

Public and Private Food Safety Regulatory Approaches: Exploring the Role of Global Food
Safety Initiative Auditors in Achieving Public Health Objectives, focusing on the Canadian
Experience

by

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Abstract

Governments are faced with a variety of challenging issues that have proven difficult to manage, one of which is providing safe food to its citizens. Recognizing this, and in response to several high-profile food safety crises in the late 1990s, food retailers created the Global Food Safety Initiative (GFSI), a private food safety regulatory approach. Certification to a GFSI-benchmarked private standard is often required through customer-supplier contracts, and as a result, food producers in the global agri-food supply chain may be subject to both the public and a private food safety regulatory approach.

This dissertation uses Webb's (2005) sustainable governance framework, which maintains that public, private, and civil sectors' institutions, processes, rule instruments and actors have regulatory capabilities in support of public policy objectives, to explore whether or not the GFSI auditor, an actor in the GFSI-system, supports the public health objectives of the state. Three primary research questions were developed to pursue this inquiry. First, on a functional level, can the GFSI auditor can be considered a public health practitioner analogous to the government's food safety inspector? Second, do GFSI auditors view themselves as public health practitioners? Third, do other actors in the GFSI-system consider GFSI auditors to be public health practitioners?

Using a mixed methods investigative approach, this dissertation presents the following conclusion: though the GFSI auditor can be characterized as a public health practitioner who supports the state's public health objectives, neither the auditors themselves nor other actors, e.g. representatives of Certification Bodies, Certification Programme Owners, etc., in the GFSI-system who participated in this research characterize the GFSI auditor as a public health practitioner. The final chapter of this dissertation discusses the public health and policy study significance of this investigation, provides policy recommendations to both the public and

private institutions and actors involved governing food safety in Canada intended to strengthen the overall public health system by recognizing the role that GFSI auditors have in promoting public health objectives, and opportunities for further research.

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Abbreviations

AB	Accreditation Body
B	Biological
BR	Benchmarking Requirements
BRC	British Retail Consortium
C	Chemical
CB	Certification Body
CCP	Critical Control Point
CFIA	Canadian Food Inspection Agency
CGF	Consumer Goods Forum
CHA	Certified HACCP Auditor
CIPHI	Canadian Institute of Public Health Inspectors
CP	Certification Programme
CPHI(C)	Certificate in Public Health Inspection (Canada)
CPO	Certification Programme Owner
EPHP	Environmental Public Health Professional
EU	European Union
FDA	United States Food and Drug Administration
FMI	Food Marketing Institute
FP	Food Producer
FSEP	Food Safety Enhancement Program
FSIS	Food Safety Inspection Service
FSMA	Food Safety Modernization Act
FSSC 22000	Food Safety Systems Certification 22000
GFSI	Global Food Safety Initiative
GMP	Good manufacturing practices
HACCP	Hazard Analysis Critical Control Point
IFS	International Featured Standards
IND	Industry
NEHA	National Environmental Health Association
NSMD	Non-State Market Driven

OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs,
OS	Other Stakeholders
P	Physical
Public Health Agency of Canada	Public Health Agency of Canada
PHI	Public Health Inspector
PRP	Prerequisite programs
RA	Regulatory Authority
REHS/RS	Registered Environmental Health Specialist/ Registered Sanitarian
SFCA	Safe Food for Canadians Act
SOP	Standard Operating Procedure
SQF	Safe Quality Foods
SQFI	Safe Quality Food Institute
TWG	Technical Working Groups
USDA	US Department of Agriculture
WHO	World Health Organization

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Chapter One - Introduction

Overview

The importance of food safety to ensuring the health of a population is difficult to overstate. Food is not only a biological necessity for life, the act of food preparation and consumption is a significant component of a society's culture (Block et al., 2011; Campbell, Murcott, & MacKenzie, 2011; Raspor & Jevsnik, 2008; World Health Organization [WHO], 2017a). Likely beginning as an effort to preserve food, societies have codified and enforced acceptable food handling practices through regulatory approaches for hundreds of years, and many of these practices have the additional benefit of preventing foodborne illness, thereby promoting public health (Campbell et al., 2011; Griffith, 2006; C. Parker, 2008; Regenstein, Chaudry, & Regenstein, 2003; Kernaghan Webb, 2004b; Kernaghan Webb & Morrison, 2004). The societal burden of these illnesses is significant; in Canada, it is estimated that one in eight Canadians (four million people) will become ill each year due to food consumption (Havelaar, Galindo, Kurowicka, & Cooke, 2008; Public Health Agency of Canada [Public Health Agency of Canada], 2018; M Kate Thomas et al., 2013). However, the statistic of "one in eight" is itself an estimate; not only is the number of actual illnesses difficult to quantify, these illnesses are often both under-reported and underdiagnosed, and to further complicate matters because food safety activities are preventative in nature, it is also difficult to determine how many illnesses were avoided as a result of regulated safe food handling practices (Antle, 1999; Flint, Doré, Majowicz, Edge, & Sockett, 2004; Mclinden, Sargeant, Thomas, Papadopoulos, & Fazil, 2014; Papadopoulos et al., 2012; Pires et al., 2009; Scallan et al., 2011; Thomas & Murray, 2014; World Health Organization, 2017b).

Food safety regulatory activities are undertaken by the public, private, and civil sectors of society, but in recent decades there has been a proliferation of private food safety regulatory approaches governing a variety of food safety, food quality, and food production methods (British Retail Consortium [BRC], 2015b; Busch, 2011a; Canadian Food Inspection Agency [CFIA], 2018c; Food Marketing Institute, 2017b; International Featured Standards, 2014; Manning & Baines, 2004; Marine Stewardship Council, 2017; Regenstein et al., 2003; VQA Ontario, 2017). The public food safety regulatory approach, both in Canada and around the world, codifies food handling practices for food producers (FP) through Acts, Regulations, and other policy instruments to promote public health by preventing foodborne illnesses, e.g., the requirement for milk to be pasteurized; allowable maximum residue levels of pesticides on fruits and vegetables (CFIA, 2018b; “Ontario Regulation 493/17 Food Premises,” n.d.; Public Health Ontario, 2013). These public policies apply to food producers that grow, manufacturer, or import food, into Canada. The task of regulating this industry with the purpose of preventing foodborne illnesses is considerable; there are an estimated 50,000 food producers in Canada which are regulated at either the federal, provincial, or municipal levels. Considering only the Canadian Food Inspection Agency’s (CFIA) jurisdiction, government regulatory agency has fewer than four thousand inspectors to enforce federal statutes and regulations at federally registered facilities, conduct thousands of food safety investigations, and hundreds of food recalls each year in Canada (CFIA, 2015a, 2016a, 2018a).¹ Developed with varying levels of input from stakeholders, public health policies are written and implemented by public administration institutions and actors through what is widely known as the policy cycle

¹ This is discussed in more detail in Chapter 2.

(Heywood, 2004; Howlett, 2009b; Howlett, Ramesh, & Perl, 2009; Hutter, 2011a; Poocharoen & Lejano, 2013).

The private food safety regulatory approach codifies food handling practices through private standards developed by non-state institutions and actors with varying levels of input from stakeholders; these standards are often developed using a process similar to the policy cycle to meet private goals such as market gains, protecting their reputation, or a due diligence defense in the event of a food safety crisis, which indirectly promotes the betterment of society (Fuchs, Kalfagianni, & Havinga, 2011; Fung, 2006; García Martínez, Fearne, Caswell, & Henson, 2007; Heywood, 2004; Howlett et al., 2009; Hutter, 2011a; Poocharoen & Lejano, 2013; Verbruggen & Havinga, 2017).

This is not to say that the non-state cannot provide great value to a society and work with public institutions to achieve laudable goals, nor is it to say that such activities should be undertaken solely by governments. Recognizing the value of the state and non-state involvement in governing, and the myriad of participants and policy mechanisms available, governance scholars, including Webb (2005), articulate a four component taxonomy to governance arrangements; institutions, rule instruments, processes, and actors. Institutions are organizations and groups of organizations in both the state and non-state which take on a variety of governance roles and activities; each institution uses processes, methods that allow them to develop and implement rule instruments and often allow for stakeholder participation to achieve defined objectives. Rule instruments set requirements intended to modify behaviour and which can be evaluated for compliance; and finally, actors are individuals or small groups who participate in governance activities, from the identification of a problem through to rule instrument

development, implementation, inspection, and enforcement (Driscoll & Webb, 2015a; K. Webb, 2005).

Webb uses these four components to envision the concept of sustainable governance and describe its four distinguishing characteristics (2004b, 2005). First, this approach recognizes that non-state actors can perceive an issue and act entirely independent from the state. Though the state may take part in the resulting governance activities, the state is not required for these activities to be initiated, developed or operationalized. Second, though other scholars may recognize these four components in a variety of ways, Webb uses them in an integrated manner to analyze a governance arrangement applied by the public, private, and civil sectors to solve a societal issue. Third, sustainable governance recognizes that interactions between the state and non-state may be adversarial, collaborative, or both, and that this is not only acceptable, but the friction between these three sector's policy activities can be beneficial. Finally, sustainable governance draws on and harnesses multiple energies and the combination of public, private and civil sectors; it emphasizes that multiple regulatory approaches creates a sustainable, or resilient system.

Currently, the governance literature identifies numerous governance arrangements commonly used in developed countries to manage societal issues; collaborative governance, adaptive governance and the related concept of i.e. polycentric governance, multi-level governance, participatory governance, private governance, public governance, and sustainable governance (Ansell & Gash, 2007; Dietz et al., 2003; Emerson, Nabatchi, & Balogh, 2012; Hooghe & Marks, 2003; Ostrom, 1999; Kernaghan Webb, 2005). The first four governance arrangements utilize government-centric approaches that acknowledge the importance of the non-state, including the private sector and civil actors, but rely primarily on the state to initiate,

develop, and operationalize a regulatory approach. This reliance may include the state's role as any (or all) of the following: initiating the arrangement; collaboration with other state institutions and / or the private sector and civil society; providing financial and other resources; supervision or other form of oversight; developing and enforcing rule instruments; and termination of the arrangement (Ansell, 2012; Dietz et al., 2003; Hooghe & Marks, 2002; Newig & Fritsch, 2009; Pahl-Wostl, 2009; Kernaghan Webb, 2005). Public governance arrangements rely on the state to initiate, develop, operationalize, and enforce rule instruments with some participation by the private and civil sectors whereas private governance arrangements utilize the private sector to initiate, develop, operationalize, and enforce rule instruments with limited, if any, involvement of the public and civil sector (Bernstein, 2011; Busch, 2011c; Henson, 2011; Konefal, Mascarenhas, & Hatanaka, 2005; Reeve, 2013). Unlike the government-centric approaches or the private approach described above, the concept of sustainable governance acknowledges that society benefits from a 'best-fit' solution to governing, i.e. it does not matter whether it was the state, the private sector, or the civil sector who initiates, develops, operationalizes, and enforces rule instruments: if these policies promote public goals, they have a place in governing society.

In Canada, the current public regulatory approach to food safety is composed of government agencies and departments (institutions) at the federal, provincial, territorial, municipal, and tribal government levels through a variety of law making and policy development activities (processes) to create Acts, Regulations, and other policies (rule instruments) that are implemented by the food producer and enforced by food safety inspectors (actors). The predominant private regulatory approach to food safety in Canada is the Global Food Safety Initiative (GFSI) (Anders, Souza-Monteiro, & Rouvière, 2010; Barling & Lang, 2003; García Martinez, Poole, Skinner, Illés, & Lehota, 2006; Giraud-Héraud, Hammoudi, Hoffmann, &

Soler, 2012; Global Food Safety Initiative [GFSI], 2018c; Havinga, 2011; Havinga, Casey, & van Waarden, 2015; Bernd M.J. van der Meulen, 2011a). The GFSI is an organization composed of actors from a number of other organizations, including the Consumer Goods Forum (CGF), food retailers, Certification Programme Owners (CPO), Certification Bodies (CB), Accreditation Bodies (AB), food producers and other stakeholders. It uses a variety of processes, including benchmarking, accreditation, and certification to develop and evaluate rule instruments, its Benchmarking Requirements and the CPO's certification programmes, that are implemented and evaluated by actors, individuals employed by the ABs, CBs, and food producers. Certification to a GFSI-recognized certification programme is often a contractual requirement to supply many Canadian and multi-national food retailers and manufacturers, including Walmart Inc., Loblaw Companies Limited, and Maple Leaf Foods Inc. (Crandall et al., 2017; Davey & Richards, 2013; Havinga, 2006; Konefal et al., 2005; Loblaw Companies Limited, 2011; Maple Leaf Foods Inc., 2015; Bernd M.J. van der Meulen, 2011a; Walmart Inc., 2008).

Combined, the public and private regulatory approaches to food safety developed by these institutions form a food safety regulatory system, defined by Papadopoulos et al. (2012) as “those involved in the safe manufacture, storage, handling, display, distribution, sale or offer for sale, preparation, processing or service of food” (p. 98). Though Papadopoulos et al. (2012) refer specifically to the state's public health agency activities, i.e. government's efforts to protect the food supply and achieve public health objective through food safety policies (p. 99), this dissertation expands the concept of the food safety regulatory system to incorporate the private sectors for several reasons. First, the state has recognized the role of food producers and

consumers in food safety (CFIA, 2014b; Weatherill, 2009).² Second, the CFIA has recognized the value of private food safety certification programs in its Private Certification Policy (Food Safety) and its recognition of the CanadaGAP Program, a GFSI-recognized certification programme for companies that grow, handle, or broker fruits and vegetables in Canada (CFIA, 2017e; CanAgPlus, 2017, 2018d). Third, the GFSI clearly states their support of government's public health objectives throughout its website and published documents (GFSI, 2018b, 2018p). Though the GFSI is a private regulatory approach, and therefore has no conventional public-sector foundation to address public health in the form of legislative or regulatory instruments developed through a democratic process, it has nevertheless asserted responsibility for food safety and public health in its policy documents, rule instruments and related communications. For example, the GFSI website states on its "Benefits" page that the benefits for the government are "improved public health" and "business is collaboratively promoting compliance with legislation"; the institution's vision is "Safe food for consumers, everywhere"; and their rule instrument, the Benchmarking Requirements claim a responsibility for both food safety and public health in its glossary (GFSI, 2018b, 2018i, 2018p).³ The Benchmarking Requirements, Part IV - Glossary of Terms defines a Food Safety System as "a series of defined rules, policies and procedures which are intended to ensure *the safe supply of food and protect public health*" and a Food Safety Management System as "a series of defined rules, policies and procedures

² Though it is important to understand that the consumer has a responsibility for handling food safely, this dissertation focuses on food safety regulatory approaches prior to the consumer purchasing the food.

³ The Global Food Safety Initiative-system modified the names of its rule instruments and component institutions in 2017 with the release of Version 7.0 of its Benchmarking Requirements. Previously, the Benchmarking Requirement was known as the Guidance Document, Certification Programme Owners were known as Food Safety Scheme Owners, and the certification programmes were known as Food Safety Schemes. This dissertation uses the new terminology, except when quoting the Benchmarking Requirements document as it has not yet been completely updated (Global Food Safety Initiative, 2017i, 2018a).

which are intended to *ensure the safe supply of food and protect public health* (GFSI, 2018i, p. 6, emphasis added).

The food safety regulatory system, referred to here as regulatory ‘approaches’, therefore can be viewed as an interconnected set of institutions, processes, rule instruments and actors, developed, operationalized, and enforced by the public, private, and civil sectors working together to achieve a common goal, in this case the promotion of public health through the prevention of foodborne illnesses (Backlund, 2000; GFSI, 2017i; Handler, Issel, & Turnock, 2001; International Organization for Standardization, 2018b; Papadopoulos et al., 2012; K. Webb, 2005). Given that food safety practices in Canada are now regulated by the public and private sectors, and that regulatory approaches in both sectors have acknowledge responsibility for public health, I have selected the sustainable governance framework because its analytical features align well with the food safety regulatory environment in Canada. These analytical features include; the four-part taxonomy; the acknowledgement of the value of independently initiated and operated private and civil society regulatory approaches not under the control and direction of governments; the importance of interactions among all three sectors, which may be collaborative and / or rivalrous; the possibility that the weaknesses of one approach can be addressed by another, thereby increasing the resilience and sustainability the hoped-for outcomes.

