

**MINISTRY OF  
AGRICULTURE AND  
RURAL DEVELOPMENT**

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**THE SOCIALIST REPUBLIC OF VIETNAM**  
**Independence – Freedom – Happiness**

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*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) Plant 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 councils (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 specificfood/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 specificfood/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 combinationsthat already have risk profilesor 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 combinations 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 a 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 the risk 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 management 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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