

Food safety systems – Share & compare

An international workshop 2011

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Lecture contents:

- Presentation of the Canadian *Food safety performance world ranking*
 - approach, scope, methodology
 - results from the 2010 ranking
 - limitations of the model
- Presentation of the Finnish ranking workshop
 - held in Helsinki in October 2011
 - 17 countries, 34 participants
 - conclusions

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Food safety performance world ranking

Developed by Dr. Sylvain Charlebois et al.
at the University of Guelph in 2006
Published biannually since



Countries assessed in 2010:

Australia	France
Norway	Austria
Germany	Sweden
Belgium	Ireland
Switzerland	<u>Canada</u>
United Kingdom	Italy
Denmark	Japan
United States	Finland
Netherlands	



Methodology used: State-Pressure-Response approach (OECD)

1. State (output), condition of food safety performance at the time of the report;
2. Pressure (input), human activities that impact the condition of food safety systems;
3. Response (policy and actions) policies and actions the country initiated to address food safety issues.



Categories used in 2010:

Consumer Affairs:

1. Incidence of reported illness by food-borne pathogens;
2. Rate of inspections and audits;
3. Food safety education programs;
4. Labelling and indications of allergens; and
5. Ease of access to public health information.

Biosecurity:

1. Rate of use of agricultural chemicals; and
2. Bioterrorism strategy.

Governance and Recalls:

1. Existence of risk-management plans;
2. Level of clarity and stability of food recall regulations;
3. Number of protectionist measures against trading partners; and
4. Number of recalls.

Traceability and Management:

1. Depth of traceability system in food chain.



Combined results 2010 (and 2008):

Rank	Country	Grade	2008 Comparison	
			Grade	Rank
1	Denmark	Superior	Superior	3
2	Australia	Superior	Superior	4
3	United Kingdom	Superior	Superior	1
4	Canada	Superior	Superior	5
4	United States	Superior	Average	7
6	Japan	Superior	Superior	2
7	Finland	Average	Average	6
8	Netherlands	Average	Average	12
9	Austria	Average	Average	14
10	Norway	Average	Average	9
11	Sweden	Average	Average	13
12	Switzerland	Average	Average	8
13	Belgium	Poor	Poor	16
14	Germany	Poor	Average	10
15	Ireland	Poor	Poor	17
16	France	Poor	Poor	15
16	Italy	Poor	Average	11

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Category-specific results in 2010:

Country	Average rank	Consumer Affairs		Biosecurity		Governance and Recalls		Traceability and Management	
		Rank	Grade	Rank	Grade	Rank	Grade	Rank	Grade
Australia	6.25	5	Average	11	Average	2	Superior	7	Superior
Austria	9	16	Poor	5	Average	9	Average	6	Superior
Belgium	9.25	11	Poor	15	Poor	7	Average	4	Superior
Canada	7.25	2	Superior	11	Average	1	Superior	15	Poor
Denmark	3.5	3	Superior	1	Superior	8	Average	2	Superior
Finland	7.75	14	Poor	1	Superior	15	Poor	1	Superior
France	11.25	9	Average	14	Poor	13	Poor	9	Superior
Germany	10.5	13	Poor	5	Average	12	Poor	12	Superior
Ireland	11	4	Average	13	Poor	14	Poor	13	Superior
Italy	11.25	17	Poor	15	Poor	10	Average	3	Superior
Japan	7.5	8	Average	8	Average	4	Superior	10	Superior
Netherlands	8.75	6	Average	17	Poor	5	Average	7	Superior
Norway	9.25	10	Poor	3	Superior	10	Average	14	Average
Sweden	10.25	11	Poor	4	Superior	15	Poor	11	Superior
Switzerland	12	14	Poor	7	Average	15	Poor	*	N/A
United Kingdom	6.75	7	Average	9	Average	6	Average	5	Superior
United States	7.25	1	Superior	9	Average	3	Superior	16	Poor

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Canada vs. the World:

1. Non-European countries (Australia, Canada, Japan and the U.S.) tended to perform fairly equally;
2. Canada and the U.S. were tied in category grades, overall grade and world ranking position;
3. Largest E.U. countries tended to perform the weakest compared with their small-state peers.



