VIETNAM FOOD SAFETY RISK ASSESSMENT
GAP ANALYSIS REPORT

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About the project

Funded by Global Affairs Canada, our project seeks to enhance the Vietnamese people (Ha Noi & Ho Chi Minh city) access to safe and competitive agri-food products, with an aim to improve the well-being of consumers as well as other agri-food actors. SAFEGRO project is implemented by Alinea International in partnership with the University of Guelph.

Food safety is a major public health concern. Many people do not trust food safety enforcement at informal markets where they buy most of their food. Trade for Vietnam's commodity exports also suffers due to a lack of compliance with international standards.

SAFEGRO project works with national and municipal governments to modernize food safety capacity among regulators, thousands of smallholder farmers, cooperatives, processors, retailers and consumers along specific meat and vegetables value chains in Ha Noi and Ho Chi Minh city. SAFEGRO supports Vietnam's Ministry of Agriculture and Rural Development, Ministry of Health and Ministry of Industry and Trade jointly.

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LIST OF ACRONYMS

AAFC	Agriculture and Agri-food Canada
ACFS	Bureau of Agricultural Commodity and Food Standards (Thailand)
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AHD	Animal Health Department (MARD)
ALVA	Luxembourg Veterinary and Food Administration
AMR	Anti-microbial resistance
APEC	Asia Pacific Economic Cooperation
AQSIQ	General Administration of Quality Supervision, Inspection and Quarantine (China)
ASEAN	Association of Southeast Asian Nations
AWP	Annual Work Plan
BRC	Global Standard for Food Safety
CBT	Competency Based Training
CC	Climate Change
CD	Capacity Development
CDC	Centre for Disease Control (USA)
CEA	Canadian Executing Agency
CFDA	China Food and Drug Administration
CFIA	Canadian Food Inspection Agency
CFSA	China National Food Safety Risk Assessment
CSA	Climate Smart Agriculture
CSO	Civil Society Organizations
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DFS	Department of Food Safety
DLP	Department of Livestock Production
DOIT	Department of Industry and Trade
EC	European Commission
EFSA	European Food Safety Authority
EPA	Environmental Protection Agency (USA)
EU	European Union
FAO	Food and Agriculture Organization
FCSA	Food Control System Assessment Tool (FAO/WHO)
FDA	Food and Drug Administration (US)
FIRI	Food Industry Research Institute (MOIT)
FS	Food Safety
FSIS	Food Safety Inspection Services (USDA)
FSL	Food Safety Law
FSMA	Food Safety Management Authority (Vietnam)

FSMA	Food Safety Modernization Act (USA)
FSMB	Food Safety Management Board
FSRM	Food Safety Risk Management
FSSC	Food Safety Systems Certification
FSTWG	Food Safety Technical Working Group
GAC	Global Affairs Canada
GAP	Good Agricultural Practices
GACC	General Administration of Customs China
GBVCAs	Gender-Based Value Chain Assessments
GFSI	Global Food Safety Index
GFSI	Global Food Safety Initiative
GoC	Government of Canada
GoV	Government of Vietnam
HACCP	Hazard Analysis Critical Control Points
HC	Health Canada
HCMC	Ho Chi Minh City
HFPC	Health and Family Planning Commission (China)
HR	Human Resources
ICD	International Cooperation Department (MARD)
IFS	International Food Standard
ISO	International Standards Organization
IPPC	International Plant Protection Convention
IPSARD	Institute of Policy and Strategy for Agriculture and Rural Development
KFDS	Korean Ministry of Food and Drug Safety
LIMS	Laboratory Information Management System
LPD	Livestock Production Department (MARD)
MARA	Ministry of Agriculture and Rural Affairs (China)
MARD	Ministry of Agriculture and Rural Development
MFSA	Mauritius Food Standards Agency
MOA	Ministry of Agriculture (China)
MOC	Ministry of Cooperatives (Thailand)
MOF	Ministry of Finance
MOH	Ministry of Health
MOIT	Ministry of Industry and Trade
MOPH	Ministry of Public Health (Thailand)
MOST	Ministry of Science and Technology
MOU	Memorandum of Understanding
MRL	Maximum Residue Limit
NAEC	National Agriculture Extension Centre
NAFIQPM	National Agro-Forestry-Fisheries Quality Product Management
NGO	Non-Governmental Organization

ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs (Canada)
OOG	Office of the Government
PHAC	Public Health Agency of Canada
PPD	Plant Protection Department (MARD)
PSC	Project Steering Committee
PPC	Provincial People's Committee
QCVN	National Technical Regulation
RA	Risk Assessment
RASFF	Rapid Alert System for Food and Feed (EU)
RETAQ	Reference Testing and Agrifood Quality Consultancy Center
RM	Risk Management
SAFEGRO	Safe Food for Growth Project
SAIC	State Administration of Industry and Commerce (China)
SAMR	State Administration of Market Regulation (China)
SFDA	State Food and Drug Administration (China)
SFCA	Safe Food for Canadians Act
SFCR	Safe Food for Canadians Regulations
SME	Small and Medium Enterprise
SPS	Sanitary and Phytosanitary
TA	Technical Assistance
TCVN	National Standard
ToT	Training of Trainers
TPR	Trade Policy Review
UoG	University of Guelph
UK	United Kingdom
UN	United Nations
USDA	United States Department of Agriculture
VC	Value Chain
VFA	Vietnam Food Administration
VFIORP	Vietnam Foodborne Illness Outbreak Response Protocol
VietGAP	Vietnamese Good Agricultural Practices
VNCC	Vietnam National Codex Committee
VND	Vietnamese Dong
WB	World Bank
WGs	Working Groups
WHO	World Health Organization
WOAH	World Organization for Animal Health (former OIE)
WTO	World Trade Organization

1 EXECUTIVE SUMMARY

The "Working Principles for Risk Analysis for Food Safety for Application by Governments" first published by Codex Alimentarius Commission in 2007 (CAC/GL 62-2007) stated that the overall objective of risk analysis is to ensure human health protection. Risk analysis should be established as an integral component of a national food safety system, and follow a structured approach comprising the three distinct but closely linked components of risk analysis (risk assessment, risk management, and risk communication) as defined by the Codex Alimentarius Commission. The three components of risk analysis should be applied within an overarching framework for management of food related risks to human health (CAC/GL 62-2007).

The SAFEGRO project has a mandate to support the Government of Vietnam to develop a risk-based food safety control system aligned with international principles including the adoption of a new food safety law. Robust approaches to food safety risk assessment (FSRA) are the foundation of risk analysis and a risk-based system, including methodologies and human resource capacity to carry them out. While there are a number of very capable risk assessors in Vietnam, the overall approach to risk assessment requires a coordinated system of senior "risk managers" as decision-makers from each of the key ministries responsible for food safety; preferably under a unified approach to annual risk assessments which would guide targeted food safety risk management and risk communication. Inter-ministerial collaboration on food safety risk assessments under a unified FSRA resource center utilizing nationally mandated FSRA protocols and methodologies is strongly recommended.

Several attempts have been made to establish centralized food safety risk assessment resources among donors and government ministries, supported by decrees and decisions but have yet to be formulated under such an entity. Food safety risk assessment gap analyses, recommendations and reports have been prepared in support of formalizing risk assessment networks, centers and commissions but such entities have yet to be fully established and operationalized. There is a need for a nationally recognized food safety risk assessment resource center, virtual or otherwise.

This gap analysis was undertaken by a team of national and international experts incorporating conclusions and recommendations from a number of recent studies and reports by international donors and organizations with counterpart Government of Vietnam organizations. In addition, the SAFEGRO project funded related study tours to both China and Canada, the feedback from which has been referenced in this gap analysis.

There is a need to establish a comprehensive program for food safety risk assessment (FSRA) capacity building, aligned with international standards which provides in-depth in-service training and updating for designated, highly skilled "risk assessors", but which is also imbedded in undergraduate and graduate level university curricula. In addition, there is a need for awareness raising and comprehensive risk analysis training which includes fundamental approach to robust risk assessment which supports

impactful risk management and risk communication. The SAFEGRO project is committed to this level of capacity building.

Japan (JICA) is also supporting food safety risk assessment capacity building under a concurrent project at MARD/RETAQ. SAFEGRO support will be coordinated with these investments to ensure value-for-money, to avoid redundancy and duplication.

The FSRA gap analysis team has made strong recommendations for a FSRA capacity development program to raise the profile of the “Risk Managers” as senior decision-makers in each of the respective ministries to support collaboration in an annual FSRA prioritization workshop, provide leadership in undertaking the designated food safety risk assessments, and providing the necessary cost-sharing budget and staff resources assigned to undertake the work. The risk managers are expected to have the responsibility, authority, accountability and budget to provide oversight and support the proposed food safety risk assessment work.

SAFEGRO will support the food safety risk assessment capacity building with the expectation that the capacity development (CD) will be imbedded in a designated national center to ensure that the resources become sustainable and internationally recognized. The gap analysis provides recommendations on the components of such a CD program in Section 6.

2 BACKGROUND

The "Working Principles for Risk Analysis for Food Safety for Application by Governments", first published by the Codex Alimentarius Commission in 2007 (CAC/GL 62-2007) stated that the overall objective of risk analysis is to ensure human health protection. Risk analysis should be established as an integral component of a national food safety system, and follow a structured approach comprising the three distinct but closely linked components of risk analysis (risk assessment, risk management, and risk communication) as defined by the Codex Alimentarius Commission. The three components of risk analysis should be applied within an overarching framework for management of food-related risks to human health (CAC/GL 62-2007).

Among the three components of the food safety risk analysis framework, ***risk assessment*** is defined as a structured scientific process for estimating the probability and severity of risk with attendant uncertainty, to characterize the potential hazards and the associated risks to a healthy life resulting from exposure to biological, chemical, or physical hazards in food (Food and Agriculture Organization/World Health Organization, 2006, 2009). Allergens and antimicrobial resistance (AMR) can be added to this list of hazards. Risk assessment results provide the essential scientific basis for "Risk Managers" to make risk management decisions, including policy, legislation and standards (Food and Agriculture Organization/World Health Organization, 1995, 2006, 2008) and develop risk communication strategies. Implementation of risk management decisions at the national level should be supported by an adequately functioning food control system. Quantitative and qualitative risk assessment results are useful for establishing priorities for monitoring and management, evaluating the effectiveness of risk management measures and providing scientific information for risk communication (Food and Agriculture Organization/World Health Organization, 1997, 1998, 2008).

Food safety "Risk Managers" and policymakers charged with protecting public health and safety are working in an ever more complex world. They must make sound choices to address public health risks, while taking into account socio-economic implications, political impacts, and stakeholder perspectives, but often under media scrutiny. Faced with this complexity, risk managers and policymakers can be aided by structured methods that are based on multiple evidence-based decision factors (FAO, 2017).

This gap analysis is intended to focus specifically on the "**risk assessment**" component of food safety risk analysis and to provide recommendations on capacity building to be supported by SAFEGRO or other donors and sustainably incorporated into ongoing institutional and government programming. The gap analysis will provide a roadmap for improvements to risk assessments in Vietnam aligned with international best practices.

The SAFEGRO project is a Canadian TA funded Project for improvement of the food safety management system of Vietnam. Key partners on this project include the Ministry of Agriculture Rural Development (MARD), the Ministry of Industry and Trade (MOIT), the Ministry of Health (MOH), the Canadian Food Inspection Agency (CFIA), and other Vietnamese Academic Institutes. The objective of the project is to

improve the performance of central and local governments in "jointly" enforcing food safety regulations; increase the competitiveness of Vietnamese agricultural products domestically and internationally; and increasing consumer demand for safe agricultural products in Vietnam. The 5-year project (2020-2025) will work across the entire agro-food value chain by engaging and enhancing the capacities of three key target groups: the public sector (facilitation), the private sector (supply side) and consumers (demand side). Inter-ministerial risk assessment collaboration on food safety risk assessments is critical for success.

In partnership with the University of Guelph (Canada), Alinea International is the Project Implementation Agency that will work with national and regional governments to improve food safety regulations, private sector suppliers to increase the competitiveness of Vietnamese food products domestically and internationally, and consumers to improve demand for safe food in Vietnam.

This gap analysis is not the first effort to clarify the food safety risk assessment capacity building needs in Vietnam but is intended to support alignment of the multiple recommendations that have evolved from the following reports and journal articles among other references:

- ✓ World Bank report on Food Safety Challenges and Opportunities in Vietnam - 2017
- ✓ Ministry of Health Technical working group deliberations/workshop on Food Safety Risk Assessments gaps and recommendations- report
- ✓ International Livestock Research Centre (ILRI) reports and journal publication on food safety RA task force: Nguyen-Viet Hung, Grace D, Tran Thi Tuyet-Hanh, Pham Duc Phuc, Tanner M. 2013. Risk assessment for food safety in Vietnam. Evidence for Policy Series, Regional edition Southeast Asia, No. 5, ed. Thammarat Koottatep. Pathumthani, Thailand: NCCR North-South
- ✓ World Bank/Australia/MARD - "Improving Food Safety Risk Assessment in Vietnam" (2022)
- ✓ SAFEGRO Food Safety Policy Review for Vietnam (2023)
- ✓ WHO/FAO RA Guidelines for Food Safety Risk Assessment

3 RISK ANALYSIS IN VIETNAM

3.1 Introduction

As per CODEX (2013), *risk analysis is a process which follows a structured approach comprising three distinct but closely linked components, namely, risk assessment, risk management, and risk communication, each component being integral to overall risk analysis and playing an essential and complementary role in the risk analysis process.* The overall objective of risk analysis applied to food safety is to ensure the protection of human health.

Risk analysis should be based on all available scientific evidence, information on perceptions, costs, environmental, cultural factors, consumption, and other information which is gathered and analyzed according to scientific principles. It should always be open and transparent and must be documented according to the principles of a quality management system to preserve confidentiality and accessibility to all interested parties within the framework for management of food related risks to human health. Effective communication and consultation with all interested parties should be ensured throughout the risk analysis process. Precaution is an inherent part of risk analysis. Many sources of uncertainty exist in the process of risk assessment and risk management of food related hazards to human health. The degree of uncertainty and variability in available scientific information should be explicitly considered in risk analysis and the underlying risk assessments. Specific needs and unique situations of developing countries should be identified and considered by the responsible bodies in different stages of risk analysis. National governments should also use guidance and information available within the Codex Alimentarius Commission (CAC), the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and other relevant international intergovernmental organizations, including the World Organization for Animal Health [formerly Office International des Epizooties (OIE)] and the International Plant Protection Convention (IPPC) [14].

Risk analysis is just one part of an effective food safety control system. It will also be essential to develop and improve other components of the risk-based system including food safety policies, food legislation (food law, regulations, standards, technical guidance), food inspection, laboratory analysis, epidemiological surveillance of foodborne diseases, monitoring systems for chemical and microbiological contamination in foods, and information, education, and communication. Use of a science-based approach shall enable governments to develop and implement a range of general improvements and interventions tailored to specific high-risk areas and be recognized internationally and by trading partners [14].

The Codex standard CAC/GL 30-1999 (1999; amended 2012, 2014) provides the following definitions:

Risk Assessment (RA): A scientifically based process consisting of the following steps: (i) hazard identification, (ii) hazard characterization, (iii) exposure assessment, and (iv) risk characterization. More recently, EUFSA has formally adopted a preliminary RA step of “problem formulation”, a systematic approach to defining the questions that must be answered, ensuring that they are scientifically

answerable, and have a clear objective that will provide guidance for development of protocols, with answerable questions to guide the scientific assessment.

Risk Management: The process, distinct from risk assessment, of weighing policy alternatives, in consultation with all interested parties, considering risk assessment and other factors relevant for protecting the health of consumers, for the promotion of fair-trade practices, and, if needed, selecting appropriate prevention and control options.

Risk Communication: The interactive exchange of information and opinions throughout the risk analysis process concerning risks, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, processors, retailers, producers, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions.

Risk assessment is considered to be the "science-based" component of risk analysis, while risk management is the process of weighing policy alternatives, in consultation with all interested parties, considering risk assessment and other factors relevant for consumers' health, for promotion of fair-trade practices and for selecting appropriate prevention or control options, and monitoring measures. The management of food-related risks involves balancing the recommendations formulated by experts and resources of all types that social and commercial groups and manufacturers can allocate for dealing with these risks (CAC, 2013).

"Risk manager": Risk managers, as senior decision-makers or policymakers, have the responsibility to oversee the entire food safety risk analysis process with the legislative authority, accountability, and requisite budget to determine national priorities for food safety hazards and directing the work that needs to be done to mitigate these risks starting with robust evidence-based risk assessments. In Vietnam this risk manager responsibility is distributed among the three key ministries involved in food safety but lacks sufficient enforcement of legislative authority, budget and direction to operationalize a robust national food safety risk assessment system.

Vietnam Food Safety Risk Analysis Regulatory Framework

Under the Food Safety Law (FSL) No. 55/2010/QH12, promulgated in 2010, Article 3 states that food safety management must be conducted throughout the food production chain and be based on food safety risk assessment as one of the six principles of food safety management. The Article 49 of the FSL directs the analysis of food safety risks, including foods with high rates of poisoning; foods with samples taken for surveillance showing a high rate of violation of technical regulations on food safety; food production or trading environment or establishments which are suspected of causing pollution; foods or food production or trading establishments which are subject to risk management requirements.

