Food Safety Challenges and Opportunities for Developing Countries

*Case of Indonesia*

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and

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Food Safety?

A condition and/or effort such that foods do not contain biological, chemical or physical hazards at level that can cause adverse effects on human’s health.
Food Safety?

“… access to nutritionally adequate and **SAFE** food is a right of each **individual**."

[FAO/WHO World Declaration on Nutrition 1992]
Food Safety?

“… access to nutritionally adequate and **SAFE** food is a right of each **individual**.“

*[FAO/WHO World Declaration on Nutrition 1992]*

Food security exists when **all people**, at all times, have physical and economic access to sufficient, **SAFE** and nutritious food to meet their dietary needs and food preferences for an active and healthy life  

*[FAO. 1996]*
Food Safety?

- Food safety is increasingly important
- Developing countries –Indonesia- pay more and more attention to food safety; due to its great potential impact on
  1. Public health,
  2. Food security, and
  3. Trade competitiveness

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Food Safety?

INDONESIA? → Double Burden of Food Safety

“DOMESTIC”
FOOD SAFETY BURDEN

“INTERNATIONAL”
FOOD SAFETY BURDEN

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Food Safety?

INDONESIA? → Double Burden of Food Safety

“Domestic” problems of food safety
- The need to establish basic domestic food safety system and infrastructure

International problems of Food Safety
- The need to comply with international standards
Food Safety ? ... Domestic Issues?

Reported Foodborne Disease in Indonesia 2003-2009*

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009**</th>
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<tbody>
<tr>
<td>Outbreaks (#)</td>
<td>34</td>
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<td>184</td>
<td>159</td>
<td>179</td>
<td>197</td>
<td>119</td>
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<td>Cases (#)</td>
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<td>8949</td>
<td>8733</td>
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<td>8943</td>
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</table>

* NAFDC, 2009
**Incomplete
Food Safety ? ... Domestic Issues?

Reported Foodborne Disease in Indonesia 2009*

- Home made: 42.14%
- Street Food: 13.21%
- Industry: 15.72%
- Food service industry: 26.67%
- Others: 1.26%

n = 119; Suratmono-NADFC (2009)
Food Safety? ... Domestic Issues?

Reported Foodborne Disease in Indonesia 2009*

n = 119; Suratmono-NADFC (2009)

- Microbiology: 36.7%
- Chemical: 20.2%
- Expired: 13.8%
- Not known: 2.8%
- Not identified: 4.4%
- No sample: 21.1%
Food Safety? ... Domestic Issues?

Challenges of “domestic” food safety

• Microbial problems → unsanitary conditions
• Uses of unsafe-chemicals
• Unsafe use of food additives
Food Safety? ... Domestic Issues?

Challenges of “domestic” food safety

• Roots of the problem?
  • Poverty → Lack of foods
  • Food production system is dominated by SMEs (and household industries)
    • Lack of basic food safety infrastructure (clean water, clean ice, cold chain, etc)
    • Lack capacity of human resources (producers, consumers, government officials)
  • Lack of funding
Food Safety ? ... International Issues?

- Global food trade will likely increase due to expected increases in global income levels
- Consumers take advantage of lower prices and greater seasonal availability of some foods abroad.
Food Safety ? … International Issues?

• World Integrated Trade Solution Database
  (http://wits.worldbank.org/wits/gptad.html)

  Already ~ 40% of all trade in food, agriculture, fisheries occurs between developing & developed countries.
Food Safety ? ... International Issues?

- Driving force for trade is economic gain
  → International food trade is important for economy of developing country
Food Safety? ... International Issues?

- Driving force for trade is economic gain
  - International food trade is important for economy of developing country

- However, increasingly restrictive international food safety standard
  - limit market access
  - could incur significant export/income loss.
Food Safety? ... International Issues?

Indonesian raw material agr products of export
(MOT RI, 2010)

Palm and palm products
Shrimp
Cacao
Coffee

0 1000 2000 3000 4000 5000
Million USD

2009

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Food Safety? ... International Issues?

Indonesian processed food products of export
(MOT RI, 2010)

Million USD

Others
Beverages
Confectionaries
Tea & Coffee
Meat & Fish
Chocolate
Fruits products
Biscuits/Cereals
Dairy Products
Veg products

0 100 200 300 400 500 600 700


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Food Safety? ... International Issues?

