could include a risk-based inspection system for RTE meat products, a risk assessment model for aflatoxins in corn tortillas or a social media campaign on the rational use of antibiotics in livestock. This case studies will be related to the specific learning track (assessment, management or communication).

During the development phase, course content will be developed by each expert identified by the FSRisk Network consisting of lectures, webinars, videos, interviews, group discussions and activities, hands-on exercises, use of software and spreadsheets and case studies. The technical manuals (Activities 3.2.1 and 3.2.2) and risk assessment tools (Activity 3.2.3) will be used in the courses as the foundational knowledge. All course content will be transferred to the CANVAS platform from the U of MN (<https://canvas.umn.edu>).

### ***Activity 3.1.2: Launch of the hybrid e-learning program***

*Coordination: U of MN*

The training program will be delivered in training cohorts (10 participants per cohort for 3 cohorts) assuring equal participation from all the beneficiary countries and a variety of case studies aligned to the country roadmaps. The projected duration of the course content will be 4 months followed by 3 months for case study development for a total program duration of 7 months. The project is expecting to have at least 3 cohorts during 2 years with a projected 30 participants in total. After the successful completion of the training program, a certificate of completion will be awarded to each participant by the FSRisk network and signed by the project coordinators (FAO, PAHO and U of MN). Figure 4 shows the structure of the training program.



**Figure 4. Overall duration of the training program**

***Activity 3.1.3: Mentoring and technical guidance during in-country implementation of the risk analysis case studies***

*Coordination: FAO, PAHO and U of MN*

All training participants will have identified a case study aligned to their country roadmap and related to a food safety priority to enter the training program. The case studies will be related to a risk analysis pillar (assessment, management, communication) that will contribute to the development of a risk-based inspection scheme (domestic or import-export) in a particular food value chain, a risk assessment in a particular food and hazard, a risk-based national sampling plan, or a risk communication plan for domestic and import-export food safety alerts and a social campaign to raise awareness for a particular food safety issue. Virtual meetings will be held between the participating country and identified mentors (based on their expertise in the topic) to refine the case study idea to make sure it complies with the criteria. 2-3 mentors from the risk analysis expert database from activity 4.1.1 will be selected per project to assure the adequate project design. An in-person meeting will be held to present the projects to project coordinators and training instructors and mentors.

***Activity 3.1.4.: Evaluate impact of training in participating countries***

*Coordination: FAO, PAHO and University of Maryland*

The project will design a set of survey instruments to enable the coordination team to monitor progress on the listed risk analysis competencies and training objectives. The training impact will be characterized as a “Chain of Impacts” by identifying the occurrence of necessary changes after initial capacity building efforts to implement improved practices and by identifying measurable outcomes that can take place immediately, and in the short-, medium- and long-term impacts. Due to the project timeline, the short- and medium-term impacts will be assessed. Countries will be consulted about using a web-based protected software developed by the World Bank (Survey Solution) to collect and upload country level data through the establishment of country M&E teams. UMD will be responsible for obtaining internal Review Board (IRB) clearance for the surveys and analyzing the data.



### **Output 3.2. Development of technical guides and risk assessment tools to progress national and/or regional risk assessment and risk-based inspection schemes**

*Coordination: FAO, PAHO and U of MN*

Guidance manuals and excel-based risk assessment tools will be developed constructed on the needs identified in the previous PPG project and Outputs 1.2 and 2.2. Automated spreadsheets will be developed for countries to carry out regional/national exposure and risk assessment models based on their national data on the prevalence of pathogens and/or chemical residues in food. Technical guidance manuals will also be developed to guide food safety national authorities and training participants on the design and implementation of risk-based inspection schemes (domestic and import-export), develop a national risk communication plan, design a national food consumption study among other topics of interest for the region.

Training materials and risk assessment tools developed under the project timeline will be validated with country participants and FSRisk network experts during the first hybrid e-learning cohort.

#### ***Activity 3.2.1. Development of technical guidance manuals***

During the implementation of the PPG project, countries shared the need to develop guidance for risk-based inspection systems, food sampling plans and national risk communication plans. Regional and international experts identified by the FSRisk Network will be contracted to develop guidance manuals on priority topics such as methodology for national risk-based sampling plans for pathogens and chemical residues, national food safety risk communication plans and methodology to conduct national food consumption studies, among other topics depending on country needs. The beneficiary countries through their focal points will be consulted to identify relevant examples and case studies to include in the manuals. Once developed, manuals will be used as the course reference manuals for the risk analysis training program and will also serve as guidance materials for national authorities, food industry and food safety professionals in general.

The training program will use reference materials such as the *Codex Alimentarius* risk analysis guidelines and other manuals developed by the coordinating organizations (FAO and PAHO) (Manual on Microbiological Risk Assessment in Food, Risk-based Inspection Manual, FAO guide to Ranking Food Safety Risks at the National Level, etc.). Other manuals developed by federal agencies in the US [Food and Drug Administration (FDA), USDA-Food Safety and Inspection Service (FSIS), USDA-Foreign Agricultural Service (FAS)], risk assessment studies and scientific opinions developed by risk assessment institutions in the EU [European Food Safety Authority (EFSA), Spanish Agency for Food Safety and Nutrition (AESAN) and German Federal Institute for Risk Assessment (BfR)] and guidance documents by Food Standards Australia among other international organizations will be consulted and included in the training program.

#### ***Activity 3.2.2 Induction training to use the Spanish version of the FDA-IRISK tool***

*Coordination: U of MN and U of MD*

The FDA-Irisk (<https://irisk.foodrisk.org>) is a freely available web-based tool developed by the US FDA to conduct quantitative risk assessment models in microbial and chemical hazards. It is a robust risk assessment tool that allows probabilistic model building, run Monte Carlo simulations and sharing models by users. The FDA-Irisk tool contains a user

guide and technical manual that explains step by step how to use the tool. U of MN will work with the international office at FDA to translate the tool, user guide and technical manual into Spanish.

An online course in Spanish will be developed on the use of the tool by recording tutorial videos and developing generic risk assessment models in pathogens and/or chemical hazards of concern in specific food chains. The developed models will be publicly available and can be further used by participating countries and the food industry by using their own data and information (pathogen prevalence, concentration of chemical residues, national consumption, etc.).

### ***Activity 3.2.3 Development of risk assessment tools***

*Coordination: FAO, PAHO and U of MN*

Automated user-friendly spreadsheets will be developed by regional experts and IT consultants for beneficiary countries and training program participants to carry out risk prioritization studies, risk-based sampling programs, pesticides and chemical residues exposure assessments and an algorithm for risk-based inspection (import-export and domestic). Risk ranking studies will allow countries to identify the combination of pathogen and/or chemical and food product of most concern. This will serve as the basis for the design of a risk-based sampling program for agri-food products imported into the country (i.e., number of samples, type of products and pathogens or chemical residues to be sampled) or carry out baseline studies at a national level.