Limitations:

1. Secondary data was not always available;
2. A considerable amount of data were processed and analyzed with some level of subjectivity
 - transparency, language;
3. Reports that were considered for this study were published between 2002 and 2010, which may skew results;



The ranking workshop

For more information see:

Charlebois S. and Hielm S. (2014) Empowering the regulators in the development of national performance measurements in food safety.

Brit. Food J. (116) 2, pp. 317-336.



Countries repr. in the workshop:

New Zealand	France
Norway	Estonia
Germany	Sweden
Belgium	Ireland
India	Canada
United Kingdom	Latvia
Denmark	Japan
United States	Finland
The Netherlands	



Metrics considered in the workshop

- The upcoming 2012 survey would include:
 - 14 sub-categories
 - 3 main categories
 - 37 indicators
 - two additional countries (China, India)
- The initial plan was to rank all countries present in the workshop using the indicators
- After discussions, it was decided that it would be more rewarding to analyze the indicators instead



Data validity

- Performance-based reports should be no less than 2 years old (then: 2008-2009). If data is unavailable, statistics can be averaged over a 10-year period;
- For qualitative data and indicators, best practices and recognized, authoritative or commissioned reports/documents will be considered, and should:
 - provide valuable information concerning the performance or status of the particular food safety domain;
 - be reliable and readily available;
 - be sufficiently consistent to allow benchmarking over time and permit a valuable international comparative analysis;



Data grading

- For the sub-categories (n=14), grades of “progressive,” “moderate” or “regressive” should be used;
- For the main categories (n=3; Risk Assessment, Risk Communication and Risk Management), countries should be awarded a grade of “superior,” “average” or “poor” for each category.
 - this change was introduced in the 2012 ranking
- For the actual world ranking, countries are ranked for each main category and the results are then aggregated. Countries are given grades varying between “superior,” “average” or “poor”, creating three tiers



Risk Assessment (Category 1)

- (Sub-category 1) Rate of use of agricultural chemicals: Herbicides? Environmental and health risks? Bioterrorism and deliberate contamination of foods
 - (Indicator 1) What is the pesticide use per hectare of agricultural land? Calculated by dividing the published rate of pesticide use (in kilograms of active ingredients) by the amount of agricultural land (arable and permanent crop area); Data should be aggregated;
 - (Indicator 2) Sale of pesticides as “a proxy” for use?;
- **Workshop: delete these indicators, rather look straight at residues of pesticides in food**



Risk Assessment (Category 1)

- (Sub-Category 2) Efficacy of testing and reporting chemical food hazards?
 - (Indicator 3) Approximate time of execution?
 - **(Indicator 4) Are health officials jointly working with food safety/agriculture officials? What would be the level of collaboration?**
 - (Indicator 5) Rate of expectations?
 - **(Indicator 6) Scope of strategy of testing?**
- Workshop: indicators 3 and 5 should be deleted. For indicator 6 check whether strategy is risk-based?



Risk Assessment (Category 1)

- (Sub-Category 3) Incidence of reported illness by food-borne pathogens
 - **(Indicators 7-11) Five common food-borne pathogens; specifically:**
 - (7) *Campylobacter* (*Campylobacter jejuni*);
 - (8) *E. coli* (*Escherichia coli* O157:H7);
 - (9) *Salmonella*;
 - (10) *Vibrio*; and
 - (11) *Yersinia*;
 - Incidence per 100,000 people over a 10-year period and evaluating this trend as an upward or downward variable.
- Workshop: OK outcome indicator, but hard to compare countries



Risk Assessment (Category 1)

- (Sub-Category 4) Rate of inspections and audits (based on scale of organizations, jurisdictions and sectors (processing, retail, hospitality);
 - (Indicator 12) **Whether a country has a national inspection policy that requires a minimum number of inspections; and**
 - (Indicator 13) **The number of inspections and audits carried out under this mandate.**
- Workshop: good indicators, but check if (12) is a risk-based policy? For (13): inspections per capita?