By examining the public and private regulator approaches through Webb’s (2005) concept of sustainable governance, it is apparent that, at a functional level, there is a great deal of similarity between the public and private food safety regulatory approaches. For example, both approaches share the goal of protecting public health through the safe supply of food; both use the Codex Alimentarius, an international food standard developed by the multi-state

intergovernmental body the Codex Alimentarius Commission, as the foundation for its standards; both use institutions and processes to create their rule instruments through a policy cycle; and both use evaluations to assess the food producer's compliance to the standard. These evaluations use a process, an inspection in the public food safety regulatory approach and an audit in the private food safety regulatory approach, to evaluate a food producer's compliance to the approach's rule instrument, Acts, Regulations, guidelines and policies or Benchmarking Requirements and certification programme, respectively. In the Canadian public regulatory approach, these evaluations are conducted by government employees with education, training, and work experience in the fields of food safety and public health, referred to here as food safety inspectors, and whose role is to evaluate the food producer's implementation of public policy and enforce legislation.⁴ Food safety inspectors are employed at all levels of government in Canada including federal, provincial, territorial, municipal and tribal government agencies, and are recognized within the public administration literature as 'street-level bureaucrats' as conceptualized by Lipsky (Canadian Institute for Health Information, 2017; Lipsky, 1980). Lipsky (1980) introduced the phrase street-level bureaucrat in 1980 to describe the work of government employees whose primary role characteristic was interaction with the public and updated his work in 2010 (Lipsky, 2010).⁵ Prior to this, these public sector officials were known by a variety of names, including front line regulators, public service employees, enforcement officers, and regulatory agents, and well studied examples of these roles include welfare agents, police officers, nurses, teachers, and Environmental Public Health Professionals (EPHP)

⁴ The title given these regulatory agents varies by activity, jurisdiction, and legislation; this dissertation will use the generic term "food safety inspector" to acknowledge street-level bureaucrats who are responsible for the enforcement of public food safety regulations.

⁵ This dissertation will use Lipsky's 2010 manuscript unless otherwise noted.

(Brough, Davies, & Johnstone, 2016; Considine & Lewis, 1999; Hupe, Hill, & Buffat, 2015; Lipsky, 2010; May & Wood, 2003; Medeiros & Wilcock, 2006; Newbold, McKeary, Hart, & Hall, 2008; Oberfield, 2010; Pham, Jones, Sargeant, Marshall, & Dewey, 2010a; Piore, 2011). However, many government services have been transferred from the public to the private sector; this transference, as well as the proliferation of private standards, can be viewed as an example of the shift from government to governance that has occurred throughout developed countries since the 1970s (Bell & Hindmoor, 2009; Hutter & Jones, 2007; Rhodes, 1996; Robichau, 2011). One result of this transference is the direct involvement of non-governmental organizations, including charities, not-for-profit, and for-profit corporations in service delivery, and thus the definition has broadened to include non-state entities. Hupe, Hill & Buffat (2015) have proposed a definition of street-level bureaucrat that reflects this expanded scope as an someone “working in contact with individual citizens, doing this work while in public service, whether or not they are employed by a public or private organization, and tasks for which they have had training, which provides “inherent discretion, policy co-creation, and craftsmanship” (quotations in the original, p. 16).

While the GFSI auditor is not considered part of the public service directly, their work has the stated objective of ensuring the safe supply of food and protecting public health, and their activities require discretion, policy co-creation, and craftsmanship. Within the concept of sustainable governance as applied to the public and private food safety regulatory approaches, the GFSI auditor is an actor in the private approach who is involved in the enforcement of private rule instruments through the process of an audit, similar to the food safety inspector who is involved in the implementation and enforcement of laws and regulations through the process of an inspection. This dissertation theorizes that these roles are analogous, i.e. they have similar

functions, qualifications, role characteristics, policy activities and perform similar activities during their inspections / audits, for similar purposes, not just the compliance of the food producer to the applicable public or private rule instrument, but also the promotion of public health. Thus, the expansion of the role of the street-level bureaucrats to include private sector employees and the claim by the GFSI in both its Benchmarking Requirements and in its public documents that it provides a benefit to governments by improving public health, suggests that the GFSI auditor may be considered functioning as a public health practitioner, but this has not yet been investigated in the literature (GFSI, 2018h, 2018b).

Key concepts

Within academic literature there can be multiple understandings of terms and concepts, and phrases may be used without providing a definition or understanding of its usage. For example, ‘food governance’ is used by Lang (2003) in an exploration of power in the food supply chain, by Friedberg (2007) in her examination of supermarkets and imperial knowledge, in Hatanaka’s (2014) exploration of a private regulatory system in an organic shrimp project in Indonesia, and throughout the work of three scholars; Fuchs, Havinga, and Verbruggen (Fuchs & Kalfagianni, 2010; Fuchs, Kalfagianni, Clapp, & Busch, 2011; Havinga et al., 2015; Verbruggen & Havinga, 2014b, 2017). Other authors use the phrase ‘agri-food or agrifood governance’ as seen in critical works by Busch (Busch, 2010; Hatanaka, Bain, & Busch, 2005); an exploration of supermarkets and private standards by Fulponi (2006) and an examination of the sociopolitical relationships between states, industries, and consumers within food systems after the first incidence of Bovine Spongiform Encephalopathy in Canada by Charlebois and Labrecque (2009), as well as further works by Fuchs et al. (2011). Therefore, it is necessary to define several key concepts used throughout this dissertation.

Recognizing that the state is both a concept and the government, Steinberger (2004) considers the state to be “the entirety of political society” and encompasses a society’s understanding of how things in the world really are, thereby creating the institutions of government (p. 9). As the government, the state is a collection of institutions for a defined geographic domain that provide the foundation upon which humans facilitate collective action and maintain public order (Heywood, 2004; Miller, 2008; Steinberger, 2004). In this dissertation “the state” and “the government” will be used interchangeably as per Stillwell (2012); the government is the core of the state and is “so obviously central to the state that one may be forgiven for using the two terms interchangeably” (p. 241). The state is considered ‘public’ because it finances its activities with money collected from citizens, redistributes these resources through its policies, and is assumed to act in the best interest of society, and the term public will be used synonymously with ‘state’ and ‘government’ (Heywood, 2004; Jarvis, 2013; Mintrom & Williams, 2013). Therefore, the public regulatory approach, also referred to in this dissertation as the public food safety regulatory approach, is considered to be laws, regulations, policies, etc., (also referred to as public standards) created by state institutions through the public policy cycle and other democratic processes and are implemented by public actors such as street-level bureaucrats.

As the state is considered the government, for the purpose of this dissertation the non-state is considered all institutions and actors outside of the government, and can be divided into the private and civil sectors (Bernstein & Cashore, 2007; Busch, 2011c; Fuchs, Kalfagianni, & Havinga, 2011; Pahl-Wostl, 2009). The private sector is considered to be the market or firms, i.e. organizations which exist to create wealth or support the creation of wealth (e.g. not-for-profit market firms such as the GFSI); they may be publicly or privately-owned organizations

(Busch, 2011c; García Martínez et al., 2007; Hutter, 2011a). As with the public sector, the private sector conducts regulatory activities in the area of food safety, referred to in this dissertation as the private food safety regulatory approach or the private regulatory approach. This regulatory system is composed of private standards and voluntary codes created by private institutions through a process similar to the policy cycle but operating in the private sector (Henson & Humphrey, 2010; B. Guy Peters, 2012b; Verbruggen & Havinga, 2017).⁶ The civil sector, too, has created food safety regulatory approaches, for example the religious dietary laws of the Kosher and Halal approaches; both rule instruments incorporate practices that can be considered ‘food safety activities’, e.g. the Kosher requirement to salt meat (Campbell et al., 2011; Farouk et al., 2014, 2015; Havinga, 2010b).

Recognizing that both the state and the non-state are now involved in the process of governing, this dissertation uses the definition of governance put forth by Weiss (2013) “the range of formal and informal values, rules, norms, practices and organizations that provide better order than sole reliance on formal regulations and structures...it is the composite system through which an entity manages its common affairs” (p. 31). This definition emphasizes three features. First, there are both formal and informal components to governing society. Second, this blend of formal and informal is better than the historical command and control regulatory system. Third, the goal of governance is the management of common affairs of a society not just of a single entity, be it state or non-state, institution or actor. As governance is a concept, not a tangible object, this dissertation uses the word governance as a shorted form of ‘the concept of governance’ as it is used in the literature (Bevir, 2011; Kjær, 2011; Pahl-Wostl, 2009; Rhodes,

⁶ The civil sector may also develop private rule instruments, but this is outside the scope of this dissertation.

1996). Food governance is considered to be “mechanisms of governing the production of food”, a definition that builds on the work of Havinga and her colleagues (Havinga et al., 2015; Havinga & Verbruggen, 2017); this definition allows for the inclusion of state and non-state institutions, processes, rule instruments, and actors.⁷ In a more focused definition, Charlebois and Labrecque (2009) define food safety governance as “a process in which state, industry, and public alike maintain the social order of the agri-food system” (p. 363); this definition will be understood to be synonymous with ‘food governance’. As the focus of this dissertation is an actor, not firms or organizations, and in keeping with Webb’s (2005) definitions, this dissertation will use the following: actors will be considered to be the individuals participating in the GFSI-system, including public regulatory agents; food safety inspectors, GFSI auditors, and the individuals participating in the research who are employed by institutions. Hypothesis 3 focusses on perceptions of representatives of Institutions involved in the GFSI-system, e.g. the GFSI, CPO, and CB, etc., more specifically, it was the perceptions of employees of these institutions who participated in the interviews (see Figure 5: Direct and indirect influence on the food producer). The rule instruments will be considered “public standards” because these instruments are created by public institutions and enforced by public actors in the public food safety regulatory approach and “private standards” or “voluntary codes” because are created by private institutions and enforced by private actors in the private food safety regulatory approach. Finally, food producers or food premises are defined as a facility which could implement and be audited against a GFSI-benchmarked certification programme, including animal feed producers, farms, processors (e.g. flour mills), manufacturers (e.g. ready-to-eat sliced meats), distribution

⁷ The definition of ‘food governance’ is intended to be broad enough to incorporate other food concerns than food safety, e.g. food security if it were to be applied to other areas.

center or manufacturer of a food contact item such as food grade lubricants or packaging (GFSI, 2018f, p. 7-10).⁸

Importance and Scope of this Research

This research identified and attempted to fill several gaps in the literature. It identifies a gap in the literature, little investigation into the role of an actor in the private food safety regulatory approach, the GFSI auditor. This gap includes the place of the auditor in public health; auditors' understanding of their role in public health; and the understanding of other actors representing institutions in the GFSI-system. It also expands the concept of street-level bureaucrat, exploring how an actor in the private food safety regulatory approach can assist the public institutions with meeting public health objectives. This investigation is timely because the CFIA has recognized the importance of third party certifications in promoting public health through their 2014 Private Certification Policy (Food Safety); this policy refers to the GFSI by name, stating that “the GFSI can assist food producers to meet Canadian food safety regulatory objectives” (CFIA, 2017f).⁹ The CFIA has also recognized a GFSI-benchmarked certification programme, CanadaGAP, stating that this programme can assist farmers, i.e. those involved in the “production, packing (including field/orchard/vineyard packing and both on and off farm packinghouses), repacking, storage, wholesaling and brokerage of horticultural products”, in meeting Canadian regulatory requirements (CFIA, 2017f; CanAgPlus, 2017). In the US, the FDA has indicated its intention to use third-party certification through its Final Rule on

⁸ As of August 20, 2018, there is a Benchmarking Category Code “H - Retail / Wholesale” for the “Provision of finished food and feed products to a customer and Retailing and wholesaling of food and feed” however, there are no certification programmes benchmarked to this category (Global Food Safety Initiative, 2018n, 2018o).

⁹ This policy is only available on the CFIA's webpage “Private Certification Policy (Food Safety); it was initially posted in 2014 and the most current version is dated 2017-01-14.

Accredited Third-Party Certification to support the Food Safety Modernization Act (FSMA) and this Rule has been implemented. (U.S. Food and Drug Administration, 2015b, 2017b). It is important to note that the CFIA Private Certification Policy (Food Safety) has not yet been operationalized, i.e. there is no information as to how the CFIA will use this policy to support its public policy objectives, despite the fact it came into effect on September 3, 2015 (CFIA, 2017f, 2017g).¹⁰

An important consideration into the scope of this research is the historical vs. current day context. This dissertation acknowledges that no regulatory approach, be it the public sector's 'command and control' regulations, the private sector's third-party certification approach, or the civil sector's religious dietary laws (as an example) arise without a historical context and that this context is extremely important to the institutions, processes, rule instruments and actors involved in governing. Other authors have explored the origin and impacts of the GFSI-system on the food regulatory landscape, and therefore this context is not within the scope of this dissertation (Henson & Hooker, 2001; Barling & Lang, 2003; Hatanaka et al., 2005; Garcia Martinez et al., 2006; Fuchs & Kalfagianni, 2010; Busch, 2011b; Fuchs, Kalfagianni, Clapp, et al., 2011; van der Meulen, 2011; Havinga et al., 2015; Havinga & Verbruggen, 2017). Having acknowledged this, this dissertation will present the historical context of the public and private regulatory approaches only as necessary to understand the current-day state of affairs and focuses on the public and private sector governing activities with respect to food safety that are in place today.

¹⁰ Much of the information available regarding the Global Food Safety Initiative-system and government institutions was retrieved from these institution's websites. Therefore, references, including direct quotes, do not have a page number associated with the information. As appropriate, where information was taken from a 'numbered page' document the page number has been included.

The scope of this research has three boundaries. First, it only examines the GFSI and does not examine in detail other private food certification programmes, e.g. the Marine Stewardship Council, Vintners Quality Alliance (VQA); nor does it examine civil society certification programmes such as the religious dietary laws of Kosher or Halal. These standards may incorporate food safety requirements but they were not developed to promote public health through food safety activities (Campbell et al., 2011; Havinga, 2010b; Marine Stewardship Council, 2017; Regenstein et al., 2003; VQA Ontario, 2017). These private and civil standards may be referred to in the dissertation but are not discussed in detail and only the GFSI's rule instruments will be considered here unless otherwise stated. Second, it focuses on the current Canadian context of food safety governance because of the CFIA's policy described above, though it does reference other national institutions such as the U.S. FDA and other Regulatory Agencies (RA) as needed to position the Canadian approach in context to other nations. In addition, auditor respondents were located in North America, and therefore an understanding of Canadian and American public regulatory systems is necessary to place their responses in context. Finally, the focus of this research is on the GFSI auditor's role in public health through their food safety activities; the appropriateness of the GFSI's rule instruments, the effectiveness of the GFSI in promoting public health, and a critical analysis of the GFSI are not within the scope of this dissertation.

Research Questions

Despite the role that GFSI auditors play in promoting public health through the private food safety regulatory approach, little investigation has been done into these actors. This study examines the GFSI auditor and their role in public health through three key research questions: What are the role characteristics of the GFSI auditor in the private food safety approach? Do

GFSI auditors recognize a role for themselves in promoting food safety, and, if so, do they view themselves as part of the public health system? Do the actors and institutions in the public and private food safety regulatory approaches view the auditor as a part of the public health system? These questions have not yet been explored in the literature and form the basis of this dissertation.

As the GFSI auditor is an underexamined actor in the emerging global food safety system and therefore the broader public health system as envisioned through the concept of sustainable governance (see Chapter Three), this research has three objectives: 1) to determine if the GFSI auditor can be characterized a public health practitioner at a functional level; 2) to determine if the GFSI auditor has the professional identity of a public health practitioner; and 3) to determine if the actors within these institutions of GFSI-system and public regulatory agencies view the GFSI auditor as a public health practitioner. To investigate these objectives, research questions were developed that explore the role and professional identity of the GFSI auditor, the auditor's understanding of their role in public health, and the understanding of actors in other institutions in the GFSI-system of the role of the GFSI auditor in food safety and public health, e.g. public regulatory agencies, Certification Bodies, Certification Programme Owners, etc. These questions can be grouped into four categories.

- **Food safety and public health as conceptualized by the sustainable governance**

framework: How do the public and private regulatory approaches interact to promote food safety and public health? What are the goals of these approaches? Who are the actors and institutions in these approaches, and what processes and instruments do they use to meet their goals?

- **The place of the GFSI auditor in food safety and public health:** What is the role of the GFSI auditor in food safety and public health? Are the education, training and experience of the GFSI auditor and the food safety inspector comparable? Are the job characteristics and policy activities of the GFSI auditor and the food safety inspector comparable?
- **The professional identity of the GFSI auditor:** What is the professional identity of the GFSI auditor? How do they envision their role in the promoting safe food production, i.e. food safety? Do they recognize a public health role for themselves? Do they consider themselves to be a public health practitioner?
- **The GFSI-system's understanding of the GFSI auditor role in public health and food safety:** How do the actors in the institutions of the public and private food safety regulatory approaches envision the role of the GFSI auditor? Do these actors recognize a public health role for the GFSI auditor? Do they consider the GFSI auditor to be a public health practitioner?

Hypotheses

These goals and questions lead to the following hypotheses.

Hypothesis One: If the GFSI auditor is a private food safety regulatory agent analogous to the government's food safety inspector then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors may all have regulatory capabilities in support of public policy objectives, they can be characterized as public health practitioners participating in the overall achievement of public health objectives.

Hypothesis Two: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, GFSI auditors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives.

Hypothesis Three: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, other actors in the GFSI-system are likely to consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives

These three hypotheses were investigated through qualitative and quantitative methodologies. Hypothesis One was investigated through a functions-based analysis of the literature and publicly available documents. Hypothesis Two was investigated through interviews with GFSI auditors and an on-line survey to determine if these actors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives. Hypothesis Three was investigated through interviews with actors of the following institutions: Accreditation Body (AB), Certification Body (CB), Certification

Programme Owner (CPO), Industry (IND), Regulatory Authority (RA) and Other Stakeholders (OS) (see Figure 5: Direct and indirect influences on the food producer) in the GFSI-system to determine these actors' perceptions of the auditor's role in the public health system, and if they are likely to consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives.