The pesticide exposure assessment spreadsheet will allow countries to identify the highest risk pesticides and food products to focus their risk management decisions (tailored Good Agricultural Practices (GAP), producers training on pesticides use, sampling and testing) and estimate if the pesticides daily exposure can be of public health concern. The risk algorithm spreadsheet will allow countries to identify and mathematically combine the risk factors related to the importation of a food product (i.e., inherent risk of the imported product, country of origin, importer, facility at origin) to identify a risk level for each importation and assigned a type of inspection (document, physical, physical with sampling).

Main risk assessment tools to be developed during the project:

- *Risk ranking of microbial and chemical hazards*
- *Pesticides quantitative risk assessment tool (acute and chronic exposure)*
- *Chemical residues quantitative risk assessment tool (acute and chronic exposure)*
- *Risk-based sampling for microbial pathogens-based sampling for chemical residues*
- *Risk algorithm for risk-based inspection.*

**Outcome 4: The Latin American region has strengthened a network of food safety risk analysis experts to enhance risk communication, collaboration and knowledge management and expertise sharing.**

Following the recommendations of the 17<sup>th</sup> RIMSA and 7<sup>th</sup> COPAIA, national governments, higher education institutions in Latin America, United States and Canada and international organizations created in 2016 the Food Safety Risk Analysis Network (FSRisk). The Food

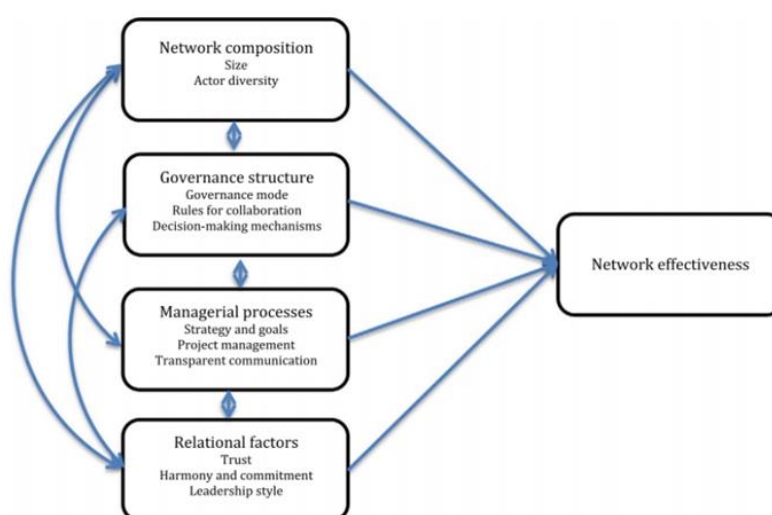
Safety Risk Analysis Network (FSRisk) is an international strategic alliance that arose from the need to strengthen food safety risk analysis systems in the Latin American and Caribbean region. The network aims at promoting South-South cooperation through the transfer of knowledge and experiences in risk analysis between countries.

The transfer of successful experiences from countries with more developed risk analysis capacities to those countries with less developed risk analysis skills will be a very useful tool to improve the technical proficiency of food safety competent authorities. This will contribute to build a reference hub among experts in the region to discuss and share experiences for an effective implementation of risk analysis principles. The objective of the network is to build trust, strengthen communication and share resources to promote the use of a risk analysis framework to improve food safety management systems in the countries of the Americas, mainly the Latin American and Caribbean region.

#### Output 4.1. Operationalization of the Food Safety Risk Analysis Network

The purpose of this network is to help institutions to use their resources more effectively, avoiding work duplications and broadening the scope for technical cooperation to more countries. The network is at initial stages and created a website in Spanish hosted by PANAFTOSA-OPS and a mirror site in English hosted by JIFSAN, USA.

The aim of the FSRisk Network is to become a reference technical hub for food safety risk analysis (FSRA) in the Americas, where countries will have the possibility to share expertise and solve problems that may arise in their day-to-day work. However, its effectiveness will depend on its operational foundations defined by its composition, governance structure, managerial process, and relational factors.



**Figure 5. Application of Planko's model to the Food Safety Risk Analysis Network (FSRisk Network)<sup>29</sup>**

<sup>29</sup> Planko, J., Chappin, M., Cramer, J.M. & Hekkert, M.P. (2017). Managing strategic system-building networks in emerging business fields: A case study of the Dutch smart grid sector. *Industrial marketing management*, 67: 37-51. 10.1016/j.indmarman.2017.06.010

It is foreseen during the project span to improve the operationality of the network according to Planko's model and aligned to FSRisk Network member needs and requests as part of the network operational plans. In terms of sustainability, the platform – while initially supported by the project – might be financially supported to the extent of covering all costs by allowing the private sector or other sponsors to sign a collaborative agreement to fund the biannual workplan of the network.

The FSRisk Network would not only help to solve and overcome common problems, but in the long run may also help to build trust among institutions, which is very important for data collection and consolidation of risk evaluations. Consequently, such a network would also help to build capacity of more risk analysts.

***Activity 4.1.1: Create a database of risk analysis experts in the region***

*Coordination: FAO, PAHO and U of MN*

A regional open call will be shared within the national networks of project participating countries (i.e., ERIA-Colombia, RSA-Argentina, ACHIPIA-Chile, Uruguay, Brazil) to create a regional risk analysis experts database. Experts will come from academia and government institutions that have acquired experience implementing the risk analysis framework or risk-based inspection (i.e., risk-based inspection system, risk-based sampling plan, risk assessment model or tool, risk communication plan, etc.). Experts will help in the operationalization of the FSRisk Network, development of training materials, manuals and tools and will serve as mentors for the project implementation phase. The goal is to have 5-10 experts per risk analysis component (assessment, management and communication and risk-based inspection).

***Activity 4.1.2: Organize and Operationalize the FSRisk Network on a regular basis.***

*Coordination: FAO, PAHO and U of MN*

FSRisk Network members (participating countries, international organizations and academic institutions) will define the very basic rules for collaboration and coordination of the network to ensure that network actors work cohesively and effectively. This will be achieved through the creation of simple operational procedures and agreed technical activity plans including:

1. Development of an operational procedure defining the network's composition, governance structure and managerial process.
2. Establishment of the coordinating and communication mechanisms of the network.
3. Preparation of a regional action plan for the development of a comprehensive risk analysis capacity package (to be renewed by the members every two years).
4. Roll-out of the hybrid training package on risk analysis for future risk assessors, risk managers and risk communicators.

***Activity 4.1.3: Develop a visibility plan for the project under the FSRisk Network (RA Community).***

*Coordination: FAO, PAHO and U of MN*

A network communication and visibility plan will be developed by a communications specialist in close collaboration with participating countries and FSRisk network experts. The strategy will target policy makers, food safety professionals and the public. Specific visibility

project interventions will be conducted and during the World Food Safety Day to increase awareness on the importance of food safety risk analysis. Furthermore, existing internet-based communication platforms and accessibility by Ministries, agencies and public institutions will be explored and assessed to define the most user-friendly interactive platform to be used as a tool for network communication. The online platform will have to facilitate networking for the purpose of dissemination of information, posting of questions, as well as active communication among different users. Different hosts will be identified for the facility and build up the required online infrastructure, if necessary. A network community manager will be assigned to moderate the platform, compile trainings, information, manuals and tools generated during the project as well as create discussion channels for FSRisk Network members and other stakeholders. A comprehensive FSRisk Network communications procedure will be developed on network communication channels and data sharing among FSRisk Network members and users. Platform usability statistics will be monitored regularly to assess its effectiveness.

