Risk Categorization of Food Establishment

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What is the content of this Guideline?

1. PREAMBLE
2. INTRODUCTION
3. IMPORTANT FOOD ISSUES
4. ELEMENTS OF A NATIONAL FOOD CONTROL SYSTEM
5. STRENGTHENING NATIONAL FOOD CONTROL SYSTEM
6. SPECIFIC ISSUES FOR DEVELOPING COUNTRY
   6.1 Food Systems
   6.2 Food Processing Industry
   6.3 Street Foods
   6.4 Food Control Infrastructure and Resources
   6.5 Technical Assistance: Role of International Agencies

ANNEXES
Important questions to be answered: How does a country develop an Effective and Efficient Food Control System?

1. Food Legislation

2. Food Control Management (Single Agency System, Multi Agency System, Integrated System)

3. Inspection Activities

4. Laboratory Services

5. Information, Education, Communication and Training

What laws, regulations, standards, code of practices, and guidelines related with food safety are available?

How does the government control food safety? Is there any specific system applied?

How are risk-based inspection activities implemented?

How does the government manage food safety laboratories, reference labs?

How are information exchanged amongs stakeholders? Any training program? For whom?
Should we give special attention to food-supply-chain commonly practiced in SAARC countries?

Examples:

- Small farmers
- Small fishermen
- SMEs (processors)
- Household food industries
- Traditional markets
- Streetfood vendors
- SMEs (caterers, restaurants, etc.)
Risk Factors Related to Foods

Risk Factors Related to Food Business

Food-borne diseases occur most frequently because of consumption of contaminated food by microbiological hazards (depend on pH and $a_w$)

- Cross contamination
- Food from unsafe sources
- Inadequate cooking
- Improper holding temperatures
- Contaminated equipment
- Poor personal hygiene
- Food handlers’ health status
- Water quality
- Presence of pests

High-Risk Foods
Medium-Risk Foods
Low-Risk foods

How do we assess the Risk?
How do we manage the Risk?
How do we communicate the Risk?

Risk Analysis (CAC)

Risk Assessment
1. Hazard identification
2. Hazard characterization
3. Exposure assessment
4. Risk characterization

Risk Management

Risk Communication

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Need to regulate, to build the capacity, and to control
Develop More Effective and Efficient Food Safety Control Policy

Set Laws and Regulations to Protect Consumer Health and Insure Fair Trade

How do we enhance Food Safety?

Build the Capacity of the Producers to Raise Their Food Safety Awareness

Empower Consumer to Participate in Food Safety Activities (Education, Campaigns, Monitoring, etc.)
<table>
<thead>
<tr>
<th>Traditional Food Inspection</th>
<th>Risk-based Food Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has centred on determining compliance by food processing establishments with a number of regulations (may or may not be up to date).</td>
<td>Focuses inspection on risk factors that may cause food-borne disease.</td>
</tr>
<tr>
<td>The effectiveness of this method of inspection depends on the time available to inspectors to check the facility under inspection and particularly its products physically.</td>
<td>The inspector will make better use of his/her scarce time allocation to each processor, without overlooking existing non-compliance and violations of regulations.</td>
</tr>
<tr>
<td><strong>The method is corrective.</strong> No assurance after this type of inspection that there will not be recurrence of the violation.</td>
<td>The inspection will be based on risk and will thus fulfil its ultimate purpose of safeguarding the consumer. Product samples will be collected and analysed only for verification purposes and no longer as a means to ensure product safety.</td>
</tr>
</tbody>
</table>
Guidelines for risk categorization of food and food establishments applicable to ASEAN countries

2011
FAO ROAP, Bangkok, Thailand
PURPOSE
The purpose of classifying food businesses according to risk category, is to allow the regulatory agency responsible to food inspection to prioritise inspections of food businesses based on those which pose the greatest potential risk to the population if the safety of food is out-of control.

Classification of food businesses according to risk category was prepared with special attention to specific condition in ASEAN countries.

SCOPE
The scope of this Guideline are as follows:

a) provides a framework for the risk categorization which include high-risk, medium-risk, and low-risk food businesses to meet specific needs of ASEAN countries;
b) addresses different types of food sector, including imported, exported and domestic foods;
c) includes impact of products, primary producer’s level controls, processing types and consumer group on risks;
d) covers the foods traded in ASEAN countries.
# Risk Level Matrix for Fish and Fishery Products (FAO, 2009)

<table>
<thead>
<tr>
<th>Fish/fishery product</th>
<th>Characteristics that increase risk</th>
<th>Events that are reasonably likely to occur and that will increase risk</th>
<th>Risk level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molluscan shellfish live and eaten raw</td>
<td>X</td>
<td>X</td>
<td>High</td>
</tr>
<tr>
<td>Fermented &lt; 8% NaCl</td>
<td>X</td>
<td>X</td>
<td>High</td>
</tr>
<tr>
<td>Semipreserved &gt; 6% NaCl, pH &lt; 5</td>
<td>X</td>
<td>X</td>
<td>Medium</td>
</tr>
<tr>
<td>Frozen freshwater fin fish</td>
<td></td>
<td>X</td>
<td>Low</td>
</tr>
</tbody>
</table>

