Food Safety Management Issues in Latin America

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The countries with the highest inequality in 2006 were Bolivia, Haiti, Colombia, Paraguay, Brazil and Panama (UNDP, 2008).

The countries with the lowest inequality in 2006 were Nicaragua, Uruguay and Mexico (UNDP, 2008).

Population (million) and Racial groups:

<table>
<thead>
<tr>
<th>Country</th>
<th>Population (million)</th>
<th>Racial groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>188</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Venezuela</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Ecuador</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Cuba</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Bolivia</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>El Salvador</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Honduras</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Paraguay</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Costa Rica</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Uruguay</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Suriname</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

Characteristics:

Inequality* and poverty continue to be the region's main challenges; according to ECLAC, 2008, Latin America is the most unequal region in the world.

Nearly 25% of the population lives on less than 2 U$D a day (World Bank, 2008).

Socio-economic performance indicators:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>2,000,000</td>
<td>10,000</td>
<td>9.7</td>
</tr>
<tr>
<td>Mexico</td>
<td>1,500,000</td>
<td>15,000</td>
<td>6.7</td>
</tr>
<tr>
<td>Argentina</td>
<td>570,000</td>
<td>15,000</td>
<td>4.0</td>
</tr>
<tr>
<td>Colombia</td>
<td>400,000</td>
<td>8,000</td>
<td>8.1</td>
</tr>
<tr>
<td>Venezuela</td>
<td>360,000</td>
<td>13,000</td>
<td>7.8</td>
</tr>
<tr>
<td>Chile</td>
<td>250,000</td>
<td>15,000</td>
<td>3.3</td>
</tr>
<tr>
<td>Peru</td>
<td>250,000</td>
<td>8,000</td>
<td>11.0</td>
</tr>
<tr>
<td>Uruguay</td>
<td>40,000</td>
<td>13,000</td>
<td>3.3</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>16,000</td>
<td>2,600</td>
<td>16.0</td>
</tr>
<tr>
<td>Haiti</td>
<td>11,000</td>
<td>1,300</td>
<td>32.0</td>
</tr>
</tbody>
</table>

*Measure deprivations in three basic elements in developing countries: long and healthy life, knowledge and standard of living.

Ten largest metropolitan areas:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metropolitan area</th>
<th>Country</th>
<th>GDP Billion USD</th>
<th>Population (millions)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mexico City</td>
<td>Mexico</td>
<td>315</td>
<td>19.4</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Buenos Aires</td>
<td>Argentina</td>
<td>278</td>
<td>12.6</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>São Paulo</td>
<td>Brazil</td>
<td>265</td>
<td>18.3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Rio de Janeiro</td>
<td>Brazil</td>
<td>156</td>
<td>8.5</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Santiago</td>
<td>Chile</td>
<td>91</td>
<td>8.5</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Bogota</td>
<td>Colombia</td>
<td>86</td>
<td>8.5</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Monterrey</td>
<td>Mexico</td>
<td>78</td>
<td>3.9</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Lima</td>
<td>Peru</td>
<td>67</td>
<td>8.5</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>Belo Horizonte</td>
<td>Brazil</td>
<td>65</td>
<td>5.6</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>Guadalajara</td>
<td>Mexico</td>
<td>60</td>
<td>4.1</td>
<td>10</td>
</tr>
</tbody>
</table>

*ECLAC (United Nations Economic Commission for Latin America and the Caribbean), 2008
FOODBORNE ILLNESSES WORLDWIDE