The Trade Standards Compliance Report, 2010 (UNIDO)

Number of EU rejections of food and feed exports from Indonesia, 2002-2008

- Other
- Herbs & spices
- Fish & fishery products
- Nuts & seeds
- Fruit & vegetables
Food Safety? ... International Issues?

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## Reasons for EU rejections of food products, 2002-08
*(The Trade Standards Compliance Report, 2010; UNIDO)*

<table>
<thead>
<tr>
<th>Country</th>
<th>Mycotoxins</th>
<th>Microbiological contaminants</th>
<th>Veterinary drug residues</th>
<th>Heavy metals</th>
<th>Unauthorized food additives</th>
<th>Pesticide residues</th>
<th>Migration</th>
<th>Industrial contaminants</th>
<th>GMO/novel/food</th>
<th>Foreign bodies</th>
<th>Biotoxins/contaminants</th>
<th>Radiation</th>
<th>Organoleptic</th>
<th>Bad or insufficient controls</th>
<th>Parasitic infestation</th>
<th>Labelling</th>
<th>Packaging</th>
<th>Other chemical contamination</th>
<th>Allergens</th>
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</table>
## Reasons for US rejections of food products, 2002-08 (The Trade Standards Compliance Report, 2010; UNIDO)

| Country                | Labelling | Unregistered process/manufacturer | Filthy/unsanitary | Unauthorized food additives | Microbiological contaminants | Pesticide residues | Veterinary drug residues | Poisonous | Biocides/contaminant no import permit | HAACP | Mycotoxins | Product composition | Foreign bodies | Other chemical contamination | Packaging | Allergens | Adulteration | Quality standards | Inadequate information | Radiation | Total |
|------------------------|-----------|----------------------------------|-------------------|-----------------------------|------------------------------|------------------------|----------------------|------------------------|-----------|-------------------------------------|-------|-----------|----------------------|----------------|------------------------|-----------|--------|-------------|----------------|------------------------|-----------|-------|
| Mexico                 | 3,328     | 475                              | 3,476             | 1,475                       | 1,328                        | 2,109                  | 16                   | 135                    | 5                     | 27                    | 114               | 91                     | 14                    | 17               | 10                     | 14               | 7                     | 1           | 8       | 0           | 0                | 12,650                |
| India                  | 3,829     | 1,246                            | 1,722             | 1,346                       | 1,532                        | 454                    | 16                   | 48                     | 2                     | 28                    | 0                 | 37                     | 15                    | 38               | 10                     | 4                 | 4                     | 1           | 1       | 1           | 0                | 10,333                |
| United Kingdom         | 5,899     | 1,228                            | 65                | 833                         | 40                            | 1                      | 0                    | 5                      | 7                     | 5                     | 13                | 0                     | 16                    | 2                 | 0                     | 0                 | 9                     | 0           | 1       | 1           | 0                | 8,124                 |
| China                  | 1,266     | 1,236                            | 1,625             | 931                         | 290                           | 402                    | 582                  | 45                     | 5                     | 12                    | 7                 | 7                     | 9                     | 11               | 35                     | 9                 | 1                     | 0           | 1       | 3           | 0                | 6,477                 |
| Canada                 | 2,516     | 356                              | 548               | 524                         | 124                           | 254                    | 16                   | 26                     | 0                     | 16                    | 27                | 33                     | 6                     | 5                 | 0                      | 0                 | 3                     | 0           | 5       | 0           | 0                | 4,459                 |
| Japan                  | 1,124     | 1,726                            | 279               | 272                         | 76                            | 4                      | 12                   | 4                      | 5                     | 58                    | 0                 | 1                     | 12                    | 1                 | 1                      | 2                 | 1                     | 1           | 0       | 0           | 0                | 3,566                 |
| Vietnam                | 798       | 376                              | 866               | 285                         | 770                           | 16                     | 172                  | 106                    | 99                    | 2                     | 29                | 22                     | 0                     | 1                 | 8                      | 0                 | 1                     | 0           | 1       | 0           | 0                | 3,552                 |
| Dominican Republic     | 117       | 32                               | 170               | 8                            | 2                              | 2456                   | 0                    | 4                      | 5                     | 15                    | 0                 | 0                     | 1                     | 0                 | 0                      | 2                 | 0                     | 0           | 0       | 0           | 0                | 2,812                 |
| Italy                  | 1037      | 1268                             | 215               | 68                           | 63                            | 10                     | 0                   | 11                     | 0                     | 4                     | 6                 | 1                     | 5                    | 1                 | 0                      | 0                 | 0                     | 0           | 1       | 0           | 0                | 2,690                 |
| South Korea            | 875       | 1068                             | 181               | 299                         | 129                           | 13                     | 0                    | 8                      | 0                     | 7                     | 49                | 0                     | 2                     | 1                 | 1                      | 0                 | 2                     | 0           | 0       | 0           | 0                | 2,635                 |
| Indonesia              | 335       | 347                              | 949               | 82                           | 600                           | 0                      | 120                  | 56                     | 95                    | 6                     | 2                 | 3                     | 13                    | 0                 | 0                      | 1                 | 0                     | 0           | 0       | 0           | 0                | 2,609                 |
Comparision of Reasons for US & EU rejections of food products, 2002-08 (The Trade Standards Compliance Report, 2010; UNIDO)