Article 50 of the FSL regulates components of food safety risk analysis as follows:

(1) Assessment of food safety risks covers:

- ✓ Investigating and testing to identify microbiological, chemical and physical hazards in food;

- ✓ Identifying risks of health hazards to food safety, extent their impacts on the community health.

(2). Management of food safety risks covers:

- ✓ Implementing solutions to limiting food safety risks in each stage of the food supply chain;
- ✓ Controlling and coordinating to limit food safety risks in providing catering services and other food production or trading activities.

(3). Communication on food safety risks covers:

- ✓ Providing information on preventive measures in cases of food poisoning or unsafe food-borne practices to raise public awareness about and responsibility for food safety risks;
- ✓ Notifying or forecasting food safety risks; building an information system for warning about food safety risks and food-borne diseases.

The Article 51 of the FSL assigns that the Ministry of Health (MOH), the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Industry and Trade (MOIT) shall analyze food safety risks in their assigned management domains under Articles 49 and 50 of this Law. MARD has promulgated Circular No. 02/2013/TT-BNNPTNT dated January 05, 2013 which assigns central management agencies responsible for food safety risk analysis as follows:

(1) National Agro-Forestry-Fisheries Quality Product Management (NAFIQPM, formerly NAFIQAD) shall be responsible for carrying out food safety risk analysis of Agro - Forestry – Fishery and salt products; it is also a contact point in charge of food safety risk analysis of the MARD.
(2) Plant Protection Department (PPD) under MARD shall be responsible for carrying out food safety risk analysis of plants and food from plant products.
(3) Department of Animal Health (DAH) shall be responsible for carrying out food safety risk analysis of animals and food from terrestrial animal products.

This Circular also stipulates collaborating agencies on risk analysis:

(1) Departments of Agriculture and Rural Development of provinces.
(2) Research institutes, universities, laboratories in related fields.
(3) Professional associations and consumer associations.
(4) Food establishments
(5) Relevant organizations, individuals.

At this stage, very few if any of the activities have been undertaken as designated in the Circular. Risk analysis has been added into Decisions regulating functions, responsibilities and organizational structure of the NAFIQMP, the PPD and the DAH.

The FSL provisions for food safety risk analysis are quite general and not fully in line with the guidance from Codex Alimentarius Commission (CAC), Food and Agriculture Organization (FAO) and World Health Organization (WHO), especially the roles and functions of three components and the functional separation of risk assessment from risk management, in order to ensure the scientific integrity of the risk

assessment, to avoid confusion over the functions to be performed by risk assessors and risk managers, and to reduce any conflict of interest.

Article 50 of the FSL defines risk assessment as verification of risks to public health with respect to the presence of physical, chemical, and microbiological factors. Food inspection, as a risk management function, should not be confused with risk assessments and should be aligned with the results of risk assessments. According to the FAO (2019). Inspection activities have focused historically on end-product testing to determine their compliance with regulations, rather than risk-based inspection management. According to the WHO (2019), risk assessment is the scientific evaluation of known or potential adverse health effects resulting from human exposure to food-borne hazards. The principle of independent risk assessment should be based on sound scientific studies to establish good management strategies as the foundation for a risk-based preventative food safety management and inspection system and to move away from tedious and costly end-product testing.

The FSL requires line ministries to set their specific regulations on food safety risk analysis under their respective management systems. MARD issued Circular No. 02/2013/TT-BNNPTNT in 2013, for example, designates risk analysis and food safety management in the agro-forestry-fishery and salt production/trading chain, while MOH and MOIT do not have specific guidance for their portfolio of foodstuffs, resulting in different policies, methods and regulations for commodities under their respective jurisdictions.

3.2 Food safety control system

3.2.1 Risk-based approaches

Foodborne disease is a significant public health issue in Vietnam and food safety risk analysis answers the questions of concern to policymakers and the public. Risk analysis, however, is still not well understood nor effectively applied in the developing world, including Vietnam. The situation is especially urgent in Vietnam’s huge informal market sector, from which most food is supplied, domestically. Developing a risk-based approach to food safety is crucial to improve food safety management in Vietnam and demonstrate for policymakers how robust risk assessments contribute to improved food safety management. The current enabling regulatory environment is supportive for the implementation of risk-based approaches to food safety management but lacks effective oversight and enforcement. The foundational FSL sets forth innovative approaches and principles aligned with international approaches [16] and affirms that organizations and individuals participating in the food chain are obliged to ensure food is safe. The law defines mandatory technical regulations that should be respected by all including procedures of food testing and inspection and food safety risk analysis. Traceability should be applied to monitor distribution, identify unsafe food, support recalls and comply with requirements of the competent authorities.

Vietnam's food safety legislative framework includes other related laws, specifically aligned with the FSL: the Law on Quality of Products and Commodities, the Law on Standards and Technical Regulations, and the Law on Inspection. Other food safety related laws and regulations include the Law on Administrative

Sanction, Law on Fisheries, Law of Veterinary Control, Law of Plant Protection, and the Law on Animal Husbandry.

Under the strategic vision to 2030 the food safety policy document Decision 20/QĐ-TTg dated 04/01/2022 approves the national food safety strategy in the period 2011–2022 with five main objectives:

- ✓ Improve the understanding on food safety of different categories of stakeholders in the food chain (food producers, food processors, consumers, and state officers).
- ✓ Building the capacity for the state's food safety administration (application of ISO standard, a rapid alert system, implementation of risk analysis for all cities with > 2 million inhabitants).
- ✓ Improve the use of standard and certification of food safety (application of HACCP, GMP, GHP, ISO 9001, ISO 22000, and VietGAP).
- ✓ Improve food safety conditions at commercial units (restaurant, collective kitchen, market).
- ✓ Reduce cases of food poisoning with capacity to control along the whole food chain in 2030.

Unfortunately, the proposed food safety risk analysis scenario under this Decision has not yet been fully implemented.

3.2.2. Resources

The food safety tasks are shared among three ministries the MOH, MARD, and MOIT but the ultimate food safety responsibility lies with MOH and its Vietnam Food Administration (VFA). Essentially, food safety control is managed by local or sub-national authorities for which there are 63 People's Committees at the provincial/city level, 678 People's Committees at the district level, and at the ward level in big cities or provinces [16].

Decree 15/2018/ND-CP distributes management competences among the three ministries based on: (1) the stage in the food chain and (2) the category of food. MARD is responsible for controlling the production of raw agricultural products for human consumption. It also follows the first processing operation of fresh products (cleaning, slaughtering, and cutting) and their trading to the wholesale stage. MOIT is responsible for processed foods, and especially the retail sale of all food products (including fresh food) in circulation at traditional markets, supermarkets, and food shops. Finally, MOH is responsible for the food additives and chemical agents used in food processing. It is also in charge of food safety in restaurants, collective kitchens, and canteens. The coordination between the three ministries is realized via a national directive committee on food safety, a policy bureau of policy under Vice Prime-Minister in charge of food safety. The national committee provides policy guidance to assist the Government in decision-making, but the inter-sectoral coordination is minimal with limited exchange of information or resources [16].

Provincial and district agencies have progressively accepted new responsibilities of Vietnam's food safety control as a decentralized inter-sectoral state service mobilized to work together under the People's committee. Directive 13/CT-Ttg on 13 May 2016 reinforces the responsibility of local authorities with the president of the People's Committee responsible for safety issues. There is an inter-sectoral directive

committee, and different control groups operating in each province/city. A (provincial/ city) inter-sectoral directive committee, similar to the central committee, is led by the president of the province. Its members are essentially from the three departments under the three ministries and other public and civil institutions. They continue to receive guidance from their respective ministries, but their day-to-day operations are decided locally. They are further organized at the provincial, district, and commune levels increasing the degree of compliance of stakeholders.

Pilot decentralization programs in three cities (Ho Chi Minh, Danang, and Bac Ninh) created Food Safety Management Authorities (FSMA) as public entities with a higher degree of autonomy to manage food safety than the inter-sectoral directive committee. In January, 2024 the HCMC FSMA transitioned to become the Food Safety Department (FSD) with greater responsibility and authority for oversight of food safety management in HCM.

The decentralized solution is restricted by workforce shortages lacking qualified agents for ensuring controls at every administrative level among the 10,805 rural and urban communes. Rural communes do not have a control group, while many urban communes (wards) work with incomplete teams; the local control group may contain one agent from the MARD, one agent from the MOIT, but no one from the MOH [16].

According to Directive 17-CT/TW dated 21/10/2022 and Decision 426/QĐ-TTg dated 21/04/2023, organizations responsible for food security and food safety must quickly work towards consolidation under a unified single focal point to carry out tasks from the central to local levels; clearly define the functions, tasks and responsibilities of sectors in ensuring food security and safety; implement decentralization, innovate methods of management, administration, coordination, ensuring science, rigor and efficiency; overcome the situation of overlapping and inefficient management of food security and food safety assurance. Enforcement continues to be problematic.

3.2.3 Education and training

Education and training are a very important part of the food safety strategy to consolidate the responsibility of food business operators (FBOs). Training for farmers and FBOs is currently distributed among the key ministries and organized by different public institutions such as NAFIQPM (MARD), VFA (MOH), Food Industry Research Institute (FIRI-MOIT), academic institutions and others. The FSL indicates that successful completion of training is the pre-requisite to obtain the certificate of compliance with food safety conditions for food operators but is optional for farmers and smallholders. The government planned that 100% of the food safety staff and 82% each of the food operators and consumers would be trained by 2020 but a lack of training capacity has retarded the recruitment of food control agents [16] to complete this task. In addition, compliance with these requirements can be met through a self-declaration by the entity of FBO that they are compliant and does not require formal third party or government audits, per se, for validation of verification; not an ideal scenario for verification and validation of food safety compliance.

The World Bank Food Safety Report (2017) promoted training and food safety awareness raising among producers and processors, as well as for government agencies, especially at local levels; consumers food safety awareness raising to be able to understand foodborne hazards and create the demand for hygienic and safe products, sending the appropriate signals to retailers, processors and producers to promote safe food.

3.3 Risk Assessment in Vietnam

3.3.1 Existing Food Safety Risk Assessment Regulatory Framework

3.3.3.1 The Food Safety Law (FSL):

The FSL defines the food safety risk assessment as:

- ✓ Investigating and testing to identify microbiological, chemical and physical agents as food safety hazards;
- ✓ Identifying the risks of food safety hazards, extent and scope of impacts of these hazards on the community health;
- ✓ Under the FSL each line Ministry has established or assigned the tasks to its agencies or units to advise and assist the Ministry in performing food safety risk analysis within its jurisdiction.

In many countries and among international agencies, however, allergens and antimicrobial resistance (AMR) are considered additional food safety hazards for risk assessments.

3.3.3.2 Circulars on risk assessments from line ministries:

According to Circular No. 02/2013/TT-BNNPTNT of MARD (Annex A-1), the line departments (DAH, NAFIQPM, PPD) shall establish a Food Safety Risk Assessment Unit (FSRAU) and Food Safety Risk Assessment Council (FSRAC). Each FSRAC shall be established with participation of many different stakeholders to discuss, consider and decide on overlapping and complex issues. Although the operating regulations of the FSRAC are prescribed, until now MARD has not issued any regulations on FSRAC's operation. Article 10 of the Circular assigns the functions and responsibilities of FSRAU:

1. Establish a database on food safety issues for the food production and value chains at the request of the Management Agency.
2. List hazard-food pairs that need to make a Risk Profile, determine priority order when implementing and report to the FSRAC and the Management Agency.
3. Develop a Risk Profile for the identified hazard-food pair according to the requirements of the Management Agency.
4. Perform a food safety risk assessment and prepare a report for the hazard-food pair that has been identified according to the requirements of the Management Agency.

The corresponding responsibilities of the FSRAC as follows:

1. Propose to the Management Agency on the hazard-food pair to develop a Risk Profile.
2. Review the Risk Profile provided by the FSRAU and propose to the Management Agency: The Hazard - Food pair needs to prepare a Food Safety Risk Assessment Report.

3. Propose to the Management Agency on food safety risk management measures for the Hazard - Food pair that has been developed a Risk Profile or prepare a Food safety risk Assessment Report by the FSRAU.

Specific regulations on risk assessment have not been issued by either MOH or MOIT, but MOH has issued a Decision Memorandum directing the creation of a food safety risk assessment technical working group including all three ministries, which has been created through the National Institute of Food Control (NIFC). In addition, the memo directs the TWG to explore options and make recommendations for the establishment of a national food safety risk assessment center, as described below.

3.3.3.3 Other circulars and regulations

In 2013, the Prime Minister Decision No. 518/QD -TTg approved the Project to building a rapid alert system and food safety risk analysis in Vietnam with MOH as the lead agency to:

1. Conduct food safety risk assessment on 5-10 popular foods with potential hazards annually.
2. Design and implement a Total Diet Study (TDS) for different groups of consumers nationwide.
3. Train all technical food safety risk assessment technical staff in methods, content, and techniques of food safety risk assessment.

MOH Decision 1973/QD-BYT in 2023 (Annex A-2) established a taskforce to assess food safety risks as follows:

1. Research and propose regulations and methods to conduct the food safety risk assessment based on international best practice.
2. Propose a project on a food safety risk assessment model in Vietnam on the basis of updating and referencing models of some countries in the world, moving towards establishing a National Center for food safety risk assessment.
3. Draft food safety risk assessment project in Vietnam to be submitted to MOH.

3.3.2 Food safety risk assessments in Vietnam

3.3.2.1 MOH

In 2016 the Vietnam Food Administration (VFA), under Decision No. 518/QD - TTg, coordinated with the National Institute of Nutrition (NIN) to conduct research on TDS and risk assessments of a number of hazards that are likely to cause harm to consumers' health in popular foods in Vietnam; such as chemical hazards in traditional alcohol products and pesticide residues in vegetable samples sold in markets in Ha Noi, 2014 [18]. In June, 2023 the Health Minister issued Decision 1973/QD-BYT dated 27/4/2023 regarding establishment of the Food Safety Risk Assessment Technical Group (hereinafter referred to as the "Technical Group") which is charged with developing a food safety risk assessment model for Vietnam and a national food safety risk assessment center. An outline of their activities is provided in Annex E.

3.3.2.2 MARD

There several risk assessment centers under MARD departments:

- Reference Testing and Agrifood Quality Consultancy (RETAQ) Center under NAFIQPM has designated responsibility for overseeing risk assessments. For example, NAFIQPM (sponsored by WB) conducted primary research and risk profiles of tropical shrimp and dragon fruit in

Vietnam. Other consultants sponsored by the Danish Government conducted a risk profile of Salmonella in frozen shrimp for export [8].

- The Plant Protection Department (PPD) has an affiliated institute which conducts risk assessments for some imported fruits and vegetables, such as: fresh tomato from Republic of Korea [8].
- The National Institute of Veterinary Research (NIVR) is a focal point in the Department of Animal Health work for food safety risks characterization through research, training, and consultancy.

The World Bank, together with the Government of Australia, recently supported MARD to undertake a study on "Improving Food Safety Risk Assessment in Vietnam: Facilitating the National Food Safety Risk Assessment Committee" (2022). The report, which focused specifically on MARD, makes recommendations for the establishment of a National Agro-Food Safety Risk Assessment Committee (NFSRAC) in Vietnam with functions to

- Assist Ministers of MARD in food safety risk assessment activities
- Organize, administrate FS RA system/activities, enhance FSRA capacity within MARD
- Establish, approve, manage Board of Scientists, Scientific Panels and external experts
- Final review FSRA reports submitted by Board of Scientists, Scientific Panels.
- Scientific advice and management solutions based on scientific review to Ministers of MARD
- Cooperate with internal and international agencies relating to food safety risk assessment
- Direct and support stakeholders to organizing training on food safety risk assessment

3.3.2.3 Notable other recent Risk Assessments

The Hanoi University of Public Health (HUPH) is one of the first universities to introduce FSRA training and research. In 2011 HUPH created a taskforce (TF), with the support of ILRI, consisting of researchers and representatives of MOH and MARD working on FSRAs case studies linked to research projects implemented by the TF member institutions [19]. Some key findings of selected case studies are as follows:

1. A quantitative microbial RA on salmonellosis in boiled pork consumption.
2. RA on hazardous chemical residues in pork, liver, and kidney at wet markets in several provinces.
3. RA on microbial and chemical hazards in vegetables and fish in the Nhue River in Hanoi from wastewater discharged from industrial, hospital, agricultural and domestic activities.
4. Tuyet-Hanh et al. (2015), using the Australian Environmental Health RA Framework, studied exposure to dioxin through foods for local residents living in seven wards surrounding Bien Hoa and Da Nang airbases.
5. The Institute of Food and Biotechnology, Can Tho University, conducted a food safety risk assessment for fried meat and fish balls in Ninh Kieu district, Can Tho city [20].
6. RA of groundwater quality based on principal component analysis and pollution source-based examination: a case study in Ho Chi Minh City, Vietnam [21].