Risk Assessment (Category 1)

- (Sub-Category 5) A country's plan for agri/bioterrorism
 - (Indicator 14) How comprehensive is it? What is the scope of the plan?
 - (Indicator 15) Co-operation between government agencies and the involved industry, as well as existing agri/bioterrorism systems and plans?
 - (Indicator 16) Is the involvement of law enforcement and security agencies included in the plan?
- Workshop: rather look at emerging risks, physical hazards, novel technologies - instead of bioterrorism



Risk Communication (Category 2)

- (Sub-Category 6) Food safety education programs;
 - (Indicator 17) Are all levels of government involved?
 - (Indicator 18) How many multi-faceted programs targeting all or nearly all populations?
- Workshop: these are not about risk communication at all. Why not assess whether there is a functioning risk communication strategy in place?



Risk Communication (Category 2)

- (Sub-Category 7) Labelling & indications of allergens;
 - (Indicator 19) This metric considered the stringency of mandatory allergen regulations for food products across a variety of information points?
 - (Indicator 20) Comparative metrics:
 - Name of item; Use-by or made-on date;
 - Rigor of nutritional information;
 - List of ingredients; Country of origin;
 - Warning of allergens; and
 - The indication of food additives.
- Workshop: These are control measures, and usually the regulatory demands are quite similar in OECD countries – but compliance differs



Risk Communication (Category 2)

- (Sub-Category 8) Ease of access to public health information
 - (Indicator 21) Holistic evaluation of the information provided by national-level governments;
 - (Indicator 22) How accessible is the information to the public?

- Workshop: good indicators but measurability is a concern? Are the standard operating procedures?



Risk Communication (Category 2)

- (Sub-Category 9) Communication among federal, provincial and local public health, food inspection and regulatory agencies;
 - (Indicator 23) Do they have joint communications strategies?;
 - (Indicator 24) How integrated are they?;
 - (Indicator 25) Does the communication strategy extend beyond the borders of the country?

- Workshop: good indicators, but is a strategy enough?



Risk management (Category 3)

- (Sub-Category 10) Evidence of risk based (preventive) food safety management systems, enumeration of GFSI (Global Food Safety Initiative) approved plants?
 - (Indicator 26) Are equivalences and consistencies within the system encouraged?;
 - (Indicator 27) Are costs managed?;
 - **(Indicator 28) Are competencies and capacity building developed in food safety to create consistent and effective global food systems?**
- Workshop: indicators (26, 27) should be deleted. For (28) assess both natl./international capacity building



Risk management (Category 3)

- (Sub-Category 11) Level of clarity and stability of food recall regulations;
 - (Indicator 29) Nature, coherency and number of recent changes to regulatory system;
 - Workshop: this indicator should be deleted
 - **(Indicator 30) Follow-up monitoring and enforcement of a recall.**



Risk management (Category 3)

- (Sub-Category 12) Number of protectionist measures against trading partners;
 - (Indicator 31) What is the country's MFN (Most-favoured-nation) rate?
 - the higher a country's MFN rate for agricultural goods, the greater the tariff barrier against foreign agricultural products;
 - Workshop: this indicator should be deleted, as it has no impact on food safety



Risk management (Category 3)

- (Sub-Category 13) Number of recalls;
 - **(Indicator 32) Is the number of recalls increasing?**
 - Workshop: only mandatory recalls should be included, as voluntary recalls often are done for quality reasons
 - (Indicator 33) How many recalls were caused by imported foods?
 - Workshop: this indicator should be deleted



Risk management (Category 3)

- (Sub-Category 14) Depth of traceability system in food chain;
 - (Indicator 34) What is the depth of a country's traceability system?;
 - Workshop: important indicator; does the traceability cover the entire farm-to-fork continuum?
 - (Indicator 35) Is country-specific or industry-specific information considered?;
 - (Indicator 36) How significant is the use of technology in food traceability?;
 - (Indicator 37) Does the country have a national, comprehensive strategy/policy on food traceability?.



Conclusions

- Too many indicators – no more than 20 needed!
- Ranking should (obviously!) not be done by those whose effectiveness it measures (eg. governments)
 - introduces subjectivity, nationalism
- Who is the target audience?
 - in benchmarking, metrics/measures can be very specific
- Rankings are liked by everyone except by those who perform badly in the ranking
- Ranking is good at creating external pressure for change, benchmarking guides you in the right direction



Thank you!



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