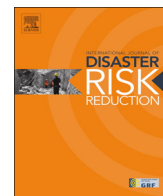




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## Review article

## Towards an integrated approach to disaster management and food safety governance

Maciej Mikulsen<sup>a,1</sup>, Alan P. Diduck<sup>b,\*</sup><sup>a</sup> Natural Resources Institute, University of Manitoba, Winnipeg, Canada R3T 2N2<sup>b</sup> Department of Environmental Studies and Sciences, The University of Winnipeg, Winnipeg, Canada R3B 2E9

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## ABSTRACT

The paper begins with a description of Canadian food safety institutions and follows with an overview of basic models of governance. A leading food safety governance model, emphasizing risk communication and public participation, and a normative version of the disaster management cycle are then highlighted. In recent years, thinking in disaster management and food safety governance has placed increased emphasis on deliberation and dialogue, denoting greater inclusiveness and influence of stakeholders in risk communication and government decision making. And while disaster management and food safety governance bear important similarities, they are mostly viewed as stand-alone systems. The 2008 Canadian listeriosis crisis spurred our interest in developing a simplified, and yet more broadly encapsulating, food safety model. Exploring the intersection between the essential components of the disaster management cycle with those of a leading food safety governance framework permitted us to develop a more comprehensive and integrative conceptual framework. Keeping the essential components, we offer a revised, integrative framework to bridge the gap between disaster management and food safety governance. This framework has positive implications for public participation and risk communication. It could serve to strengthen food safety decision making by consolidating the spectra within which public participation and risk communication are undertaken. In particular, the framework streamlines the management phase of food safety governance with the mitigation phase of the disaster management cycle, allowing deliberative risk communication actions to mitigate potential food safety disasters and enabling governance actors to consider a broader range of food safety issues.

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\* Corresponding author.

E-mail addresses: [mikulec11@hotmail.com](mailto:mikulec11@hotmail.com) (M. Mikulsen), [a.diduck@uwinnipeg.ca](mailto:a.diduck@uwinnipeg.ca) (A.P. Diduck).<sup>1</sup> Permanent address: 591 Fleet Avenue, Winnipeg, Canada MB R3M1J7.

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## 1. Introduction

Wendell Berry [3, p. 145] famously said: “eating is an agricultural act.” This statement, so simple and yet so powerful, reminds us that sometimes lost in our convenience-focused, agro-industrial complex is that our individual decisions about how and what we eat are situated within macro-level policy and governance processes. Further, it reminds us that such processes shape the extent to which we enjoy a safe and reliable food supply. It thus comes as no surprise that when crisis hits, and uproots our confidence in food safety, we immediately search policy and governance regimes for better ways of doing things. A case in point is the Canadian listeriosis outbreak of 2008.

Occurring in the summer of 2008, the outbreak resulted in 57 illnesses of which 23 were confirmed deaths [4]. The origin of the outbreak was a Maple Leaf Foods Toronto-area facility, where various ready-to-eat meats became contaminated with *Listeria monocytogenes*. Senior citizens felt the greatest impact, with the median age of those who died being 76 years (Government of Canada, 2011). The outbreak exposed limitations in Canada’s food safety governance regime, and became a catalyst for change, particularly within the federal government. Health Canada and the Canadian Food Inspection Agency initiated internal reviews, and an independent investigator, Sheila Weatherill, was appointed to do a further review. Among the key findings in Weatherill’s [54] report were important causes of the outbreak, including inadequate reporting requirements, insufficient coordination of government departments, and a failure to properly communicate to Canadians how to minimize the risk of becoming sick. Since the outbreak, risk communication has been strengthened, as has public involvement in food safety governance more generally. Still, communication activities are less than ideal and public involvement is not highly participatory. The government’s approach to risk communication has been overly general, has not created opportunities for dialogue with vulnerable groups and other segments of the population, and is not rooted in foodborne disease surveillance data. What’s more, the government engages with experts far more than with the lay public, and it has not fulfilled its stated commitment to openness and transparency [27]. Given these limitations, this integrative review paper [50] explores conceptual underpinnings in a search for ways to strengthen risk communication and public involvement in food safety governance.

Section 2 of the paper presents an outline of the Canadian federal food safety regime, an overview of basic models of governance, and an analysis of modes of governance in the federal regime. The subsequent section summarizes a leading food safety governance model that emphasizes risk communication and public participation, and also presents frameworks that highlight the importance of *dialogical* communication and *deliberative* participation. Section 4 sets out a basic version of the disaster management cycle and explores commonalities in disaster management and food safety governance. In the final section, we offer a critical review of federal changes to risk communication and public participation since the 2008 listeriosis crisis. We also present an integrated framework to bridge the gap between disaster management and food safety governance, and speculate on the implications for risk communication, public involvement and food safety.

## 2. The Canadian federal food safety regime

### 2.1. The major governance actors

In general, responsibility for food safety in Canada is a shared endeavor. It is shared among consumers at the handling stage, the food processing industry at the manufacturing, processing, and distribution stages, and various federal, provincial, territorial, and municipal government agencies at different stages throughout the system [54]. While perhaps not readily apparent, consumer handling is the leading cause of foodborne illness in Canada, with as many as 13 million cases of foodborne illness every year [54]. Still, problems of food safety outside of individual citizen control are those most likely to affect perceptions and undermine confidence in the food-processing sector [48].

While market mechanisms and voluntary corporate initiatives are important food safety activities, regulations enforced through compliance monitoring are the primary mechanism for controlling the hazards of industrial food processing [45]. In Canada, three federal regulatory agencies are central governance actors: Health Canada, the Canadian Food Inspection Agency, and the Public Health Agency of Canada.

Health Canada is at the centre of this institutional configuration. It provides leadership through the formulation of policies and regulations, the sum of which cover a broad spectrum of issues [47]. While the policies and standards created by Health Canada are strengthened through their entrenchment in the *Food and Drug Act* and other legislation, the department is not directly involved in the enforcement of its regulatory regime.

The agency responsible for enforcing regulatory compliance in the food-processing sector is the Canadian Food Inspection Agency. Broadly speaking, the agency carries out 14 inspection programs related to foods, plants, and animals [43]. In so doing, it enforces the food safety and nutritional quality standards imposed by Health Canada [43]. The generalized activities identified by the agency as central to its mandate include the protection of consumers and the marketplace from unfair practices, integrating the Hazard Analysis Critical Control Point (HACCP) approach into the food safety system, sampling and testing products, and responding to food safety emergencies. (The HACCP system involves identifying, assessing, and controlling hazards during the production, processing, manufacturing, preparation, and use of food, rather than relying on end-product testing [57]).

The Public Health Agency of Canada fulfills neither a regulatory nor an enforcement function with respect to food safety. It is, however, the main agency responsible for public health in Canada, with a primary goal to protect and improve the health of Canadians. Among other responsibilities, the Public Health Agency of Canada is mandated to protect Canadians from infectious diseases and to prepare and respond to public health emergencies [37].

### 2.2. Technocratic, decisionist, and co-evolutionary models of governance

Mohamed Salih [31, p. 501] provided a useful characterization of governance, defining it as, “the exercise of power in an institutional context with the main aim of directing, controlling, and regulating activities concerned with the public interest.” Two fundamental forms of legitimacy, bestowed by society at large, underpin an effective governance strategy: scientific/professional

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