CURRENT FOOD SAFETY ISSUES IN INDONESIA: CHALLENGE AND EXPECTATION

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NATIONAL AGENCY OF DRUG AND FOOD CONTROL, REPUBLIC OF INDONESIA

INTERNATIONAL FOOD CONFERENCE 2011
Life Improvement Through Food Technology
Surabaya, 28-29 October 2011
1. Introduction

2. Food Safety Challenges

3. Integrated Food Safety System as a Solution

4. Food Innovation and Safety

5. Conclusion and Recommendation
1

INTRODUCTION
The Republic of Indonesia

- World 3rd largest stable and multiethnic democracy country
- Emerging economy of the 21st century
- 30% of world’s tropical rainforest
- Southeast Asia’s largest country and economy
- Founding member of non-aligned movement
- Founding member of ASEAN
- Member of the G-20
The Republic of Indonesia

- **Area:** 1,904,569 km² (5 major islands and about 30 smaller groups)
- **Population:** 240 Million; More than 400 ethnics as well as languages diversity.
- **Archipelago** of 18,000 islands.
Almost 600 million people (Indonesia: 231 million)
GDP: 1,496 Mil US$/2,860 Mil PPP$ (Indonesia: 547 Mil US$/967 Mil PPP)
Source: ASEAN Secretariat (2010)
Indonesia F&B industry output is estimated at about USD 80 billion with growth level about 5-13%

<table>
<thead>
<tr>
<th>Year</th>
<th>RP (Trillions)</th>
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<tr>
<td>2007</td>
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<td>2009</td>
<td>586</td>
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<tr>
<td>2010</td>
<td>605</td>
</tr>
<tr>
<td>2011*</td>
<td>684</td>
</tr>
</tbody>
</table>

Source: Gapmmi (2011) based on BPS data
Food industry is ranked 2\textsuperscript{nd} in domestic investment realization and 5\textsuperscript{th} in FDI realization.

### Top 5 Domestic Investment Realization 2010 by Sector

- **Food Crops and Plantation**: 3.22 (US$ billion)
- **Food Industry**: 1.84 (US$ billion)
- **Transportations, Storage & Telecommunications**: 1.55 (US$ billion)
- **Electricity, Gas & Water Supply**: 0.55 (US$ billion)
- **Other Services**: 0.37 (US$ billion)

### Top 5 FDI 2010 by Sector

- **Transportations, Storage & Telecommunications**: 5 (US$ billion)
- **Mining**: 2.2 (US$ billion)
- **Electricity, Gas & Water Supply**: 1.4 (US$ billion)
- **Real Estate, Industrial Estate & Office Building**: 1.1 (US$ billion)
- **Food Industry**: 1 (US$ billion)

(US$ 1 = IDR 8,900,-)

**Source**: BKPM (2011)
Indonesia is ranked 9th based on International Rating Organizations

<table>
<thead>
<tr>
<th>No.</th>
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<th>Ratings (Period of Year)</th>
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<td>Inggris</td>
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<td>20.</td>
<td>Spain</td>
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World Investment Prospects Survey 2008 – 2012 of “the most attractive economies for the location of FDI” conducted by the United Nations Conference on Trade and Development (UNCTAD)

Indonesia was ranked 9th as major destination for FDI, based on UNCTAD survey whose respondents are executives of Transnational Corporations (TNC) from developed and/or developing countries. UNCTAD consists of 193 member economies or countries.

Intra and Extra Trade ASEAN


ASEAN Secretariat (2011)
## ASEAN Balance of trade with selected trading partner countries

<table>
<thead>
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<td>-34.5</td>
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<td>Value (US$ million)</td>
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<td>21.2</td>
<td>34.3</td>
<td>30.8</td>
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<td>EU27</td>
<td>Value (US$ million)</td>
<td>14,211</td>
<td>24,176</td>
<td>18,940</td>
<td>29,349</td>
<td>24,093</td>
<td>14,196</td>
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<td>Share to exports (%)</td>
<td>29.0</td>
<td>38.1</td>
<td>31.4</td>
<td>27.1</td>
<td>20.7</td>
<td>15.3</td>
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<td>Share to exports (%)</td>
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<td>-24.8</td>
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<td>-106</td>
<td>179</td>
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<td>Share to exports (%)</td>
<td>-14.0</td>
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<td>21.7</td>
<td>36.8</td>
<td>26.9</td>
<td>28.7</td>
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<td>Russia</td>
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<td>Share to exports (%)</td>
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<td>91.0</td>
<td>89.7</td>
<td>87.8</td>
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</table>

Source: ASEAN Secretariat (2010)
Challenges of Food Safety in Southeast Asia

- **Legislation**
  - Establishing and updating food legislation is a necessary first step in establishing an effective food safety system.