- Mycotoxin
- Microbiological Contaminants
- Product composition
- Biotoxins/Contaminants
- Vet drug Residues
- Heavy Metal
- Unregistered process/manufacturer
- Filthy/Unsanitary
- Labelling
- Unregistered food additives
- Product composition
- Microbiological contaminants
- Veterinary drug residues
- Heavy metals

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Food Safety ? ... International Issues?
Challenges/Opportunity?

Case of Indonesian shrimp exports*)

- September 2001, the EU has required virus-free and antibiotic-free shrimp imports
  → all imported shrimp to EU to be free of chloramphenicol.
- The EU has refused entry of Indonesian shrimp and other seafood products based on food safety reasons.
- Contribute to the decrease of export value from Indonesia to EU by 2.6% in 2002 and 15.8% in 2003.

*) Alimi, T. Trade and Environment Dimensions in the Food and Food Processing Industries in Asia and the Pacific; *A Country Case Study of Indonesia*
Food Safety ? ... International Issues?
Challenges/Opportunity?

Case of EU vs US refusals of Indonesian exports**)

- Total EU rejections of food and feed products from Indonesia declined dramatically from 2004 to 2008, while total US rejections did not show any clear downwards trend.
  - EU primary reasons of fish and fishery products rejections were heavy metals and antibiotic residues, problems that largely has been addressed by Indonesia.
  - This contrasts with on-going rejections in the US due to poor sanitation/hygiene and resultant microbiological contamination; which have not been addressed well by Indonesia.

**) The Trade Standards Compliance Report, 2010 (UNIDO)
Food Safety?

... So........

Food Safety Challenges and opportunities of developing countries are associated with how to improve

(i) public health
(ii) food security, and
(iii) trade competitiveness
Food Safety Challenges & Opportunity? ... (1)

Domestically; Indonesia need to establish national system of food safety; including

1. Strengthen **National Standards Body (NSB)**, responsible for approval and dissemination of standards.

2. Establish **National Metrology Institute (NMI)**: responsible for measurement standards and national calibration system

3. Establish network and increase capacity of **Laboratories for Product Testing**
Food Safety Challenges & Opportunity? … (2)

Domestically; Indonesia need to establish national system of food safety; including

4. Improve Certification Services (product and system certification).

5. Develop National Empowerment Services: Industrial – especially SMEs assistances/capacity building.


7. Develop massive food safety education program; → from farm to fork approach.
Food Safety Challenges & Opportunity?  … (3)

Internationally; Indonesia and international community (market) need to establish stronger partnership:

- Food safety is a shared responsibility
- Approach to solve food safety problem is “form farm to fork”,
- With the emergence of “international trade”, then, to strengthen global food safety system, international community have to remember that farm (may be in country A) and fork (may be in country B, C)

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Food Safety Challenges & Opportunity? ... (4)

**Internationally;** Indonesia and international community (market) need to establish stronger partnership:

**Meaning that...**

Understanding and collaboration between *producing* country and *consuming* country is essential in strengthening global supply chain of safe foods.

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THANK YOU

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