#### **Activity 4.1.4. Workshop (hybrid) to validate and approve operational procedures of the FSRisk Network**

Coordination: *FAO, PAHO and U of MN*

Within the framework of the project the FSRisk Network will organize a back-to-back event, linked to BfR's Latin American Risk Assessment Symposium, every two years to organize and launch the activities of the network and the biannual action plans for sustainability. The network is intended to connect with professional organizations or associations inside and outside the countries and thus provide and have access to a wealth of information.

#### **Outcome 5: Explore the establishment Public-Private Partnerships for future program sustainability**

An instrument that catalyzes economic development through the exchange of innovation and good practices and expands market opportunities across countries with shared development objectives, such as those reflected in the Sustainable Development Goals (SDGs) is South-South Cooperation (SSC). The 2030 Agenda for SDGs places weight on SSC as a means to support capacity-building and enhancing cooperation, strengthening partnerships on capacity-building, science, technology, and innovation.<sup>30</sup>

Based on South-South cooperation principles, the project will seek for partnerships with the private and/or academic sector to ensure FSRisk Network long-term sustainability. Partnerships will be evaluated by FAO and PAHO's external relations, partnerships, and resource mobilization departments to ensure that they align with organizations' mission, priorities, policies and procedures. Stipulations need to be considered in terms of donations and seconded personnel, clarity on conflicts of interest, appropriateness of interacting with individual industries, copyright issues, deals with multiparty collaboration and institutional

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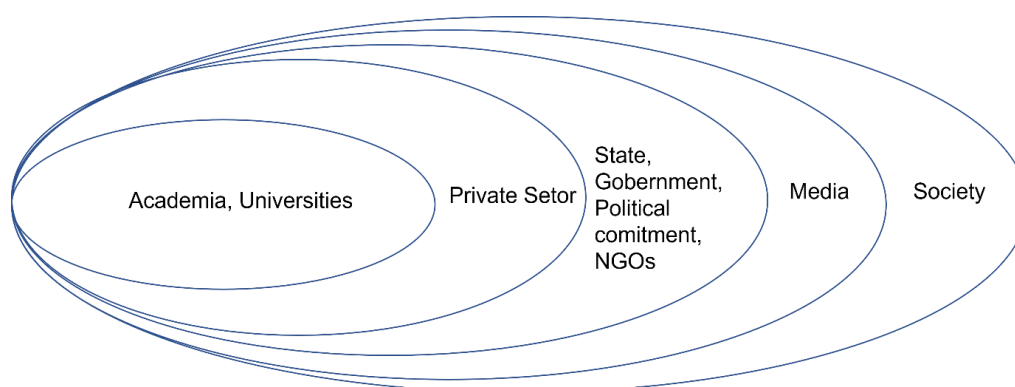
<sup>30</sup> South South Cooperation (SSC) is defined as *"The mutual sharing and exchange of knowledge, experience, technical and financial resources related to agriculture and food systems between two or more developing countries, as well as collective actions in pursuit of their individual and/or shared development objectives."* FAO South-South and Triangular Cooperation Guidelines for Action 2022–2025. <https://www.fao.org/publications/card/en/c/CB8176EN/>

arrangements<sup>31</sup>. Bilateral meetings will be held with interested parties to specify what the organizations wish to achieve from the partnership and how to use these partnerships to build the technical expertise of professionals in food safety risk analysis and contribute to a regional food safety culture.

Current trends among food safety actors within the agri-food chains identify the need for a high level of coordination to meet consumer demands and guarantee food safety and environmental sustainability, to achieve national food security, promote inclusiveness of smallholder farmers, stimulate industry development and encourage equitable sharing of value created along the chain, evidencing an interdependency between the objectives of public and private partners.

Private partners may enter the partnership to maximize market opportunities by securing supplies of raw materials and leveraging financing and complementary knowledge and skills from the public sector. Public partners can drive the partnership by creating the enabling conditions for the development of specific commodity chains through the design of national programs.

By ensuring that international sanitary and phytosanitary standards are met, national governments protect domestic consumers and county trade reputation in international markets.



**Figure 6. Food Safety Risk Analysis supports a food safety culture among stakeholders (Adapted from AskFood)**

#### **Output 5.1. A sustainability plan to secure the continuity of the FSRisk network and the training program.**

Under the FSRisk Network a multi-agency governance model will be created to design a PPP program indicating the selection criteria for private or public partners risk

<sup>29</sup>South South Cooperation (SSC) is defined as “The mutual sharing and exchange of knowledge, experience, technical and financial resources related to agriculture and food systems between two or more developing countries, as well as collective actions in pursuit of their individual and/or shared development objectives.” FAO South–South and Triangular Cooperation Guidelines for Action 2022–2025. <https://www.fao.org/publications/card/en/c/CB8176EN/>

<sup>31</sup> Buse, K; Walt, G. Global public–private partnerships: part I – a new development in health? Bulletin of the World Health Organization, 2000, 78 (4)

sharing/mitigation mechanisms. Based on these initial criteria, multi-stakeholder consultations and meetings will be held to ensure the compliance with requisites of PPP partners (e.g., national entities, international organizations and/or academia). Negotiations with the private sector and academia will be necessary to define the scale of investment coordination and oversight of implementation of partnership activities and funding mechanisms.



**Figure 7. Sustainability plan in the establishment of PPPs (FAO, 2016) <sup>32</sup>**

***Activity 5.1.1: Virtual meetings with producer associations, private sector, and food safety third parties***

*Coordination: FAO and PAHO*

A series of virtual meetings will be conducted with Latin American food industry associations, private industry, and international third parties such as GFSI to explore the possibilities to sustain the FSRisk Network and hybrid e-learning program in time. Additionally, FAO and PAHO collaborating centers will be assessed on their suitability to undertake some activities of the FSRisk network and host and maintain the hybrid e-learning program in time.

***Activity 5.1.2 Virtual and in-person meetings with Latin American Universities***

*Coordination: U of MN*

The U of MN will hold several meetings (virtual and in-person) with universities in Latin America with expertise or available academic programs in food safety. Through the meetings, universities will be encouraged to adapt the content and materials developed during the project and include them within their existing food safety curricula, academic programs and/or post-graduate courses as a new subject or course. As part of the PPP negotiations and agreement, universities might enroll at least 5 government officials per year within their food safety risk analysis cohorts.

## **10. Environmental-related issues**

The operationalization of the one health Approach aims to protect human, animal plant and environmental health. This project will facilitate dialogues and activities taking into account the mandates, responsibilities and accountabilities of each stakeholder, promoting cooperation across multiple sectors, including food safety, public health, agriculture, animal and plant health, trade and environment.