- **Food Control Management**
  - Reliable scientific information on food safety is one of the pillars to ensure food safety. In this regard, decision-making can be enhanced through a risk-based approach to food safety, i.e., through risk analysis.

- **Food Inspection**
  - Competent food inspectors who are adequately trained and equipped for food inspection are vital in ensuring consistent, transparent, and effective food inspection.

- **Food Control Laboratory**
  - Adequate laboratory infrastructure is required to support the monitoring, surveillance and enforcement activities.

- **Compliance by the Food Industry**
  - Exporters in the food industry need to comply with the importing country’s and buyers’ requirements.

- **Information, Education, Communication and Training**
  - Sharing information, education, and advice among stakeholders is essential to enable food safety programs to reduce the incidence of food-borne disease.

- **International and Regional Trade Frameworks**
  - The use of Codex standards and related texts as reference in international food trade in the framework of the WTO has created an increased interest and participation by its members in the development of Codex standards.

**ECONOMIC Blueprint**

- Single Market and production base
- Competitive economic region
- Equitable Economic development
- Integration into global economy

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**ASEAN CHARTER**

ONE VISION, ONE IDENTITY, ONE CARING AND SHARING COMMUNITY
ASEAN Standards for a Single Market

- ASEAN Consultative Committee on Standards and Quality (ACCSQ)
- Consisting of several working groups, product working groups, and task forces to facilitate the 12 priority integration sectors
- Goal of ‘One Standard, One Test, Accepted Everywhere’
- Upgrade to international standards
- Main Focus on Mutual Recognition Agreements (MRA)
STANDARD AND CONFORMANCE INSTITUTIONAL FRAMEWORK
Significant progress has been made in the 12 priority integration sectors that ASEAN has identified to serve as a catalyst for economic integration in the region.

- Agro-based
- Air transport
- Automotive
- Electronics
- e-ASEAN/ICT
- Fisheries
- Healthcare
- Logistics
- Rubber-based
- Textile and apparel
- Tourism
- Wood-based
• Scope in product group approach
• The Pre-Conditions for equivalence between national systems
• Automaticity: What is recognized at the individual level and what are the entry requirements (pre-market approval)

Are we ready?
Readiness of SMEs?
Challenges to reach harmonized food safety standard in ASEAN at the moment are:

- Gap in legal framework
- Control of compliance
- Institutional coordination
- Awareness of quality issues
- Accreditation infrastructure.
FOOD SAFETY CHALLENGE
Great challenge to control food safety in Indonesia

- Wide coverage area of control
- Control of large diversity of foods
- Inadequate knowledge and skill to produce **good quality and safe foods** (SMEs in particular)
- Lack of consumer awareness in food safety
- Limited number of competent food inspectors
Various foods in the market

Fresh food in:
- Super/hypermarket
- Traditional Market
- Retailer

Ready to eat in:
- Restaurant
- Café Hotel
- Warung Tegal
- vendors

Processed food
- MD, ML (Badan POM)
- SP, P-IRT (District Gov.)
- unregister food

Street foods and foods sold in school

How to control them?
Who authorize to control food safety and quality in Indonesia?
FOOD SAFETY LAW AND REGULATION IN INDONESIA

- Law No. 7, 1996 on Foods
- Law No. 8, 1999 on Consumer Protection
- Law No. 36, 2009 on Health
- Government Regulation No. 69, 1999 on Food Labeling and Advertisement
- Government Regulation No. 28, 2004 on Food Safety, Food Quality and Nutrition
- Decrees of Ministry of Health and other decrees of ministries related to Food safety.
- Decrees of Head of NADFC

Do the legal bases fully function to control food safety and quality?
Do we use of Scientific Data for setting up the Standard?