3.3.2.4 The challenges

Building a sustainable food safety risk assessment infrastructure in Vietnam faces a number of critical challenges. Although some risk assessments have been conducted through research and academic institutions, it has been reported that these are often disregarded by government line ministries as valid

exercises since they have not actually been commissioned by government agencies, per se. Additional challenges include:

1. Most goals on food safety risk assessment in MARD Decision No. 518/QD–TTg have not been achieved;
2. Food safety assessment activities have been weak in both quantity and quality due to lack of human resources, facilities, and budget for implementation;
3. Programs and projects investing in research, training and internships on food safety risk assessment have been individual efforts, not coordinated among key actors, such as MOH, MOIT and MARD;
4. Policies, regulations, circulars and guidance on food safety risk assessment are not clear on the roles and responsibilities of stakeholders at all levels and the standard methodology for conducting quantitative food safety risk assessments and coordination among stakeholders is weak;
5. Results from research are insufficient in both quality and quantity to provide scientific evidence for public health risk managers to make decisions;
6. Risk management and risk communication activities are inadequate and not aligned with or supported by targeted risk assessment research results;
7. MOH has established committees, on which all other ministries and other stakeholders are represented, for drafting regulations. Although over 50 mandatory technical regulations have been issued for food products, there is no formal methodology for risk assessments to support these regulations. [16].

3.3.3 The Risk Managers

MARD distributes food control responsibility through multiple departments but the main task for food safety management rests with NAFIQPM, PPD and DAH; food control activities are assigned to three other departments under the MARD: Department of Horticulture, Department of Animal husbandry and Department of Fisheries. The designated risk assessment activity in MARD currently rests with RETAQ and other related institutes such as NIVR and PPD.

In MOH, the VFA is in charge of elaborating the food safety standards and providing advice to assist the MOH in implementing state control and state legal application regarding food safety, and has an important role in establishing the legal framework of food control; National Institute of Food Control (NIFC), undertakes specific risk assessments as assigned by MOH and for other ministries (e.g. MOIT) but is not involved in food safety management nor food inspection. The Minister of health recently charged NIFC with the task of exploring the establishment of a national food safety risk assessment centre. (See Annex C.

MOIT's primary food safety role is to control the legal circulation of foodstuffs through markets under its jurisdiction. The Department of Science and Technology with MOIT is in charge of elaborating the safety standards and providing advice to assist MOIT in implementing state food safety control and legal enforcement. The Vietnam Directorate of Market Surveillance (VDMS) under MOIT controls food labelling

and food information; controls all traditional markets, supermarkets, and food shops where foodstuffs are sold as merchandise. The Directorate for Standards, Metrology and Quality (STAMEQ) under MOIT contributes to the elaboration of legal standards for products and processing schemes and oversees the assignment of food safety certification schemes and accreditation of certification bodies.

3.4 Food Safety Risk Assessment in other countries

3.4.1 Risk-assessment methodologies

Food safety risk assessment systems of China, Australia/New Zealand (FSANZ), the United States, and Canada utilize the Codex Alimentarius food safety risks assessment approaches but there are several key differences among them. Australia/NZ, Canada, and the United States have been applying risk assessment methodologies following international standards such as FAO/WHO Codex Alimentarius Commission over the past 30 years. This ensures that food safety risk assessments are based on the latest scientific evidence and recently published databases and reflect extensive national and international findings on food safety risks and proven control measures to manage the risks and ensure a safe food supply for consumers and to comply with international trade requirements. China began using the FAO/WHO Codex Alimentarius Commission risk assessment tool after a reform in the nation's food safety regulation in 2009, when China launched its new Food Safety Law, although gaps apparently still exist between China and countries more advanced in their food safety risk assessment.

The risk-assessment methodology used by the CFIA in Canada is a scoring system known as the “Ranked Risk Assessment” and used to score chemical hazards according to their “relative risk.” The relative risk for a chemical present in a food is estimated by calculating the toxicity of that chemical and the likelihood of exposure. The “risk model scoring system” works hand in hand with the Risk Priority Compound List (RPCL), which consists of various categories of toxic chemicals present in humans and animals. Category A caters to toxicity for the acute and chronic animal toxicity; Category B focuses on the impact on human health; and Category C covers foods of plant and animal origin. The relative ranking is calculated by the information created by the monitoring and analysis programs that CFIA undertakes.

In the United States, the USFDA oversees food safety risk analysis, risk assessment, risk management, and risk communication. Within the FDA, there is the specialized department known as the Centre for Food Safety and Applied Nutrition (CFSAN), which oversees food safety risk analysis. The FDA uses a risk analysis program and a set of tools available on its web-based platform, foodrisk.org (FDA iRISK, 2021). Under the umbrella of the food risk analysis program is the Joint Institute of Food Safety and Applied Nutrition (JIFSAN) based at the University of Maryland. JIFSAN's strategy focuses on making use of sound scientific findings to promote collaborative research and it is heavily involved in sustainable partnerships with research organizations, academia, and global collaborators in food safety risk assessment. It also provides training to cultivate skilled labor in the food sectors and building capacity in the risk analysis of food safety. Other tools provided by FoodRisk.org include the Interactive online Catalogue on Risk Assessment (ICRA), the Food Commodity Intake Database (FCID), the Produce Point of Origin Database (PPOD), the Norovirus database (NoroDB), and the Violations Database for food safety inspections of retail entities.

Food safety risk assessment study tour to China (Nov,2023) (Annex B): A study visit to China for an inter-ministerial technical working group on food safety risk assessment was organized by SAFEGRO (October 30 - November 5, 2023). Participants exchanged information on: (i) history of risk assessment organization; (ii) FSRA policy development; (iii) FSRA institutional set up; (iv) how risk assessment supports risk management and risk communication; and (v) effective inter-ministerial collaboration on food safety risk analysis. In meetings with the China National Center for Food Safety Risk Assessment (CFSA) and related agencies the team gained insights on legislative promotion, systematic development, active practice, sci-tech support and international cooperation to the level where China currently hosts two sub-Committees at Codex. The risk analysis framework in China, based in CFSA with accompanying databases, is undergoing continuous improvement to align with international standards to support the risk-based management system and risk communication.

3.4.2 Chemical risk assessment

All chemicals used in the agriculture field and veterinary sectors in Australia are governed by the Australian Pesticides and Veterinary Medicines Authority (APVMA), which establishes the maximum residue limits (MRLs), based on scientific findings and clinical trials provided by research organizations and academic institutions. As long as the chemicals are used by industry in accordance with the manufacturer's instruction on the label, there is an assurance that the chemical will be administered safely and MRLs are not exceeded. Dietary chemical contaminants are also evaluated by APVMA. MRLs are validated by FSANZ and APVMA, and FSANZ harmonizes the MRLs with the standards for Codex Alimentarius. The states' regulatory bodies enforce adherence to the MRLs in food and APVMA works closely with FSANZ to compile the information for the new registration of chemicals (FSANZ, 2013a). The Ministry of Primary Industries enforces the MRLs in food in NZ (Ministry for Primary Industries, 2021).

The process of setting pesticide MRLs in China is based on a residual chemical assessment, which includes agriculture sector field trials, food manufacturing sampling, climatic/environmental factors, toxicological studies, and an evaluation of dietary intake (Chen et al., 2015). China's National Health Commission, the State Administration for Market Regulation, and the Ministry of Agriculture and Rural Affairs co-govern the MRLs for Pesticides in foods, according to the Chinese national standards (GB, 2763-2021 (GB, 2763-2021, 2021; USDA, Foreign Agriculture ServiceChina MRLs, 2019). This covers the most common pesticides that are applied in agricultural and chemical contaminants present in frequently consumed foods. China has also established regulations that observe MRL standards for primary manufacturing products, specifically for horticultural products such as fruit in various forms including juice and dried or preserved fruits; deals mainly with pesticide MRLs in fresh products, primarily in fruits, grains, vegetables, meat, eggs, and poultry.

The National Chemical Residue Monitoring Program (NCRMP) in Canada is complemented by the Food Safety Action Plan (FSAP), with sampling plans focused on the analysis of registered products including dairy, meat, poultry, horticultural products, animal medicines, pesticides/fungicides, irrigation water, soil, toxins originating from plants, mycotoxins, and heavy metals. The FSAP also studies emerging chemical hazards associated with particular types of foods or regional commodities in which the permissible MRLs

are not as yet established. These findings from the NCRMP and FSAP play an important part in considering the risk management options.

In the United States, the setting of MRLs is conducted by the US Environmental Protection Agency, the methodologies for which can be sourced from the e-Code of the US Federal Regulations.

3.4.3 Microbiological risk assessment

FSANZ conducts food microbiological risk assessment through published scientific data and uses the peer review process to ascertain the integrity of regulatory decisions. The method that FSANZ has adopted by disseminating the information and seeking feedback from all the stakeholders to debate on the risk assessment through a consultative process ensures a thoroughly scrutinized risk assessment is achieved. In addition to national peer reviewers, FSANZ also seeks input from international experts in handling more complicated risk assessments (FSANZ, 2013b).

In China, the use of Quantitative Microbiological Risk Assessment (QMRA) has increased in the past two decades. Dong et al. (2015) concluded that in order to enhance the use of QMRA, an increase in planning and initiating QMRA through adoption in the decision-making in food safety management and in developing the process controls in the manufacturing environment are needed. China has been improving its risk management strategy by having the National Food Safety Standards (NFSSs) review the causative parameters that resulted in the contamination of food by pathogens that are often involved in foodborne outbreaks.

Both Canada and the United States use the Quantitative Microbial Risk Assessment (QMRA) method (Whelan et al., 2010) in conducting risk assessment for microbiological hazards. It takes into consideration the sensitivity evaluation approach and uncertainty and variability in risk assessment. Other factors include the estimation of the concentration of the pathogens present, microbial killing steps throughout the process that keep the pathogens under control, and exposure analysis. Dose-response estimation is widely used in the QMRA. In addition, QMRA also looks at the estimated health impact by examining the probability that illness could occur through exposure to the estimated concentration of pathogens involved.

3.4.4 Resource investment in food safety management

The Australian and New Zealand governments regard food safety as an important area that warrants government priority, and consequently, prioritized finance and resources are allocated to manage food safety for the general population. In 2021, for the food and beverage sector, the Australian government announced it will invest AUD$1.3 billion on the modern manufacturing initiative, in which, food safety is one of the key areas that would receive attention. In 2014, the New Zealand government announced the intention of spending the budget surplus of NZ$86 million dollars on food safety investment. Similar attitudes prevail in the United States, Canada, and European member nations where the government contribution to food safety is high. In Canada, the government announced on January 22, 2021, that it will invest CAD$162.6 million to build up the management of its food safety agency, CFIA, over the next 5

years. In addition, the Canadian government is planning to spend CAD$40 million per year continuously to improve the efficiency of the food safety program to overcome pandemic disruptions that have damaged food business and export markets.

In the United States, the USDA announced on June 8, 2021, that the government has decided to invest more than US$4 billion to improve the food system following pandemic disruption. The funds aim to improve food production, bring big changes in food processing, provide efficient infrastructure for distribution, and reduce foodborne illness through food safety risk assessment and a rapid response management strategy. It is believed these activities will lower the burden on healthcare due to foodborne outbreaks and increase the life expectancy of the population (USDA, 2021).

By comparison, in China there is lack of investment through finance or technical human resources to conduct food safety risk assessments, which in turn has led to an inadequacy in the food safety management system (Wu & Chen, 2013). However, China has taken steps to increase resources with the World Bank by applying for a loan of US$400 million and was granted the loan on March 25, 2021 [22].

4 PROBLEM IDENTIFICATION

4.1 Food safety in Vietnam

Vietnam has a national food safety legal framework, with a foundation to further improve efficiency and achieve food safety goals, and the system of legal documents on food safety management is clearly regulated [1]. However, coordination and enforcement of food safety management still faces many difficulties, with delays in responding to food safety incidents or warning about potential hazards, and adoption of a more preventative risk-based approach to food safety management.

4.1.1 FS Incidents

The Ministry of Health is assigned by the Government to be the focal point for investigating the cause and tracing the origin of food safety incidents. Other ministries coordinate in this process when necessary [1]. Organizations under the Ministry of Health and the Health sector are always proactive in participating in controlling food safety incidents, mainly taking actions after the food safety incidents have occurred. Finding the cause of poisoning is also difficult due to the division of food management responsibilities between ministries and the time it takes to request relevant documents or need coordination to find out together, inadequate disease information systems, and weak traceability in very complex agri-food value chains.

According to data from the Vietnam Food Safety Administration (VFA), the number of food poisoning cases shows that in 2010, there were 182 poisoning cases nationwide, infecting 6,520 people and 52 deaths. By 2019, the number of poisoning cases in the country was 88 cases with 2,235 cases and 11 deaths, a significant reported decrease from 2010 to 2020 (Figure 1) [2][3].

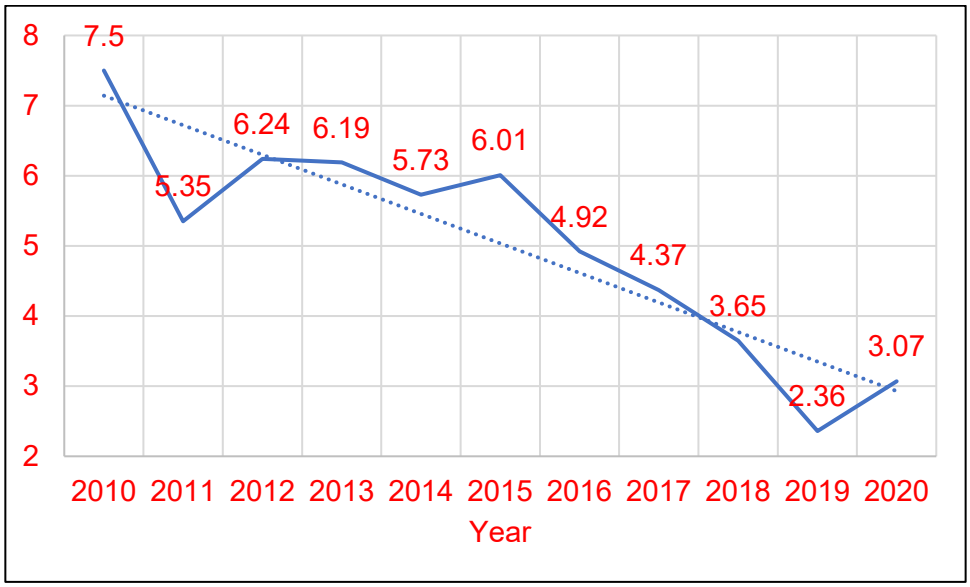


Figure 1. Estimation of food poisoning/100.000 citizens from 2010-2020 [4]

Notification of food safety risk is mainly carried out at the central level by official dispatch notifying businesses and authorities when there are cases where exported goods are refused or forced to be destroyed in the host country, and notifying authorities and the community when domestic goods detect a risk of food hazard [2]. Normally, notification about food safety incidents and food safety recommendations are reported in mass media or social media but may originate from previous incidents. Warnings or recommendations rarely originate from risk assessment studies that can prevent food safety hazards.

4.1.2 Trade and rejections

Since 2011, MARD has focused on resolving technical barriers to trade, maintaining or expanding markets, and worked with inspection teams from importing countries to evaluate food safety management systems. The Ministry also supports businesses in resolving technical barriers in import markets and maintaining or expanding new markets (fruits and vegetables exported to 50 countries, seafood exported to 120 countries/territories). MOH organizes the issuance of health certificates and certificates of free circulation for exported food products. Vietnam has signed cooperation programs with Korea, the US, and New Zealand to help businesses access difficult markets; actively participates in standards harmonization activities to promote food production that is more consistent with the requirements of importing countries [2].

Along with expanding the food export market, Vietnam also faces the problem of exported food being rejected because it does not meet the requirements of the importing country. According to UNIDO statistics, the main reasons leading to food rejections for imports are bacterial contamination, hygiene control conditions, veterinary drug and plant protection drug residues, labeling and food additives [5]. In advanced regions and countries around the world, establishing a risk-based food safety control system is facilitating a preventative approach and improving early warning of food safety incidents to prevent harm to human health [6]. The results from proactive risk assessment studies can provide scientific evidence for the effectiveness of the food safety control in Vietnam and protecting export products in case of disputes with the importing country. The publication of evidence on domestic risk assessment for exported food products, however, is still limited. Assessment and management of food safety risks is mainly carried out through annual proactive surveillance or monitoring plans developed by each Ministry and passive updates from international warnings [2].

4.2 Technical and human resources

Pursuant to Article 51 of the Food Safety Law, the responsibility for performing risk analysis on food safety is assigned to all three ministries aligned with the commodity and management scope of each Ministry but their respective technical resources for risk assessment are quite different.