Author's Intent

Examining the research questions and hypotheses presented above it is clear that this dissertation explores the interplay of the public and private sectors through an actor in each approach. As per the concept of sustainable governance this research is intended to recognize that a private sector actor may support the public sector's activities; it is not intended to support the deregulation or privatization of food safety activities by the state, nor is it intended to be a critical examination of the private sector's activities. The intent of this research is solely to examine if the GFSI auditor has a role in public health, and if so, how the auditors and other actors of institutions in these approaches understand the role of the auditor in public health.

Dissertation Outline

This dissertation proceeds in the following manner. Chapter Two presents an overview of the challenges in producing safe food and promoting public health objectives. Chapter Three discusses the concepts of governance, food governance, and street-level bureaucrats; the public and private food safety regulatory approaches in Canada through an examination of the institutions, processes, rule instruments and actors involved; presents an overview of the GFSI-system; and explains why the concept of sustainable governance is the most appropriate analytical framework for this investigation. Chapter Four describes the conceptual framework; research methodology used to investigate these hypotheses; and the strengths and limitations of

this investigation. Chapters Five, Six and Seven present the results of this investigation. Finally, Chapter Eight discusses the theoretical insights gained through this investigation; policy recommendations for both the public regulatory approach and the GFSI-system to strengthen the role of the GFSI auditor in the Canadian food safety regulatory system, and opportunities for further research.

Chapter Two - The Governance Challenge: Food Safety and Public Health

Access to safe food is considered a basic human right by the World Health Organization (WHO) and both governments and the GFSI-system have developed regulatory approaches which have the stated goal of promoting public health through the prevention of foodborne illness (Codex Alimentarius Commission, 2003; GFSI, 2018h; Public Health Agency of Canada, 2016c; WHO, 2017a). The foundation of both approaches is the Codex Alimentarius, an international food standard based on the scientific understanding of foodborne illness, food safety hazards, and risk assessment which has been utilized to prevent, reduce, or eliminate the causes of foodborne illnesses in the food production system (CFIA, 2014b; Codex Alimentarius Commission, 2003; Food and Agriculture Organization of the United Nations & WHO, 2018; GFSI, 2017a; Green & Kane, 2014; Surak & Wilson, 2014). Therefore, understanding the importance of food safety and public health, as well as associated governance approaches, requires an appreciation of how the consumption of food can harm the individual.

Chapter Two provides an overview of the causes of foodborne illnesses, the public health impact of these illnesses, and the preventative measures taken by food producers to avoid making the consumer ill. It begins with a discussion of the concepts of food safety and public health, and then explores the challenges in providing safe food to a population. It concludes with a discussion of the public health objectives of the Canadian food safety regulatory system and the GFSI.

Food Safety

Food safety and public health are intangible concepts and therefore require definitions to ensure a common understanding. For the purposes of this research, food safety and public health

have been defined as per the CFIA and Public Health Agency of Canada (Public Health Agency of Canada), respectively. The CFIA's Food Safety Enhancement Program (FSEP) defines food safety as "a concept that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use" (CFIA, 2014, p. vi) and public health is defined by the Public Health Agency of Canada as measures taken to keep people healthy through programs and services that prevent illnesses, injuries, and deaths (Public Health Agency of Canada, 2010, 2016c). Food safety activities and systems promote public health through the prevention of foodborne illnesses, considered here to be illnesses, injuries, or death due to food consumption; a foodborne illness occurs if one person is sickened by their food, and a foodborne illness outbreak occurs if there are illnesses in two or more individuals (CFIA, 2014b; Centers for Disease Control and Prevention, 2017). Food safety is a subset of food quality; a food meeting a quality standard must not make a consumer ill, but a 'safe' food may not meet a quality standard, e.g. colour, size, shape (Henson, 2008; Surak & Wilson, 2014).

These illnesses are caused by hazards, contaminants or conditions of a food that are harmful to the consumer and may cause an adverse health effect (CFIA, 2014b; Codex Alimentarius Commission, 2003; Surak & Wilson, 2014). Hazards are classified into three broad categories to assist in the development of preventative measures; biological (B) (pathogenic microorganisms and their toxins, including bacteria, viruses, parasites, moulds, fungi, and prions); chemical (C) (chemicals, allergens, and radiological contaminants that are not expected in the food or exceed permitted levels); and physical (P) (objects that are unexpected in the food or are larger than the legally permitted size for foreign material) (CFIA, 2014b; Greig & Ravel, 2009; Lawley, Curtis, & Davis, 2012; Surak & Wilson, 2014; Van Boxtael et al., 2013). Biological hazards are the most common cause of foodborne illness and Gould et al. (2013)

found that pathogens cause more than 90% of outbreaks, whereas physical hazards are the most easily identifiable and therefore are the most common hazard reported to the CFIA for investigation (CFIA, 2017a, 2017b).

Historically, food safety activities focused on sensory inspections to detect potential hazards to the consumer, including symptoms of illness in animals, undesirable odors, colour or spoilage during processing, or visible foreign materials (Khandaker & Alauddin, 2005; Richards, Lawrence, & Burch, 2011; Surak & Wilson, 2014). However, the introduction of the Hazard Analysis Critical Control Point (HACCP) system in the 1970s transformed industry's approach from finished product testing to proactive management of foodborne illnesses by requiring food producers to identify and evaluate hazards, and implement controls (Lawley et al., 2012; NACMCF, 1998; Surak & Wilson, 2014). Each control measure is classified as either part of a prerequisite programs (PRP) or part of the HACCP plan. PRPs are general requirements to produce safe food, and include such activities as: employee good manufacturing practices; monitoring the temperature of a cooler; and ensuring the cleanliness of the facility and equipment, whereas HACCP plans are used to systematically identify and evaluate risks specific to the food product or production method (CFIA, 2014b; National Advisory Committee on Microbiological Criteria for Foods, 1998; Surak & Wilson, 2014). HACCP plans identify Critical Control Points (CCPs), activities that prevent, eliminate, or reduce the presence of a high-risk hazard through scientifically validated control measures such as cooking temperatures to eliminate biological hazards or using a metal detector to remove metallic physical hazards (CFIA, 2014b; Curran, Sargeant, & Hollett, 2007; Green & Kane, 2014; Lawley et al., 2012; Surak & Wilson, 2014). Though HACCP plans are critical to food safety, PRPs are no less important as demonstrated by the Canadian 2008 listeriosis outbreak in which there were 23

deaths and nearly 57 illnesses (a 40% case fatality rate) caused by an improperly cleaned meat slicer used after the cooking CCP (Government of Canada, 2011; Health Canada, 2009; Thomas et al., 2015; Weatherill, 2009).¹¹

To minimize the potential and/or severity of a food item's contamination and thereby reduce the incidence of foodborne illnesses, PRPs and HACCP plans are used at most locations in the food production system and are often codified into state regulations or non-state private standards (Barling, 2007; Busch, 2011c; CFIA, 2014b; David, Ravel, Nesbitt, Pintar, & Pollari, 2014; Powell, Jacob, & Chapman, 2011; Surak & Wilson, 2014). State codified food safety standards, e.g. laws, regulations and policies, for food producers are necessary public health activities to ensure that the food purchased by the consumer is as safe as possible; these standards are necessary because consumers often fail to follow safe food handling practices once the food is in their possession (CFIA, 2014b; Hirschauer & Bavorová, 2014; Nesbitt et al., 2009, 2014; Saulo & Moskowitz, 2011). The 2016-17 outbreak of Shiga toxin-producing *E. coli* infections in the US from contaminated raw flour is an example of how consumer food handling practices can exacerbate a foodborne illness event. Of the 63 illnesses, several victims used the flour to make cookie dough which they then consumed uncooked, an 'unintended use' of the food product as per the CFIA's definition of food safety; flour is not intended to be consumed without a baking, a process that would likely have prevented the illnesses by eliminating the pathogen. Other victims handled but did not consume uncooked dough yet still became ill, suggesting that the pathogen was transferred to the foods they consumed through insufficient hand washing. In this example, simple food safety practices by the consumer (baking cookies and effective hand washing) may have decreased the number of illnesses and therefore the public

¹¹ Listeriosis is an illness caused by the pathogen *Listeria monocytogenes*.

health impact of this outbreak (CFIA, 2014b; Nesbitt et al., 2014; U.S. Food and Drug Administration, 2017a) It demonstrates that both industry and consumers have an important role to play in public health; it was industry's responsibility to treat the flour to remove the pathogen, but it was the consumer's responsibility to follow safe food handling practices once they were using the flour.

Food Safety Challenges

The principles of food safety operate on the concept that a hazard can be reduced, prevented, or eliminated from a food and that everyone, from the farmer to the consumer, has a responsibility to handle food safely (CFIA, 2014b). How the actors in the food supply chain manage these hazards can be seen Table 1: Hazards associated with a retailer packaged vegetable tray which describes several potential hazards and associated preventative measures.

Location	Hazard		Preventative Measure
Farm / Greenhouse / Packhouse Example activity: Harvesting of vegetables	B	Fecal contamination from farm animals	<ul style="list-style-type: none"> • Ensure animal waste is not stored in a way that it can contact produce • Employee training
	C	Pesticides applied incorrectly	<ul style="list-style-type: none"> • Apply chemicals as per label and government regulations • Employee training
	P	Destoning (e.g. failure to remove stones from produce such as wheat)	<ul style="list-style-type: none"> • Equipment inspection and maintenance • Employee training
Distribution Centre Example activity: Storage of vegetables	B	Pathogen contamination due to contamination from equipment, e.g. trimming produce with dirty knives	<ul style="list-style-type: none"> • Sanitation program • Pre-operation inspection • Employee training
	C	Chemical contamination from refrigerant leak, e.g. refrigeration chemicals dripping onto product	<ul style="list-style-type: none"> • Equipment inspection • Employee training
	P	Foreign material falling into uncovered product, e.g. bins of carrots covered	<ul style="list-style-type: none"> • Facility and equipment inspection • Employee training
Production Facility	B	Pathogen contamination due to inadequate washing / sanitizing of	<ul style="list-style-type: none"> • Sanitation program • Pre-operation inspection

Example activity: Washing and slicing of vegetables		equipment and utensils, e.g. unclean knives	<ul style="list-style-type: none"> • Employee training
	C	Contamination from non-food chemicals, e.g. non-food grade lubricants	<ul style="list-style-type: none"> • Chemical control program • Employee training
	P	Contamination from hazardous extraneous material, e.g. metal fragments from damaged knife	<ul style="list-style-type: none"> • Sanitation program • Pre-operation inspection • Employee training
Retailer Example activity: Assembly of vegetable tray	B	Pathogen contamination / growth due to improper handling and operation procedure, e.g. employee not washing hands before handling food	<ul style="list-style-type: none"> • Good Manufacturing Practices • Employee training
	C	Contamination from non-food chemicals, e.g. incorrect concentration of sanitizer used to wash vegetables	<ul style="list-style-type: none"> • Good Manufacturing Practices • Standard Operating Procedures for assembling vegetable tray • Employee training
	P	Contamination from hazardous extraneous material, e.g. employee wearing jewellery	<ul style="list-style-type: none"> • Good Manufacturing Practices • Employee training
Consumer Example activity: Serves food	B	Pathogen growth due to time / temperature abuse, e.g. leaving vegetable tray at room temperature	<ul style="list-style-type: none"> • Consumer food safety practices • Consumer education
	C	Cross contamination due to allergens in product, e.g. handling dairy based dip without washing hands	<ul style="list-style-type: none"> • Consumer food safety practices • Consumer education
	P	Contamination from hazardous extraneous material, e.g. glass breaks on counter top	<ul style="list-style-type: none"> • Consumer food safety practices • Consumer education

Table 1: Hazards associated with a retailer packaged vegetable tray¹²

In this example, a retailer assembled vegetable platter of carrots, celery, tomatoes, broccoli, and cauliflower could have at least seven suppliers: five farms; the tray manufacturer; and the label manufacturer; and as a result, there are 17 potential locations at which

¹² All hazards drawn from the CFIA's Reference Database for Hazard Identification (CFIA, 2013). This is not an exhaustive list, but instead provides an overview of the potential hazards.

contamination could occur.¹³ This highlights several difficulties in producing safe food. First, the food processing system is complex and with increased complexity comes increased risk. Second, each food production site can only control hazards while the food is in their possession and these sites have no way of knowing how the food item will be handled at other facilities in the supply chain, a concept known as information asymmetry. Third, the globalization of the food supply has resulted in a significant shift in the food production system as foods and ingredients are transported around the world; therefore, a contaminated food may cause illnesses in multiple countries.

The increased risk in the food processing system is managed primarily through the use of HACCP systems, but the use of these systems does not eliminate the issue of information asymmetry. Information asymmetry occurs when one party in a transaction is less informed than the other; in the food industry each organization or individual can only know how they themselves handled the food and have little-to-no knowledge of either potential risks or contamination events that occurred at other processing sites (Albersmeier, Schulze, Jahn, & Spiller, 2009; Fuchs et al., 2011; Hobbs, 2010; Rouvière & Caswell, 2012; K. Webb, 2004a). An example of information asymmetry can be seen in an individual's consumption of contaminated food because it can be assumed that few individuals knowingly eat cookie dough contaminated with shiga toxin-producing *Escherichia coli* or sliced meats contaminated with *Listeria monocytogenes*. Information asymmetry is an important concern in the food production system since it is impossible for a warehouse to know what pesticides were applied by the farmer; the processor to know how the warehouse managed its sanitation programs; or the retailer to know if

¹³ Five farms, two production facilities (tray and label), seven distribution centers, one vegetable washing / slicing facility, one retailer, and one consumer, considered here to be the person who purchased the tray.

the CCPs were correctly implemented by the food processor. To correct this asymmetry the consumer and a representative from each organization would have to be present whenever the product is handled, an impractical and economically inefficient solution given the number of handling locations, types of processes, and potential hazards associated with even a simple food item.

The number of food producers presents a challenge for governments to manage. In 2016 the CFIA had approximately 6,500 employees, including the inspectorate, administrative, and other staff; of these employees the 3,900 individuals who make up the inspectorate are responsible for enforcing 13 federal statutes and 38 sets of regulations, more than 3,000 food safety investigations, 350 food recalls, 700 federally registered establishments (i.e. meat, dairy, egg, seafood) as well as any issues at non-federally registered facilities as needed each year (CFIA, 2015a, 2016a, 2018a).^{14, 15} Currently, not all food producers in Canada are required to be registered with the CFIA, and until the Safe Food for Canadians Regulations come into force the CFIA will not have a clear estimate of the number of food producers operating in Canada who manufacture, grade, label, package, preserve, process, or treat food conveyed from one province to another, though the Private Certification (Food Safety) policy estimates this number to be 50,000 (CFIA, 2017f, 2018d).

While information asymmetry has always been a concern in the food industry, the globalization of the food supply creates additional risks. The sourcing of food ingredients and

¹⁴ Based on data available from the Public Service Alliance of Canada website, the inspectorate / field staff is estimated to be 3,900 employees (Public Service Alliance of Canada, 2018).

¹⁵ Agriculture and Agri-food Canada estimate that there are approximately 6,500 food and beverage processors in Canada, and this would include both federally and non-federally registered processing facilities (Agriculture and Agri-Food Canada, 2016).

the distribution of finished products is no longer limited to a regional or national geographic area and food has often travelled thousands of miles to the plate of a consumer in the developed countries (Aung & Chang, 2014; Born & Purcell, 2006; Busch, 2011c; Busch & Bain, 2004; Hatanaka et al., 2005). Factors contributing to the global sourcing of foods include: increased immigration and a concurrent demand for ethnically appropriate foods; changing consumer preferences; and Canada's climate-based food production restrictions that limit the winter consumption of fruits and vegetables to those that are easily stored, e.g. potatoes and apples, and from this perspective, even Canada's Food Guide's suggestion to eat leafy greens can be viewed as a contributing to globalization of the food supply because such items are seasonally inappropriate for most of the country (Dorff, 2014; Health Canada, 2011; Olaimat & Holley, 2012; WHO, 2017a). At the same time, food safety hazards are changing, and new and emerging concerns present significant risks to public health. For example, an *E. coli* O104:H4 outbreak in Germany between May and July 2011 resulted in more than 3500 illnesses and 50 deaths; the public health investigation eventually determined the source of the pathogen to be contaminated fenugreek sprouts imported from Egypt (Frank et al., 2011). This outbreak overwhelmed the public health system due to the number and severity of illnesses, the unusual pathogen; and the outbreak's relatively short duration (Centers for Disease Control and Prevention, 2013; Kleimann et al., 2014; Radosavljevic, Finke, & Belojevic, 2014).

Public Health

The field of public health attempts to prevent illnesses in a population through a variety of activities, from immunization against communicable diseases to encouraging healthy behaviours such as nutritious eating, and includes food safety activities (Health Canada, 2012; Public Health Agency of Canada, 2016a; World Health Organization, 2014, 2015a).