The implementation of a risk analysis framework is a preventative approach that can optimize costs and reduce food losses by identifying risks along the food value chain in a timely manner and preventing non-compliances. A recent study conducted by Chairany et al. 2022<sup>33</sup>, showed that the application of risk analysis and lean principles along the production

<sup>32</sup> FAO. 2016. *Public-private partnerships for agribusiness development – A review of international experiences*, by Rankin, M., Gálvez Nogales, E., Santacoloma, P., Mhlanga, N. & Rizzo, C. Rome, Italy.

<sup>33</sup> Chairany, N. Hidayatno, A., Suzianti, A. Risk analysis approach to identifying actions that reduce waste for a Lean agricultural supply chain. *Journal of Industrial Engineering and Management*, [S.l.], v. 15, n. 2, p. 350-366, 2022.

and consumption of cayenne pepper helped to identify and prevent risks along the production and apply different innovative solutions to reduce food loss and food waste.

A well-defined risk analysis approach also helps countries to enforce good practices along the farm to fork continuum and prevent the overuse or misuse of antibiotics or pesticides during food production or food adulterations.

The project will focus on the implementation of food safety risk analysis principles with an aim to reduce food losses and waste as a result of food spoilage and trade rejections. By addressing the risks of microbial and chemical hazards in foods, this project will positively contribute to the protection of the environment thus positively impacting on produce, soil, and water supplies

## 11. Risks

Despite a strong commitment of project's stakeholders, various factors may impact the delivery of the project's outcome. The main risk is that other priorities such as natural emergencies related to hurricanes, floods, volcano eruptions, epidemics, etc. may impact government priorities and support to the project. It should be noted that such events are quite common in some participating countries of the project. To avoid this, the project would, to the extent possible, invest in advocacy initiatives and training activities to improve the awareness about food safety and its impact on consumers' health and overall economic and social development in the Region.

The project's outcome can be affected by political risks due to conflicts and unrest, changes in government, changes in international policies or relations between countries. These political changes might involve the designation of new staff that may need to receive an induction and training on project's activities.

During the project, key personnel will contribute to the country assessment, attend training programmes, complete activities and work alongside national and international consultants. The new and improved skills and knowledge that result from these activities need to be recognized, and national counterparts should, before the completion of the project, identify a plan to make optimal use of the trained human resources in food safety interventions.

**Table 6. Summary of Risks and Mitigating Measures**

<b>Risk</b>	<b>Impact</b>	<b>Probability</b>	<b>Mitigation</b>
1. Higher priority not given by Government to food safety and quality improvements	Failure to deliver project outputs and activities in a timely manner	Low/Medium	<ul style="list-style-type: none"> <li>• Advocacy initiatives</li> <li>• Ongoing promotion of food safety as a consumer health priority</li> <li>• Strong support by the steering committee</li> <li>• Provision of full time project coordinators to enable government engagement and ownership</li> </ul>
3. Political changes	Failure or delayed	Medium	<ul style="list-style-type: none"> <li>• Advocacy initiatives</li> </ul>



	delivery of project outputs and activities		<ul style="list-style-type: none"> <li>• Induction of new government appointees</li> <li>• Training of new government appointees</li> </ul>
3. Loss of key staff from Government	Failure to deliver specific outputs	Low/Medium	<ul style="list-style-type: none"> <li>• Strong support by international organizations</li> <li>• Commitment of country government</li> <li>• Contingency planning activity</li> </ul>

## 12. Sustainability

Project sustainability will be addressed by the three coordinators during the execution of the project. The current project will put a strong emphasis on the sustainability and continuity of the training program by building public-private partnerships with different stakeholders (food safety competent authorities, private sector, producer associations, universities in the region) to mobilize financial resources to support the training program and capacity building efforts in the region.

The project has a robust focus on South-South cooperation (SSC) initiatives whereby existing food safety expert networks in the region (i.e., Argentina, Colombia, Chile, Brazil) and countries with more experience in implementing the risk analysis framework and risk-based inspection schemes will serve as subject-matter experts and mentors to train participants. This collaborative model will allow the training program and projects to be implemented in the region aligned with the current regional/national priorities.

The project also has a strong emphasis on sustainability to design a strategy to continue with the training program beyond the project timeline. To achieve this, we will consider the elements at the core of SSC: networks, partnerships, and resource mobilization. This project will focus on the consolidation of a network of Latin American risk analysis experts within FSRisk, to strengthen and unify the capacities gained through training and mentoring. Partnerships are envisioned with the public and private sectors to support different actions that will effectively ground the risk analysis framework in the countries and region. One relevant partnership to raise awareness and political buy-in for risk analysis is to bring together stakeholders from the public and private sectors for national/regional discussions on specific food safety issues involving risk analysis. FAO and PAHO have broad experience in conducting regional dialogues/discussions for different topics within the food system environment and under their mandates.

### **III. BUDGET**

#### **13. Estimated budget**

The detailed budget is presented in Appendix 3, broken down by activity and by category of STDF contribution and in-kind counterpart contributions from the coordinating organizations. The in-kind contribution of participating countries is reflected by the attendance to the e-learning capacity building program that requires at least 7 months of allotted time from the designated national officials and by the mentorship activities that will be conducted by the nonbeneficiary countries (Brazil, Chile, Uruguay) reflecting the SSC initiatives. The budget requested from the STDF is US\$ 998,674, and the total project budget is US\$ 1,273,674; therefore, the counterpart is US\$ 275,000, which is higher than the contribution requested from the STDF, resulting in a leverage percentage of 27,5%.

#### **14. Cost-effectiveness**

The Covid-19 pandemic evidenced the vulnerabilities of the global and regional food supply chains. As some countries in the region are highly dependent on agricultural trade, or on specific products and/or partners, addressing trade vulnerabilities is important. One way to create resilience in the region is by securing good practices along the food chain and building stronger food safety systems that include risk analysis and prioritization of related issues into the decision-making arena.

The objective of this project is to advance the implementation of a risk analysis framework in food safety decision-making: risk-based inspection, risk assessment tools and risk communication.

In this project, we are promoting the adoption and pilot implementation of **risk-based approaches, including risk analysis and risk-based inspection for food safety** through training, tools, and regional expertise. This endeavor will provide robust scientific support for policy development and risk management decisions, and consequently, the ability to reach other international markets that demand a risk-based approach.

Therefore, the project reflects on the need to build expertise on food safety risk analysis in the region and develop practical tools to aid into the decision-making process and improve work productivity of risk managers, risk assessors and risk communicators in the region.

### **IV. PROJECT IMPLEMENTATION & MANAGEMENT**

#### **15. Implementing organization**

FAO will lead the implementation of the project, providing technical and operational leadership and coordination support. The project was formulated in close collaboration with PAHO/PANAFTOSA and University of Minnesota. PAHO and University of Minnesota will act as partners in the execution of the project.

A Project Management Steering Committee (PMSC) composed of FAO, PAHO and U of MN will be established to oversee the project implementation at the regional level. The PMSC will

identify the necessary capacity building activities to implement project activities, evaluate the progress of the project and decide new pathways to follow. The Steering Committee will meet twice during the project timeline and regularly hold web-based meetings.

A Technical Advisory Group for the project will be constituted by the FSRisk Network and will oversee and guide the implementation of the project at country level and ensure the reliability of technical outputs. The Technical Advisory Group will meet twice during the project timeline and hold regularly web-based meetings.