MARD is the leading Ministry in promulgating legal documents on risk analysis and implementing specific policies for risk assessment. The Ministry issued Circular No. 02/2013/TT-BNNPTNT dated January 5, 2013 (Annex A-1) on regulations on risk analysis and food safety management according to the production and business chain of agriculture, forestry, fisheries and salt. This Circular clearly states that human resources

involved in risk assessment/analysis include: Relevant units under the Ministry of Agriculture and Rural Development; Departments of Agriculture and Rural Development of provinces and cities; Research institutes, universities, testing laboratories in related fields; Professional associations and consumer associations; Establishments producing and trading agricultural, forestry, aquatic products and salt used as food; Relevant organizations and individuals. In addition, the Circular also stipulates the establishment of a "Food safety risk assessment expert council" responsible for [7]:

- Establish a database on food safety issues for the food production and business chain at the request of the Central Professional Management Agency;
- Make a list of Hazard - Food pairs that need to build a Risk Profile, determine priority order when implementing and report to the Expert Council and Central Professional Management Agency;
- Develop a Risk Profile for the identified Hazard - Food pair according to the requirements of the Central Professional Management Agency;
- Perform food safety risk assessment and prepare a Food Safety Risk Assessment report for the Hazard - Food pair that has been identified according to the requirements of the Central Professional Management Agency.

The Ministry has not yet officially established the "Food safety risk assessment expert council" as prescribed in the Circular.

MOH and MOIT have not currently issued legal documents or instructions related to risk assessment or risk analysis. However, the Ministry of Health still annually plans and implements proactive food surveillance under its management and assigns tasks to Central and Regional Institutes/Research Centers to perform sampling and analysis, the results obtained will be reported to VFA. In addition, the Ministry of Science and Technology issued Vietnam Standard TCVN 11394:2016 Principles and instructions for assessing microbiological risks for food. This is a guide to conducting risk assessments for Vietnam compiled based on CAC/GL 30-1999. Regarding risk assessment/analysis in Vietnam, there has been thought and planning, but it is still unrealistic in implementation [8].

In most countries, the responsibilities for undertaking qualitative and quantitative food safety risk assessments are assigned by the risk managers to a small core of highly qualified “risk assessors” with specific analytical and modelling skills and, in some cases, specialized in particular risk assessment areas (chemical, micro, AMR, allergens, etc). More recently, some user-friendly applications have been developed allowing some risk assessments to be undertaken more broadly but still requiring specialized training on their use and interpretation of results (e.g. iRisk). The recognized network of highly skilled food safety risk assessors is currently being developed in Vietnam with the support of several donor organizations (Japan, Canada, etc).

4.3 Published or reported food safety hazards in Vietnam

4.3.1 Salmonella

Evidence from research on the prevalence of *Salmonella contamination* on chicken carcasses in retail markets in 6 provinces of Vietnam in 2012 [a] showed the prevalence *of Salmonella contamination was*

45, 9%. There was no significant difference (P > 0.05) in *Salmonella* prevalence according to (i) location (Hanoi city, 51.1%; Hai Phong city, 45.6%; Da Nang and Can Tho, 45.5%; Bac Ninh province and Ho Chi Minh City, 44.7%; Dong Nai province, 44.6%; Ha Tinh province, 44.4%; Phu Tho province, 43.8%; Lao Cai province, 43.5%; Kien Giang province, 41.9%; and Lam Dong province, 40.9%), (ii) markets (wet market samples, 46.2%; supermarket samples, 43.0%), and (iii) storage temperature at retail (preserving normal storage, 46.4%; cold storage, 45.1%). Therefore, the presence of *Salmonella* in poultry meat in Vietnam is not linked to a specific city or province, market type or storage temperature at retail. Strategies to reduce *Salmonella* contamination in live poultry in Vietnam need to be implemented to improve the safety of poultry products and reduce the incidence of *Salmonella infection* in humans due to chicken and egg consumption.

Research by MSc. Truong Huynh Anh Vu and a group of colleagues at Ho Chi Minh City Laboratory Analysis Service Center (Ho Chi Minh City Department of Science and Technology) from September 2019 to December 2020 on "Surveying the level of microbiological contamination and evaluate the antibiotic resistance of *Salmonella spp.* in food in the Ho Chi Minh City area", the research team randomly collected 2,940 food samples (fresh food and processed products) in 48 provinces. Traditional markets (2,680 samples) and 5 supermarkets (260 samples) in Ho Chi Minh City, recorded the group of meat and meat products samples accounting for the highest contamination rate, up to 34.93% (234/670) in market and 15.38% (10/65) at supermarkets. Next is the sample group of seafood and seafood products, the rate is 18.06% (121/670) at the market and 6.15% (4/65) at the supermarket. The group of fruit and vegetable samples accounted for the lowest proportion with 0.15% (1/670) but was only detected in samples taken at the market. There have been no recorded cases of *Salmonella spp.* for eggs and egg products [b].

More recently, there was a large-scale food poisoning incident at a school in Nha Trang in 2022, causing 648 students to be hospitalized, including one student who died from a severe infection whose cause was unknown. identified as *Salmonella contamination* in diets prepared at school [c].

4.3.2 Listeria

Another investigation on the appearance of L. monocytogenes in 258 samples of sausages and meat pieces collected during the period 2013-2015 in Hanoi, results: L. monocytogenes was detected in samples of sausages and meat pieces in 19/129 (14.7 %) and 40/129 (31.0 %) respectively with the highest isolation rate in summer [e].

Another food poisoning bacteria, Listeria monocytogenes, was collected by author DX Binh and research staff in Bac Giang, Tuyen Quang, Lang Son, Thai Nguyen in 2015 and 2016 to determine Listeria monocytogenes contamination. At markets, the percentage of poultry samples contaminated with bacteria was 8.3% [d].

Survey on contamination rate, antisera groups, virulence genes, and antibiotic susceptibility for *Listeria monocytogenes* isolated from pangasius at two processing facilities in Vietnam by author Trang NP and

colleagues published announced in 2022, *L. monocytogenes* was most commonly detected in washing water samples at 20.8% (15 out of 72 samples) and in pangasius at 16.6% (15 out of 90 fish samples). Serotypes 1/2b were predominant and internalin genes (inlA, inlC and inlJ) were found in all *L. monocytogenes* isolates. Most isolates were resistant to cefoxitin, oxacillin, and fosfomycin. This study shows a high risk of *L. monocytogenes contamination* from wash water to fish. Therefore, maintaining water quality and designing sanitation procedures to minimize *L. monocytogenes contamination* is necessary to ensure food safety at pangasius processing plants [f].

4.3.3 E. coli

E. coli is a type of bacteria commonly found in fresh foods, processed foods, fresh fruits and vegetables as well as domestic water. This is also one of the causes of food poisoning for consumers when using products contaminated with this organism. There are many studies and publications about the appearance of *E. coli* in Vietnam, such as: from July 2017 to January 2019, a total of 645 retail fresh vegetable samples were collected from 19 stores. and retail markets were investigated to determine enterohemorrhagic *Escherichia coli (EHEC) and* enterotoxigenic *E. coli (ETEC) contamination.* Of the 645 tested samples, 2 samples (0.3%) were positive for pathogenic *E. coli bacteria.* Of the 2 samples positive for pathogenic *E. coli, 1 sample was EHEC (stx2 positive) and the other was ETEC* (sta positive). Two pathogenic *E. coli strains* were isolated from crisp lettuce. EHEC and ETEC strains showed multidrug resistance to 4 and 7 antibiotics, respectively. These results indicate that retail fresh vegetables do not appear to be an important source of human EHEC and ETEC infections in the Mekong Delta, Vietnam [g]. In a study on the presence of colistin-resistant *E. coli* in meat samples collected at local markets in Thai Binh (for each type of meat, only one sample was collected from one store. At several stores (multiple samples taken at different times) from November 2018 to July 2019 showed: 15 chicken and pork samples purchased from 10 stores in two local markets were evaluated for presence of colistin-resistant *E. coli* bacteria with the resistance gene *mcr,* detecting that 40% (6/15) and 66% (10/15) of pork and chicken samples were contaminated with colistin-resistant *E. coli bacteria, respectively.* The average quantitative levels of colistin-resistant *E. coli* in contaminated pork and chicken samples were $1.8x10^4$ and $4.2x10^3$ CFU/g [h], respectively.

4.3.4 Campylobacter

To assess the level of *Campylobacter* infection in Vietnam, Carrique-Mas and colleagues conducted a survey of 343 pig and poultry farms in the Mekong Delta region. The area is characterized by integrated farming of many animal species with many biosecurity limitations. The prevalence of *Campylobacter infection* in animals was 31.9%, 23.9% and 53.7% for chickens, ducks and pigs, respectively. *C. jejuni* isolates predominate in all three host species, with the highest prevalence in pigs [i].

Thus, it can be seen that most bacteria that cause food poisoning appear in Vietnam in the food supply are relatively high infection rates. Risk management interventions to reduce the contamination rate of these bacteria at the links in the food production stages in general and chicken in particular are essential and need to be supported by reliable risk assessments. This, combined with consumer awareness raising

through effective risk communication to identify clean food, ensure proper handling, preserving and processing food to mitigate foodborne disease incidents.

4.4 Inter-ministerial food commodity responsibilities

Responsibility for food safety management is divided between three ministries (MARD/MOH/MOIT) with each ministry assigned to manage different food products according to the provisions of Decree No. 15/2018/ND-CP dated February 2, 2018. After promulgation of this Decree, each Ministry has its own documents on food safety management for both domestic and export/import food products but still complies with coordination regulations in ensuring food safety [9] as stated:

- Ministries, within the scope of their management, shall cooperate with the Ministry of Health in performing state management tasks to ensure uniform and effective state management of food safety;
- The MOH shall develop a food safety education program; the MARD, the MOIT and other ministries shall cooperate with the Ministry of Health in running the program;
- The Ministries shall plan and carry out inspections of products under their management in cooperation with other ministries;
- In case of food poisoning, the MOH is responsible for organizing emergency treatment. Other Ministries should provide adequate documents and information about the origin of the food suspected of poisoning; cooperate with the MOH in investigating and tracing the origin and disposal of the poisoning food;
- Upon discovery of non-conforming foods under management of other ministries, the MOH shall take charge and cooperate with relevant Ministries in carrying out inspection and giving conclusion.

4.5 Risk managers and budget allocations

Each Ministry assigned by the Government to manage food safety assigns tasks to units under the Ministry to manage food safety risks. MOH assigned a focal point, the VFA, according to Decision No. 2728/QD-BYT dated May 3, 2018, to have the tasks and powers of "Presiding over, guiding, and organizing the implementation of supervision, risk assessment, prevention, investigation and coordination to prevent and overcome food safety incidents under the management of the Ministry of Health" [10]. The VFA has proposed to MOH to establish a group of technical experts to assess risk with the task of researching and directly performing risk assessment and reporting to the Ministry of Health and approved at the Decision No. 1973/QD-BYT dated April 27, 2023. This Task Force has been established.

MOIT assigns its Department of Science and Technology to manage food safety, but the scope of functions and tasks does not include assessing or managing food safety risks [11]. Therefore, up to now, the Ministry of Industry and Trade has not yet taken specific actions to undertake risk assessments under its management.

MARD issued Decision No. 1290/QD-BNN-TCCB dated April 14, 2015 assigning and decentralizing the management of agricultural and food safety to relevant Departments of the MARD at the central level and local Sub-departments [12]. Pursuant to this Decision, there are three Departments that participate directly and throughout the entire process of the agro-forestry-fishery chain: National Agro-Forestry-

Fisheries Quality Assurance Department; Plant Protection Department and Department of Animal Health are the units responsible for performing risk analysis and related risk assessments.
The MOH and MARD have assigned risk management tasks to units and only perform them for food and commodities within their assigned scope. Although MOH has established a group of "technical experts in risk assessment" with the participation of all three ministries, the group is still in the process of developing an activity and learning plan that has not yet been officially implemented any research to have results reported to regulatory agencies.

Regardless of the respective assignments there does not appear to be a transparent system for prioritizing and undertaking routine food safety risk assessments with the designated risk managers under each ministry assuming the responsibility, authority and accountability with budget to assign ministry RA assessors as experts with the financial and human resources to undertake specific risk assessments on a routine basis.

4.6 Existing RA Resources in Vietnam

Risk assessment must be based on the scientific evaluation of known or potential adverse health effects resulting from human exposure to foodborne hazards. The World Bank (2016) recommended a number of steps: strengthening of the national food safety monitoring and surveillance system; pilot a single agency for food safety management at provincial level; improve data management to fill the need for better evidence on risks, impacts, and costs of foodborne disease and the efficacy and cost benefit of interventions; develop databases of food businesses according to their risk profiles in order to understand and target effective interventions and enforcement; create a Risk Assessment Centre to build capacity in risk-based approaches including risk assessment, risk profiling and risk categorization; improve networking, consensus building and consistency: coordinating and sharing of data from laboratory and surveillance networks to serve evidence-based decision-making; develop inter-connected food safety strategy and SPS action plan; focus on preventive approach for ensuring food safety rather than on end product testing.

The main cause of food-borne illness originates from bacterial contamination, rather than from chemicals and pesticides, which tends to dominate the media discussion and public dialogue. Thorough quantitative risk assessments could help to clarify the distinction and prioritize improved levels of food hygiene throughout the value chain. Moreover, high use of agricultural inputs such as antibiotics, pesticides and chemical fertilizers, poorly regulated or illegal imports, lack of traceability, and cross-contamination are also important factors in assuring safe food. The biggest challenge, however, lies in changing the focus and practices of vast numbers of small producers. Vietnam has a modern food safety regulatory framework with foundations in place for further improving food safety performance and outcomes, but much more could be done to promote and enforce an evidence-based, risk-based food control system.

There appears to be a shortfall in the availability of highly qualified food safety RA human resources, especially risk assessors, within the government system and a need for intensive in-service training and post-secondary academic programs for RA capacity development.

At the same time, Vietnam's burgeoning agri-food trade markets would benefit from internationally recognized evidence-based domestic risk assessments to comply with international standards and requirements of trading partners. Food-borne illness is notoriously difficult to assess in any country but any contamination of Vietnamese food for domestic consumption would raise public and trade concerns.

Ideally, food safety problem-solving through more robust risk assessments would support efficient risk-based enforcement. This would require genuine collaboration across ministries supporting a unified network of well-trained food inspectors with risk-profiling of businesses leading to risk-based enforcement planning and evidence-based surveillance. Laboratory networks (public and private) would participate in proficiency testing and providing timely and quality-assured tests while sharing results and data through an integrated LIMS and food safety information system. Building a trusted and authoritative food safety system requires transparent and comprehensive surveillance, and risk analysis framework with incident and outbreak reporting and recall protocols, good relations with the public, trading partners and institutions involved in food safety, all supported by reliable food safety risk assessment processes and experts.

5 RISK ASSESSMENT OBJECTIVES

The overall objective of risk assessment is to evaluate hazards, then remove that hazard or minimize the level of its risk by adding control measures, as necessary [13] through risk management and risk communication strategies. In each particular case, the objectives of risk assessment are different. Ultimately, the objectives of risk assessments are:

To control food poisoning outbreaks: Preventing foodborne illness and outbreaks is the primary objective of risk assessment in food by identifying and evaluating potential hazards, exposure, their related risks and advising risk management. The outcome of risk assessment is used by individuals and organizations to identify potential hazards, and then prepare appropriate "risk management" measures to eliminate or mitigate them, reducing the likelihood of accidents, injuries, and fatalities as the consequence of a food poisoning outbreak. This helps identify and implement safety measures, training for employees and stakeholders, and regularly reviewing and updating risk management action plans.

To prevent similar food poisoning outbreaks occurrences in the future: *R*isk assessment also aims to prevent similar occurrences in the future. Risk assessments assist individuals and organizations to identify potential hazards and risks, leading to risk management measures to prevent them.

To prevent the violation of the law: Risk assessment also supports compliance with food safety laws and regulations to ensure FBOs comply with legal requirements such as health and safety regulations. Failure to comply with these laws can result in legal action being taken against the organization, which can be costly and damaging to its reputation. Risk assessments help to identify any areas where legal compliance may be at risk.

To Provide a Framework for Effective Risk Management: Risk assessment provides a structured framework for organizations even nations to make informed decisions about addressing the risks associated with food safety and design effective risk management action plans. Once potential risks have been identified and assessed, organizations can use this information to prioritize risk management efforts and allocate resources effectively. The most common application of risk assessment is the annual risk-based inspection of domestic food products.

To Communicate Effective Risk Findings to Stakeholders: Risk assessment results can support risk communication to relevant stakeholders, foster awareness, understanding, and buy-in from all parties involved in risk management. This includes sharing information about the identified risks, their potential impact, the likelihood of occurrence, and the proposed mitigation strategies. Communicating these results allows stakeholders to better appreciate the risk exposure, make informed decisions, and support risk management initiatives. Including risk-based amendments to the food safety law.

To Optimize Resource Allocation: Risk assessment provides scientific data for decision-making on allocation of resources and more effectively invest time, money, and personnel to manage and mitigate potential hazards by identifying, evaluating, and prioritizing risks. Resources can be focused on addressing the most significant risks while considering the cost-benefit and trade-offs of different risk management options. For example, the GoV issued the Law on Customs (2014), and a Circular on Customs procedures (2015) on providing specific provisions and guidance on enforcement of the customs laws for procedures, inspections, examination, supervision and control, export duty, import duty, and tax administration applied to exports and imports based on applied risks assessment. Risk-based criteria, strategies for sampling, and analysis optimize often limited resources.