Foodborne illnesses have a significant cost to a society, including: personal medical expenses; government expenditures; lost productivity; decreased well-being; and death (Mclinden et al., 2014; Scharff, 2012; Thomas et al., 2015). In Canada, the estimated four million illnesses per year result in 11,600 hospitalizations and 238 deaths; in the US the estimated 48 million illnesses result in 128,000 hospitalizations and 3,000 deaths; and globally there are an estimated 600 million foodborne illnesses, resulting in 420,000 deaths (Pires et al., 2009; Public Health Agency of Canada, 2018; Scallan et al., 2011; Scharff, 2012; M. K. Thomas & Murray, 2014; WHO, 2017a, 2017b). The financial impact of these illnesses can be estimated to determine not just the direct costs to the state but also the indirect costs to a society. For example, there were significant direct and indirect costs associated with the 2008 listeriosis outbreak in Canada. Direct costs included healthcare costs for the victims and the federal outbreak response, which were more than seven hundred and fifty thousand dollars and two million dollars respectively; when indirect costs such as death and non-healthcare costs were incorporated the total cost of this outbreak is estimated to have been more than 150 million dollars; this is almost certainly an underestimate as the provincial outbreak response costs were not included (Thomas et al., 2015).^{16, 17}

The importance of food safety to public health therefore can be seen not just in maintaining the health of the population but also by preventing illnesses, thus allowing the financial resources required to investigate and control an outbreak to be utilized in other public

¹⁶ Cost to the company have not been included in this estimate because this is not a cost to society and would not have been spent on other public health activities (Thomas et al., 2015, p. 969).

¹⁷ The focus of the thesis is to examine the role of the Global Food Safety Initiative food auditor in public safety, not to assess the effectiveness of the public and private approaches to food safety.

health programs (CFIA, 2015a; L. M. Lee, 2012; Papadopoulos et al., 2012; Public Health Agency of Canada, 2016c, 2018, World Health Organization, 2015a, 2017b).

Public Health Objectives

The goal of public health is to improve the health and well-being of a population and both the Canadian government and the GFSI have stated that their objectives include the promotion of public health through a safer food supply (CFIA, 2015c; GFSI, 2017i; Munthe, 2008; Public Health Agency of Canada, 2016a; Waller, 2013; WHO, 2017a). In Canada, all three federal agencies, the CFIA, Health Canada, and Public Health Agency of Canada have declared the importance of promoting public health through the control of disease, including foodborne illnesses (CFIA, 2015d; Health Canada, 2016; Public Health Agency of Canada, 2017).

The GFSI has also stated that it has public health objectives in several of its publicly available documents, as well as its website. The GFSI's Benchmarking Requirements include references to food safety and public health in the definitions of both a Food Safety System and a Food Safety Management System (GFSI, 2018i). The GFSI defines a Food Safety System as “a series of defined rules, policies and procedures which are intended to ensure the safe supply of food and protect public health” and a Food Safety Management System as “a series of defined rules, policies and procedures which are intended to ensure the safe supply of food and protect public health (GFSI, 2018i, p. 6). The GFSI's support of public health through food safety is also seen in the vision of the GFSI, “Safe food for consumers, everywhere” and its Governance Model & Rules of Procedure incorporates public health objectives, stating in this document that the GFSI will reduce food safety risk, which would promote public health (GFSI, 2017b, 2018p). The certification programmes also have requirements that the food producer comply with the legislation of the country of manufacture and the countries where it is known the product will be

sold (BRC, 2015; Food Marketing Institute, 2017a; Food Safety Systems Certification [FSSC] 22000, 2017d; GFSI, 2018e; IFS, 2017). Finally, the GFSI Benefits page lists as a benefit for governments “improved public health” and “promoting compliance with legislation” (GFSI, 2018b, 2018i, 2018p).

Conclusion

This chapter has presented the concepts of food safety and public health, emphasising the challenges in delivering safe food to consumers. It began with an exploration of the scientific basis for food safety systems focusing on biological, chemical, and physical hazards controlled through PRPs and HACCP systems. From here it moved to a discussion of the concept of public health, including the significant costs to a society resulting from foodborne illnesses, and defined food safety public health objectives in both food safety regulatory approaches. The next chapter reviews the main theoretical assumptions, concepts and scholarly literature that is foundational for this study and provides an overview of how the public and private regulatory approaches and systems that have a role in addressing the governance challenges outlined in this chapter and the achievement of public health objectives.

Chapter Three – Literature Review: Governing Food Safety Through Public and Private Regulatory Approaches

Introduction

Government laws, regulations, and policies governing food safety grew out of the state's efforts to protect its citizens, first from intentional adulteration and then from pathogens and other hazards (Barling, 2007; Havinga et al., 2015; Hutter, 2011a; Manning & Soon, 2016; S. Thompson, de Burger, & Kadri, 2005). These efforts to ensure food safety and public health are examples of public policy, actions taken by the state to ensure social order and which apply to the entire population (Dahl, 1947; Howlett et al., 2009; Jarvis, 2013; Mintrom & Williams, 2013; Raadschelders, 2011; Rutgers, 2008; Stahl, 1981; Stilwell, 2012). In addition to the state's efforts, both the private and civil sectors have long been involved in regulatory activities intended to promote food safety, as seen with private standards, e.g. organic agriculture standards certification programmes and civil society's regulatory approaches of Kosher and Halal (Campbell et al., 2011; Fulponi, 2006; Herzfeld, Drescher, & Grebitus, 2011; Mosier & Thilmany, 2016; Sumner, 2015).

Recognizing that the public, private, and civil sectors all have an interest in how food safety is governed and all three have developed regulatory approaches, this investigation draws on three bodies of literature. The governance literature explores how society is governed, focusing on the public and private sectors through an examination of seven governance arrangements. The food governance literature focuses this exploration to the interactions of the state and non-state in governing food safety. Finally, the street-level bureaucrat literature explores the role of the sector's front-line regulatory agent, focusing on the governmental food safety inspector and the GFSI auditor. These are appropriate literatures because the hypotheses

presented in Chapter One creates a role for a street-level private actor in historically public activities, food safety and public health.

Next, this chapter explores the public regulatory approach in Canada through Webb's (2005) four component taxonomy; institutions, processes, rule instruments, and actors, with an emphasis on the food safety inspector. It then explores a private food safety regulatory approach, the GFSI through these four components, with an emphasis on the GFSI auditor. Having explored these two systems, this chapter then examines the interactions of these two regulatory approaches using the sustainable governance framework.

Governance, Food Governance, and Street-Level Bureaucrats.

Peters (2012) states “all societies have to find some means of governing themselves and providing some collective direction, and governance asks questions about how this is done” (p. 23). Historically, the state was the primary source of institutions, processes, rule instrument and actors governing society, with some governing activities occurring through private and civil sector regulatory approaches. As a result, non-state approaches to governing are not a new mechanism to create social order but it is only in the past several decades that the importance of non-state institutions, processes, rule instruments, and actors have been accepted as a component of how society is governed (Bell & Hindmoor, 2009; Braithwaite, Coglianese, & Levi-Faur, 2007; Campbell et al., 2011; Charlebois & Labrecque, 2009; Hutter & Jones, 2007; Kjær, 2011; Pahl-Wostl, 2009; Regenstein et al., 2003; Rhodes, 1996; Riccucci, 2010; Robichau, 2011; Rutgers, 1997; Kernaghan Webb, 2005). Today governing is well recognized as including the public, private, and civil sectors and this expands the concept of governing from ‘governing’ to ‘governance’, i.e. from a state-centric regulatory approach to one encompassing a broad range of

institutions, processes, rule instruments, and actors (Auld, 2010; Colebatch, 2009; García Martínez et al., 2007; Hutter & Jones, 2007).

The Concept of Governance

The concept of governance varies widely between scholars. For example, Bertelli (2012) provides a state-centric definition of governance: “A governance task is any activity that a society directly entrusts to a state or that the state takes on after congealing clues about public preferences regarding a policy.... We define governance, then, as the sum of governance tasks in the domain of the state” (p. 9). In contrast, Rhodes (2007), reflecting on his 1997 work, states “Governance is broader than government, covering non-state actors. Changing the boundaries of the state meant the boundaries between public, private and voluntary sectors became shifting and opaque” (p. 1246). For the purposes of this thesis, a broad conception of governance is adopted, that encompasses public, private and voluntary activities that are intended to address a particular policy.

The transition from government to governance acknowledges that both the state and non-state participate in managing societal problems, particularly in policy areas where it is thought the state can no longer manage the issue on its own (M. Lee, 2003; Tollefson, Zito, & Gale, 2012). Building on Weiss’s (2013) definition of governance presented in Chapter One, governance arrangements can be understood to be a combination of state and non-state institutions, processes, rule instruments, and actors (Ansell & Gash, 2007; Dietz et al., 2003; Emerson et al., 2012; Hooghe & Marks, 2002; Newig & Fritsch, 2009; Kernaghan Webb, 2005). State entities range from multi-state intergovernmental bodies such as the Codex Alimentarius Commission which developed the Codex Alimentarius, a set of internationally accepted “standards, guidelines and codes of practice contribute to the safety, quality and fairness of this

international food trade” to municipal governments setting local food safety by-laws (City of Toronto, 2006; Food and Agriculture Organization of the United Nations, 2018; Verbruggen & Havinga, 2014a; WHO, 2018). The non-state can be understood as two groups; private sector entities and actors, e.g. businesses, not-for-profit organizations operating to promote business interests, etc., and civil sector entities and actors, e.g. religious organizations and non-governmental organizations such as community groups (Fuchs, Kalfagianni, & Havinga, 2011; W. Grant, 2011; Hutter, 2011a; Rittel & Webber, 1973; Steinberger, 2004). Therefore, governance of activities are now understood to involve the public, private, and civil sector institutions and actors (Hooghe & Marks, 2002; Levi-Faur, 2012; Weiss, 2013). Governance can be visualized as per Figure 1: Interactions of the public sector, private sector, and civil society in governing.

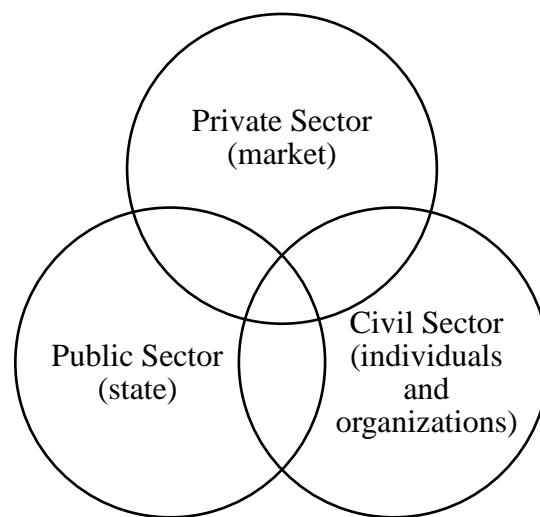


Figure 1: Interactions of the public sector, private sector, and civil sector in governing.

Governance arrangements are created when actors and institutions from the state and / or non-state identify an area of concern, institute a process to develop and implement rule instruments, conduct enforcement activities, and evaluate the outcome to determine whether or not the goal was met (Henson & Humphrey, 2010; Howlett et al., 2009; Newig & Koontz, 2014;

B. Guy Peters, 2012b; Verbruggen & Havinga, 2017; Kernaghan Webb, 2005). When examining governance arrangements, it is helpful to have a framework, i.e. a conceptual structure that organizes information into a format that allows for an analytical evaluation of its components (Crona & Parker, 2012; Eberlein, Abbott, Black, Meidinger, & Wood, 2013; Skok, 1995; Verbruggen & Havinga, 2017). For the purposes of this dissertation each governance arrangement will be organized as per Webb's (2005) four component framework discussed in Chapter One; institutions, processes, rule instruments, and actors. Examining food governance arrangements through this framework allows an examination and comparison of these components which can lead to a deeper understanding of the individual arrangement (Robichau, 2011; Kernaghan Webb, 2005).

A literature review of modes of governance identified seven commonly used governance arrangements: multi-level, collaborative, adaptive, participatory, private, public, and sustainable governance (Ansell & Gash, 2007; Dietz et al., 2003; Emerson & Gerlak, 2014; Gunningham, 2009; Hooghe & Marks, 2002; Howlett, 2009a; Newig & Fritsch, 2009; Newig & Koontz, 2014; Pahl-Wostl, 2009; Kernaghan Webb, 2005). These arrangements are presented independently, but in practice there may be overlap in how governance arrangements are characterized and operate (Treib, Bähr, & Falkner, 2007; Kernaghan Webb, 2005).

The multi-level governance arrangement recognizes that governance arrangements may require several levels of government involvement or support, often in conjunction with the non-state (Driscoll & Webb, 2015; Hooghe & Marks, 2002; Laforest, 2013; Newig & Fritsch, 2009; Robichau & Lynn Jr., 2009). This arrangement is government-centric in that it is the government who initiates and manages the arrangements but includes non-state institutions and actors, and may use both traditional regulatory policies and innovative rule instruments to

achieve a policy goal (Benz & Eberlein, 1999; Driscoll & Webb, 2015a; Howlett, 2009a; Newig & Fritsch, 2009; K. Webb, 2005).

Collaborative governance, sometimes referred to a network governance, creates arrangements in which state and non-state work together, focused on consensus and cooperation between organizations to develop lasting solutions that could not otherwise be achieved through public policy (Ansell, 2012; Ansell & Gash, 2007; Emerson et al., 2012; Purdy, 2012). It is also government-centric and uses primarily established rule instruments, but does share power with the non-state, providing stakeholders with influence over the decision making process (Ansell, 2012; Ansell & Gash, 2007; T. Choi & Robertson, 2013; Driscoll & Webb, 2015).

Adaptive governance builds on the concept of collaborative governance and emphasizes dynamic learning by the actors and institutions, with less usage of government regulatory tools (Dietz et al., 2003; Driscoll & Webb, 2015; Hatfield-Dodds, Nelson, & Cook, 2007; Ostrom, 1999). Historically, this governance arrangement was used within socioecological and ecological systems and focused on the evolution of formal and informal institutions for the management and use of shared assets, such as common pool natural resources, particularly where there is complexity, uncertainty, and rapid change (Chaffin, Gosnell, & Cosens, 2014; Dietz et al., 2003; Ostrom, 1994). Ostrom (1994, 1999) drew a connection between adaptive governance and polycentric governance, with the latter being described by McGinnis (2011) as “authorities from overlapping jurisdictions (or centers of authority) interacting to determine the conditions under which these authorities, as well as the citizens subject to these jurisdictional units, are authorized to act, and the constraints put upon their activities for public purposes” (p. 171, parenthesis in original). It has been said that polycentric governance is useful in examining multi-level, participatory and deliberative arrangements that are also decentralized (Andersson &

Van Laerhoven, 2007; McGinnis, 2011; Ostrom, 1994, 2011). Polycentric governance is less government-centric and differs from the multi-level and collaborative governance arrangements in the flexibility of its arrangements, emphasizing learning and adaptation in the processes used and rule instruments developed in response to changes in the influences, context, and outcomes of governance activities (Hatfield-Dodds, Nelson, dieCsiro, & Cook, 2007). There is also an emphasis on “interaction” among governance initiatives in scholarly discussion of polycentricity (e.g., see the quote from McGinnis (2011) provided above), in contrast to situations where public and private regulatory governance initiatives operate largely independently of each other with minimal interaction (as seems to be largely the case at present where the GFSI and its related entities have limited interactions with government food safety regulatory entities). Blending aspects of the other arrangements and placing an emphasis on democratic principles and foundations of governance, participatory governance focuses on incorporating locally held knowledge and encourages citizen participation through their inclusion in a bottom up decision-making process. As with adaptive governance, it is more flexible in its arrangements and is less government-centric, though it still emphasizes the control of the state for coordination (Andersson & Van Laerhoven, 2007; Driscoll & Webb, 2015; Fung, 2006; Newig & Fritsch, 2009; Speer, 2012).

The above governance arrangements all incorporate the state into governing activities, however, it is possible for the private and civil sectors to also initiate, develop, and operationalize governing activities. In the case of private governing arrangements, these activities are “created by private actors using private law instruments to regulate conduct of food businesses” (van der Meulen, 2011a, p. 30). Therefore, private governance is the concept that organizations, specifically the private sector, can govern themselves , and is exclusive of both the

state and civil institutions and actors in these arrangements (Auld, 2012; Busch, 2011c, 2011b; Fuchs & Kalfagianni, 2010; Henson, 2011; Pattberg, 2005; Rudder, 2008). This governance arrangement uses a variety of processes, including self regulation and third-party certification; rule instruments therefore include voluntary codes or private standards, certification, and accreditation (Coglianese & Mendelson, 2009; Davey & Richards, 2013; Freidberg, 2007; Fulponi, 2006; Office of Consumer Affairs, 2010; Ojo, 2011; Bernd M.J. van der Meulen, 2011a, 2011b, Vogel, 2008, 2010). Its distinguishing features are the lack of roles for government and civil society, as well as its enforcement mechanisms through private law (Auld, 2012; Pattberg, 2005; Rudder, 2008; Bernd M.J. van der Meulen, 2011b).