**DOSE-RESPONSE DATA**
* (HAZARD CHARACTERIZATION)  

**ADI**

X mg / kg BB  

**GOVERNMENT**

**Consumption data**  

**RISK:** HAZARD x EXPOSURE  

Maximum level of contaminant / food additive / chemical residues should be set in order not to exceed the ADI value.
Food Chain from *Farm to Table* Approach
(Government Regulation No. 28/2004 on Food Safety, Quality, and Nutrition)
These Good Practices are prepared by related government institutions, applied voluntarily by stakeholders, may be applied as mandatory if required (considered critical) and controlled by related government institutions.
Pre-Market Assessment for Processed Food (as preventive control)

Processed food for trade in retail packaging shall obtain the registration approval letter from NADFC, prior to distribution (based on the processed food safety, quality, and nutrition assessment results)

Exempted processed food produced by home industries. Processed food made by home industries shall possess a home industry food production certificate issued by the Local Government.
PRE AND POST-MARKET CONTROL OF FOOD PRODUCTS

RISK BASED APPROACH

PRE – MARKET EVALUATION

REGISTRATION

REQUIREMENT

QUALITY
SAFETY
NUTRITION

POST – MARKET VIGILANCE

* Inspection of manufacture, distribution and retail facilities
* Product control:
  - Sampling
  - Laboratory Test.
  - Label and advertisement control
* Monitoring of adverse events

SUSPENSION
BANNED LICENSE
RECALLING
PUBLIC WARNING
LAW ENFORCEMENT

Food Safety Control in Indonesia
PROCESSED FOOD ITEMS REGISTERED IN INDONESIA
2006-2011*

ML: Imported Food
MD: National Food / produced in Indonesia

*Registration data from 1 January 2006 – 7 July 2011 (NADFC, 2011)
How SMEs survive in the global competition?
Small and Home Industry dominate F&B Industry, but contribute less than 15%

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<tr>
<th>Category</th>
<th>% Output</th>
<th>% Number of establishment</th>
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<tbody>
<tr>
<td>Big &amp; Medium</td>
<td>86,79</td>
<td>0.52</td>
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<tr>
<td>Small</td>
<td>5,69</td>
<td>5,71</td>
</tr>
<tr>
<td>Home Industry</td>
<td>7,52</td>
<td>93,77</td>
</tr>
</tbody>
</table>

Source: BPS (2008)

SMEs in Indonesia was reported around 1.2 millions. Number of home industry in Indonesia was recorded less than 45,000 industries (IRTP) and its registered food number provided by local government (SP-PIRT) was only less than 30,000 (BPOM, 2010). Foods marketed in Indonesia including ready to eat foods dominated by home and micro business
1. Foodborne disease outbreak in Indonesia
2. Food notification and rejection
   - FDA
   - EU RASFF
3. Pre Market Evaluation by NADFC
4. Post Market Control by NADFC
   - Production channel
   - Distribution channel
PERCENTAGE OF THE ETIOLOGICAL AGENTS FOR
FOODBORNE DISEASE OUTBREAKS
2001 - 2010

![Bar chart showing the percentage of etiological agents for foodborne disease outbreaks from 2001 to 2010. The chart displays data for microbes, chemical, unknown, and no samples for each year.]
Foodborne Disease Outbreak In Indonesia 2010

Suspected agents

- Unknown: 52.1%
- Microb.: 18.8%
- Chemical: 12.4%
- No Sample: 16.8%

Suspected foods

- Household food: 44.4%
- Processed food: 16.2%
- Catering Food: 21.5%
- Street Food: 14.7%
- Others: 1.2%
- Not Reported: 2.0%
The percentage food poisoning outbreak in elementary school is the highest (70-79%) compared to that in kindergarten, junior high school, senior high school and campus.
FOOD IMPORT REFUSAL IN US FROM INDONESIA

### as of October 2010

- **Food Additive**: 9%
- **Chemical**: 23%
- **Microbes**: 23%
- **Label**: 14%
- **Filthy**: 27%
- **Production**: 4%

### as of October 2011

- **Food Additive**: 10%
- **Label**: 17%
- **Microbes**: 13%
- **Filthy**: 3%
- **Chemical**: 30%
- **Production**: 27%
- **Process**: 27%