To Foster Transparency and Stakeholder Trust

While transparency and trust are important among domestic markets, internationally recognized risk assessments improve trading partners' confidence and trust in the risk management associated with agri-food exports. Reliable FSRA supports risk management for prevention and early detection of food-borne disease and recalls which enhances confidence among international importers of the safety of Vietnam's agri-food exports.

6 CONCLUSIONS, RECOMMENDATIONS

6.1 Risk managers

Food safety risk assessments supporting a risk-based food safety control system would typically be overseen by a senior level "Risk Manager" with the responsibility, authority, accountability and, ideally, adequate budget to direct risk assessments and annual prioritization exercises. In Vietnam, "risk managers" are recognized in each of the designated ministries but the national risk assessment process has not been formalized among them in a well-coordinated manner. Nor have food safety risks been collectively prioritized among the ministries and undertaken to support nationally coordinated food safety risk management and communication strategies to mitigate food safety risks for the designated commodities under their respective jurisdictions.

6.2 Inter-ministerial collaboration mechanisms

Given the apparent dearth of adequate food safety risk assessment resource persons, or risk assessors, it is recommended that a network, pool, task force, committee or center be established consisting of internationally qualified food safety risk assessors be developed and shared amongst the respective ministries involved. Although a number of studies and donor reports have been undertaken and provided similar recommendations, these resources have not been formally established. The team is recommending that the CFSA model in China be considered as a model. The team has also considered the respective ministerial resources and would recommend closer collaboration among MARD/RETAQ/NVRI/PPD, MOH/VFA/NIFC and MOIT/FIRI to engage FSRA with MOH/NIFC taking the lead, similar to the scenario in other countries, including Canada.

6.3 Food Safety Laws and regulation

The new food safety law should clearly articulate the roles, responsibilities, authority and accountability for undertaking food safety risk assessments, inter-ministerial collaboration and institutional arrangements.

The FSL would have provisions for the food safety risk analysis in line with the guidance from Codex Alimentarius Commission (CAC), Food and Agriculture Organization (FAO) and World Health Organization (WHO), especially the roles and functions of three risk analysis components and the functional separation of risk assessment from risk management, in order to ensure the scientific integrity of the risk assessment, to avoid confusion over the functions to be performed by risk assessors and risk managers, and to reduce any conflict of interest. The responsibilities, authority and accountability for food safety risk analysis should be clearly defined and assigned amongst the three ministries.

Technical regulations for RA methodology should be directed by the law and developed as a national standard among the three ministries involved. Subsequent rules and regulations should clearly articulate the approach to annual food safety risk assessments and provide technical guidance on methodologies for chemical, microbiological, allergens and AMR risk assessments to support a risk-based food safety management system.

New regulations and guidance should clearly articulate the references for protocols and methodologies for food safety risk assessments to be recognized as the national standard aligned with international standards for:

(1) Chemical hazards
(2) Microbiological hazards
(3) Allergens
(4) AMR
(5) Other hazards and food safety RA deemed important

6.4 National food safety RA network and task force

Following on the recommendations of a number of key studies and assessments in Vietnam, a national food safety risk assessment task force or working group should be convened, comprised of key representatives from MOH, MARD and MOIT. The TWG recently established by the MOH could be formalized in this regard.

The TWG would be convened around a national network, commission or center to serve as the recognized national resource and training center for food safety risk assessments, and be comprised of members from the key departments and institutions responsible for food safety risk assessment in each of the respective ministries.

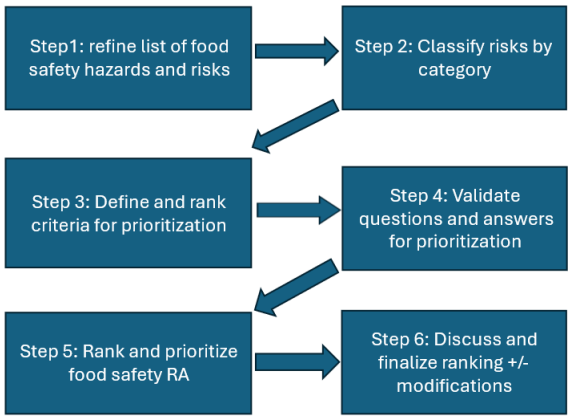
6.5 National food safety database

Reliable and credible food safety risk assessments rely on a complex set of data for laboratory food safety hazard test results, exposure rates, and consumption data that should ideally be provided by a national food safety information and reporting system, linked to the network of food safety laboratories, and providing real-time information of foodborne illness and food safety incidents. Alternatively, specific and reliable data can be collected for each of the specified food safety risk assessments undertaken annually. New technology including Artificial Intelligence (AI) and Machine Learning (ML) are introducing alternatives for missing data built on surrogate (e.g. social media, historical trends) and secondary data (e.g. published research) and could be explored as risk assessment tools of the future.

6.6 Food safety hazard, risk prioritization and RA reports

Joint inter-ministerial prioritization of food safety risk assessments could be undertaken annually to determine risk assessments to be done and to serve as a coordination mechanism among the ministries and their respective institutions charged with implementing the FSRA. The annual RA prioritization workshops would follow a number of key steps graphically illustrated below. Prioritization would lead to consensus on the risk assessments to be undertaken and reported on in any given year and supported by risk management and risk communication action plans.

Food safety risk assessment prioritization workshop steps:



6.7 Sustainable training programs & resources

The designated set of national food safety risk assessment resources, institutions, and centers should be coordinated to provide a consistent, shared approach to capacity development and training for risk analysis at the national and sub-national level through a recognized set of training resources and ToT programming for the following:

6.7.1 Risk analysis

- ✓ Comprehensive food safety risk analysis overview for regulators and inspectors
- ✓ Focused "risk assessors" technical training for
  - Qualitative and quantitative FSRA
  - Advanced FSRA
- ✓ Risk management for inspectors, regulators and the private sector
- ✓ Risk communication

6.7.2 Development of eLearning for all of the above and an in-house Learning Management System (LMS)

6.8 Academic curriculum

University undergraduate and graduate curriculum should be developed to align with all of the above.

6.9 Applications and software

The designated resource centre should identify user-friendly software, applications and tools to facilitate basic risk assessments and support risk management and risk communications. One example is iRisk which has been introduced by SAFEGRO.

7 SAFEGRO PROPOSED INTERVENTIONS

Food safety risk assessments, aligned with international standards, are at the core of a national risk-based food safety control system being promoted through the Safe Food for Growth (SAFEGRO) Project. The project team also recognizes the concurrent risk assessment support being provided through the Japan (JICA) project with RETAQ. SAFEGRO will endeavour to collaborate with this project and other designated food safety risk assessment resources, departments and centres in MARD, MOH and MOIT to support food safety risk assessment capacity building.

7.1 Technical assistance

The project will provide both national and international expertise to support risk assessment capacity develop for both training of trainers and specific hands-on coaching and mentoring of skillful food safety risk assessors for qualitative and quantitative risk assessments.

7.2 RA Network, Commission, Centre

SAFEGRO will support the establishment of a national food safety risk assessment resource centre and accompanying networks and commissions to be recognized as the collective food safety risk assessment expertise in Vietnam accessible by the key partner ministries. This work is expected to be undertaken in collaboration with other donors and key counterparts.

7.3 FSRA Prioritization workshop

SAFEGRO will support an annual FSRA prioritization workshop in consultation with the designated risk managers of each ministry and key stakeholders and other donors. A draft outline of the prioritization workshop is provided in section 6.6 and detailed in in Annex E.

7.4 RA pilots

The risk prioritization workshop is expected to identify 6 or more priority food safety risk assessments to be undertaken to address and characterize key food safety risks. These risk assessments will be undertaken with the technical and financial support of SAFEGRO on a cost-shared basis with the respective ministries and their key counterpart FSRA staff.

7.5 Training programs, study tours and conferences

SAFEGRO will support a series of FSRA training and capacity building programs with the objective of having these institutionalized in the national resource center through a training of trainers strategy and formalizing the training content in a readily accessible, user-friendly repository or website. This work is expected to be undertaken in collaboration with and key counterparts. The training will include but not be limited to the following:

(a) Risk analysis course for managers, regulators and inspectors
    (i) Risk assessments – general +/- iRisk
    (ii) Risk management
    (iii) Risk communication
(b) Quantitative risk assessment training for risk assessors
    (i) Microbiological and chemical hazards
    (ii) Advanced FS RA training program for risk assessors
(c) FSRA eLearning courses and modules
(d) FSRA courses and modules to be included in the international food safety curriculum at 4 universities and available to others

7.6 Risk assessment tools, software and database

SAFEGRO will support the adaptation and accessibility of applications and software to support food safety risk assessment activities outlined above including but not limited to iRisk and statistical software. SAFEGRO will also support a food safety incident database aligned with the food incident response program being supported by the project, subject to demands of the respective ministries.

ANNEX A FOOD SAFETY RISK ASSESSMENT CIRCULARS AND DECISION MEMO

1. **MARD RA circular (2013)**
2. **MOH RA Decision memo (2023)**

1. MARD RA circular (2013)

2. MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

THE SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

No. 02/2013/TT-BNNPTNT

Hanoi, January 05, 2013

CIRCULAR

RISK ANALYSIS AND FOOD SAFETY MANAGEMENT IN THE AGRO-FORESTRY-FISHERY AND SALT PRODUCTION/TRADING CHAIN

Pursuant to the Government's Decree No. 01/2008/ND-CP dated January 03, 2008 on functions, tasks, powers and organizational structure of the Ministry of Agriculture and Rural Development; the Government's Decree No. 75/2009/ND-CP dated September 10, 2009 on amending Article 3 of the Government's Decree No. 01/2008/ND-CP dated January 03, 2008

Pursuant to the Law No. 55/2010/QH12 on Food Safety dated June 17, 2010;

Pursuant to the Government's Decree No. 38/2012/ND-CP dated April 25, 2012 on detailing the implementation of a number of articles of the Law on Food Safety;

At the request of the Director of National Agro - Forestry - Fishery Quality Assurance Department

The Minister of Agriculture and Rural Development promulgates the Circular providing for risk analysis and food safety management in the agro—forestry-fishery and salt production/trading chain.

Chapter I

GENERAL PROVISIONS

Article 1. Scope

This Circular provides for risk analysis and food safety management in the agro—forestry-fishery and salt production/trading chain under the management of the Ministry of Agriculture and Rural Development; responsibilities and power of relevant parties.

Article 2. Regulated entities:

1. The management agencies affiliated to the agriculture and rural development sector;
2. The agro-forestry-fishery and salt food production/trading establishments (hereinafter referred to as "establishments"); relevant organizations and individuals.

Article 3. Definitions

For the purposes of this Decree, the terms below are construed as follows:

1. A food hazard is a biological, chemical or physical agent in a food or condition that could potentially cause an adverse human health effect.
2. A risk is the likelihood and severity of the adverse health effect posed by one (or more) certain hazards if consumed.
3. Food safety risk analysis includes food safety risk assessment, risk management and risk communication.
4. Risk assessment is a science-based process that includes the following steps: hazard identification, hazard characterization, exposure assessment, and risk characterization.
5. Hazard identification is the identification of biological, chemical or physical agents in a particular food or food group that could potentially cause an adverse human health effect.
6. Hazard characterization is a quantitative or qualitative assessment of the nature and probability of adverse human effects associated with biological, chemical or physical agents that may be present in food.
7. Exposure assessment is the qualitative or quantitative assessment of the quantity of chemical, biological and physical agent in food consumed by human as well as other relevant sources through exposure.
8. Risk characterization is the qualitative or quantitative assessment of the likelihood and severity of known potential hazards to health including levels of uncertainty in a certain residential area according to hazard identification, hazard characterization, and exposure assessment.
9. Food safety risk profile (hereinafter referred to as “risk profile”) is a description of food safety issues and their contexts in order to identify elements of hazards or risks regarding to risk management decisions.
10. Quantitative risk assessment is a risk assessment that provides numerical information about the risk and shows levels of uncertainty
11. Qualitative risk assessment is a risk assessment based on inadequate data for risk estimation but that allows risk ranking by professional knowledge and indication of elements of uncertainty.
12. Risk estimation is the result of a risk characterization process.
13. Risk management is the process of considering policy options according to the result of risk assessment, selecting and implementing appropriate control measures.
14. Risk communication is the process of information and ideas exchange regarding to hazard, risk, risk management and elements among risk assessors, risk managers, consumers, producers, organizations and other relevant individuals.
15. Food safety management in the production/trading chain is the food safety management that is carried out throughout the agro-forestry-fishery and salt production process from initial stage to preliminary processing, processing and distribution.

Article 4. Foods that are subjects of food safety risk assessment

Food safety risk assessment of a food is necessary in one or some of the following cases:
1. It has high rate of poisoning;
2. It potentially causes dangerous diseases;
3. It has monitoring sample results that show the high rate of violation of technical regulations and standards of food safety;

4. Its food safety criteria need to be established or revised.
5. It needs to undergo food safety risk analysis according to management requirements.

Article 5. The professional management agencies

1. Food safety risk analysis

a) National Agro - Forestry - Fisheries Quality Assurance Department shall be responsible for carrying out food safety risk analysis of Agro - Forestry – Fishery and salt products; it is also a unit in charge of food safety risk analysis of The Ministry of Agriculture and Rural Development.

b) Plan Protection Department shall be responsible for carrying out food safety risk analysis of plants and food from plant products.

c) Department of Animal Health shall be responsible for carrying out food safety risk analysis of animal and food from terrestrial animal products.

(hereinafter the above agencies are referred to as "The central professional management agencies")

2. Food safety management in the agro-forestry-fishery and salt food production/trading chain.

a) The central professional management agencies shall be responsible for inspecting and monitoring food safety for the agro-forestry-fishery and salt production/trading chain for the purpose of export according to their assigned management fields.

b) The local professional management agencies are professional management agencies affiliated to Department of Agriculture and Rural Development in charge of food safety management of local agro-forestry-fishery and salt products, inspection and monitoring food safety for the agro-forestry-fishery and salt production/trading chain for the purpose of domestic consumption within the scope of their assigned management.

Article 6. The agencies cooperate in carrying out food safety risk analysis (hereinafter referred to as cooperating agencies)

1. The relevant units affiliated to the Ministry of Agriculture and Rural Development, Departments of Agriculture and Rural Development of provinces.
2. Research institutes, universities, laboratories in related fields.
3. Professional associations and consumer associations.
4. Establishments
5. Relevant organizations, individuals.

Article 7. Budget for food safety risk analysis and food safety management in the agro—forestry-fishery and salt production/trading chain.

The presiding units, the central and local professional management agencies shall make plans and estimate budget from the annual budget, submit them to competent authorities for approval and implementation after being approved.

Chapter II
THE PROCESS OF FOOD SAFETY RISK ANALYSIS
Section 1.THE FOOD SAFETY RISK ASSESSMENT EXPERT COUNCILS

Article 8. Food safety risk assessment boards

1. A food safety risk assessment board shall be established by a central professional management agency and includes the Director, Deputy Director(s) and members

2. The members of the board are experts who have knowledge and experience in one or several of the following fields: food quality and safety management; food technology; biology; chemistry; epidemiology; medicine and relevant fields according to the requirements for food safety risk assessment from the central professional management agency and external agencies and organizations.

Article 9. Food safety risk assessment expert council (hereinafter referred to as "expert councils")

1..Anexpert council shall be established by a central professional management agency and has 7-11 people, including: the President, Vice President(s), representatives of the boards and members.

2. The members of the expert council are experts who have knowledge and experience in one or several of the following fields: food quality and safety management; food technology; biology; chemistry; epidemiology; medicine and relevant fields according to the requirements of the central professional management agency.

3. Regulations on the operation of the expert councils are prescribed by the Ministry of Agriculture and Rural Development.

Article 10. Responsibilities of the boards

1. Establish the databases of food safety issues of the food production/trading chain according to the requests of the central professional management agencies.

2. Make the lists of food/hazard combinations that require risk profiles, identify the order of priority for implementation and report to the expert councils and the central professional management agencies.

3. Make risk profiles for specific food/hazard combinations according to the requests of the central professional management agencies.

4. Carry out food safety risk assessment and make food safety risk assessment reports on the specific food/hazard combinations according to the requests of the central professional management agencies.

Article 11. Responsibilities of the expert councils

1. Propose the food/hazard combinations that require risk profiles to the central professional management agencies according to the reports submitted by the boards.

2. Review the risk profiles provided by the boards and propose food/hazard combinations that require food safety risk assessment reports; food/hazard combinations that do not require food safety risk assessment report to the central professional management agencies.

3. Propose the food safety risk management measures of food/hazard combinations that already have risk profiles or food safety risk assessment reports prepared by the boards to the central professional management agencies.