The Steering Committee will guarantee that National authorities will be informed and will also facilitate linkages that will support the efficient implementation of the project. It is expected that the PMSC will convene meetings twice per year to:

- Oversee and assure technical quality of outputs
- Ensure sustainability of key project outcomes, including up-scaling and replication
- Ensure effective coordination of government partner work under this project;
- Approve reports (including six-monthly and annual Progress and Financial Reports), and the Annual Operational Plans and Budget

The project will be organised with a Project Management Unit (PMU) involving an Operational Project Coordinator, one Technical Assistant and one Administrative Assistant, all with experience or willing to receive training in designing and or implementing projects that have gender equity mainstreamed. The PMU will be responsible for the preparation of documentation to be reviewed and approved by the PMSC.

## **16. Project management**

The Project Management Steering Committee (PMSC) will be responsible to coordinate, guide, implement, monitor and report of the project activities at regional level with the support of the Technical Advisory Group. The project will be implemented by FAO, PAHO and U of MN in close collaboration with FSRisk Network experts and representatives from the Ministry of Agriculture and Ministry of Health of participating countries.

Under the overall implementing umbrella of FAO, the three Organizations – FAO, PAHO and U of MN – will jointly manage the project. The outcomes described in the project document provide the lead organization(s) for each of the activities. FAO will be the end responsible for the project implementation and monitoring in collaboration with PAHO and U of MN, and will report directly to the STDF utilizing the FAO procedures in agreement with STDF contact mechanism.

## **V. REPORTING, MONITORING & EVALUATION**

### **17. Project reporting**

FAO as Implementing Organization, is responsible for reporting under the project and submission of reports to the STDF Secretariat. An inception report will be produced within three months of launching of the project, and a final report will be produced at the end of the Project. In-between, progress reports will be produced every six months (covering the periods January-June and July-December) and will provide the basis for systematically

monitoring progress made and give recipients an opportunity to make substantive comments on any anticipated issues that require attention.

The operational project coordinator will be responsible for collecting and validating all information to assess whether targets and indicators are met. All partner leads will report on the planned activities within scope for that period. The Project coordinator will maintain the project reports and all other such documentation.

A final project report and an independent project assessment report will be provided

## **18. Monitoring and evaluation, including performance indicators**

The logical framework shows the indicators that will be monitored at the result/output level. The project budget includes provision for an independent end-of-project assessment – prior to the project end date – that will provide data for assessing the project results, reporting on indicators at the result and purpose level. This end- of-project assessment will be contracted by FAO, and attached to the final project report.

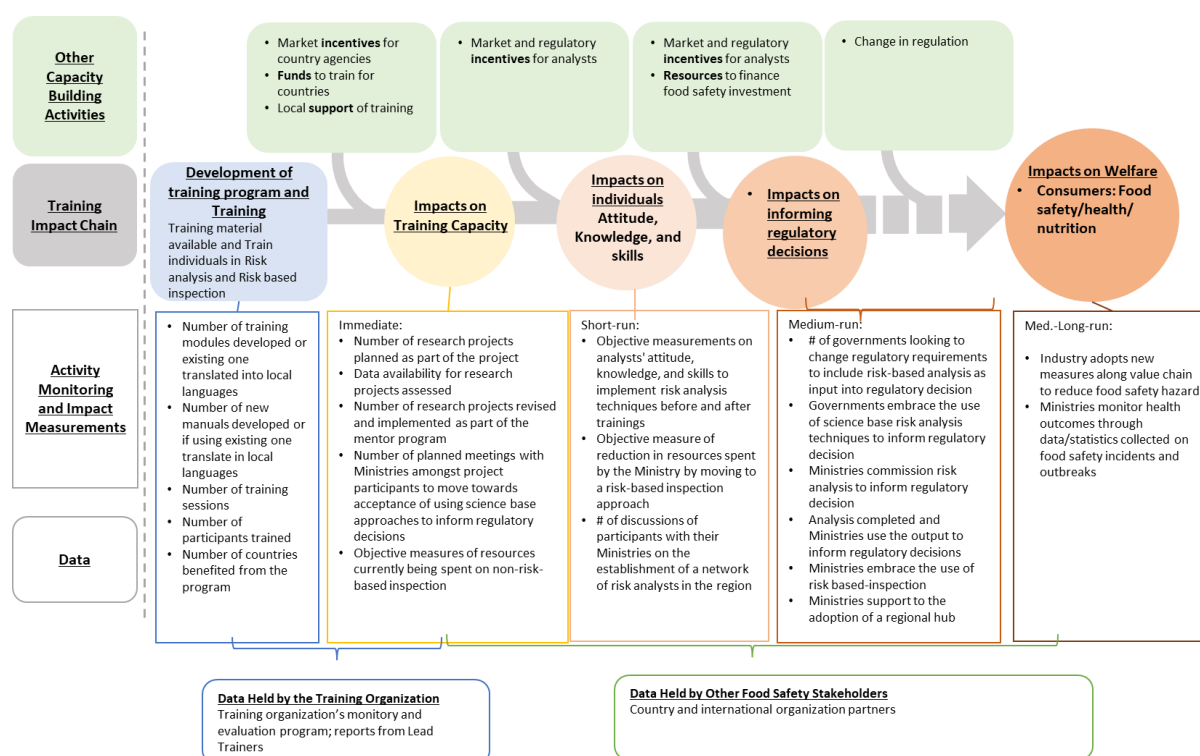
FAO will set aside funds for M&E, based on its internal procedures. This will include attention to undertake a baseline survey at the project inception, to help track and measure the results of the project at mid-term and at the end of the project (using the key performance indicators in the logical framework). As part of the M&E framework for this project, FAO will monitor on an ongoing basis implementation of annual workplan, levels of beneficiary participation and physical delivery of the intended project outputs.

It is expected that M&E will make use of a mix of quantitative and qualitative indicators. The indicators will be further improved at the inception phase if the pilot project is approved)

### **18.1. Evaluation of the impact of the training**

A common strategy to improve food safety and reduce foodborne illness has been to provide food safety capacity building. Over the years there have been many capacity building efforts focused on value chain actors and attempts to measure the impacts of such efforts. Though there has been increased attention to measure the impact of these efforts in terms of long-term consumer welfare benefits, it takes time to translate what is learned into action and to realize the desired impacts for which the investment in capacity is aimed. Many monitoring and evaluation (M&E) plans assume that the immediate impacts of reduction in foodborne disease will occur due to capacity building programs. This rarely is the case. Narrod et al (2020, 2021) developed a framework for looking at impacts of food safety capacity building efforts which they characterize as a “Chain of Impacts.” This chain looks at the changes that need to occur after initial capacity building efforts to implement improved practices and the framework breaks the impacts down into measurable outcomes that can take place immediately, in the short-term, medium-term, and long-term impacts. The approach builds from health literature to identify knowledge gaps, beliefs, and behavioral patterns that result in undesirable health outcomes using knowledge, attitude, and practices surveys (KAP). In the food safety training evaluation literature, KAP surveys have been used to examine the knowledge level, attitude towards food safety, and self-reported practices.