Chemical: histamin, methyl mercury, botulinum toxin, chloramphenicol, aflatoxin, cadmium, sulfites

Microbes: *Listeria monocytogenes*, *Salmonella*, *other microbial contamination*

Food Additive: Illegal and/or Undeclared Sweeteners, Illegal and/or Undeclared colors

Production: Not Comply with GMP, HACCP,

Source: US FDA Import Alert (http://www.accessdata.fda.gov/cms_ia/countrylist.html)
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<td>2011.0394</td>
<td>Greece</td>
<td>Mercury in ground nutmeg from Indonesia via Italy</td>
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<td>2011.0411</td>
<td>Netherlands</td>
<td>Benzo(A)Pyrene in palm oil stearin from Indonesia</td>
<td>food additives</td>
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<td>microbiology</td>
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<td>Spain</td>
<td>Aflatoxin (B1=12.2; Tot = 13.2; B1 = 17.8; Tot = 20.4 ug/kg-ppb) in ground nutmeg from Indonesia</td>
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<td>mycotoxins</td>
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<td>Mercury (1.572 mg/kg-ppm) in swordfish from Spain, with raw material from Indonesia</td>
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<td>2011.0451</td>
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<td>2011.0952</td>
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<td>Carbon monoxide treatment (170 ug/kg - ppb) of chilled vacuum packed tuna from Indonesia</td>
<td>fish and fish product</td>
<td>Composition of Carbon monoxide treatment</td>
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<td>2011.BQT</td>
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<td>Aflatoxin (B1 = 17 ug/kg-ppb) in nutmeg from Indonesia</td>
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<td>Bulging and defective packaging of canned pineapple in syrup from Indonesia</td>
<td>fruits and vegetable</td>
<td>packaging defective/ incorrect</td>
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<td>12</td>
<td>Alert</td>
<td>04/08/2011</td>
<td>2011.1055</td>
<td>Germany</td>
<td>Aflatoxins (B1=14.6; Tot = 16.6 ug/kg-ppb) in ground nutmeg spices from Indonesia, via the Netherlands</td>
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<td>13</td>
<td>Information</td>
<td>14/09/2011</td>
<td>2011.1226</td>
<td>France</td>
<td>Cadmium (0.440 mg/kg-ppm) in frozen swordfish (Xiphias gladius) from Indonesia</td>
<td>fish and fish heavy metals</td>
<td>product</td>
</tr>
<tr>
<td>14</td>
<td>Alert</td>
<td>12/9/2011</td>
<td>2011.1246</td>
<td>Germany</td>
<td>Aflatoxins (B1=9.0; Tot = 11.2 ug/kg-ppb) in ground nutmeg spices from Indonesia, via the Netherlands</td>
<td>herbs and spices</td>
<td>mycotoxins</td>
</tr>
<tr>
<td>15</td>
<td>Border rejection</td>
<td>15/09/2011</td>
<td>2011.BVM</td>
<td>France</td>
<td>Mercury (1.362 mg/kg-ppm) in frozen swordfish (Xiphias gladius) from Indonesia</td>
<td>fish and fish heavy metals</td>
<td>product</td>
</tr>
<tr>
<td>16</td>
<td>Information</td>
<td>13/10/2011</td>
<td>2011.1376</td>
<td>United Kingdom</td>
<td>Arsenic in palm kernel expeller from Indonesia and Malaysia</td>
<td>feed material</td>
<td>heavy metals</td>
</tr>
</tbody>
</table>

Badan POM (2011)
Food producer / importer / distributor / retailer

PRE MARKET EVALUATION

SUSPENSION OR REJECTION DUE TO:

• Exceeding the max level of food contaminants (microbiological, chemical)
• Exceeding max level of food additive or not in the food category
• Use of unapproved additives or illegal additives
• Not comply with food safety and quality standard.
• Over claim
• Administration requirement

Registered number MD and ML
POST MARKET CONTROL

Inspection on production, distribution channels and port of entry, sampling, lab testing, control of label and advertisement, monitoring, surveillance, and law enforcement

PRODUCTION FACILITY (MD)

HOME INDUSTRY (PIRT)