Section 2. ISSUE IDENTIFICATION AND FOOD SAFETY RISK ASSESSMENT

Article 12. Database creation

1. Food safety data sources include:

a) The establishments' violations or non-compliance with the regulations on food safety during the process of food circulation, importation, and exportation discovered by competent authorities of Vietnam or the importing countries;
b) National food safety monitoring programs
c) Monitoring disease and food poisoning, epidemiological research, clinical research;
d) Information in the via mass media about food-related diseases, cases of food poisoning, complaints of customers, reports of scientists, announcements about food safety issues of establishments.
2. The boards shall collect and summarize information on food safety issues of the food production/trading chain under the management responsibility of the central professional management agencies prescribed in Article 5 of this Circular .
3. The boards shall identify the nature and characteristics of the food safety issues in order to find out the hazards in particular food according to the collected information

Article 13: Identification of food/hazard combinations that require risk profiles.
1. The boards shall make the lists and identify the order of priority for food/hazard combinations that require risk profiles and report to the expert councils and the central professional management agencies in accordance with the subjects in Article 4 of this Circular
2. The expert councils shall consider and propose particular food/hazard combinations that require risk profiles and report to the central professional management agencies according to the information provided by the boards.
3. The central professional management agencies shall decide food/hazard combinations that require risk profiles and assign the development of risk profiles of the specific food/hazard combinations to the boards.

Article 14: Preparation of risk profiles
1. The boards shall be responsible for developing the risk profiles of the specific food/hazard combination specified in Article 13 of this Circular and providing the risk profiles to the expert councils and the central professional management agencies.
2. A risk profile shall contain the following information::
a) The description of the food safety issues that require risk profiles;
b) Information on hazards and relevant foods
c) The causes, methods and production stages at which the hazard potentially permeate the food production/trading chain;
d) Information about infection routes resulting in exposure to the hazards of customers;
dd) Information about food production and potential consequences (economic consequence, harms to consumer health);
e) Regulations and control measures of hazards in food that are being implemented;
g) Proposal for food safety management measures of the food/hazard combinations;
h) Proposal for food/hazard combinations that require risk assessment reports;
i) The missing scientific data that limits or causes difficulties to food safety risk assessment of the food/hazard combinations;

k) Other relevant contents according to the requests of the central professional management agencies.
3. The information and data in the risk profiles shall cite the information sources

Article 15. Identification of the necessity of food safety risk assessment reports on the food/hazard combinations

1. The expert councils shall consider and assess risk profiles; report the results of the risk profile assessment and propose the next measures of the food/hazard combinations prescribed in Clauses 2 and 3 of this Article to the central professional management agencies.
2. The risk assessment report is not necessary for a food/hazard combination in one or some of the following cases::
a) The risks were fully described with authenticated data;
b) The risks are quite simple;
c) The appropriate risk management measures were specified in the risk profiles;
d) The risks are not under management;
3. 3. The risk assessment report is necessary for a food/hazard combination in one or some of the following cases
a) The risks were not fully described;
b) The risks are urgent concerns of the community;
c) The influential risks of many subjects in society or commerce.
4. The central professional management agencies shall decide the next processing measures of the food/hazard combinations according to the results of the risk profile assessment and the proposal of the expert councils
a) A risk assessment report is necessary;
b) A risk assessment report is not necessary;

Article 16. Food safety risk assessment

1. The boards shall carry out the food safety risk assessment of the specific food/hazard combinations according to the requests of the central professional management agencies and submit the reports to the expert councils and the central professional management agencies for the purpose of consideration and assessment.
2. The steps of the food safety risk assessment are specified in the Appendix issued with this Circular.
3. If it is necessary, the boards shall use information from similar food safety risk assessment works of international organizations, countries, ministries and central authorities that were published during the assessment process of specific food/hazard combinations in order to consider specific factors of domestic food production/trading and consumption process.
4. A food safety risk assessment report contains the following contents:
a) The purpose of risk assessment;
b) Hazard identification;
c) Hazard characterization;
d) Exposure assessment;
dd) Risk characterization;

e) Risk estimation;
g) Data gaps determination;
h) Proposal for the food safety risk management measures in food production/trading chain.

Section 3. FOOD SAFETY RISK MANAGEMENT

Article 17. Consideration and assessment of the food safety risk management measures

1. The expert councils shall considerate and assess the food safety risk management measures according to the following cases;
a) The food/hazard combinations were already has risk profile;
b) The food/hazard combination already has a food safety risk assessment report;
2. The food safety risk management measures in food production/trading chain are evaluated according the following criteria:
a) The levels of food safety that have been reached (the levels of consumer health protection);
b) The feasibility and practicality of implementation;
c) The economic aspect (consideration for cost and benefit factors of implementation of therisk management measures);
d) The social aspect.
3. The expert councils shall propose the food safety risk management measures to the central professional management agencies.

Article 18. Decision on the food safety risk management measures

The central professional management agencies shall consider reports proposed by expert councils and decide the food safety risk management measures applicable to the specific food/hazard combinations.

Article 19. Implementation of the food safety risk management measures and adjustment (if necessary)

1. The central professional management agencies shall be responsible for cooperation with relevant organizations and individuals in the implementation of particular management measures at each stage that specific hazards arise in the food production/trading chain for the purpose of protection the customers' health.
2. The central professional management agencies shall periodically gather information, evaluate the results of implementation of the food safety risk management measures and propose adjustments if necessary.
3. The food safety risk management measures shall be reconsidered and adjusted according to one of the following cases;
a) There are new data or new scientific knowledge about the food/hazard combinations that are being controlled ;
b) The central professional management agencies, the local professional management agencies, the presiding agencies or the relevant cooperating agencies discover the inappropriate risk management measures.

Section 4. FOOD SAFETY RISK COMMUNICATION

Article 20. Information exchange during the risk assessment and food safety risk management process

1. The central professional management agencies shall assign relevant organizations and individuals to exchange information about the risk assessment and food safety risk management process.

2. The relevant agencies participating in information exchange during the risk assessment and food safety risk management process shall:

a) Exchange information on the food/hazard combinations during the identification of food safety issues, risk assessment and food safety risk management process;

b) Notify and collect opinions of relevant cooperating agencies, representatives of agro-forestry-fishery food production/trading establishments about information on hazards, products and related information in order to carry out food safety risk assessment; risk profile and risk assessment report drafts; legal regulation drafts on the food safety risk management measures.

3. The information exchange measures consist of organizing meetings, seminars and providing questionnaires, written comments or other forms.

Article 21. Dissemination of information on food safety risk

1. Dissemination of information on food/hazard combinations that require risk profiles: the central professional management agencies shall notify relevant organizations and individuals of specific food/hazard combinations.

Dissemination of information on the results of food safety risk assessment according to the risk profiles or risk assessment reports: the central professional management agencies shall notify relevant organizations and individuals of the results of the food safety risk assessment of the specific food/hazard combinations.

3. Disclosure of information on risks and risk management measures: the central professional management agencies shall be responsible for disclosing information on risks and risk management measures of the specific food/hazard combinations to relevant organizations and individuals according to the regulations of the Ministry of Agriculture and Rural Development and the scope of assigned tasks and powers.

4. The forms of information disclosure consist of organizing conferences, updating on the website of the central professional management agencies through via mass media or other forms.

Chapter III

FOOD SAFETY MANAGEMENT IN THE AGRO-FORESTRY-FISHERY AND SALT PRODUCTION/TRADING CHAIN

Article 22: The principle of food safety management in the agro—forestry-fishery and salt food production/trading chain.

1. Food safety management shall be carried out throughout the agro-forestry-fishery and salt production/trading chain from initial stage to distribution.

2. The establishments shall be responsible for food safety for the products produced and traded at the establishments.

3. The food safety state management shall be carried out according to each stage throughout production/trading chain on the basis of food safety risk analysis.

Article 23: Food safety management activities in the agro-forestry-fishery and salt food production/trading chain

1. Self- control food safety during the establishments' food production/trading process.
2. Monitor food safety in community.
3. Monitor, inspect food safety profession of the professional management agencies.
4. Make contingency plan for processing food safety incidents.
5. Evaluate and propose effective measures in order to improve food safety management activities.

Article 24: Self- control of food safety by establishments

1. Self-control activities (including the implementation of food safety quality management programs) at the establishments shall comply with technical regulations and standards promulgated by the Ministry of Agriculture and Rural Development.
2. The establishments shall create the product traceability systems and recall unsafe food according to the regulations of Circular No. 03/2011/TT-BNNPTNT dated January 21, 2011 and Circular No. 74/ 2011/TT-BNNPTNT dated October 31, 2011 of the Ministry of Agriculture and Rural Development.
3. Small food production/trading establishments shall carry out self-control activities in accordance with national technical standards and specific regulations on food safety assurance conditions of retail food production/trading.
4. The establishments shall determine the key stages of the production/trading process in order to implement risk management measures in accordance with the instructions of the central professional management agencies or the regulations of the Ministry of Agriculture and Rural Development according to the risk profiles or the risk assessment reports on food/hazard combinations.
5. For the specific food/hazard combinations that require risk assessment without risk profiles or risk assessment reports, the establishments shall develop and implement the hazard monitoring programs that contain the following activities:

a) Identify hazards of products according to warnings of competent authorities, feedbacks from customers;

b) Strengthen control measures of the specific hazards at Point a, this Clause according to the food safety and quality management programs applied by establishments; control sample for hazard inspection and monitoring during production process at the establishments;

c) Trace the origin of food and find out the causes of unsafe food (if any);

d) Regularly report the results of food safety hazard monitoring and inspection to the central professional management agencies or the local professional management agencies.

6. The establishments shall identify and report to central professional management agencies or local professional management agencies if the establishments' products are potentially unsafe food.
7. Information about food safety on food labels, packages, documents shall comply with the regulations of the law on labels.

8. The establishments shall be promptly, fully and accurately warn about the unsafe food risk, preventive measures for consumers in accordance with the regulations of the Law.

Article 25. Food safety monitoring in community

The organizations and individuals shall report violations of food safety to central professional management agencies, local professional management agencies and local appropriate authorities.

Article 26. Food safety inspection and monitoring of central professional management agencies and local professional management agencies

1. The central professional management agencies or the local professional management agencies shall collect samples for food safety monitoring of agro-forestry-fishery and salt products throughout the production chain in accordance with current regulations, focus on high-risk products and stages in the risk profiles, the risk assessment reports and the results of the food safety condition classification assessment of establishments.

2. The central professional management agencies or the local professional management agencies shall apply appropriate monitoring frequency in order to inspect the food safety assurance conditions of establishments in each stage of entire chain according to current technical regulations, standards and the classification results of establishments

3. The inspection types include:

a) Inspection for assessment and classification of food safety assurance conditions;

b) Professional inspection according to the plans in compliance with the regulations of law;

c) Irregular inspection and professional inspection if there are signs of violation of regulations on food safety.

4. The central professional management agency and the local professional management agencies shall intensify inspection and supervision of the production establishments and production stages that do not ensure food safety;

5. If specific food/hazard combinations must undergo risk assessment without risk profiles or risk assessment reports, the central professional management agencies, the local professional management agencies shall develop the hazard monitoring program applied to food production/trading chain, strengthen inspection of production stages that potentially cause unsafe food; increase the frequency of taking inspection sample for the specific food/hazard combinations;

6. The central professional management agencies shall instruct the implementation of measures for risk management of the food/hazard combinations that have undergone risk analysis If necessary, the central professional management agencies will propose developing regulation documents on food safety risk management measures and submit these documents to the Ministry for the purpose of consideration and promulgation.

Article 27. The contingency plan for processing food safety incidents.

The central professional management agencies and the local professional management agencies shall develop contingency plans for processing food safety incidents in the annually regular operation plans that contain the following contents:

1. Anticipation of potential food safety incidents;
2. Processing measures that contains deployment steps and resources for each type of incident;
3. Assignment on the implementation of each processing measures;
4. The budget

Article 28. Respond to food safety incidents

If food safety incidents occur, the central professional management agencies and the local professional management agencies shall be responsible for tracing origins and recalling unsafe food in accordance with the regulations of Circular No. 03/2011/TT-BNNPTNT dated January 21, 2011 and Circular No. 74/2011/TT-BNNPTNT dated October 31, 2011 of the Ministry of Agriculture and Rural Development.

Chapter IV

RESPONSIBILITIES OF RELATED PARTIES

Article 29. Responsibilities of the presiding agencies for food safety risk analysis

1. Annually summarize proposals of central professional management agencies; make plans for food safety risk analysis, budget plans for implementation and submit them to the Ministry for approval;
2. Collect opinions, make plans and organize training courses on food safety risk analysis for officials who are responsible for food safety risk management of relevant units;
3. Participate in the domestic and foreign food safety risk assessment network;
4. Summarize and report annually the results of food safety risk analysis of the central professional management agencies and related coordinating agencies to the Ministry of Agriculture and Rural Development

Article 30. Responsibilities of central professional management agencies

1. Annually, make operation and budget plans and send these plan to the presiding agencies The detailed plans contain the following contents: the proposed lists of food/hazard combinations that require risk profiles, prepare risk assessment reports; training and communication plans; budget plan and other contents that are required by managers. At the same time, propose the lists according to the order of priority for the purpose of applying the food safety management model in the production/trading chain to some products and group of products under their management.
2. Develop relevant technical documents and guidelines for unified application;
3. Establish the expert councils, the boards
4. Build databases of expert networks on food safety risk assessment of assigned foods;
5. Build databases of food safety risk assessment issues on assigned foods;
6. Identify the food/hazard combinations that require risk profiles and food safety risk assessment reports, make risk profiles and prepare the food safety risk assessment reports for the specific food/hazard combinations;
7. Closely cooperate and provide full information to the boards for risk assessment of the specific food/hazard combination;
8. Select and decide on food safety risk manage measures for the specific food/hazard combinations, if necessary, propose to develop documents providing regulations on safety risk management measures and submit to the Ministry of Agriculture and Rural Development for promulgation;

9. Cooperate with other central professional management agencies in food safety risk analysis group of products according to requirements
10. Organize the food safety risk management in food production/trading chain
11. Make contingency plan for handling food safety incidents; organize the processing and remedy of food safety incidents;
12. Annually report the implementation of food safety risk analysis to the presiding agencies and report the situations of food safety management in the production/trading chain of foods to the Ministry of Agriculture and Rural Development;
13. Evaluate and propose measures for improvement of the effective food safety management activities according to the food production/trading chain prescribed in Article 5 of this Circular.

Article 31. The local professional management agencies shall:

1. Provide information about food safety issues that require risk analysis to the relevant presiding agencies and central professional management agencies;
2. Inspect and monitor food safety in the food production/trading chain;
3. Implement hazard inspection and monitoring programs for the specific food production chain, strengthen control at the production stage that potentially lose control for the purpose of limiting the risks according to assignment of the central professional management agencies.

Article 32. The establishments shall:

1. Regularly or irregularly report (if there are requests of agencies or identification of unsafe food) food safety control activities, processing measures, recall of unsafe food and the remedy results to the central professional management agencies or the local professional management agencies.
2. Provide information on food safety control activities and other relevant information according to the requests of the central professional management agencies or the local professional management agencies in order to undertake food safety risk assessment and food safety management activities along chain.
3. Implement measures for food safety risk management at the establishments, measures for remedy of food safety incidents according to the instructions of the central professional management agencies or the regulations of the Ministry of Agriculture and Rural Development.
4. Establish and implement food safety and quality management programs for the food production/trading process at the establishments according to regulations.

Article 33. Cooperating agencies shall:

1. Provide information about food safety regarding to food safety risk analysis activities to presiding agencies and central professional management agencies;
2. Appoint experts to join the expert councils and the boards according to the requests of the central professional management agencies;
3. Participate in other activities regarding to food safety risk analysis according to requests of the central professional management agencies

Chapter V
IMPLEMENTATION PROVISIONS

Article 34: Entry into force

This Circular comes into force as of February 20, 2013

Article 35. Amendment

Any difficulties or problems that arise during the implementation of this document should be reported to the Department of Health for consideration and amendment.

MINISTER

Cao Duc Phat

APPENDIX

FRAMEWORK FOR FOOD SAFETY RISK ASSESSMENT

(*Issued together with Circular No 02/2013/TT-BNNPTNT dated January 05, 2013 of the Minister of Agriculture and Rural Development)*

I. General requirements

1. Risk assessment shall comply with scientific basis and the review entire process from food production to consumption
2. Risk assessment shall be separate from risk management.
3. Risk assessment shall be objective, transparent and it is fully recorded..
4. Risk assessment shall describe the levels of uncertainty and the places where the risks occur during the risk assessment process.
5. The data provided for the risk assessment shall be reliable and accurate in order to minimize the levels of uncertainty in the risk estimation.
6. Risk assessment shall be reviewed and updated if there is new information about the hazards and the food production process;
7. The selection of risk assessors shall be transparent according to professional qualifications and independence on interests regarding to the food production industry.

II. Food safety risk assessment measures

Step 1. Hazard identification;

- Review the information in the risk profiles and provide necessary information about the specific food/hazard combinations;
- Determine the information on the food production process and output;
- Identify the source of the hazard and food contamination
- Identify the relationship between food/hazard combinations and specific domestic and foreign food-related disease, foodborne illness outbreak, warnings (recall of products) that violate the regulations on food safety of the competent authorities of Vietnam and the importing countries.