<table>
<thead>
<tr>
<th>Agent</th>
<th>Year</th>
<th>Food / Country</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis A</td>
<td>1998</td>
<td>Oysters, China</td>
<td>36000</td>
</tr>
<tr>
<td>E. coli O157</td>
<td>1993</td>
<td>Hamburgers, USA</td>
<td>3900</td>
</tr>
<tr>
<td>S. enteritidis</td>
<td>1994</td>
<td>Ice-cream, USA</td>
<td>234000</td>
</tr>
<tr>
<td>Y. pseudotuberculosis</td>
<td>1994</td>
<td>Street vendor tools, El Salvador</td>
<td>841</td>
</tr>
<tr>
<td>Cyclospora</td>
<td>1998</td>
<td>Raspberries, EU/Canada</td>
<td>1635</td>
</tr>
<tr>
<td>B. cereus</td>
<td>1998</td>
<td>Cooked meal, Germany</td>
<td>91</td>
</tr>
<tr>
<td>F. tularensis</td>
<td>1999</td>
<td>Lettuce, Finland</td>
<td>47</td>
</tr>
<tr>
<td>L. monocytogenes</td>
<td>2002</td>
<td>Turkey meat, USA</td>
<td>65</td>
</tr>
<tr>
<td>F. tularensis</td>
<td>2003</td>
<td>Salmon, USA</td>
<td>21</td>
</tr>
<tr>
<td>S. Schwarzengrund</td>
<td>2003</td>
<td>Green salad, Australia</td>
<td>79</td>
</tr>
<tr>
<td>S. Schwarzengrund</td>
<td>2003</td>
<td>Eggs and Mushrooms, UK</td>
<td>196</td>
</tr>
<tr>
<td>S. enteritidis</td>
<td>2004</td>
<td>Nuts, USA</td>
<td>7</td>
</tr>
<tr>
<td>E. coli O157</td>
<td>2005</td>
<td>Raw spinach, USA</td>
<td>196</td>
</tr>
<tr>
<td>C. innocuum</td>
<td>2007</td>
<td>Centrifuge, USA</td>
<td>8</td>
</tr>
<tr>
<td>S. aureus</td>
<td>2007</td>
<td>Benadryl, USA</td>
<td>46</td>
</tr>
<tr>
<td>S. Schwarzengrund</td>
<td>2007</td>
<td>Pet foods, USA</td>
<td>10</td>
</tr>
<tr>
<td>L. monocytogenes</td>
<td>2008</td>
<td>Dell maize, Canada</td>
<td>55 and 25+</td>
</tr>
<tr>
<td>Campylobacter jejuni</td>
<td>2008</td>
<td>Peas, Alaska</td>
<td>99</td>
</tr>
<tr>
<td>Salmonella typhimurium</td>
<td>2008</td>
<td>Tomatoes, peppers, USA, Mexico</td>
<td>183</td>
</tr>
<tr>
<td>E. coli 0157:H7</td>
<td>2009</td>
<td>Double dough, USA</td>
<td>38 (7)</td>
</tr>
</tbody>
</table>

Why does the problem persist?

- **Demographic changes**
- **New food consumption habits**
- **New technologies and processes for food production**
- **New and more precise analytical methods**
- **Enhanced epidemiologic data**
- **Changes in microbial behaviour**
- **Tourism intensification**

CONSEQUENCES

Food safety has become a subject of increasing importance internationally, driven by the concerns of economically more advanced countries.

- Raises external and internal concerns for Latin American countries
- Induces remarkable changes in these countries:
  1. Impact on the trade oriented sectors
  2. Thinking about the role of the government, regulators, industry, scientists and consumers

In Latin America

- Most countries apply SPS risk management measures, forced by international market demands, for entering food trade or for maintaining their markets
- Most countries don’t have SPS measures as a priority for internal markets:
  - SPS issues become politically important when related to trade and economical development
  - SPS measures result in double standards, one for internal market and other for export

Recent developments of food control and food legislation in Latin America

1. Most national food control systems involve several ministries, making coordination among different agencies challenging
Comisión Multisectorial Permanente de Inocuidad Alimentaria

Objetivos:
- Coordinar las actividades sectoriales y con la sociedad civil que garanticen la inocuidad de los alimentos de consumo humano a lo largo de toda la cadena alimentaria, en todo el territorio nacional.

Recent developments of food control and food legislation in Latin America

1. most national food control systems involve several ministries, making coordination among different agencies challenging

2. most countries are making efforts to align regulatory frameworks with the requirements of the WTO SPS/TBT Agreements

Brazil – Poultry

Per year, Brazil slaughters 5 billion poultry, 40 million bovine and 30 million swine

Poultry: 2009, Brazil is the leading exporter country (41% of the world market)

Control of Newcastle Disease, Salmonella and Mycoplasma

Brazil – Chicken meat

Ministry of Agriculture, Livestock and Food Supply

National Program for Pathogen Reduction (PNRP - Programa Nacional de Reducción de Patógenos) – Instrucción Normativa 70/2003

Monitoring of Salmonella in carcasses and parts in slaughterhouses
**Brazil – Chicken Meat**

*Ministry of Agriculture, Livestock and Food Supply*

National Program of Control of Residues and Contaminants in Meat (bovine, poultry, pork and horse), Milk, Honey, Eggs and Seafood (PNCRC – Programa Nacional de Controle de Resíduos e Contaminantes em Carnes (Bovina, Aves, Suína e Eqüina), Leite, Mel, Ovos e Pescado - Instrução Normativa 14/2009

Monitoring pesticides, organochlorides, polychlorinated biphenyls, antiparasitic drugs, anabolics, betagonists, anticoagulant drugs, nitrofurans, nitrofurantoins and chloramphenicol.

**Brazil – Chicken Meat**

*Ministry of Health: National Agency of Sanitary Surveillance*

PREBAF I - National Program on Monitoring the Prevalence and Antimicrobial Resistance of Enterococci and Salmonella in Frozen Chicken Carcasses at Retail Level – Programa Nacional de Monitoramento da Prevalência e do Perfil de Resistência aos Antimicrobianos em Enterococos e Salmonelas em Carcaças de Frango Congeladas Comercializadas no Brasil.