TRADITIONAL MARKET

RETAIL OUTLET

DISTRIBUTION FACILITY

MD, ML and PIRT

DISTRIBUTION AND RETAIL FACILITY

MODERN MARKET
POST MARKET CONTROL NOTES

- Unsafe foods mostly reported from micro business, ready to eat foods, small scale and home industry (IRTP)
- High public expectation to Badan POM for food safety control.
- Limited authority and resources of Badan POM for Food Safety Prevention and Control.
- Fragmented food safety control programs
- Mild criminal sanction
- Great challenges for risk based food safety control
- Major local authorities do not empower District Food Inspector and Food Safety Extension Worker that have been trained by NADFC.
- NADFC’s Food Inspectors do not have clear authority in inspecting production facilities and law enforcement of IRTP, except those in suspected cases that violate the law (Government Regulation No 28/2004).
- Local Government do not have special food safety institutional and enough resources for food safety establishment and control.
Food Safety seems to be the last priority for Food Security Agenda
3 INTEGRATED FOOD SAFETY SYSTEM AS A SOLUTION

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

- Food Law (Law No. 7/1996)
- Health (Law No 36/2009)
- Consumer Protection Law (Law No.8/1999)
- Government Regulations: No. 69/1999 on Food Labeling and Advertisement
- No. 28/2004 on Food Safety, Quality, and Nutrition

Integrated Food Safety System in Indonesia

Inspection of Food Establishment, Distributor/Retailer, Export/Import

Food Testing Laboratories at Related Government Institutions (Including 31 NADFC Provincial Laboratories)

Training (i.e. District Food Inspectors), Extension Service for Household Food Industry, Food Star Award and Food Safety Campaign
“Together we can improve food safety in Indonesia”
INDONESIAN INTEGRATED FOOD SAFETY SYSTEM

This brings together agencies involved with foodborne disease monitoring, food surveillance and food assessment including government, industry, academia and consumers.

Food Intelligence  
(Risk Assessment)

Food Safety Control  
(Risk Management)

Food Watch

Food Safety Promotion  
(Risk Communication)

NATIONAL FOOD SAFETY COMMITTEE

This brings together agencies involved with administration of food law, the inspectorate and analysis of food.

This brings together government, industry and consumers to communicate on food safety issues.
THE CHALLENGE OF INTEGRATED INTERSECTORAL APPROACH

How to conduct this IFSS in the region so that can be implemented effectively?

Decree of Coordinating Minister for Human Welfare No 23 /2011
Regarding Coordination of National Food Safety Network
INTEGRATED FOOD SAFETY NETWORK IN INDONESIA

- JIP (Food Intelligence Network)
- JPKP (Food Safety Promotion Network)
- JPP (Food Control Network)
By applying the Integrated Food Safety System, Indonesia improves food safety through the following scheme:

LEVEL OF FOOD SAFETY IMPROVED

OUTCOMES

1. HIGHER COMPETENCY LEVEL OF NATIONAL AND LOCAL CONTROL AUTHORITY
2. MORE EFFECTIVE AND EFFICIENT FOOD SAFETY CONTROL POLICY
3. MORE READILY AVAILABLE AND APPLICABLE FOOD LEGISLATION
4. HIGHER FOOD SAFETY AWARENESS LEVEL OF FOOD PRODUCERS
5. HIGHER FOOD SAFETY AWARENESS LEVEL OF CONSUMERS
The National Movement of Food Consumed by School Children (FCSC)

- Unsafe FCSC may lead to acute or chronic adverse health effects to the students.
- Several years of exposure assessment was one of the scientific evidences showing that school children exposed to unsafe FCSC.
- Several ministries/institutions involve in controlling the safety of FCSC.
- Commitment of competent authorities to improve the safety of FCSC is essential.

It is necessary to initiate a clear, systematic, integrated plan of action by authorities in improving the safety, quality and nutrition of FCSC.

National Movement of FCSC
• The responsibility for best generation depends on current generation
• Next generation will be the successor of the nations. If the young generation is exposed to unsafe foods, we lose the next generation.
• This National Movement shall be moved and followed by concrete actions
• Vice President is delighted to watch over the implementation of the national action plan.

31 January 2011
GOAL
SAFE, QUALITY AND NUTRITIOUS FCSC IMPROVED

PURPOSE
To empower school community in providing safe, quality and nutritious FCSC

1. FCSC Program Developed
2. Community awareness increased
3. Capacity Building conducted
4. Facility Developed
5. Management Optimized

Program 1
Program 2
Program 3
Program ...