Public governance is considered here to be the concept that the state is responsible for managing the activities of its citizens; i.e. the state determined the scope of its authority; its responsibilities to its citizens; its regulatory approaches to manage identified issues; and the reciprocal obligations of its citizens (Bernstein, 2011; Fagotto, 2014; H  ritier & Lehmkuhl, 2011; Levi-Faur, 2009; Rutgers, 2008; Steinberger, 2004; Stoker, 1998; K. Webb, 2004b; Weible, 2008). Therefore, it is the state alone which is responsible for governing and this occurs through public administration institutions and actors, state-made rule instruments, through processes such as the policy cycle with limited input for either private actors or civil society (Bertelli, 2012; Levi-Faur, 2011).

The sustainable governance arrangement as articulated by Webb (2005) recognizes that “there is considerable value in moving beyond narrow investigations of which policy instruments governments should use to more broad and nuanced inquiries into how a range of social actors can organize themselves to address problems of mutual concern” (p. 242). The benefit to this arrangement is the resilience of the system; should one institution or actor withdraw their support

a government's or private institution's decision to discontinue their participation in the governance arrangement, or a decrease in the funding provided by an organization, there are others who can respond. For example, should a government choose to decrease its inspection activities, through deregulation of some food safety activities or through austerity measures, this would not likely decrease the number of third-party auditors. The sustainable governance concept suggests that there is value in both collaboration and in a rivalrous tension, a 'friction' between the sectors involved (Martin & Webb, 2018; Tovilla & Webb, 2017; Kernaghan Webb, 2005; Kernaghan Webb, Cruz, & Walsh, 2017). Importantly, it is not intended to suggest a decrease in government involvement in a societal problem but instead to acknowledge that there can be value in having multiple public, private, and civil sector approaches to solving these issues. An educational analogy would be a student who seeks tutoring; the instruction provided by the different actors (tutor and teacher) supports the student's learning and both instructors assist the student with learning a difficult concept through different processes (individual vs group instruction, different examples) based on the same rule instrument (government educational standards). In this example it is the outcome (the student's understanding measured by an examination) that is important, not the instruction methods used to achieve it. Key distinguishing features of the sustainable governance arrangement are first, it acknowledges that institutions, processes, rule instruments, and actors of the public, private, and civil sectors can usefully address a particular issue such as food safety. These governing activities by government, business, and civil society can be developed and implemented largely independently of each other and for different reasons. Thus, for example, while the main objective of governmental food safety regulatory approaches might be protection of the public interest, for the private sector a key interest in food safety governance arrangements might be

strongly associated with maintaining or increasing profit, protecting their reputation and reducing the likelihood of liability; these market-oriented concerns are harnessed in support of public policy. The outcome of public and private food safety governance arrangements is the same, i.e. improved food safety, even if the particular actors, instruments, institutions, processes, rule instruments and actors of the parties involved are different. Second, the concept of sustainable governance recognizes that the governance arrangements of each of the three sectors can largely operate independently and yet at the same time be usefully examined concurrently, i.e. as in this dissertation, with its examination of the public and private regulatory approaches to food safety. Third, the concept of sustainable governance recognizes that the public and private regulatory approaches each have unique strengths and weaknesses; it suggests that these approaches can functionally operate in a largely complementary manner. Finally, the concept of sustainable governance suggests that a rivalrous / ‘check and balances’ dynamic between these approaches potentially has value (Webb, 2005) so that, for example, if there is a breakdown of one approach (e.g., a budget cutback of a governmental system), a concurrent private sector audit may nevertheless reveal a food safety issue. Analysis using these elements of the sustainable governance approach can assist in revealing the individual capabilities and limitations of each public and private instrument, institution, process and actor.

Importantly, the public and private governance arrangements presented here display a combination of these four components, and the components are found to varying degrees in each one. For example, collaborative governance may include aspects of multi-level governance if multiple state organizations participate (e.g. national and provincial), adaptive governance may include aspects of collaborative or participatory governance if civil actors participate in its arrangements. The sustainable governance arrangement recognizes that governing activities may

be collaborative or competitive in nature and that society may benefit from collaboration or competition between regulatory approaches.

Governance Arrangement	Definition	Distinguishing Feature	Relevant Scholars in the Food Governance Literature
Multi-Level	Governing arrangements which are organized by vertical layers of government and interaction among the levels, including involvement of non-state actors in decision processes pertaining to the different levels of governance (Benz & Eberlein, 1999; Hooghe & Marks, 2002; Newig & Fritsch, 2009).	Governance takes place on several levels; may be mix of government and non-state approaches.	No scholars: no government involvement.
Collaborative	Governing arrangements which engage actors and institutions constructively across the boundaries of public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished (Ansell, 2012; Emerson et al., 2012).	Government actors and institutions initiate collaboration with private actors and institutions to develop governing instruments and processes; but it is government-centric and cooperative.	Martinez et al. (2007, 2013). Havinga and Verbruggen (2017) Verbruggen and Havinga (2017) Fagotto (2017)
Adaptive	Governing arrangements which promote	This arrangement may be initiated by any one of the respondents and has historically	No scholars.

	collaboration given changes over time in understanding, objectives, and context, with particular emphasis on learning and the evolution of the instruments and norms (Dietz et al., 2003; Hatfield-Dodds, Nelson, & Cook, 2007).	focused on ecological issues with an emphasis on learning and adjusting policy as needed; dynamic and evolving.	The system is adaptive in that it responds to new food safety concerns, e.g. food fraud, but the literature does not place the GFSI in this category.
Participatory	Governing arrangements which promote the inclusion of citizens and their organizations in multi-level governance, with a focus on incorporating locally held knowledge (Newig & Fritsch, 2009).	Extensive involvement of local / regional actors in the governance process, with an emphasis on learning and adjusting policy as needed; citizen-based approach, democratic.	No scholars; no government or civil society involvement.
Private	Governing arrangements are initiated, developed and operationalized by the private sector, with limited input from the public sector or civil society (Auld, 2012; Pattberg, 2005; Bernd M.J. van der Meulen, 2011b).	Lack of participation by institutions and actors from the state and civil society.	Hatanaka et al. (2005) Wengle (2016) Garcia Martinez et al. (2013, 2007) Fuchs and Kalfagianni (2010)
Public	Governing arrangements and activities are undertaken by the state alone (Antle, 1999; Henson &	Limited involvement of other institutions and actors. Processes are democratically based and use the public policy cycle to create and enforce rule	No scholars.

	Hooker, 2001; Levi-Faur, 2011).	instruments that are implemented by the non-state.	
Sustainable	Governing arrangements are initiated, developed, and operationalized by the public, private, or civil sectors, or a combination thereof (Kernaghan Webb, 2005)	Actors and institutions from both private and public sectors initiate governing, with specific use of innovative instruments and processes.	Driscoll and Webb (in review)

Table 2: Governance frameworks and their distinguishing features
(Modified from Driscoll & Webb, in review)

Returning to the definitions of governance presented at the beginning of this chapter and the definition presented in Chapter One it is clear there is a wide range of conceptualizations of governance (Bertelli, 2012; Rhodes, 2007; Weiss, 2013). This dissertation conceptualizes governance very broadly, and uses the sustainable governance concept to assist in understanding the public and private rule instruments, institutions, processes, and actors functionally involved in food safety, and the connections to the specific functions of GFSI food auditors, and their public counterparts, food inspectors (Kernaghan Webb, 2005).

Figure 2: Government involvement in the governance arrangement depicts the importance of the state in each arrangement.

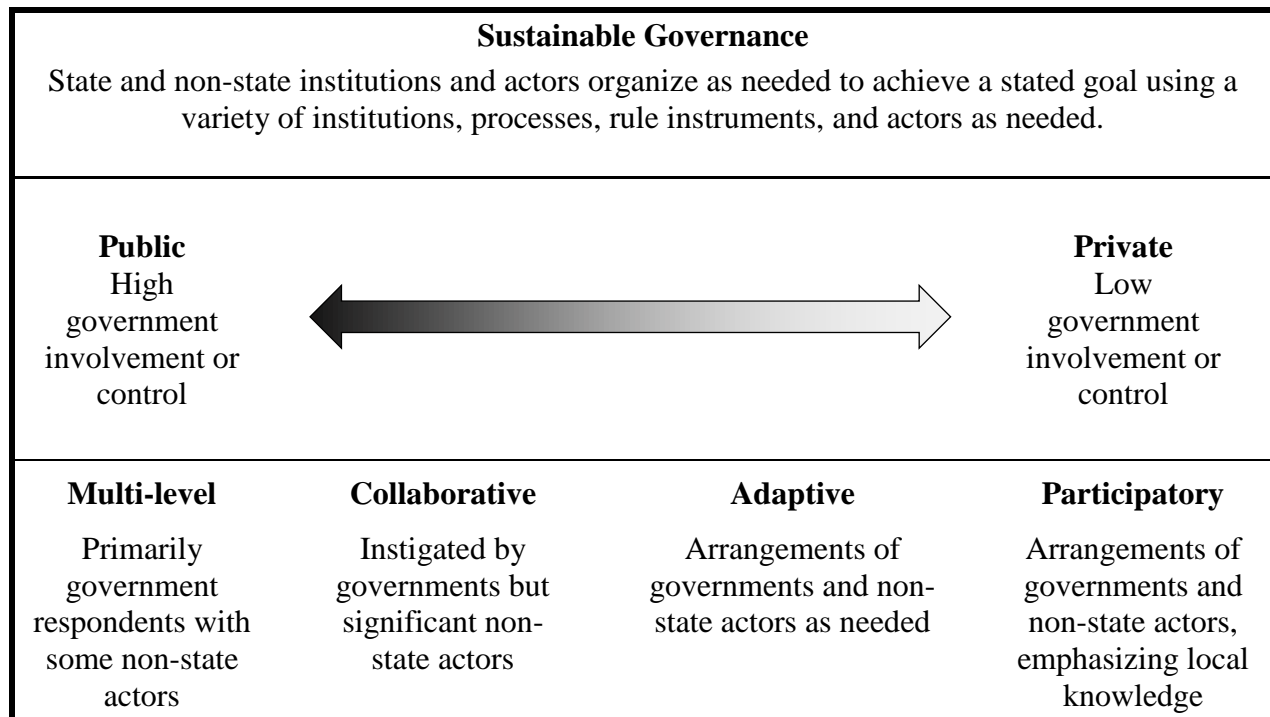


Figure 2: Government involvement in the governance arrangements
(Modified from Driscoll & Webb, 2015b)

Food Governance

If the concept of ‘governance’ refers to how society manages the activities of governing, then “food governance” can be understood as how society manages the activities of governing with respect to food in a variety of areas, including the quality and attributes of food, how food is produced, and the safety of food. This dissertation focuses on food safety, i.e. how food safety and public health are governed, therefore the concept of “food governance” for the purposes of this dissertation are considered to include only governing activities that impact public health through the production of safe food. Food governance in the field of food safety uses a variety of regulatory activities developed by the public, private, and civil sectors to manage food safety-related concerns to society (Barling, 2007; Bevir, Rhodes, & Weller, 2003; Busch & Bain, 2004; Campbell et al., 2011; CFIA, 2017f; City of Toronto, 2012; Davey & Richards, 2013; Fuchs &

Kalfagianni, 2010; Havinga, 2015; Havinga et al., 2015; Hutter, 2011a; Regenstein et al., 2003; L. J. Thompson & Lockie, 2013; U.S. Food and Drug Administration, 2016a). The public sector uses the institutions of the state to develop Acts, Regulations, and other rule instruments through the public policy cycle and its actor, the food safety inspector conducts monitoring activities. The private sector uses the institutions of the market, e.g. CPOs and the GFSI to develop rule instruments through a process similar to the public policy cycle, and one of its actors, the GFSI auditor, conducts monitoring activities. Finally, several civil sector food safety governance approaches exist, for example the religious dietary laws of the Kosher and Halal approaches; both rule instruments incorporate practices that can be considered ‘food safety activities’, e.g. the Kosher requirement to salt meat (Campbell et al., 2011; Farouk et al., 2014, 2015; Havinga, 2010b).¹⁸

Bevir (2011) identified four important features of governance; it combines established administrative arrangements with features of the market; it is multijurisdictional and often transnational; it has a plurality of stakeholders; and governing arrangements often link together as networks (p. 2-3). Examining the array of public and private institutions, processes, rule instruments, and actors involved in attempting to ensure consumers have access to safe food, the food safety governance displays these four features. First, food safety regulatory approaches “combine established administrative arrangements with features of the market”, i.e. public and private regulatory approaches are now intertwined, for example in the CFIA’s Private Certification Policy (Food Safety) and certification programmes requirements for the food producer to meet all applicable government regulations (CFIA, 2017b; U.S. FDA, 2017).

¹⁸ As discussed in Chapter One, other private food regulatory approaches exist but are outside the scope of this dissertation.

Second, the globalization of food production has resulted in food safety being multijurisdictional and often transnational, i.e. food is now transported globally, and therefore subject to the public regulation of both the importing and exporting countries (Herzfeld et al., 2011; Meidinger, 2009). Third, this results in a plurality of stakeholders, from small food producers to multinational corporations and a variety of state and private organizations (Barling, 2007; BRC, 2015a; CFIA, 2014b; Herzfeld et al., 2011; McMahon, 2011; J. S. Parker, Wilson, LeJeune, & Doohan, 2012; S. Thompson et al., 2005; WHO, 2018). Finally, governing in the area of food safety has arrangements that often are considered networks (Busch, 2011a; Guthman, 2008; Lytton, 2017; L. J. Thompson & Lockie, 2013).

One prominent rule instrument of private governance used by the GFSI-system are voluntary codes, “non-legislatively required commitments agreed to by one or more private firms that are designed to influence behaviour, and are to be applied in a consistent manner by all signatories” (Cohen, 2004, p. 35). Also known as private standards, the utilization of these instruments serves a function similar to public regulations; private standards attempt to correct information asymmetry and modify an institution or actor’s behaviour (Anders et al., 2010; Busch, 2011c; Cafaggi, 2011; Davey & Richards, 2013; Fuchs et al., 2011; Henson, 2008; Henson & Humphrey, 2009; Marks, 2016; Smith, 2009; Vandenberg, 2007; Verbruggen & Havinga, 2014; Vogel, 2008; K. Webb, 2004b, 2005). Private standards are considered ‘self-regulation’ in that the business or organization ‘regulates’ its own activities; this concept is not new to food producers as HACCP has been well acknowledged as a self-regulation mechanism to promote food safety (Caduff & Bernauer, 2006; Coglianese & Lazer, 2003; Drew & Clydesdale, 2015; Fagotto, 2014; García Martínez et al., 2007; Havinga, 2006; Yapp & Fairman, 2006). Private standards in the GFSI-system however transcends ‘self-regulation’ because it is a

‘transnational private food safety standard’ as defined by Verbruggen and Havinga (2014b); it is applied to food producers in different countries and the regulators do not include the regulatees (p. 19). This places it into the category of “transnational business governance” as defined by Eberlein, Abbott, Black, Meidinger and Wood (2013), the “systematic efforts to regulate business conduct that involve a significant degree of non-state authority in the performance of regulatory functions across national borders” (p. 3). This form of governance creates complex governance arrangements which can be difficult to disentangle and can be viewed as competing (Auld, 2012; Eberlein et al., 2013; C. Scott, Cafaggi, & Senden, 2011; Verbruggen, 2013).

The study of food governance is an interdisciplinary approach to understanding how food safety is governed, and academic investigations can be found in many areas of scholarship, including public health, food science (e.g. food microbiology), policy studies, legal studies, and international relations; this can be seen in the variety of journals which publish investigations into food regulatory approaches. For example, Papadopoulos et al. (2012) investigated trust in the public food safety system (journal: *Health Policy*); Antle (1999) examined the cost benefit analysis of public food safety regulations (journal: *Food Policy*); Wengle (2016) examined HACCP as experimentalist governance, stating that HACCP is at its core, self-regulation (journal: *Regulation & Governance*); Coglianese and Lazer (2003) examined HACCP as a management based regulation (journal: *Law & Society Review*); Henson (2008) investigates the role of public and private standards in regulating international food markets (journal: *Journal of International Agricultural Trade and Development*); Almeida, Pessali, and de Paula (2010) investigate third party certification (journal: *Journal of Economic Issues*) and finally, a variety of topics in the journal “*Agriculture and Human Values*” (Campbell et al., 2011; DeLind &

Howard, 2008; Fuchs, Kalfagianni, Clapp, et al., 2011; Fuchs, Kalfagianni, & Havinga, 2011; Henson, 2011; Kaan & Liese, 2011; L. J. Thompson & Lockie, 2013).