- **No terminal heat application**
- **Bad safety record**
- **No CCP identified for a hazard**
- **Harmful recontamination or contamination**
- **Abusive handling–time–temp**
- **Growth or accumulation of hazard**
## Prioritizing establishments based on establishment type and product profile (FAO, 2009)

<table>
<thead>
<tr>
<th>Establishment type</th>
<th>Compliance</th>
<th>Product</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish landing</td>
<td>High</td>
<td>Fresh fish for processing and direct consumption after cooking</td>
<td>Low</td>
</tr>
<tr>
<td>Aquaculture producer</td>
<td>Low</td>
<td>Molluscan shellfish for consumption raw</td>
<td>High</td>
</tr>
<tr>
<td>Processing plant</td>
<td>High</td>
<td>Frozen fish fillets</td>
<td>Low</td>
</tr>
<tr>
<td>Retail fish market</td>
<td>Low</td>
<td>Variety of fresh and processed products some of which are consumed without further processing</td>
<td>High</td>
</tr>
</tbody>
</table>
Determination of Food Business Risk Category

Special attention should be given to Food Business in ASEAN countries:

- Small farmers
- Small fishermen
- SMEs (processors)
- Household food industries
- Traditional markets
- Streetfood vendors
- SMEs (Caterers, restaurants, etc)

Principal stages of the food supply chain (FAO, 2006)
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Photos taken from www.flickr.com
Food-borne Disease Risk Factors:
Those factors that may cause food-borne disease in consumers if left uncontrolled.

Risk-based Food Control Program

Risk Factors Related to Foods
Risk Factors Related to Food Business

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FAO-ROAP, India, 17-21-06-13
Risk Factors Related to Foods
Risk Factors Related to Foods

Food-borne diseases occur most frequently because of consumption of contaminated food by microbiological hazards (depend on pH and $a_w$).

- High-Risk Foods
- Medium-Risk Foods
- Low-Risk foods

Risk Factors Related to Food Business

cross contamination -
food from unsafe sources -
inadequate cooking -
improper holding temperatures -
contaminated equipment -
poor personal hygiene -
food handlers’ health status -
water quality -
presence of pests -
Decision Tree Used in this Guidelines

Guidelines for risk categorization of food and food establishments applicable to ASEAN countries
Check if the primary product is:
- live animals (livestock, fish, poultry) up to the point of slaughter;
- fish (chilled fresh, head on, gut in);
- harvested live shellfish and live crustaceans; or
- grain (producers, handlers, storage).

QP1: Is it likely that a food safety hazard is present or in the primary product that could be transferred to food derived from the primary product?

QP2: Is there a practical hazard control action, demonstrated to be effective, that can be implemented in the farm?

QP3: Is an action in the farm critical to the safety of the product at the time of consumption?

QP4: Is it possible that prohibited chemical additives such as formalin or borax is added to the primary products?

Low-Risk Food Business

High-Risk Food Business

Medium-Risk Food Business

Low-Risk Food Business
<table>
<thead>
<tr>
<th>Businesses dealing with primary foods</th>
<th>Main Activity</th>
<th>QP1</th>
<th>QP2</th>
<th>QP3</th>
<th>QP4</th>
<th>Risk-Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef Cattle</td>
<td>Animal husbandry, slaughtering, fresh handling</td>
<td>yes</td>
<td>no</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Piggery</td>
<td>Animal husbandry, slaughtering, fresh handling</td>
<td>yes</td>
<td>no</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Dairy Farm, small scale</td>
<td>Animal husbandry, milking</td>
<td>yes</td>
<td>no</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Poultry Farm, small scale</td>
<td>Farming, butchering, fresh handling</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Freshwater Fish Farm</td>
<td>Farming, fresh handling</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Captured Fish</td>
<td>Catching, fresh handling</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Vegetable Farm</td>
<td>Farming, harvesting, packaging, fresh handling</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Rice Farm</td>
<td>Farming, harvesting, threshing, drying</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
## FREQUENCY OF INSPECTION

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Frequency of Inspection (every x months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Starting Point</td>
</tr>
<tr>
<td>High-Risk Food Business</td>
<td>6</td>
</tr>
<tr>
<td>Medium-Risk Food Business</td>
<td>12</td>
</tr>
<tr>
<td>Low-Risk Food Business</td>
<td>18</td>
</tr>
</tbody>
</table>
Risk categorization is a complex process that may be influenced by a number of factors. Therefore, different approaches seemed to be used in classifying food business based on risk category.

Different approach has been used in classifying food business based on risk category, among others:

- **Approach Using Risk Categorization Model (RCM) Questionnaires**
- **Priority Classification System Based on Score**
- **Food Business Categorization Using Decision Tree Model**

**Food Business Categorization Using Decision Tree Model is Suggested in this Guideline**
SUMMARY

Decision tree model of this Guideline has been applied in categorizing both businesses dealing with primary and secondary foods which include high-risk, medium-risk, and low-risk food business. However, the national authority in each country may review and revise if needed according to food business conditions existing in the country concerned.
Thank You Very Much