ACTIVITIES
Badan POM through all Balai POM in all provinces is very pleased to be “Clearing House” for SMEs to improve their competitiveness and compliance of Food Safety and Quality. It needs strong coordination among stakeholders.
FOOD INNOVATION AND SAFETY
Innovation system is dynamic interactions among academician, government and business.

The Government of Indonesia provides incentives for the business who allocates their incomes for engineering, innovation, and diffusion of technology (Government Regulation No 35 / 2007).

Incentives for tax, custom duty, researcher, and engineer
INNOVATION PARADIGM

R&D Institutes

Supply-Push
Technology Development
Know-What
Know-How

Demand-Driven
Value Creation
Know-Who
Know-Where

Government

Know to regulate, to control, to facilitate, to empower

Market/Society
INNOVATION MODEL IS NOT ALWAYS LINIER

The starting point of processes of innovation does not always originate in research. In fact, Impulses for innovations mostly originate from potential users and their issues.
INNOVATION BRIDGING FLOW OF TRIPLE HELIX ACTORS

Alur Jembatan Inovasi (Proses Penciptaan Teknologi)

I  II  III  IV  V

Pengembangan  Manufaktur

Riset  Desain & Rekayasa

- Pemerintah (RUT)
- Universitas
- Lembaga Penelitian Dasar

- Investor (Modal Ventura)
- Pemerintah (RUK)
- Lembaga Penelitian Terapan

Sepenuhnya investor

Pasar

Zuhal (2009)
Feedback is "Key" of innovation

Source: Kline and Rosenberg
INNOVATION is not only about invention or new technology

How is the Offering Produced?
How do you Deliver the Offering?
What financial model do we use?

What's next?

Which Networks and Partners should we use?
What should be the Offering?
What Customer Experience will You Offer?
Key expectations from regulator

1. Strengthen ABG partnership to develop food product innovation in Indonesia
2. Follow the guidelines provided as a prerequisite for the development of innovative food products to meet the criteria of food safety, quality, nutrition and efficacy.
3. Follow regulatory framework to allow specific health claims with scientific evidence.
4. Call for development of detection methods for food microbiological and chemical hazards
Strain identification and deposit strain in international culture collection

Functional characterization
- in vitro
- Animal study

Safety assessment
- in vitro/animal study
- Clinical trial Phase 1

Double blind, randomized, placebo-controlled (DBPC)
phase 2 human trial or other appropriate design with sample size and primary outcome appropriate to determine if strain/product is efficacious

Second independent DBPC study to confirm results (evidence from other country)

Second independent DBPC study to confirm results (Indonesian population)

Phase 3, effectiveness trial is appropriate to compare probiotics with standard treatment of a specific condition (Indonesian population preferred)

PROBIOTIC FOOD

Labeling
- Contents – genus, species, strain designation;
- Minimum numbers of viable bacteria at end of shelf-life;
- Proper storage conditions;
- Corporate contact details for consumer information.
5 CONCLUSION AND RECOMMENDATION
CONCLUSION AND RECOMMENDATION

- Indonesia is a potential country for food trade and investment.
- Pre market evaluation and post market control of food products in Indonesia are conducted by NADFC to safeguard the food safety.
- Unsafe foods mostly reported from micro business, ready to eat foods, small scale and home industry (IRTP). NADFC’s Food Inspectors do not have clear authority in inspecting production facilities and law enforcement of IRTP, except those in suspected cases that violate the law.
- Mild criminal sanctions are given for those who break the law, it encourages the violation, due to soft criminal charge of punishment.
• There must be no discrimination for any food producer, importer, distributor and retailer who violate the law. They must be responsible for food safety and quality to ensure that foods are safe for the consumer. The Government should provide more attention and incentive for the vulnerable groups such as IRTP.

• The consumer should be aware of food safety to make their choice, interactive public communication, information and education are needed as a part of risk communication strategy.

• Indonesia should continue to improve food safety programme and innovation through integration of food safety system and technology development including for SMEs sectors with active participation of producers, consumers, regulators, and academician. It will improve risk-based food safety control and product competitiveness in the region to face ASEAN single market.
Thank You

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