Voluntary standards such as the certification programmes of the GFSI-system rely on a process (the third-party certifications) in which one actor (the food producer) implements a rule instrument (a private standard such as GFSI-recognized certification programme) and this implementation is assessed by another actor (the third-party auditor) (Albersmeier et al., 2009; Anders et al., 2010; Hatanaka et al., 2005; Herzfeld et al., 2011; Lytton, 2014; Tanner, 2000). The food governance literature as it applies to food safety and voluntary standards can be broadly categorized as: descriptive, examining how this form of food governance came about and how it is operationalized; critical, examining primarily theoretical impacts of private food governance and the dominance of the private sector; and investigative, examining the outcomes of public and private food governance arrangements.¹⁹

Descriptive investigations have been undertaken to examine how food governance occurs as a result of public and private regulatory approaches. Henson and Hooker (2001) outlined the public and private sector's regulatory controls and responses to these controls, and Henson and Reardon (2005) stated that "the growing predominance of private standards has very significant implications for the future governance of agri-food systems" (p.251). Henson and Humphrey (2009) examined the impact of private standards on the Codex Alimentarius Commission, stating

There has been an undue tendency, however, to see private food safety standards as threatening the status of Codex standards, guidelines and recommendations, and

¹⁹ Though presented here as distinct fields of inquiry, scholars often contribute to more than one category. See for example, works authored or co-authored by Havinga (Fuchs, Kalfagianni, & Havinga, 2011; Havinga, 2013; Havinga & Verbruggen, 2017; Verbruggen & Havinga, 2014a).

undermining the Commission's mandate to promote consumer protection and fair agri-food trade... Where private food safety standards exist, they appear to take Codex standards, guidelines and recommendations, alongside national regulatory requirements, as their starting point and build a system of process requirements and conformity assessment around these. (p. 45)

García Martínez and her colleagues (García Martínez et al., 2013, 2007; García Martínez & Poole, 2004) have examined the possibility of using third-party certifications as a co-regulatory mechanism for coping with limited government resources, stating “co-regulation is an approach in which a mixture of instruments is brought to bear on a specific problem, in this case management of food safety, typically involving both primary legislation and self-regulation” (2007, p. 302). Busch (2011a) provides an overview of the critique of private governance of food, continuing the discussion on accountability, legitimacy, fairness, and transparency, but also noted the lack of research into the effectiveness of these standards. van der Meulen (Bernd M.J. van der Meulen, 2010, 2011b, 2011a) examines the emergence and structure of ‘private food law’, focusing on private standards. Building on this work, Havinga and her co-authors (Havinga, 2006, 2011, 2015; Havinga et al., 2015) investigate the changes in regulatory arrangements as a result of changes in food governance. Fagotto (2014) examines private regulation from an economics and law perspective, finding that while private standards may complement government regulations, there are areas of concern that should be explored, e.g. the ability of private standards to influence public regulations. Verbruggen and Havinga (Havinga & Verbruggen, 2017; Verbruggen & Havinga, 2017) have postulated that the GFSI is an example of ‘hybridized food governance’ as per Bartle’s (2011) concept of hybridization in the realm of climate change as “a variety of actors and institutions perusing different strategies and

interacting in complex ways” which recognizes that in practice there are multiple approaches to handling a complex societal problem. In their discussion of the GFSI, they state “the GFSI is paving the way for hybrid food safety governance” (p. 183). Verbruggen and Havinga (2017), based on the work of Levi-Faur (2011) suggest that the interactions of public and private regulatory approaches can be considered hybridization of regulatory approaches, i.e. that “effective systems of food governance.... Is increasingly hybrid, that is, the result of coordinated public and private regulatory activities that frequently transcend national state boundaries” (p. 3).

These authors suggest that by government acknowledgement of the GFSI, governments “engage with a central actor in the domain of private food standards in order to exert control over the scope and depth of the assurance systems” and “exploit the potential of private food safety schemes to contribute to public policy goals by improving food safety management systems” (p. 211). Other research has investigated potential conflicts of interest for the auditor. Lytton (2014) and Lytton and McAllister (2014), as well as other authors, have investigated conflict of interest in private food safety auditing. Recognizing the financial relationship between the food producer, the auditor, and the CB creates a conflict of interest that contradicts the idea that third-party auditors are ‘independent’ (Almeida et al., 2010; Anders et al., 2010; Davey & Richards, 2013; Deaton, 2004; Fagotto, 2014; Lytton, 2014; Tanner, 2000).

The empirical literature investigating food governance arrangements is significantly smaller than that of the descriptive or critical perspectives. Fulponi (2006) interviewed food retailers who were members of the GFSI, finding that their reliance of third-party certification and support of the GFSI was based on the firm’s reputation with their customers, with a secondary emphasis on legal liability. Two empirical evaluations of the GFSI itself have been conducted by Crandall et al. (2012, 2017) and both studies found that the GFSI was thought to

improve food safety at the food producer.²⁰ Albersmeier, Schulze, Jahn and Spiller (2009) assessed the validity of audit findings from a CB, finding significant differences between auditors. Short, Toffel and Hugill (2014) determined that auditors in third-party certification schemes could be influenced by many social factors, including gender, professional training, etc.

Much of the critical literature investigating private food safety standards is based on the concept that these standards, though they may have a claim to improve public health, may not have the public health as their primary focus and should not be favoured over public regulations (Fagotto, 2014, p. 93; Fuchs, Kalfagianni, & Havinga, 2011). Hatanaka, Bain and Busch (2005) examined third-party certification systems with respect to private food regulation finding that this represents a shift from public to private governance, with the regulator being food retailers (primarily supermarkets) due to their significant market power, and the regulatee being the food producer (i.e. supplier to the retailer). The private regulatory approach further removes retailer responsibility for the actual ‘policing’ of the safety of the food; it decreases the retailers’ liability, and shifts the costs of monitoring food safety to the supplier (Havinga, 2015; Hobbs, 2004; Rouvière & Latouche, 2014). Fuchs and Kalfagianni (2010) explore the causes and consequences of private food standards focusing on environmental well-being and food security, stating that retailers have gained authority through their standards and that this is problematic due to the non-democratic nature of such standards. Fuchs, Kalfagianni, Clapp and Busch (2011) also examine the democratic legitimacy of private food governance, stating that

²⁰ There are several concerns with the methodology of the 2012 paper. For example, the 2012 paper used a request for participation sent out to Walmart, Inc. suppliers with “a cover letter from the retailer encouraging the suppliers to participate”; responses are categorized by type of product and scheme followed and Walmart could reasonably determine which of their suppliers responded, e.g. only one response in the “Dairy and eggs” category used FSSC 22000; and finally, respondents were primarily sales employees, and it could question whether or not a corporate employee could reasonably answer many questions, e.g. “Due to Global Food Safety Initiative requirements, we have more employee food safety training.”.

participating in food governance should include all actors with equality in the decision making process; other concerns include transparency and accountability. These authors found “substantial asymmetries in access and participation prevent the creation of equal opportunities for social actors to influence private governance institutions” (Fuchs, Kalfagianni, Clapp, et al., 2011, p. 339). Fuchs, Kalfagianni and Havinga (2011) found that there was lack of civil society participation in private food governance, as well as power asymmetries among the actors involved and that small farmers are excluded. This was supported by Oosterveer (2015), in an examination of GlobalGAP (a GFSI-recognized certification programme) which explored how food governance receives its legitimacy from its output, i.e. claim that foods produced under this standard is ‘safer’ and notes that consumers have not been engaged in developing or assessing GlobalGAP. Henson (2011) responds to these critiques citing public regulatory flaws, including the lack of participation by developing countries in the Codex Alimentarius Commission and that these standards can create efficiencies in the food supply chain. The literature investigating most third-party certification systems, and the GFSI in particular, clearly places these regulatory arrangements into the category of private governance (Almeida et al., 2010; Busch, 2011c; Fuchs & Kalfagianni, 2010; Fuchs, Kalfagianni, Clapp, et al., 2011; Hatanaka et al., 2005; Havinga, 2006; Havinga et al., 2015; Havinga & Verbruggen, 2017; Konefal et al., 2005; Lytton, 2014; Rudder, 2008; Bernd M.J. van der Meulen, 2011a; Verbruggen & Havinga, 2014b).

Food governance literature concludes that the state’s approach to food safety is categorized as public governance and the GFSI is categorized as private governance with little-to-no interactions between these approaches. Analyzing these two approaches through the concept of sustainable governance using the institutions, processes, rule instruments, and actors taxonomy facilitates a direct comparison of the distinct elements of the public and private food

safety regulatory approaches as independent arrangements without any preconception of a state-centric model, and without any preconception that considerable interactions between the two are a central preoccupation. The sustainable governance framework, therefore, is a useful lens of analysis for good governance through its concurrent examination of the institutions, processes, rule instruments, and actors involved in these distinct food safety governance approaches.

Street-level bureaucrats.

Public regulations, as put forth by Levi-Faur (2011) are the “bureaucratic legalization of prescriptive rules” and includes the monitoring and enforcement of these rules, emphasizing that public regulations developed by elected representatives of the legislature (p. 6). As per Lipsky (1980), the bureaucracy could be divided into two groups; ‘office-level bureaucrats’ who develop policy, and ‘street-level bureaucrats’, the frontline workers who execute and enforce these policies.^{21, 22} Citizens in society interact with the office-level bureaucracy indirectly through its rule instruments and the street-level bureaucracy directly through its actors, and well-recognized examples of this role are teachers, police officers, and Environmental Public Health Professional (EPHP). Though first described as street-level bureaucrats by Lipsky in 1980, research into these policy practitioners was occurring well before this phrase became common place. Examining roles often called frontline workers, frontline regulators, public service employees, enforcement officers, or regulatory agents, Lipsky’s work can be interpreted to have focused the research into a common field (Considine & Lewis, 1999; C. J. Hill, 2006; H. C. Hill, 2003; Hupe et al., 2015; Lipsky, 2010; May & Wood, 2003; Oberfield, 2010; Piore, 2011).

²¹ Lipsky’s “Street-level Bureaucracy: Dilemmas of Individuals in Public Service” was first published in 1980 and was revised and updated in 2010. This dissertation uses the 2010 version.

²² The phrase ‘street-level’ bureaucrat is well recognized in the literature, however ‘office-level’ bureaucrat is less common and I have been able to find only one reference to this phrase in the literature (Honig, 2013).

Street-level bureaucrats are traditionally employees of public administration institutions, and are classified as actors as per Webb's definition due to the nature of their role (Hupe et al., 2015; Lipsky, 2010; Raadschelders, 2011; Riccucci, 2010; K. Webb, 2005).

The difference between the institution's representatives who create the rule instrument and its actor, the street-level bureaucrat, is significant, and there are two primary characteristics of the street-level bureaucrat's role that distinguish them from their office counterparts. First, street-level bureaucrats work at the intersection of government and citizen, and as such they are often the only government representative with whom the citizen interacts (Arnold, 2014; Hupe & Hill, 2007; Lipsky, 2010; Meyers & Nielsen, 2012; Piore, 2011; Riccucci, 2010). Second, street-level bureaucrats display discretion in terms of their ability to decide how they will execute the office-level bureaucrat's policy, the effectiveness of the policy's implementation in relation to the food premises, and potential enforcement activities to correct violations (Fineman, 1998; Hupe et al., 2015; Hutter, 1989; Lipsky, 2010; May & Wood, 2003; Tummers & Bekkers, 2014). Discretion arises from two converging aspects of their role: rule instruments cannot anticipate every scenario, requiring street-level bureaucrats to make decisions that are unforeseen by office-level bureaucrats; and the street-level bureaucrats' role is largely unsupervised, requiring that these decisions be made without the direct oversight or input of those who created the policy (Arnold, 2014; Buckley, 2015; Fineman, 1998; M. Hill & Hupe, 2014; Lipsky, 2010; May & Winter, 2009; Maynard-Moody & Musheno, 2000; Sewell, 2005; Tummers & Bekkers, 2014; Virtanen, Laitinen, & Stenvall, 2016). As a result, discretion can impact the policy's implementation and outcome in ways the office-level bureaucrat cannot predict, and therefore discretion compensates for both the general nature of rule instruments which may need clarification during implementation and the instrument's potentially conflicting goals (Lipsky,

2010; May & Winter, 2009; Pautz & Rinfret, 2011; B. Guy Peters & Pierre, 2012). Discretion is also exercised by the street-level bureaucrat because they determine what aspect of the rule instrument should be enforced and how that enforcement occurs (Lipsky, 2010; May & Wood, 2003; Steinberger, 2004).

Recognizing the breadth of discretion exercised by the street-level bureaucrat, Tuurnas, Stenvall & Rannisto (2016) describe three perspectives of this actor's work: the policy perspective, the work practices perspective, and the professional perspective (p. 133). The policy perspective reveals the role of the street-level bureaucrat in the policy cycle; not just policy implementation, but also agenda setting and decision making by bringing awareness of the need for a policy to their managers; policy formation by influencing policy structure and goals during its development; and policy evaluation by providing feedback to office-level bureaucrats (Howlett et al., 2009; May, 2012; May & Winter, 2009; Oberfield, 2010; Poocharoen & Lejano, 2013; Rice, 2013; Robichau & Lynn Jr., 2009; Virtanen et al., 2016). The work practices perspective focuses on working methods, values, and practices (Tuurnas et al., 2016). Street-level bureaucrats' work practices focus on policy implementation, and they are often a mechanism of the state's resource allocation. The decision to impose a penalty (or not) for a particular violation may be reflective of what other issues were found during the inspection (work methods), whether or not they felt the issue was important enough to correct (values), and how they interact with the operator (practices) (Buckley, 2015; Green & Kane, 2014; A. C. Johnson, Almanza, & Nelson, 2014; Pahl-Wostl, 2009; Pautz & Rinfret, 2011; Poocharoen & Lejano, 2013; Tummers & Bekkers, 2014; Tuurnas et al., 2016). For example, if an EPHP finds hazardous food stored at 5°C, they have several options. In Toronto the EPHP has the authority to correct this infraction by laying charges against the operator, writing a ticket, or using the

softer compliance measure of issuing a “yellow sign” as per the Dinesafe program. All three options are expensive to society, potentially requiring a court appearance by the operator and the PHI (laying charges or issuing a ticket) or a reinspection (issuing a yellow sign). However, the PHI might also express discretion and simply speak to the operator, requiring the temperature to be brought into compliance during the inspection, thus allocating society’s resources differently by choosing not to involve the legal system or not requiring re-inspection. These decisions depend on a variety of factors, including the PHI’s interactions with the operator, severity of the issue, risk to the public, and personal bias (J. Choi & Almanza, 2012; A. C. Johnson et al., 2014; Medeiros & Wilcock, 2006; Wilcock, Ball, & Fajumo, 2011). The professional perspective indicates that the individuals in these roles view themselves as professionals as a result of their education, training, experience, and professional designation or certification (Gunz & Gunz, 2007; Hotho, 2008; Liddell, Wilson, Pasquesi, Hirschy, & Boyle, 2014; MacLellan, Lordly, & Gingras, 2011; Slay & Smith, 2011). This view stems from both their expertise in their field and the role characteristic of discretion (Hupe & Hill, 2007; Lipsky, 2010; Tuurnas et al., 2016).

Public Regulatory Approach

Levi-Faur (2009, p. 182) states: “to regulate is to define what is acceptable and legitimate for public action”. To this end, the state determines the scope of its authority; its responsibilities to its citizens; its regulatory approaches to manage identified issues; and the reciprocal obligations of its citizens (Bernstein, 2011; Fagotto, 2014; Héritier & Lehmkuhl, 2011; Levi-Faur, 2009; Rutgers, 2008; Steinberger, 2004; Stoker, 1998; K. Webb, 2004b; Weible, 2008). Therefore, the state’s regulation of food safety practices is an indication of the government’s commitment to promoting public health. In this section, the public food safety regulatory

approach is examined through its institutions, processes, rule instruments, and actors as per Webb's (2005) sustainable governance framework.

Institutions: Public Institutions and Public Administration

Achieving a public health objective through the public regulatory approach requires institutions with the authority to develop, implement, and enforce public policies (Aucoin, Smith, & Dinsdale, 2004; Bernstein, 2011; Ferris & Tang, 1993; Heywood, 2004; Ingraham, Moynihan, & Andrews, 2008; Riccucci, 2010; Stoker, 1998; Stout, 2012). These institutions are collectively known as the public administration and are composed of three groups of actors: elected representatives; bureaucrats; and street-level bureaucrats. In a democratic state, individuals with the right to vote elect others to represent them in the governing process, and it is the role of these elected officials to determine what is in the public interest, as well as the processes and rule instruments used to meet the state's objectives (Aucoin et al., 2004; H  ritier & Lehmkuhl, 2011; Hupe & Hill, 2007; Riccucci, 2010). Elected representatives work closely with the bureaucracy, government officials employed on the basis of merit and who are responsible for policy development and execution (Lipsky, 2010; B. Guy Peters & Pierre, 2012; Poocharoen & Lejano, 2013; Raadschelders, 2011; Riccucci, 2010; Rose & Miller, 2010; W. Wilson, 1887). Wilson (1887) conceptualized a strict division known as the politics-administration dichotomy between the role of the elected official and the role of the bureaucrat. However, it is now recognized that these roles are intertwined, and that bureaucrats influence decisions at all stages of the policy cycle (Riccucci, 2010; Svara, 2001; W. Wilson, 1887). The importance of the public administration is described by Peters & Pierre (2012) as "Legislatures and political executives may pass all the laws they wish, but unless those laws are administered effectively by the public bureaucracy, little or nothing will actually happen." (p. 1).