Step 2. Hazard characterization;

Collect information, documents and reports of research institutes, universities, agencies affiliated to domestic ministries, central authorities, countries and international organizations regarding the following contents:

- Hazard characterization includes the qualitative and/or quantitative characterization at the levels of the severity and the duration of harms to human health if hazard enters the human body.
- Information on the hazard characterization includes virulence and pathogenicity for different groups of consumers; medical condition (duration of disease, number of days, symptoms); the impact of food substrates (ingredients, processing methods,....) to hazard.
- Information about people who ate the food and had disease during a specific period (number of cases; levels of infection; group of people who are confirmed inspection...).
- Identify the relationship between dosage and response (threshold dose) of different groups of consumers including children, adults, the elderly, pregnant women and other sensitive patients.

Step 3: Exposure assessment;

Collect information, documents and reports of research institutes, universities, agencies affiliated to domestic ministries, central authorities, countries and international organizations in order to the quantity of the hazard in the food; the intake; the frequency of person who eats that food.

Step 4. Risk characterization;

- Risk estimation: A collection of information on hazard identification, exposure assessment, and hazard characterization. Estimate the quantity of people who are confirmed inspection, the severity of disease according to this collection.
- For qualitative risk assessment, risk estimation is high, moderate, and low;
- For quantitative risk assessment, risk estimation is a specific number;
- Identification of data gaps of risk assessment.

Step 5. Actual inspection

Inspect and compare prediction of annual cases with statistics of cases in the year

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2. MOH RA Decision memo (2023)

MINISTRY OF HEALTH	**THE SOCIALIST REPUBLIC OF VIETNAM**
	Independence – Freedom – Happiness
No: 1973/QD-BYT	*Hanoi, 27/4/2023*

DECISION
On Establishment of Food Safety Risk Assessment Technical Group
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THE HEALTH MINISTER

Pursuant to the Law on Food Safety;

Pursuant to the Party Central Committee's Secretariat Directive No. 17-CT/TW dated 21/10/2022 regarding enhanced assurance of food security and food safety in the new context;

Pursuant to the GoV Decree 95/2022/ND-CP dated 15/11/2022 regarding functions, mandates, jurisdictions and organizational structure of the Ministry of Health

Pursuant to the Health Minister Decision No. 2728/QD-BYT dated 03/5/2018 regarding functions, mandates, jurisdictions and organizational structure of the Vietnam Food Administration (VFA);

In reviewing the Petition No. 271/TTr-VKNQG dated 14/4/2023 of the National Institute for Food Control (NIFC) regarding seeking for approval to the list of members of the Food Safety Risk Assessment Technical Group (FSRATG); and

At the request of the Director General of the VFA, MOH.

Now, DECIDES

Article 1. To establish the Food Safety Risk Assessment Technical Group (FSRATG), with members are the personnel named under the list attached to this Decision.

Article 2. The FSRATG is tasked to:

1. Examine and propose to the MOH and relevant line ministries, the regulations and approaches to assessing food safety risks based on international experience.
2. Examine and advise on a proposal/project on food safety risk assessment model for Vietnam based on updates and references to relevant models of selected countries and territories and regions across the world towards establishment of a Food Safety Risk Assessment Center/Hub.
3. Draft a Proposal on Food Safety Risk Assessment in Vietnam and submit the same to the MOH for approval.
4. Collaborate in the implementation of risk assessment activities catering to food safety risk management.

Article 3. The Standing Unit of the FSRATG is based at the NIFC. The Head and Deputy Head of the Technical Group are allowed to use the institute's office stamp in implementing the tasks.

Article 4. The operational expenditures for the FSRATG shall be in accordance with the applicable regulations on and obtained from the State budget and from other legal financial sources. Expenditures are to be utilized and managed in accordance with the regulations.

Article 5. This Decision takes effect from the date of signature. The FSRATG shall be automatically self-dissolved upon having completed all the tasks.

Article 6. The Administrator of the OOM, the Director General of VFA, the Director General of NIFC, and Head of concerned Agencies/Units and personnel named under Article 1 are liable to implement this Decision./.

THE LIST OF MEMBERS - FSRA TECHNICAL GROUP

(Attached to MOH Decision 1973/QD-BTY dated 27/4/2023)

I. DEPARTMENTS/UNITS UNDER THE MINISTRY OF HEALTH (MOH)

1. Head of the Group:

1.1. Ms. Le Thi Hong Dao, Director General, NIFC, MOH

2. Deputy Heads of the Group:

2.1. Mr. Nguyen Hung Long, Deputy Director General, VFA, MOH

2.2. Mr. Tran Cao Son, Deputy Director, NIFC, MOH

3. Members:

3.1. Ms. Le Thi Phuong Thao, Deputy Director, NIFC, MOH

3.2. Ms. Doan Thi Ngoc Bich, Expert, Food Poisoning Surveillance and Communication Division, VFA, MOH

3.3. Mr. Nguyen Van Sy, Deputy Head, Department of Food Chemistry, National Institute of Nutrition (NIN), MOH

3.4. Ms. Hoang Hoai Phuong, Director of Food Safety Testing Center under the Institute of Public Health, Ho Chi Minh City, MOH

3.5. Mr. Luu Quoc Toan, Head of Nutrition Department under the Faculty of Environmental and Occupational Health, Hanoi University of Public Health (HUPH), MOH

3.6. Mr. Tuong Quoc Trieu, Deputy Director, Food Safety Testing Center for Central Highlands under the Central Highlands Institute of Hygiene and Epidemiology (CHIHE), MOH

3.7. Ms. Dao Thi Van Khanh, Director, Food Safety Center for Central Region under the Pasteur Institute Nha Trang, MOH

3.8. Ms. Vu Thi Trang, Head of Nutrients and Food Additives Department, NIFC, MOH

3.9. Mr. Nguyen Thanh Trung, Head of Food Microbiology and Genetically Modified Food Department, NIFC, MOH

3.10. Ms. Nguyen Thi Hong Ngoc, Acting Head of Food Toxigology and Allergens Department, NIFC, MOH

3.11. Ms. Dang Thu Hien, Deputy Head, in charging of Chemical Residues and Contaminants in Food Department, NIFC, MOH

3.12. Mr. Dinh Viet Chien, Deputy Head, in charging of Heavy Metal and Minerals Department, NIFC, MOH

3.13. Ms. Ta Thi Yen, acting head of Science – Training and International Cooperation Department, NIFC, MOH

3.14. Mr. Tran Thanh Son, Quality Assurance, NIFC, MOH – **Secretary**

II. DEPARTMENTS/UNITS UNDER THE MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT (participating members)

1. Mr. Vuong Truong Giang, Head of Food Safety and Environment Division, Department of Animal Health, MARD;
2. Mr. Tang Anh Vinh, Deputy Head of Public Animal Health Division, DAH, MARD
3. Mr. Le Anh Ngoc, Head of Inspection, Legal Affairs & Conformity Assessment Division, NAFIQAD, MARD

4. Ms. Dang Thi Thanh Son, Head of Veterinary Hygiene Department under the National Institute of Veterinary Research, MARD
5. Ms. Nguyen Thi Thanh Thuy, Head of Quality Management and Food Safety Department under the Food Science and Technology Faculty, Vietnam National University of Agriculture, MARD
6. Ms. Luu Ngoc Phuong, Expert, Quality Division under the Reference Testing & Agrifood Quality Consultancy Center (RETAG), NAFIQAD, MARD

III. DEPARTMENTS/UNITS UNDER THE MINISTRY OF INDUSTRY AND TRADE (participating members)

1. Mr. Nguyen Manh Thang, Expert, Department of Science and Technology, MOIT

Mr. Le Van Trong, Director, National Center for Food Analysis and Assessment

ANNEX B FOOD SAFETY RISK ASSESSMENT STUDY TOUR TO CHINA (Nov,2023)

EXECUTIVE SUMMARY

1. A study visit to China for an inter-ministerial technical working group on food safety risk assessment was organized by SAFEGRO and delivered from October 30 to November 5, 2023, in Beijing. The visit was co-funded by Global Affairs Canada (GAC) and the National Institute for Food Control (NIFC, MOH). The study visit delegation included 11 participants representing the key project partner ministries (i.e., Ministry of Agriculture and Rural Development [MARD]; Ministry of Health [MOH]; and Ministry of Industry and Trade [MOIT]), a SAFEGRO National consultant and led by the International Policy & Regulatory Specialist for SAFEGRO. Participants were expected to exchange information on topics of interest focusing on: (i) history of risk assessment organization; (ii) policy development of food safety risk assessment; (iii) its institutional set up to implement food safety risk assessment; (iv) how risk assessment supports risk management and risk communication; (v) and its effective collaboration with other government organizations with responsibilities in the food safety risk analysis context.
2. Meetings were held with relevant departmental counterparts of respective host ministries and laboratories including China National Center for Food Safety Risk Assessment (CFRA), Chinese Academy of Inspection and Quarantine (CAIQ), and the Institute of Quality Standard and Testing Technology for Agro-products (IQSTAP) of the Chinese Academy of Agricultural Science in China. The visit also coincided with participation at the 17th China International Food Safety and Quality (CIFSQ) conference held in Beijing on November 2 -3, 2023 where participants from Vietnam had opportunity to exchange information with an international audience.
3. In the areas specific to Vietnam's needs to develop risk assessment capacity, the project considered China with its similar political structure would provide valuable insights into better practices for Vietnam to learn from both technically and institutionally. As an integral component of the risk analysis framework, food safety risk assessment has developed in China after the promulgation of the Food Safety Law of the People's Republic of China in 2009 with the creation of the China National Center for Food Safety Risk Assessment (CFSA) and its development and emphasis on progress in national food safety risk assessment work. To date CFSA has conducted over 100 risk assessments in support of risk management. To further strengthen its capacities for food safety risk assessment, China continues to work on the development of risk assessment methodologies and provide more and better risk assessment data for risk management. With the new Food Safety Law of 2015 put into place and the new institutional arrangements of 2018, with CFSA under the State Administration for Market Regulation (SAMR), IQSTAP under the Ministry of Agriculture and Rural Affairs (MARA) as risk assessors and CAIQ as risk managers it is believed that food safety in China will steadily improve.
4. Key actions by China include legislative promotion, systematic development, active practice, sci-tech support and international cooperation to the level where China currently hosts two sub-Committees at Codex. The risk assessment-based risk analysis framework has been established

and has been continuously improving the food safety management system in China. All risk assessments for food safety are conducted by CFSA and information housed in a database held by CFSA. On an ongoing basis, the risk analysis framework needs further improvement following international excellence, particularly in building a risk-based management system and highlighting risk communication. Vietnam can learn from China's experience in developing risk assessment methodology as the foundation piece to a sound, evidence-based approach to food safety management. SAFEGRO encourages developing a cadre of risk assessors in Vietnam to actively maintain the technical cooperation established with CFSA in China through SAFEGRO project.

INTRODUCTION

5. A study visit to China for an inter-ministerial technical working group on food safety risk assessment from October 30 to November 5, 2023 was organized by SAFEGRO. The visit was co-funded by Global Affairs Canada (GAC) and the National Institute for Food Control (NIFC, MOH). The study visit included participants from among the key project partner ministries (i.e., Ministry of Agriculture and Rural Development (MARD); Ministry of Health (MOH); and Ministry of Industry and Trade (MOIT)). Participants were expected to observe, interact with and discuss topics of interest focusing on: (i) history of risk assessment organization; (ii) policy development of food safety risk assessment; (iii) its institutional set up to implement food safety risk assessment; (iv) how risk assessment supports risk management and risk communication; (v) and its effective collaboration with other government organizations with responsibilities in the food safety risk assessment / risk analysis context. The visit also coincided with participation at the China International Food Safety and Quality (CIFSQ) conference held in Beijing on November 2 -3, 2023.
6. The technical study visit to China shared information and built awareness amongst the study tour delegates on the process for transforming a national food safety management system to a management system built upon a national food safety risk assessment capacity, whereby the three ministries involved can more effectively collaborate in addressing food safety risk assessment in Vietnam and strive towards an integrated approach to an effective food safety control system based on risk assessment for the country, potentially under a designated focal point.
7. During the visit, participants had meetings with relevant departmental counterparts of respective host ministries and laboratories including China National Center for Food Safety Risk Assessment (CFRA), Chinese Academy of Inspection and Quarantine (CIQ), and the Institute of Quality Standard and Testing Technology for Agro-products of Chinese Academy of Agricultural Science (IQSAP) in China to learn about risk analysis, organizations that implement risk analysis, the approach to food safety risk analysis, the relationship and operation of relevant organizations, regulations, as well as inter-ministerial coordination mechanisms. Participants learned about the structure of organizations conducting risk analysis, their implementation process, reporting lines as well as vertical and horizontal coordination and accountability.

PARTICIPANTS

8. The 13-member delegation was comprised of six officers from MOH, four officers from MARD, one officer from MOIT and two SAFEGRO consultants. Throughout the visit it was brought to the attention of all Chinese hosts that this was the first inter-ministerial delegation from Vietnam participating on a visit to China. The list of participants is detailed in Table 1.

PROGRAM

9. The delegation arrived in Beijing on Monday, October 30, 2023 and spent the week visiting with CFRA on the 31st, IQSTAP on the morning and CAIQ in the afternoon of the 1st of November, participated at CIFSQ on the 2nd and 3rd and returned to Vietnam on the weekend.

OBJECTIVES

10. The objective of the technical working group participating on the Food Safety Risk Assessment Study visit to China was to obtain detailed practical knowledge about how another country such as China implements risk assessment and risk management in a holistic framework and a single agency or integrated food safety management approach of inter-ministerial collaboration.

11. The visit offered the opportunity to concerned Risk Managers and Risk Assessors at MARD/MOH/MOIT to directly gain first-hand knowledge and identify best approach and practices applicable to food safety management systems related to risk assessment/analysis. More specifically, the proposed study visit provided added knowledge to the participants on:

- The legal and structural framework of food safety risk assessment in China
- The institutional arrangements (jurisdictional/authorization) regarding the risk assessment, risk management, risk communication approach to food safety risk analysis in China
- Study risk assessment activities for chemical and microbiological in many types of food
- The roles and responsibilities of the different institutions/organizations involved in food safety risk analysis in China
- Foodborne Illness Outbreak Response Protocols (FIORP)
- The science-based, risk-based approach to food safety
- The application of risk assessment data on food safety management (e.g: regulation)
- Promoting and coordinating uniform risk assessment methodologies
- Identifying emerging risks systematically with a view of prevention
- China's approach to national food safety risk analysis programming and resource allocations

OUTCOMES

12. The exchange provided practical knowledge to be applied to the ongoing process and framework of risk analysis in Vietnam.
13. The knowledge exchange offered an opportunity, through discussions with organizations in China on their path to a uniform risk assessment methodology, to build risk assessment methodology similarities between three Ministries (MARD, MOH, MOIT) in Vietnam in order to agree on

advising on an option of a unified food safety management system and the connections between MARD, MOH, MOIT in using risk assessment data.

14. The knowledge exchange established information towards a proposal of Vietnam food safety risk assessment and a document which can be approved and unified for three ministries (MOH, MARD, MOIT).
15. The study visit provided an excellent opportunity for risk managers and assessors from MARD/MOH/MOIT to directly observe and ask for insights on an effective operation of food safety risk analysis in support of the Vietnamese risk analysis and applied risk assessment in food safety management and foodborne disease prevention. The participants learned from their peers in China practical 'do-and-don't' to implement an effective food safety risk analysis framework. The study visit to China helped to build consensus within the line ministries (MOH, MARD, MOIT) in charge of food safety management generally as well as risk assessment specifically, on the next steps towards effective implementation and enforcement of a risk-based food safety control system.
16. The knowledge gained by the participants was further disseminated through a follow-up workshop on November 7th and consensus building on the proposal of risk assessment in Vietnam. It also provided recommendations for SAFEGRO activities in the future in Vietnam.

FINDINGS

17. The delegation had direct exposure to the relevant counterparts in charge of food safety assessment, management, and control. Meetings enabled the Vietnamese delegation to witness the political will around the issues and heard firsthand how the regulatory framework and food safety management system in China evolved over the years. At the federal government level, as stated in the program, the delegation met with:

(i) China National Center for Food Safety Risk Assessment (CFSA)

Established in 2010, the CFSA has experienced rapid development due to a consensus on food safety risk assessment in China. CFSA serves as the focal unit for food safety risk assessment and food safety monitoring activities across China. Its role is to provide scientific evidence for food safety management in China. Risk assessment methods at CFSA adhere to WHO standards. Vietnam can consider adopting the CFSA model for risk assessment and risk monitoring activities nationwide. The center has the divisional units required to perform all steps of the food safety risk assessment process, including toxicity assessment division; food safety hazard monitoring division; risk assessment division; standards division; chemistry and biology laboratory; consumption assessment division. In addition, CFSA also undertakes the task of food safety risk communication. To date CFSA has conducted over 100 risk assessments in support of risk management.