Prevalence of Salmonella, enterococci, antimicrobial resistance and compliance of labelling as determined by RDC n° 13/01 – ANVISA

August/2004 to July/2006

14 States of Brazil (83% of the Brazilian poultry production)

14 Official Laboratories (LACENs)

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**Brazil – Chicken meat**

Prevalence of Salmonella spp was 3.03%.

- S. Enteritidis 48.8%
- S. Paratyphi 7.6%
- S. Typhimurium 7.2%
- S. Heidelberg 6.4%
- S. Infantis 5.1%
- S. Mbandaka 5.2%

Prevalent phagetype was PT1 (88%)

Resistance to antimicrobials varied from 0% (ciprofloxacin) to 100% (streptomycin)

Resistance to antimicrobials varied from 0% (vancomycin) to 80% (tetracyclin)

**Brazil – Chicken meat**

Ministry of Health: National Agency of Sanitary Surveillance

PREBAF II = PREBAF I = Listeria monocytogenes and Campylobacter spp

PREBAF II = retail level

September/2009 (?) to September/2011

20 Official Laboratories (LACENs) in 20 States of Brazil + Industry

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**Global Salm-Surv**

A passive surveillance system that collects annual Salmonella summary data from member institutions, on

Number of Salmonella isolates identified

Number of Salmonella isolates serotyped

Top 15 Salmonella serotypes identified

Sources of Salmonella isolates (e.g., human, non-human)

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**Regional network of molecular sub-typing for the surveillance of foodborne diseases**

PFGE National data-base Regional data-base
Recent developments of food control and food legislation in Latin America

1. Most national food control systems involve several ministries, making coordination among different agencies challenging.
2. Most countries are making efforts to align regulatory frameworks with the requirements of the WTO SPS/TBT Agreements.
3. The countries are actively seeking trade facilitation mechanisms, such as use of equivalence agreements for sanitary registration.

Foot and Mouth Disease

Building capacities

Training courses on Microbiological Risk Assessment

- Brazil – 2006 October
- Venezuela – 2007 May
- Colombia – 2006 October
- Chile – 2009 April
- Brazil – 2008 and 2009
- and many others

Requirements of the WTO SPS/TBT Agreements

Infected

Foot and Mouth Disease


Foot, without vaccination

Foot, with vaccination

Infected

Buffer area

REPORT OF THE 16th SESSION OF THE FAO/WHO COORDINATING COMMITTEE FOR LATIN AMERICA AND THE CARIBBEAN  
Acapulco, Mexico, 10 – 14 November 2008

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REPORT OF THE 16th SESSION OF THE FAO/WHO COORDINATING COMMITTEE FOR LATIN AMERICA AND THE CARIBBEAN  
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Inter-American Network of Food Analysis Laboratories (INFAL)
Red Interamericana de Laboratorios de Análisis de Alimentos (RILAA)

Objectives:
- promote and strengthen the development and interaction of the food analysis laboratories within the framework of integrated national programs of food protection
- Microbiology, Quality Management and Chemical Analysis

http://www.panalimentos.org/rilaa/ingles/index.asp
- Online bibliography, national networks, e-learning, reference materials, proficiency testing, etc

What have we learned?
- Improving food safety for export markets has a positive effect on local markets
- Improving food safety for export markets has a beneficial effect on health of the population
- HACCP as a safety management tool “pays off” financially and in terms of increased food safety
- Food safety should be a priority in relation to other areas requiring increased government support

Do you want more about food safety management in Latin America?
- Bovine meat (carne bovina) - Ricardo Sobol (Argentina)
- Leafy vegetables (hortalizas de hoja) - Janeth Luna (Colombia)
- Ready-to-eat foods (alimentos listos para consumo) – Eliana Marambio (Chile)
- Shellfish (mariscos) - Alina Ratto (Perú)
- Cacao - Pilar Hernández (Venezuela)

Do not miss the round-table on Advances in Food Safety Management in Latin America

Tomorrow at 4.30 pm in Sala Punta del Este E

LAS-ICMSF: the Latin American Sub-Commission of ICMSF

Google

Food safety management issues in latin america
1,730,000 !!!!

Advances on Risk Assessment in Latin America
Jairo Romero - Colombia
Tomorrow at 11.30 am in Sala Punta del Este E

Modernization of Food Safety Control in the Americas
Ricardo Molins – IICA
Wednesday at 8.30am in Sala Punta del Este D
Carmo, Greice M. I. - Brazil
Costarrica, Maria de Lourdes - FAO
Destro, Maria Teresa - Brazil
Hernandez, Pilar - Venezuela
Landgraf, Mariza - Brazil
Luna, Janeth - Colombia
Marambio, Eliana - Chile
Pineiro, Maya - Chile
Pontes, Alexandre Pontes - Brazil
Ratto, Maria Alina - Peru
Rivera, Irma - Brazil
Romero, Jairo - Colombia
Sobol, Ricardo - Argentina

Apologies to countries and/or initiatives that were not included in this presentation.

Thanks for your attention!

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