We believe in terms of this project a similar approach looking at the “Chain of impact” needs to occur when developing a monitoring and evaluation approach to looking at the impact of capacity building efforts in risk analysis or risk-based inspection on professionals' work in the Ministry. We believe capturing this is important as there likely will be variation in uptake of what individuals learn as it is our understanding that not all the countries in the region have yet fully embraced the use of scientific risk-based techniques. Further some of these countries might not have the needed regulatory legal infrastructure yet in place backing the use of these science-based approaches which prevents them from applying the new knowledge immediately. Breaking down stages into measurable “building-blocks” such as learning, developing a better awareness of what needs to be done, obtaining the buy-in of the Ministries to implement new science-based analysis to inform changes in regulations, having the funds to collect data and to implement risk-based practices, and measuring the associated impacts creates a way for evaluators to link capacity building activities to farther-reaching outcomes. Embracing this concept that a “Chain of Impacts” depicted in the figure below for illustrative purposes needs to occur (Figure 8). This project, given the relative short period it covers, will mainly focus on immediate, short-term, and medium-term outcomes and the types of indicators needed to evaluate those.



**Figure 8. Example of the "Chain of Impact" concept.**

## 19. Dissemination of the projects results

The results, experiences and lessons learnt from the project will be published and widely disseminated in different media including print/web (e.g. leaflets, blogs, news articles in the pilot countries, FAO, PAHO, STDF, U of MN websites, etc.), as well as outreach at relevant regional and global events (CCLAC, Codex, GFSI, Government websites, etc.). Feedback

and experiences will be shared at meetings in the participant countries. Provisions have been made in the budget for publicity and visibility of project activities and achievements, including the preparation of reports and wider dissemination of the project's interventions.

A comprehensive visibility and communication plan for the project will be developed during the inception phase to acknowledge the actions to be carried out by the STDF funding, to avoid overlapping and create synergy between countries involved in similar initiatives.

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## **ATTACHMENTS**

**Appendix 1:** Logical framework (see attached template)

**Appendix 2:** Work Plan (see attached template)

**Appendix 3:** Project Budget in Excel (see attached template)

**Appendix 4:** Letters of support from organizations that support the project request

**Appendix 5:** Written consent from an STDF partner that agrees to implement the project **OR** evidence of the technical and professional capacity of another organization proposed to implement the project.

**Appendix 6:** Terms of Reference for key staff involved in project implementation

**Terms of Reference** (TORs) for key national/international experts to be involved in implementation of activities included in the work plan. The TORs should include information on specific tasks and responsibilities, duration of assignments, number of missions (if appropriate), and required qualifications/experience (Appendix 6). See Qn. 15 (n) of the Guidance Note.

## APPENDIX 1: Logical Framework<sup>34</sup>

	Indicator	Source of verification	Assumptions and Risks
<b>Goal: National food safety competent authorities of the Latin American region improve their capacities for science-based decisions, thereby furthering the adoption and harmonization of risk analysis principles to contribute to safe trade in domestic and international (regional) markets.</b>			
Immediate objective 1 / Outcome 1: Increased awareness of FSRA in Latin American Countries	<p>Number of countries that have participated in the project</p> <p>Number of roadmaps develop by the participating countries</p> <p>Number of case studies elaborated by the country participants</p>	<p>Letter of interest signed by the participating countries</p> <p>Roadmaps</p> <p>Case studies presented at the end of the training program</p>	<p><b>Assumptions</b></p> <p>National food safety competent authorities commit to food safety risk analysis improvements</p> <p>The food safety risk analysis environment is enabled</p> <p><b>Risks</b></p> <p>Natural disasters, epidemics or other external factors change government priorities</p> <p>Political changes, unrest or changes in relations between countries can delay or affect project's implementation</p> <p>Loss of key staff from government that contribute actively to project implementation</p>

<sup>34</sup> See the CIDD Handbook on Project Identification, Formulation and Design, available on the STDF website, for guidance on the preparation of logical frameworks.

Output 1.1. The FSRisk network, with the introduction of Latin American risk analysis focal points, strengthened	Number of Risk analysis professionals in Latin America	Designated focal points for this project Attendance to FSRisk network meetings	National food safety competent authorities designate participants for this project
Key Activities	Activity 1.1.1: Inception workshop: Two-day regional conference on the implementation of a risk analysis framework for Latin America		
	Activity 1.1.2: One day back-to-back physical meeting of the Food Safety Risk Network (FSRisk Network)		
	Activity 1.1.3: Development of the ToRs and competencies for food safety risk analysis in collaboration with participating countries.		
Output 1.2. Risk Analysis environment of national food control systems assessed	Number of Countries that have assessed their national food safety control systems for an enabling risk analysis environment	Assessments conducted	<b>Assumption</b> Countries have agreed to an assessment of their national food safety control system within the risk analysis environment.
Key Activities	Activity 1.2.1: Virtual training on the FAO/WHO Food Control System Assessment Tool. Emphasis on Dimensions B and D.		
	Activity 1.2.2: Application of Dimensions B and D of the FAO/WHO Food Control System Assessment Tool to determine risk analysis needs, strengths and weaknesses in participating countries		
	Activity 1.2.3: Validate Country assessment reports by one virtual meeting/country		
Outcome 2: National food safety competent authorities have developed and implemented their risk analysis country roadmaps	Number of roadmaps developed	Country roadmaps	<b>Assumption</b> National food safety competent authorities are interested in developing risk analysis country roadmaps to identify and prioritize country needs and gaps.  <b>Risk</b> Loss of key staff from government that contribute actively to roadmap development.



Output 2.1: Regional virtual trainings on risk analysis principles (inspectors, extension officers, research/testing personnel)	Number of designated national participants	List of participants per training session	<b>Assumption</b> The region has interest in updating risk analysis training
Key Activities	Activity 2.1.1: Refresher on General Principles of Food Hygiene		
	Activity 2.1.2: Refresher virtual training on Risk assessment		
	Activity 2.1.3: Refresher virtual training on Risk management		
	Activity 2.1.4: Refresher virtual training on Risk communication		
Output 2.2: Design and development of country risk analysis roadmaps	Number of countries that have elaborated the risk analysis roadmap	Risk analysis Roadmaps	<b>Assumption</b> Country participants designated by National food safety competent authorities develop risk analysis country roadmaps to identify and prioritize national needs and gaps.  <b>Risk</b> Loss of key staff from government that contribute actively to roadmap development.
Key Activities	Activity 2.2.1: Definition and design of country roadmaps		
	Activity 2.2.2: Country roadmaps developed and validated		
	Activity 2.2.3: Collect in-country lessons learned and evidence on good practices in risk analysis.		
Outcome 3: National food safety competent authorities have gained the skills, knowledge and use of scientific tools and risk assessments to support their food safety decision-making process	Number of public officials trained in risk analysis at the national food safety competent authorities that meet the Risk analysis core competencies  Number of risk analysis case studies	List of participants per training cohort, per country and per national authority  Risk analysis case studies designed and developed by training participants	<b>Assumptions</b> National food safety competent authorities commit to food safety risk analysis improvements that will allow The food safety risk analysis environment is enabled  <b>Risks</b>