In the Canadian food safety regulatory approach there are three institutions at the federal level that create and execute policy to achieve public health objectives. Health Canada develops rule instruments, including policies, regulations, and standards for the safety of food sold in Canada; the CFIA acts as the enforcing agency for Health Canada's rule instruments; and the Public Health Agency of Canada assists in managing foodborne illness outbreaks and surveillance activities (Government of Canada, 2014). Provincial and municipal institutions also have a responsibility for food production and safety primarily in facilities whose product remains in the province of manufacture; in Ontario it is the Ministry for Food, Agriculture, and Rural Affairs (OMAFRA) that regulates food safety for these food producers. Food production facilities of very low risk items, e.g. bread, and food premises selling food directly to the public with limited distribution capabilities, e.g. a convenience store or restaurant, are inspected by the Public Health Unit (Health Protection and Promotion Act, R.S.O. 1990, c. H.7.; O. Reg. 493/17 Food Premises; Ontario Ministry of Food Agriculture and Rural Affairs, 2016a).

In the US, food is also governed at the federal, state, and municipal levels; however, in contrast to Canada's relatively streamlined food regulatory approach, the US has a more complicated set of arrangements with more than two dozen laws and more than a dozen agencies regulating some aspect of food safety (Directorate General for Internal Policies, 2015).

Federally, there are two primary organizations involved in food safety: The Department of Health and Human Services' Food and Drug Administration (FDA) and the US Department of Agriculture's (USDA) Food Safety Inspection Service (FSIS). The FDA is responsible for up to 80% of food produced or imported into the US and issues the Food Code, a document intended for non-federal regulators to use as a model for the development of their own food safety rule instruments, whereas the USDA is responsible for food producers who handle meat, poultry, and

eggs (Directorate General for Internal Policies, 2015; Gostin & Stewart, 2011; US FDA, 2016). As a result, a food producer may be subject to the policies and enforcement procedures of both institutions, e.g. a pizza manufacturer may be inspected by the FDA for its cheese pizza and the USDA for its pepperoni pizza (Gostin & Stewart, 2011).²³ The state and municipal food safety institutions have responsibilities similar to those of their Canadian counterparts, though some states have arrangements in which their inspectors conduct FDA inspection and enforcement activities (Directorate General for Internal Policies, 2015; Gostin & Stewart, 2011).

Processes: public policy development, execution, and enforcement.

State institutions use a variety of rule instruments to achieve their goals and these instruments reflect public policies. Their authority to develop and implement policies stems from two forms of legitimacy: democratic legitimacy through the electoral process and coercive legitimacy through its enforcement activities (Stilwell, 2012; Stoker, 1998; Stout, 2012; K. Webb, 2004b). Policies are the result of society recognizing a problem, whether through public pressure or ministerial / bureaucratic interest, and insisting that the state act to resolve the issue (M. Hill & Hupe, 2014; Howlett et al., 2009; Jann & Wegrich, 2007; Newig & Koontz, 2014; Sabatier, 1987; Steinberger, 2004). Processes used by governments to develop public policies in its food safety regulatory approach include law making, policy development, implementation and enforcement, and adjudication. Policy creation is often viewed as a cycle, moving through agenda setting, in which actors and institutions internal and external to the government attempt to develop governmental support for an identified issue; to policy formation, in which institutions develop rule instruments; to decision making, in which the policy is approved; to

²³ This may change as both institutions have recognized the regulatory burden of policy and enforcement duplication in the system and have agreed to investigate opportunities to reduce this repetition (U.S. Food and Drug Administration, 2018).

policy implementation, in which the policy is executed; and finally to policy evaluation, in which both the policy and any outcomes are evaluated to determine if its goals were achieved (M. Hill & Hupe, 2014; Howlett et al., 2009; Newig & Koontz, 2014; Norris, 2011). Throughout this process non-governmental institutions and actors, ranging from large multinational organizations lobbying a cabinet minister to individuals contacting their local elected representative, may attempt to influence the policy but it is ultimately the government's decision as to what policies are adopted and therefore what problems are resolved (Fuchs, Kalfagianni, & Havinga, 2011; W. Grant, 2011; Hutter, 2011a; Rittel & Webber, 1973; Steinberger, 2004). Of importance to this dissertation is policy development, implementation, and enforcement by the street-level bureaucrat; law-making is the purview of bureaucrats and adjudication is primarily used for dispute resolution (Howlett et al., 2009; Lobel, 2005; Skok, 1995). An example of a public policy solution to a food safety issue is the Toronto Public Health Dinesafe program, a 'name and shame' disclosure system in which restaurants are required to prominently display a colour coded placard indicating the results of its most recent public health inspection; this placard clearly and easily conveys the hygiene status of the food producer to the consumer (Filion & Powell, 2011; Medical Officer of Health, 2009; S. Thompson et al., 2005; Toronto Public Health, 2012a). This legislation recognizes a public health problem (foodborne illnesses resulting from food produced by a facility that does not meet the legislative standard) and the development, implementation, and execution of a public policy solution (the Dinesafe placard) in an attempt to achieve a goal (improved public health through a reduction in foodborne illnesses). The implementation of this policy coincided with a 17% increase in compliance with O. Reg. 562 Food Premises, and a 30% decrease in foodborne illness in the City of Toronto, which is

suggestive of a significant correlation with the policy activity (Arthur, Gournis, McKeown, & Yaffe, 2009; S. Thompson et al., 2005; Toronto Public Health, 2012a).

Rule instruments: public food safety regulations.

Though globalization of the food supply and the increased complexity of food processing are relatively new concerns in food safety, information asymmetry was a primary driver in the development of public food safety regulatory approaches (Hoffmann & Harder, 2010; P. Jackson, 2010; Manning & Baines, 2004; Phillips, 2006; Richards et al., 2011; Rouvière & Caswell, 2012; Rouvière & Latouche, 2014). The first public health regulations focusing on food were pure food laws, developed in the mid-to-late 1800s to deter food producers from intentionally adulterating foods for economic gain (Brimblecombe, 2003; Directorate General for Internal Policies, 2015; Gnriss, 2008; Health Canada, 2008; L. S. Jackson, 2009; Law, 2003). In Canada, the adulteration of food was first regulated in the *Inland Revenue Act* of 1875, which was amended to the *Adulteration Act* in 1884, the predecessor to the current Food and Drugs Act (Canadian Public Health Association, n.d.; Gnriss, 2008). Public rule instruments vary from hard law, which relies on coercive, command and control regulatory mechanisms such as Acts, Regulations, and enforcement through sanctions, e.g. financial penalties or incarceration, to softer mechanisms which uses less punitive tactics to ensure compliance, e.g. economic incentives or ‘name and shame’ disclosure (Coglianese & Mendelson, 2009; M. Grant, Butler, & Stuckey, 2012; Hutter, 1989, 2011b; Rouvière & Caswell, 2012; Shaffer & Pollack, 2012; Steurer, 2013).

Since these laws were enacted, the emerging and ongoing challenges in producing and handling food safely combined with the financial and personal impact that foodborne illnesses have on public health, make the supply of safe food to a population a problem governments’

have continued to meet through public policies. Historically, policies consisted of a variety of rule instruments, including laws, regulations, guidelines, and protocols that are usually processed-based and may also set detailed standards for the premises to meet, combined with the hard law enforcement activities through inspections, sanctions, and penalties (Drew & Clydesdale, 2015; García Martínez et al., 2013, 2007; Hobbs, 2010; C. Parker, 2008; Rouvière & Latouche, 2014; Kernaghan Webb, 2004b). However, over the last decade there has been a shift to outcome-based legislation with the intent that once the requirement is stated the premises may find their own methods to meet the standard (Buckley, 2015; Demortain, 2012; Henson & Caswell, 1999; Hutter, 2011a; Bernd M.J. van der Meulen, 2011b). This is a shift from rule instruments that have traditionally been *ex post*, correcting the infraction after it has occurred, to *ex ante* instruments that focus on preventing the infraction, generally through incentives (Brewster & Goldsmith, 2007; Cafaggi, 2011).

Policy instruments exist at all level of jurisdiction in Canada. Federal legislation passed in 2012, the Safe Food for Canadians Act (SFCA) consolidated three statutes: the Canadian Agricultural Products Act; the Fish Inspection Act; and the Meat Inspection Act, with the food components of the Consumer Packaging and Labelling Act to modernize the legislation, enhance food exports, and provide a new redress system for industry (CFIA, 2015g). The SFCA applies to commodities being traded primarily inter-provincially or internationally, but does have some applicability to intra-provincial food producers (CFIA, 2015c). In Ontario, OMAFRA has legislation intended to ensure the safety and quality of food products, including: eggs; produce; meats; and dairy through its Food Safety and Quality Act, 2001, S.O. 2001, c. 20, and through the Ministry of Health and Long-Term Care's Health Protection and Promotion Act with its associated regulation O. Reg. 493 Food Premises that governs food prepared and served from a

food premise, e.g. restaurant or convenience store (“Food Safety and Quality Act, 2001, S.O. 2001, C. 20,” n.d.; Health Protection and Promotion Act, R.S.O. 1990, c. H.7., n.d.)²⁴. In addition to the City of Toronto’s Municipal Code 545-Licensing which requires the food premise to post the Dinesafe placard, By-Law 678-2006 required at least one certified food handler in a supervisory role be on site whenever food is being prepared (City of Toronto, 2006, 2012). The Dinesafe program uses an economic incentive to comply with the regulations due to a presumed decrease in revenue when consumers choose not to eat at a food premise with a poor inspection record. This reduces the regulatory burden on the public health system, as compliance is achieved without having to use more severe enforcement activities; and the program has the associated benefit of educating the public about the importance of food safety and hygiene (Arthur et al., 2009; Filion & Powell, 2011; Green & Kane, 2014; S. Thompson et al., 2005; Toronto Public Health, 2012a). The requirement for food handler training is an example of outcome-based rule instrument as it does not mandate a specific food handler certification program, but instead allows the operator or employee to choose from several that are publicly offered and approved by the City (City of Toronto, 2006). It is also an example of policy diffusion, as the requirement for food handler training has been incorporated into O. Reg. 493, Food Premises which is scheduled to come into force on July 1, 2018 and will now apply to all health units in Ontario (O. Reg. 493/17 Food Premises s. 32).

In the US, the Food Safety Modernization Act (FSMA) has been described as the first significant update to food safety legalisation in 70 years and applies to both domestic and foreign food producers under the jurisdiction of the FDA (Gostin & Stewart, 2011; US FDA, 2016a). It

²⁴ Ontario revised O.Reg. 562 to O. Reg 493 in December 2017, and it comes into force on July 1, 2018.

requires comprehensive, prevention-based controls similar to a HACCP plan, gives the FDA mandatory recall authority for contaminated or adulterated foods, and includes both inspection and enforcement activities (Directorate General for Internal Policies, 2015; FDA & U.S. Food and Drug Administration, 2016). Legislation similar to the Canadian requirements exists at state and municipal levels as well (New York State Department of Health, 2012; Wisconsin Department of Safety and Professional Services, 2017).

Actors: food safety inspectors.

One of the primary street-level bureaucrats in the public food safety approach is the government regulatory agent, the food safety inspector, a role with titles such as Environmental Public Health Professional (EPHP), Environmental Health Officer, CFIA Inspector, and Dairy Plant Specialist. Employment in these roles requires a combination of education and training that includes both food safety and the larger concept of public health (CFIA, 2016b; CIPHI, 2014; Lipsky, 2010; Meyers & Nielsen, 2012; Ontario Public Service, 2009).²⁵ These regulatory agents are public health practitioners, identified by Public Health Agency of Canada as professionals working in a public health setting as per their role and function (Public Health Agency of Canada, 2010). The inspectors are recognized as both food safety professionals who promote and enforce safe food handling practices and public health practitioners because their roles and activities in promoting food safety are a well recognized component of public health (Health Canada, 2012; Papadopoulos et al., 2012; Powell et al., 2013; Public Health Agency of Canada, 2010, 2016a; Toronto Public Health, n.d.; World Health Organization, 2014, 2015a).

²⁵ Given the variety in employment roles and titles, all government inspectors operating in a food safety capacity will be called ‘food safety inspectors’.

One of the primary activities of the food safety inspector is carrying out of inspections, in which these professionals use their knowledge, experience, and expertise to assess a facility according to a public regulatory standard (Boyd, Addicott, Robertson, Ross, & Walshe, 2016; Brimblecombe, 2003; Buckley, 2015; CFIA, 2016b; Hutter, 2011; Johnson, Almanza, & Nelson, 2014; May & Wood, 2003; Medeiros & Wilcock, 2006; Pautz, 2009; Prospectus, 2013; Thompson, de Burger, & Kadri, 2005). The role of government regulatory agents, as well as the specific role of the food safety inspector, has been investigated in the literature, examining issues such as trust (Pautz, 2009), decision making (Boyd et al., 2016; J. Choi & Almanza, 2012), how and when violations are documented (A. C. Johnson et al., 2014), interactions between the inspectors and the food premises or producer (Buckley, 2015; Hutter, 1989; May & Wood, 2003), enforcement activities (Gormley, 1998; Green & Kane, 2014; Hawkins & Hutter, 1993; Law, 2006; Pothukuchi, Mohamed, & Gebben, 2008; Yapp & Fairman, 2006), potential biases exhibited by the inspector towards the food premise operator (Medeiros & Wilcock, 2006), the needs of inspectors in multilingual environments (Pham, Jones, Sargeant, Marshall, & Dewey, 2010b; Pham et al., 2010a), and their role as professionals (Brandsen & Honingh, 2013; Hupe & Hill, 2007; Oberfield, 2010). Specific to food safety inspections, Medeiros & Wilcock (2006) identified assessment criteria as either objective (e.g. the temperature of a refrigerator) or subjective (e.g. the assessment of a food contact surface for cleanliness), whereas Green and Kane (2014) classified infractions as either visually apparent or rule-based (e.g. the condition of walls and ceilings), or risk-based (e.g. cross-contamination opportunities). Johnson, Almanza, & Nelson (2014) investigated factors that impacted whether or not inspector documented a violation, and found that they were more likely to do so if the violation was critical, such as an insecticide stored near food, and if they felt the violation was less likely to be corrected if it was

not documented. Choi & Almanza (2012) investigated inspectors' perceptions of the words used to describe violations, e.g. the use of the similar meaning words unsanitary, soiled, dirty, or filthy and found that the information documented in the report depended on the inspectors' skill, judgement, and training. These investigations recognize the food safety inspectors as not only food safety professionals, but also as public health practitioners.

Professional identity of food safety inspectors.

An individual's professional identity is created through their education, training, and employment (Hotho, 2008; Liddell et al., 2014; MacLellan et al., 2011; McGregor, 2011; Slay & Smith, 2011). The concept of a professional, e.g. the roles of teacher, police officer or EPHP, has traditionally been envisioned as "highly trained practitioners providing services to clients in a disinterested fashion and one that is determined by the profession itself" (Gunz & Gunz, 2007, p. 853). These practitioners have internalized the professional identity of their role, defined by Slay and Smith's (2011) as "[one's] professional self-concept based on attributes, beliefs, values, motives, and experiences" and this definition recognizes a person may identify as a professional without being part of a regulated profession (p. 86). The development of an individual's professional identity occurs through socialization, a process in which the individual internalizes the norms, skills, knowledge, and activities developed through education and experience, as well as interactions with colleagues and peers (Liddell et al., 2014). Professional identity has been studied in traditional, regulated professions such as teachers, dietitians, and nurses (Bodman, Taylor, & Morris, 2012; Bourgeault, Demers, & Donovan, 2009; Gunz & Gunz, 2007; MacLellan et al., 2011) as well as non-traditional professions such as journalists (Slay & Smith, 2011). Food safety inspectors, therefore, can be understood to have the professional identity of both a food safety professional and a public health practitioner, achieved through the

socialization process of education; their public sector employer-provided training; and state based authority; combined with the responsibility to protect public health through the enforcement of public food safety rule instruments (CFIA, 2018a; Canadian Institute of Public Health Inspectors, 2015; Hupe & Hill, 2007; Lipsky, 2010).

A Private Regulatory Approach: The GFSI

The predominant private food safety regulatory approach in Canada and internationally is the GFSI, a non-state market driven system (NSMD) developed in the 2000s by food retailers that is independent of governments (Bernstein & Cashore, 2012; Busch, 2011b; Fuchs et al., 2011; García Martínez & Poole, 2004; GFSI, 2017b; Havinga, 2006). It is a comprehensive non-state food safety approach that is independently initiated and implemented, but also complementary to the public-sector food safety approach.

The creation of the GFSI.