(ii) Chinese Academy of Inspection and Quarantine (CAIQ)

Founded in 2004, the Chinese Academy of Inspection and Quarantine is a national public institute established to research and develop science and technology to be applied in inspection and quarantine. CAIQ was established through consolidation of two organizations, Plant Quarantine Institute of the Ministry of Agriculture (founded in 1954)

and China Import and Export Commodity Inspection Technology Institute (founded in 1979). The mission of CAIQ is mainly to conduct research on the applied science of inspection and quarantine, as well as, basic high-tech and soft science with the focus on solving general and comprehensive problems, emergent, and pivotal issues related to the administration of inspection and quarantine. Th CAIQ provides technical support to the policy making related to inspection and quarantine for China's central government and provides technical assistance to the law enforcement duties of the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) and its provincial CIQs. CAIQ also includes the Center for Application of Food Safety Hazard Analysis and Critical Control Point and the Nano-material and Products Inspection Center of AQSIQ. The delegation was given a tour of the extensive laboratory facilities at the CAIQ.

(iii) Institute of Quality Standard and Testing Technology for Agro-products of Chinese Academy of Agricultural Science (IQSTAP)

The Institute of Quality Standards and Testing Technology for Agro-products (IQSTAP), part of the Chinese Academy of Agricultural Sciences, is an entity under the Ministry of Agriculture and Rural Affairs (MARA). IQSTAP is primarily engaged in the risk assessment of pesticide chemicals and veterinary drugs to develop regulations pertaining to maximum residue limits (MRLs). The risk assessment processes are centered on understanding the decomposition and changes that occur in pesticides and veterinary drugs under real conditions of use on crops or livestock. Toxicity and consumption data are shared with CFSA.

18. Through discussions with the organizations the delegation understood the collaboration between China National Center for Food Safety Risk Assessment, Chinese Academy of Inspection and Quarantine, and Institute of Quality Standard and Testing Technology for Agro-products of Chinese Academy of Agricultural Science in China on the development and maintenance of a database of risk assessments. Although both CFSA and IQSTAP conducted risk assessments, those conducted by IQSTAP were limited to risk assessments on the application of pesticides in crop production and use of veterinary drugs in livestock production, whereas risk assessments on food safety for all food products whether of plant or animal origin were conducted by the CFSA. All risk assessment data is held in a database managed by the CFSA.
19. In the event of a food borne disease outbreak or recall the CAIQ and its affiliated institutes and local CIQs are involved in the food recall, investigation, and scientific reporting on the occurrence. Dependent upon the result of the investigation a new or updated risk assessment may be required for the product under investigation which would be referred to the CFSA.
20. In China, three ministries are involved in food safety management at different stages of the production chain. These include the Ministry of Agriculture and Rural Affairs (MARA), the State Administration for Market Regulation (SAMR), and General Administration of Customs China (GACC). The Ministry of Health, while not directly involved in management, plays a role in the development of product standards by leveraging risk assessment and monitoring of food safety risks. There is no overlap in the risk assessment work carried out at the China National Center for Food Safety Risk Assessment under SAMR and the Institute of Quality Standards and Testing

Technology for Agro-products of the Chinese Academy of Agricultural Sciences under MARA. Risk assessment results form the foundation for relevant management ministries to make risk management and risk communication decisions under CAIQ and its enforcement organizations.

21. In terms of information technology implementation for data management and sharing to facilitate risk assessment, this is carried out from central to local levels (99% at district level) and feeds up to the central database at CFSA. All food safety data can be accessed at the China National Center for Food Safety Risk Assessment.

22. Through its participation at the 17th China International Food Safety and Quality Conference held on November 2nd and 3rd the delegation heard presentations not only from senior management and scientific staff from CFSA, IQSTAP but also from other organizations in China both public and private with interests in food safety, and speakers from other countries in the region, the US Food and Drug Administration (FDA), US Department of Agriculture (USDA), US Centre for Disease Control (CDC), European Food Safety Authority (EFSA), Saudi Arabia Regulatory Agency, as well as international organizations such as the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO), private sector food production organizations and academia.
23. In a breakout session entitled Foodborne Disease Surveillance and Outbreak Investigation (Case study) the SAFEGRO consultant on the delegation gave a presentation entitled Surveillance of Food Safety Incidents in Vietnam summarized from a report produced under the SAFEGRO project.

CONCLUSION AND RECOMMENDATIONS

24. The project and the delegation considered China with its similar political structure would provide valuable insights into better practices for Vietnam to learn from both technically and institutionally.

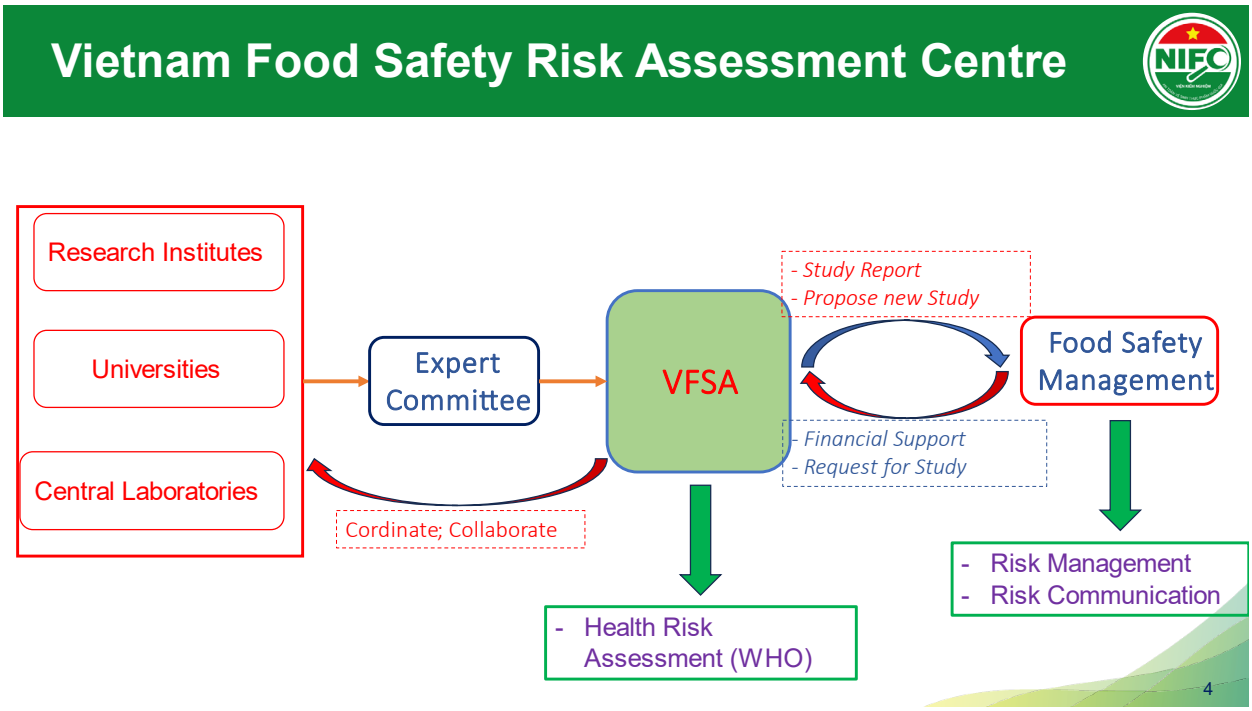
25. As an integral component of the risk analysis framework, food safety risk assessment has developed in China following the promulgation of the Food Safety Law of the People's Republic of China in 2009 with the creation of the China National Center for Food Safety Risk Assessment (CFSA) and its development and emphasis on progress in national food safety risk assessment work.

26. China continues to work on the development of risk assessment methodologies and provide more and better risk assessment data for risk management. With the new Food Safety Law of 2015 put into place and the new institutional arrangements of 2018, with CFSA under the State Administration for Market Regulation (SAMR), IQSTAP under the Ministry of Agriculture and Rural Affairs (MARA) as risk assessors and CAIQ as risk managers it is believed that food safety in China will steadily improve.

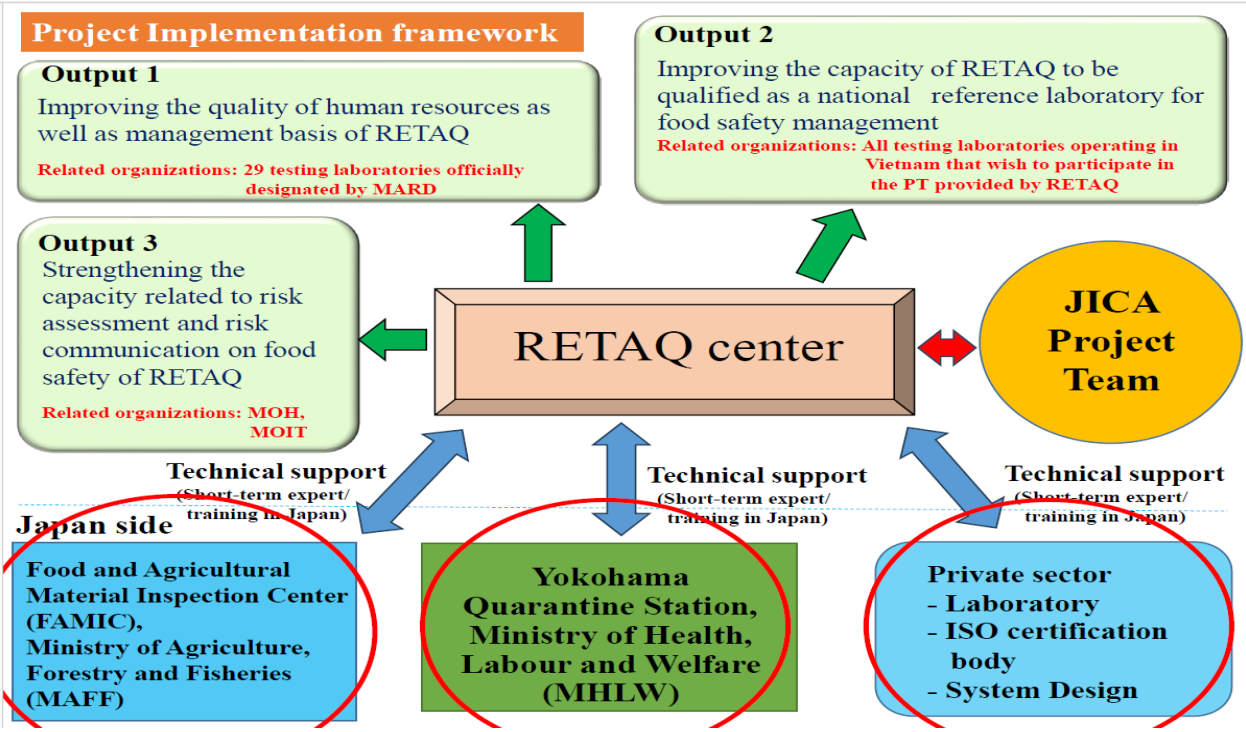
27. It is recommended that the government of Vietnam consider China's experience in the development of a single focal point within the government for the delivery of all food safety risk assessments.

28. It is further recommended that the government undertake a step-by-step approach to build capacity towards establishing an independent national center for food safety risk assessment to serve food safety management in Vietnam. To ensure the independence of the proposed risk assessment center from risk management agencies the centre should be located as an organization at arms length to the three ministries currently responsible for the regulation and implementation of food safety management.

ANNEX C MOH–NIFC FOOD SAFETY RISK ASSESSMENT FRAMEWORK



ANNEX D JAPAN (JICA) / RETAQ PROJECT



Output 3:
Strengthening the capacity related to risk assessment and risk communication on food safety of RETAQ

Activities

3-1	Select case study for risk assessment and risk communication
3-2	Organize an expert team with relevant organization such as Ministry of Health (MOH) and Ministry of Industry and Trade (MOIT), regional authorities, and so on
3-3	Analyze overall value chain to identify high risk area and conduct sampling
3-4	Conduct analysis of collected samples to determine the cause of food pollution/ contamination
3-5	Gather all concerned parties to discuss the solution to improve the situation and propose improvements
3-6	Hold a wrap-up seminar on risk analysis

ANNEX E FOOD SAFETY RISK ASSESSMENT PRIORITIZATION WORKSHOP

DRAFT FOR DISCUSSION

Foodborne Disease Risk Assessment Prioritization Workshop

June, 2024

Introduction

This document describes the objective of the consultation workshop to establish a shortlist of up to XX? food safety risk assessments to be supported by the SAFEGRO and other donors on behalf of the Government of Vietnam on a cost-shared basis with the respective government departments.

Workshop objective

The workshop aims to engage technical experts from among the three partner ministries (MARD/MOH/MOIT) responsible for food safety in Vietnam in order to achieve a consensus on the food safety risk assessment priorities for Vietnam. The result of the workshop will be a shortlist of 6 food safety risks assessments to be undertaken by respective ministries with the support of SAFEGRO.

Workshop organization

Voting process and responsibilities

The FSRA prioritization process workshop requires the following participants (up to 30 persons):

- **Voting members** of experts designated by each ministry (##?) will vote and rank food safety risks.
- **Advisors** support voting members with answering the questions/ scoring the RA
- **Facilitators** support and further explain the sub-group on the process and methodology, and translate where necessary

A webinar explaining in detail the prioritization methodology will be organized by the RA team for the facilitators in advance for the workshop (date TBC) so facilitators fully understand the process and are better able to support and explain where needed to voting members during the workshop.

The workshop will be hybrid, the ranking and scoring by the voting members will be done on site in the conference room. Advisors may be off-site. Facilitators will also be present on site.

Profile of the disease prioritization workshop participants

This is a technical workshop to rank and prioritise food safety hazards taking into account national priorities, and participants should have the following capability profile:

- Working knowledge of key food safety hazards in Vietnam
- Food safety and disease knowledge with laboratory and/or epidemiological understanding of food safety, control and surveillance of key food safety hazards relevant to Vietnam

- Experience in undertaking food safety risk assessments
- Good working knowledge of English language but translation will be provided

Participant roles in disease prioritization workshop:

Voting members

Equal representation of government staff from each ministry involved in food safety control. In total four **voting members per ministry**:

Experts should cover animal health, human health, environmental, laboratory, consumers, food safety inspection, markets, and other aspects of value chains. Industry knowledge also desirable.

Advisors

Key academic partners and stakeholders who provide advice and expertise to voting members during workshop.

Facilitators

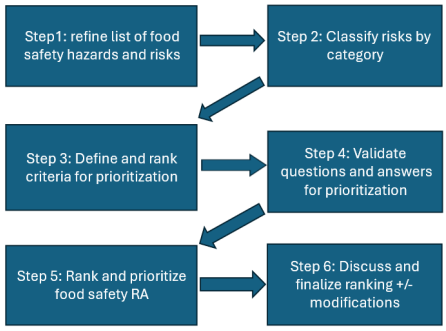
Representatives - from MARD, MOH, MOIT, SAFEGRO

Workshop process

The 1-day will be dedicated to a set of expert consultation activities (see diagram below)
To arrive at a list of priorities a stepwise approach will be undertaken. The objective of the first activity (Step 1) is to refine the list of food safety hazards, risks and scenarios which will be target of prioritization. This first step is required so that experts can focus their ranking to a list of important conditions within the available time allocated to the workshop. Ideally the ranking would be performed on a total of ~30 risks but a full list of up to 50 will be provided to workshop participants ahead of the workshop. Communication with participants before the workshop will take place before the workshop to arrive at an order of diseases to prioritize. The results of this list will be presented and discussed and a maximum of 30 food safety risks will be selected for further ranking.

The list of 30 will then be classified by “category or epitypes” in consultation with national experts. This classification step will be required so that we can organize them into homogeneous sub-groups based on specific criteria: hazards (chemical, microbiological; physical, allergen, AMR); food commodity (raw/fresh, cooked or processed); entity/environment (markets, school kitchens; etc.).

Workshop Steps:



Workshop Agenda

Presentations:

Food safety risks in Vietnam: findings from review of literature - Academic
MOH Risk manager – MOH perspective
MARD Risk manager – MARD perspective
MOIT Risk Manager – MOIT perspective
Review preliminary list
Ranking of food safety hazards, measuring impacts and health outcomes
Development of questions to be answered
Guidance of Scoring Food Safety Hazards and Examples of Ranking Process
Scoring of food safety hazards and scenarios
Real-time result score analysis and ranking food safety risks for assessments
Discussion on assignment of FSRA to respective Ministries Risk Managers and donor

Identification and inviting required voting members and advisors should be done by Ministries. A virtual briefing will be organized for the expert team to explain the purpose of the workshop, briefly the prioritization process, required profiles of voting members and advisors, and ask them to start inviting the voting members and advisors in their countries.

The actual food safety risk prioritization Workshop will last 1 day.

In advance of the workshop, the RA team will provide before the workshop for translation and dissemination to workshop participants:

- List of hazards and food safety risks
- List of hazards organized by category/epitopes
- List of criteria to be considered for each
- List of questions and respective answers to be considered in prioritization
- Adapt the digital prioritization tool

Food safety risk prioritization criteria

Examples of general criteria for socioeconomic impact of food safety risks

Likelihood of hospitalization	Labour market impact	Trade restrictions
Market closure	Movement control	Farm/market
Production limiting attitudes)	Food producing animals	Consumer fear of infection (risk
Production cost impact	Government funding	Burden on small scale producers

Examples of food safety specific criteria

Food vehicle	Temporal pattern	Disease severity
Geographical extent	Climate sensitivity	Landscape change sensitivity
Efficacy of controls	Availability of controls	Introduction of contaminant
Consumption and exposure		

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