	implemented in the countries		<p>Natural disasters, epidemics or other external factors change government priorities</p> <p>Political changes, unrest or changes in relations between countries can delay or affect project's implementation</p> <p>Loss of key staff from government that contribute actively to project implementation</p>
Output 3.1: Development of a hybrid e-learning program in food safety risk analysis	<p>Number of courses, training materials (videos, webinars), case studies developed.</p> <p>Number of training participants per country and national authority</p>	<p>Evaluation of the impact of training</p> <p>Risk analysis case studies designed and developed by training participants</p>	<p><b>Assumption</b> Hybrid e-learning program in food safety risk analysis has been completed by country participants.</p> <p>National food safety competent authorities prioritize food safety risk analysis training.</p>
Key Activities	Activity 3.1.1: Preparation and design of a hybrid e-learning program in food safety risk analysis		
	Activity 3.1.2: Launch of the hybrid e-learning program		
	Activity 3.1.3: Mentoring and technical guidance during in-country implementation of the risk analysis case studies		
	Activity 3.1.4: Evaluation of impact of training in participating countries		
Output 3.2: Development of technical guides and risk assessment tools to progress national and/or regional risk assessment and risk-based inspection schemes	<p>Training materials developed</p> <p>Number of technical guidance manuals published</p>	<p>A list of training materials, guidance manuals and risk assessment tools are developed and used in the training program.</p>	<p><b>Assumption</b> Training materials, guidance manuals and risk assessment tools will be used by national food safety competent authorities and other stakeholders.</p>

	Number of user-friendly automated spreadsheets developed for risk assessment		
Key Activities	Activity 3.2.1: Development of technical guidance manuals		
	Activity 3.2.2: Induction training to use the Spanish version of the FDA-IRISK tool		
	Activity 3.2.3: Development of risk assessment tools as user-friendly automated spreadsheets		
Outcome 4: The Latin American region has strengthened a network of food safety risk analysis experts to enhance risk communication, collaboration and knowledge management and expertise sharing	Identify risk analysis experts in the region and invite them to participate in the FSRisk network	Database of Risk analysis experts	<p><b>Assumption</b></p> <p>Latin American experts in the different components of food safety risk analysis are interested in participating in the FSRisk network to share, collaborate or discuss regional, subregional or national food safety risk analysis issues.</p> <p><b>Risk</b></p> <p>Political changes, unrest or changes in relations between countries can delay or affect participation of experts.</p>
Output 4.1: Operationalization of the Food Safety Risk Analysis Network	Define the operational procedure of FSRisk Network	Report of the workshop to validate and approve operational procedures of the FSRisk network with the presence of Latin American experts	<p><b>Assumption</b></p> <p>Latin American experts participating in the FSRisk network agree on the operational procedures of the FSRisk network</p>
Key Activities	Activity 4.1.1: Create a database of risk analysis experts in the region		
	Activity 4.1.2: Organize and Operationalize the FSRisk Network on a regular basis		

	Activity 4.1.3: Develop a visibility plan for the project under the FSRisk Network (RA Community)		
	Activity 4.1.4: Workshop (hybrid) to validate and approve operational procedures of the FSRisk Network		
Outcome 5: Establish Public-Private Partnerships for future program sustainability	Number of meetings with strategic partners	Meeting minutes and progress reports.	Lack of interest in Risk analysis training from strategic partners
Output 5.1: A sustainability plan to secure the continuity of the FSRisk network and the training program	Number of meeting with strategic partners (national and international)	The sustainability plan (document)	Lack of political commitment for Food safety Risk analysis Issues
Key Activities	Activity 5.1.1: Virtual meetings with producer associations, private sector, and food safety third-party schemes		
	Activity 5.1.2 Virtual and in-person meetings with Latin American Universities		

## APPENDIX 2: Work Plan<sup>35</sup>

	YEAR 1				YEAR 2				YEAR 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Initial Project implementation arrangements												
<b>Outcome 1: Increase awareness of FSRA in Latin American Countries</b>												
<b><i>Output 1.1. The FSRisk network, with the introduction of Latin American risk analysis focal points, strengthened</i></b>												
Activity 1.1.1: Inception workshop: Two-day regional conference on the implementation of a risk-analysis framework for Latin America												
Activity 1.1.2: One day back-to-back physical meeting of the Food Safety Risk Network (FSRisk Network)												
Activity 1.1.3: Development of the ToRs and competencies for food safety risk analysis in collaboration with participating countries.												

<sup>35</sup> Please shade or otherwise indicate when the activity will take place.

[illegible]









[illegible]

### APPENDIX 3: Budget (US\$)<sup>36</sup>

	Unit (No. days per country)	Responsible	STDF	In-kind FAO	In-kind OPS	In-kind UoMN
<b>Outcome 1: Increase awareness of FSRA in Latin American Countries</b>						
<b>Output 1.1. The FSRisk network is strengthened with the introduction of Latin American risk analysis focal points</b>						
Activity 1.1.1: Inception workshop: Two-day regional conference on the implementation of a risk-analysis framework for Latin America and back-to-back physical meeting.	15 country representatives x (250\$DSA x 3 days workshop) x 1500\$ (flight) Venue: 5000\$ Logistics: 2000\$	FAO, PAHO	<b>\$40.750</b>	<b>\$3.000</b>	<b>\$3.000</b>	
Activity 1.1.2: One day back-to-back physical meeting of the Food Safety Risk Network (FSRisk Network)	7 Food Safety Risk Analysis experts x (250\$ DSA x 1 day workshop) x 1500\$ (flight)	FAO, PAHO and U of MN	<b>\$12.250</b>	<b>\$2.000</b>	<b>\$2.000</b>	
Activity 1.1.3 Development of competencies for food safety risk analysis in collaboration with participating countries.	30 days x 200\$ honorarium		<b>\$6.000</b>	<b>\$5.000</b>	<b>\$5.000</b>	
<b>Output 1.2. Risk Analysis environment of national food control systems assessed</b>						

<sup>36</sup> Use the headings in the budget table above as a basis to prepare a budget table in Excel.



Activity 2.2.1: Definition and design of country roadmaps		FAO and PAHO, U of MN and beneficiary countries		\$10.000	\$10.000	
Activity 2.2.2: Country implementation roadmaps developed and validated	Seed funds to implement the roadmaps		\$64.000	\$10.000	\$10.000	
	8 countries x 8000\$					
Activity 2.2.3: Collect in-country lessons learned and evidence on good practices in risk analysis.				\$10.000	\$10.000	
<i>Subtotal</i>			<i>\$88.000</i>	<i>\$30.000</i>	<i>\$30.000</i>	
	<b>Outcome 3: National food safety competent authorities have gained the skills, knowledge and scientific tools to support their food safety decision-making process</b>					
	<b>Output 3.1: Development of a hybrid e-learning program in food safety risk analysis</b>					
Activity 3.1.1: Preparation and design of a hybrid e-learning program in food safety risk analysis	8 experts to develop training content: 8 experts x 5 days x 300\$	FAO, PAHO and U of MN	\$12.000			
	2 e-learning specialists to develop the training program in CANVAS (50 days x 2 x 200\$ x 3 years)	U of MN	\$60.000			\$15.000

	Training program coordinator (35 days x 300\$ x 3 years)		<b>\$31.500</b>			
Activity 3.1.2: Launch the hybrid e-learning program	8 experts to teach the courses x 5 days x 300\$ x 2 cohorts	FAO, PAHO and U of MN	<b>\$24.000</b>			
Activity 3.1.3: Mentoring and technical guidance during in-country implementation of the risk analysis case-studies	10 mentors x 2 days x 150\$x 2 cohorts	FAO, PAHO and U of MN	<b>\$6.000</b>			
	2 cohorts of training participants: (10 participants x 250\$ DSA x 5 días + 1500\$ (flight) x 2 + (10 national participants x 100\$ DSA) x 2 =57.000\$		<b>\$71.000</b>	<b>\$10,000</b>	<b>\$10,000</b>	
	Venue: 5000\$ x2 = 10,000\$ Logistics: 2000\$ x 2 =4,000\$					
Activity 3.1.4. Evaluation of the impact of the training program	1 training impact expert (80 days x \$300)	FAO, PAHO and U of MD	<b>\$24.000</b>	<b>\$10.000</b>	<b>\$10.000</b>	
	Translation of evaluation impact report into Spanish		<b>\$5.000</b>			
<b>Subtotal</b>			<b>\$233.500</b>	<b>\$20.000</b>	<b>\$20.000</b>	<b>\$15.000</b>

	<b>Output 3.2: Development of technical guides and risk assessment tools to develop national and/or regional risk assessment and risk-based inspection schemes</b>					
Activity 3.2.1: Development of technical manuals	8 food safety risk analysis experts to develop the technical manuals: 8 experts x 10 days x 300\$.	FAO, PAHO and U of MN	<b>\$24.000</b>	<b>\$15,000</b>	<b>\$15,000</b>	
	Translation of technical guidance manuals (4 manuals x \$2000)	Hire a translator	<b>\$8.000</b>			
	Design and diagram technical guidance manuals (4 manuals x \$1000)		<b>\$4.000</b>			
	Technical manuals reviewer (30 days x 300\$ x 2years)	U of MN	<b>\$18.000</b>			
Activity 3.2.2.: Induction training to use the FDA-IRISK tool in Spanish	Translation of FDA-IRISK into Spanish (hire a company to translate the tool)	External translator	<b>\$5.000</b>			
Activity 3.2.3. Development of risk assessment tools	Contract a Microsoft Excel expert to develop spreadsheet tools (60 days x150\$= \$9.000)	Hire an external expert	<b>\$9.000</b>			
	Technical risk assessment tools reviewer (15 days x 300\$ x 2 years)	U of MN	<b>\$9.000</b>			

	Contract 10 experts to develop the content of the risk assessment tools 5 days x 300\$ = \$15.000	FAO, PAHO and U of MN	\$15.000			
<b>Subtotal</b>			<b>\$92.000</b>	<b>\$15.000</b>	<b>\$15.000</b>	
	<b>Outcome 4: Latin America region has developed a network of food safety risk analysis experts to enhance risk communication, collaboration, and knowledge sharing</b>					
	<b>Output 4.1. Operationalization of the Food Safety Risk Analysis Network</b>					
Activity 4.1.1 Create a database of risk analysis experts in the region. (call of interest)				<b>\$5.000</b>	<b>\$5.000</b>	
Activity 4.1.2: Organize and operationalize the FSRisk Network	Contract a community manager 3y x 40 days x 180\$= 21.600\$		<b>\$21.600</b>	<b>\$10.000</b>	<b>\$10.000</b>	
Activity 4.1.3: Develop a visibility plan for the project under the FSRisk Network (RA Community).	Contract a communications specialist to develop a project visibility plan under the FSRisk Network 10days x 200\$ honorarium		<b>2.000</b>			
	Communication and education materials to improve awareness and visibility of Food Safety Risk Analysis. 3y x 5000\$		<b>\$15.000</b>			
Activity 4.1.4: Workshop (hybrid) to validate and approve operational procedures of the FSRisk network	10 Food Safety Risk Analysis experts x (250\$ DSA x 1 day workshop) x 1500\$ (flight)		<b>\$17.500</b>	<b>\$5.000</b>	<b>\$5.000</b>	



<b>Subtotal</b>				<b>\$56.100</b>	<b>\$20.000</b>	<b>\$20.000</b>	
	<b>Outcome 5: Explore and establish Public-Private-Partnerships for future program sustainability</b>						
	<b>Output 5.1. A sustainability plan to secure the continuity of the FSRisk network and the training program</b>						
Activity 5.1.1: Virtual and in-person meetings with producer associations, private sector, and food safety third-parties		Travel costs to join strategic meetings with partners (2person x (3 days x 250\$ DSA) + 2x 1500\$ flight) x 2years	FAO, PAHO	<b>\$9.000</b>	<b>\$10.000</b>	<b>\$10.000</b>	
Activity 5.1.2 Virtual and in-person meetings with Latin American Universities		Program sustainability 20 days x 300\$x 3 years =\$18000	U of MN	<b>\$18.000</b>	<b>\$10.000</b>	<b>\$10.000</b>	
<b>Subtotal</b>				<b>\$27.000</b>	<b>\$20.000</b>	<b>\$20.000</b>	
<b>Project Management</b>							
Personnal Costs							
Operational Project Coordinator -FAO (part-time)		Project field coordinator \$214 X11X 11 x 3 years) = \$77.682		<b>\$77.682</b>			
Project assistant-FAO		75\$x10days x11months x3years = \$24.750		<b>\$24.750</b>			
M&E Specialist-FAO		200\$ x 5days x 6months x 3years = \$18,000		<b>\$18.000</b>			

Technical assistant-FAO	Technical assistant (150\$ x 10 x11 x 2 years) = \$33.000,00		<b>\$33.000</b>			
Technical assistant-PAHO	Technical assitant (150\$ x 10 x11 x 2 years) = \$33.000,00		<b>\$33.000</b>			
Project assistant-PAHO	75x10x11x3 = \$24.750		<b>\$24.750</b>			
Technical assistant-U of MN	Technical assitant (150\$ x 10 x11 x 2 years) = \$33.000,00		<b>\$33.000</b>			
External Evaluator	External Evaluation (60days x 250\$)	-	<b>\$15.000</b>			
Closing project meeting	20 country representatives + experts x (250\$DSA x 3 days workshop) x 1500\$ (flight) Venue: 5000\$ Logistics: 2000\$		<b>\$45.000</b>			
<b>Subtotal</b>			<b>\$304.182</b>			
<b>Project Total</b>			<b>\$883.782</b>	<b>\$130.000</b>	<b>\$130.000</b>	<b>\$15.000</b>
<b>FAO Indirect Costs</b>	<b>13%</b>		<b>\$144,891.66</b>			
<b>TOTAL</b>			<b>\$998.673,66</b>			