The creation of the GFSI was the response of the food retail industry to several high-profile food safety crises in Europe in the 1990s; changes in the public regulatory approach; and a significant increase in the liability of food retailers (Almeida et al., 2010; Anders et al., 2010; Barling & Lang, 2003; Burch & Lawrence, 2005; Busch, 2011c; Busch & Bain, 2004; Davey & Richards, 2013; Fuchs, Kalfagianni, & Havinga, 2011; Fulponi, 2006; Henson, 2008; Richards et al., 2011). These crises, including the contamination of the human food supply with dioxin through adulterated animal feed, as well as outbreaks of Bovine Spongiform Encephalopathy (mad cow disease) in cattle, its associated human illness variant Creutzfeldt-Jakob Disease, and listeriosis from the then-emerging pathogen *L. monocytogenes*, resulted in a lack of consumer confidence in both the food industry and public regulation of food safety (Albersmeier, Schulze, & Spiller, 2010; Anders et al., 2010; Barling & Lang, 2003; Caduff & Bernauer, 2006; GFSI,

2018p; Havinga et al., 2015; Verbruggen & Havinga, 2014). These incidents, combined with increases in food retailers' private label market share, resulted in consumers associating food safety issues with the retailer even when the contamination was caused by the food producer. In response, governments made significant changes to their public food safety and consumer protection laws, placing greater responsibility on the retailer for the safety of the food and the management of their suppliers (Anders et al., 2010; Barling & Lang, 2003; Busch, 2010; Davey & Richards, 2013; Fagotto, 2014; Fuchs, Kalfagianni, & Havinga, 2011; Hatanaka et al., 2005; Havinga et al., 2015; Henson, 2008; Hutter, 2011a; Hutter & Jones, 2007). Consumer illnesses from these food safety events were often addressed through tort law, and this in turn led insurance companies to support the development of private standards as a method of insuring due diligence and managing liability for food producer, retailer, and service organizations (Brewster & Goldsmith, 2007; Deaton, 2004; Drew & Clydesdale, 2015; Lytton, 2017; Marks, 2016; Rahim, 2011; Rouvière & Latouche, 2014; K. Webb & Morrison, 2004).²⁶

Food retailers responded to these crises and regulatory changes by developing proprietary food safety standards to which their suppliers were expected to comply. As a result, food producers were required to implement multiple, yet similar, private standards (Dillon, 2001; Dix, 2001; Havinga et al., 2015; Henson, 2008; Henson & Humphrey, 2010; Marks, 2016; Oosterveer, 2015). The food producers' compliance was verified by an audit, an independent assessment of how well they had implemented these standards (Davey & Richards, 2013; Dillon, 2001; GFSI, 2018b; Surak & Wilson, 2014). Due to the number of individual standards each producer had to implement, and its accompanying compliance assessment, multiple audits were

²⁶ A complete discussion of private standards, tort law, and the impact of insurance company requirements for their clients on food safety governance is outside the scope of this paper but can be found in the references cited above as well as Coglianese & Lazer (2003), Henson (2008), Hobbs (2004), Lytton & McAllister (2014), and Rouvière & Latouche (2014).

seen as a significant waste of resources to the food industry (Dillon, 2001; Dix, 2001; Surak & Wilson, 2014; Tanner, 2000)

In response to these concerns, food retailers created the GFSI to reduce food safety risks as well as audit duplication and costs, and at the same time build trust throughout the supply chain with the intention that a food producer's certification to one of the GFSI-recognized certification programmes would satisfy all of their customers food safety requirements (GFSI, 2018b). Private regulatory approaches also allow for rapid response to food safety crises; for example, the CFIA released its revised Policy on *Listeria monocytogenes* in Ready-to-Eat Foods nearly three years after the 2008 Canadian listeriosis outbreak whereas the GFSI released three versions of its Benchmarking Requirements in a twelve month period and all certification programmes must be re-evaluated to the new Benchmarking Requirements (GFSI, 2017i, 2017d, 2018j; Health Canada Food Directorate, 2011). Finally, these commentators have suggested that standards are recognized as being more stringent than state regulations and provide a due diligence defense in the event of a food safety crisis (Giraud-Héraud et al., 2012; Hutter, 2011b; Meuwissen, Velthuis, Hogeveen, & Huirne, 2003; Tanner, 2000; Bernd M.J. van der Meulen, 2011b). In developing the GFSI, the private sector recognized that having its own regulatory approach harnesses a different set of energies and processes to achieve a complimentary goal. The GFSI had access to and utilized a global set of private food safety experts whereas state agencies have access to public sector experts in their nation and intergovernmental organizations (CFIA, 2015d, 2018a, GFSI, 2018p, 2018o). Private standards therefore have two roles; a proactive role in preventing food safety incidents from occurring because such incidents would have negative publicity, reputational, and market consequences on the organizations involved,

and a reactive role as certification to a private standard could assist in establishing due diligence on behalf of the food producer.

Institutions: organizations in the GFSI-system.

“The GFSI” is a phrase used to refer to the GFSI as an institution in the private regulatory approach analogous to public institutions such as the CFIA or Toronto Public Health (see Figure 4: Interactions of the public food safety regulatory approach and the GFSI-system in Canada). However, “the GFSI” can also be understood as a non-state market driven system, composed of the GFSI (institution), CPOs, CBs, ABs, and IND that operate in conjunction with one another to manage food safety in the food supply chain (Bernstein & Cashore, 2012).²⁷ This is done through the GFSI’s Benchmarking Requirements and the CPO’s certification programmes, non-legislatively required commitments that organizations agree to through a contract; both influence, shape, or control behaviour, and these standards are applied to reach accreditation or certification (GFSI, 2018c; Office of Consumer Affairs, 2010; Kernaghan Webb, 2012).

The GFSI itself is an organization that facilitates collaboration in the food industry among the retail, manufacturing, and service sectors, as well as other stakeholders in an effort to promote food safety best practices throughout the supply chain. The GFSI has claimed to be a thought leader for the food industry on food safety issues and issues management (GFSI, 2017f). Headquartered in France and employing a permanent staff, it is governed by a Board that is responsible for the daily management and strategic direction of the organization, its benchmarking committees, and the development of mandates for its Technical Working Groups (TWG) and Local Groups (GFSI, 2018k). The Board consists of members from the food

²⁷ This dissertation distinguishes between the “the Global Food Safety Initiative” as an institution and as a system by using the phrases “the Global Food Safety Initiative” and “Global Food Safety Initiative-system”, respectively.

industry; retailers; manufacturers; and service organizations, and its composition is restricted to these sectors because it is an industry organization that focuses on the needs of these members (GFSI, 2017b, 2018k). It is the Board that has responsibility for the development of its Benchmarking Requirements and processes through the GFSI Benchmarking Committee (GFSI, 2017b). Importantly, the GFSI does not set policy for any other organization in the system, nor does it own a certification programme, provide accreditation or certification activities, or set standards for any aspect of food production other than food safety, e.g. social compliance or animal welfare (GFSI, 2017b). The GFSI has direct influence only on the CPO, whose certification programme must meet the Benchmarking Requirements to be GFSI-recognized (GFSI, 2018n). The GFSI uses committees known as TWGs to provide technical expertise and advice to its Board, and they are composed of actors from the food industry, CPOs, CBs, ABs, as well as service providers, e.g. laboratory services, pest control companies, industry associations, and sometimes government representatives (GFSI, 2017b, 2018o).²⁸ TWGs are struck and disbanded as needed, and current working groups include: the Global Markets Programme Primary Production; Global Markets Programme Implementation; Food Safety Culture; GFSI Regional Outreach; and Chemicals in Food Safety (the GFSI Auditor Competence Working Group was no longer listed on its website as of October, 2017) (GFSI, 2017c, p. 6; GFSI, 2018).²⁹ The GFSI also uses Local Groups to implement its global strategy and work to expand the GFSI in designated regions (GFSI, 2017d, 2017b).

²⁸ As of March, 2018, there were no individuals or government representatives on the TWG (Global Food Safety Initiative, 2018o).

²⁹ Current as of March 2018.

Each certification programme is developed, managed, and maintained by a CPO (formerly Scheme Owner) (GFSI, 2018n, 2018a). The CPO is independent from the other institutions in the system, and cannot be a CB, be governed or owned by a CB, nor have a seat on the GFSI Board (GFSI, 2017f, 2018c). The CPO sets standards for three other institutions in the system through contractual agreement: the food producers who must meet its private standard to achieve certification; the CB who conducts the audit of the food producer; and the AB who accredits the CB to both the programme's requirements and the ISO/IEC 17065 or ISO /IEC 17021 Conformity assessment requirements for bodies certifying products, processes, and services standard (GFSI, 2018a, 2018l). As of March 2018, there were nine CPOs with thirteen GFSI-recognized certification programmes: three programmes dedicated to farming or aquaculture; four to food processing; and two GFSI-recognized programmes in each of the packaging, logistics, and distribution sectors (GFSI, 2018n).

CBs are organizations which have been accredited by an AB to conduct audits to a certification programme (GFSI, 2017i). Their role is to confirm that the food safety requirements and systems of the food producer meet the standard set by the CPO in its programme, and this is done by an auditor, an employee of the CB who has training in food safety, food manufacturing, auditing, and the certification programme (BRC, 2017c; FSSC 22000, 2017a; GFSI, 2014a, 2017i, 2018i, 2018j; SQF Institute, 2017). The competency of a CB to conduct audits is assessed by an AB for compliance to the CPO's requirements as well as through the accreditation assessment to the ISO/IEC 17065 or ISO /IEC 17021 standard (GFSI, 2018c; International Organization for Standardization, 2018b, 2018a).

Food producers are required to have certification to a GFSI-recognized certification programme by their customers, not just retailers but also many manufacturers, and as private

standards are based on contract law, it is not limited to a particular jurisdiction (Anders et al., 2010; Freidberg, 2007; Hatanaka et al., 2005; Henson & Humphrey, 2009; Konefal et al., 2005; Lelieveld, 2012; Loblaw Companies Limited, 2011; Maple Leaf Foods Inc., 2015; Walmart Inc., 2008).

One other organization influences the GFSI as an institution. The GFSI is a strategic initiative of Consumer Goods Forum (CGF), an organization that represents hundreds of consumer goods retailers and manufacturers globally (CGF, 2018b). The CGF has a self-described mandate to enhance consumer trust and drive positive change and greater efficiency while supporting long-term business growth through networking and best practice sharing (GFSI, 2017b; CGF, 2018). The CGF has other strategic initiatives similar to the GFSI in the areas of environmental and social sustainability, health and wellness, and end-to-end value chain (CGF, 2018a). Finally, the GFSI emphasizes the importance of its stakeholders in its publicly available documentation, e.g. websites, Benchmarking Requirements, etc. Stakeholders can represent an individual or organisation, and influence the GFSI through participation in the GFSI's annual meeting, the TWG, or the CGF (GFSI, 2017b; CGF, 2018).

GFSI: an institution and a system.

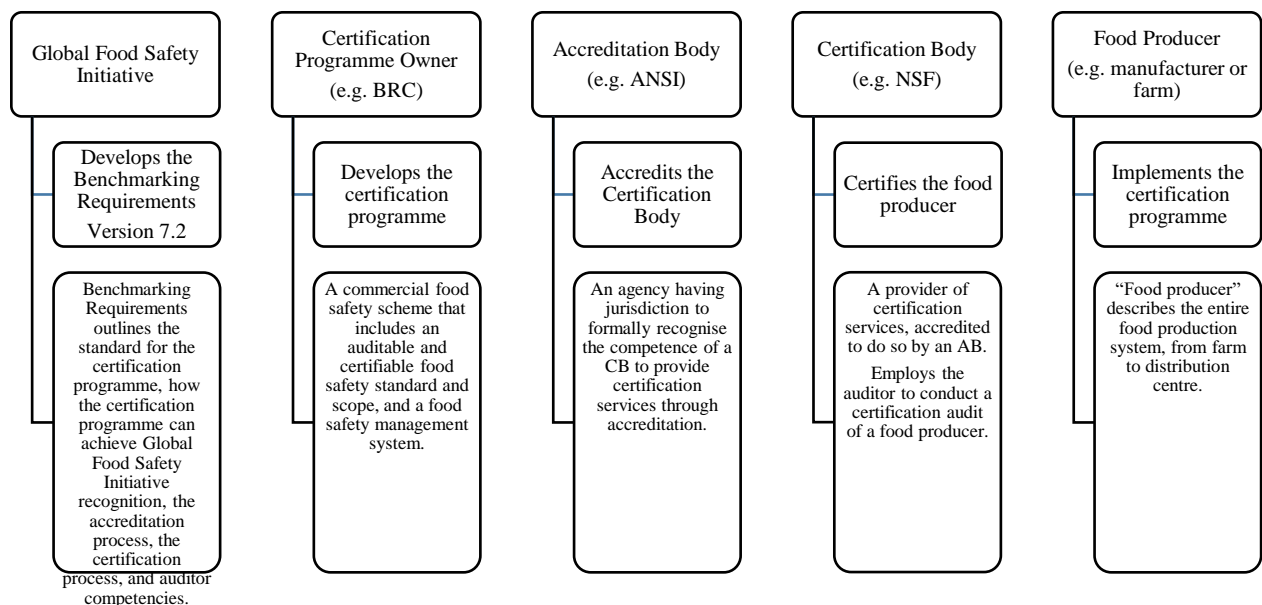
The GFSI can be viewed as both an institution and a system; as discussed it is an organization which manages other institutions, but the phrase “the GFSI” is also used to describe the system. For example, Crandall et al. (2012) use the phrase “GFSI compliant”, although the GFSI is not a standard to which a food producer may be audited, and therefore “GFSI compliant” implies compliance to a certification programme, which is part of the GFSI-system. As a system, the GFSI is composed of institutions (the GFSI, CPO, CB, AB, and food producer) which uses processes (benchmarking, certification, and accreditation) to create and implement

rule instruments (Benchmarking Requirements and certification programmes) enforced by actors, (the GFSI auditor, and others). Figure 3: Institutions and processes in the GFSI-system provides an overview of the institutions and processes in this system.

Figure 3: Institutions and processes in the GFSI-system.

(Modified from Driscoll & Webb, 2015)

As per Bernstein and Cashore (2012) the GFSI-system can be viewed as a non-state, market-driven system (p. 349-50).³⁰ It draws its authority from legal contracts in the supply



chain, as well as the voluntary participation of the institutions and actors involved, not from the state, and has therefore reconfigured the market to require food safety standards through the financial incentives of obtaining and retaining customers, as well as increased due diligence and decreased liability. Furthermore, its participants have developed collective goals and values (improved food safety and public health) through standards that are adapted as needed in

³⁰ To distinguish between the Global Food Safety Initiative (institution) and the Global Food Safety Initiative (system), the institution will be the “Global Food Safety Initiative” and the system will be “Global Food Safety Initiative-system”

response to the changing food safety landscape and members' needs. Finally, the GFSI-system uses as its implementation and enforcement mechanisms (the certification and accreditation processes) as well as through contract law and financial penalties through decreased revenue.

Processes: benchmarking, assessing and auditing.

Three processes occur in the GFSI-system: benchmarking, accreditation and certification. Benchmarking is conducted by an independent committee of the GFSI which compares the submitted certification programme to its Benchmarking Requirements (GFSI, 2018h, 2018c). Benchmarking occurs in three stages. First, a preliminary screening is conducted by a committee consisting of the GFSI team; an independent chairman; a representative from a retailer; and a manufacturer or producer. Second, more detailed review is conducted by the committee with the CPO. Finally, stakeholders provide input (GFSI, 2018a).³¹ The certification programme is “recognized” by the GFSI when it has been verified that the programme meets the standards set in the Benchmarking Requirements and has passed successfully through all three stages (GFSI, 2018a).

The CPO approves an AB to conduct accreditation assessments of the CB, formally documenting that the CB has acceptable systems in place and has hired competent auditors to conduct the certification audits. A CPO creates an agreement with an AB, which grants accreditation to the CB after an assessment of their management systems to the ISO/IEC 17065 or ISO /IEC 17021 standard and other requirements set by the CPO; the AB must be a member

³¹ The 2017 release of the Version 7.0 changed the name of the Guidance Document from “Global Food Safety Initiative Guidance Document”, with the last release being Global Food Safety Initiative Guidance Document Sixth Edition, Version 6.4 to “Global Food Safety Initiative Benchmarking Requirements Global Food Safety Initiative Guidance Document Version 7.1”, referred to in this dissertation as the “Benchmarking Requirements”. It also changed the name of Food Safety Scheme to Certification Programme, and Scheme Owner to Certification Programme Owner (Global Food Safety Initiative, 2015, 2018h).

of the International Accreditation Forum (IAF) and a signatory to the Multilateral Recognition Arrangement (MLA) (International Accreditation Forum, 2018).

Once a food producer has chosen a certification programme and implemented its requirements, they are certified to that programme after a successful third-party audit conducted by an qualified auditor employed by a CB (GFSI, 2018m). The GFSI defines an audit as “[a] systematic and functionally independent examination to determine whether activities and related results comply with a conforming scheme, whereby all the elements of this scheme should be covered by reviewing the supplier’s manual and related procedures, together with an evaluation of the production facilities” (GFSI, 2018i, p. 2). Certification audits are generally longer and more detailed than most government inspections, with standards for the amount of time spent reviewing the food safety programs and inspecting the production floor, and are considered both ‘third-party’ and impartial in the sense that the auditor does not have a direct relationship to the food producer and instead is employed by the CB (BRC, 2015; Dix, 2001; Food Marketing Institute, 2017b; Hoffmann & Harder, 2010; Sodano, Hingley, & Lindgreen, 2008; Surak & Wilson, 2014; Tanner, 2000; Bernd M.J. van der Meulen, 2011b; Wellik, 2012).

Rule instruments: meta-regulation and voluntary private standards.

The GFSI-system has two innovative rule instruments, the Benchmarking Requirements and the certification programmes. The Benchmarking Requirement is a meta-regulation, an indirect, innovative rule instrument in which one regulation governs another (Cafaggi & Renda, 2014; Coglianese & Mendelson, 2009; Gilad, 2010; Gunningham & Rees, 1997; Ojo, 2011; Parker, 2007; Rahim, 2011; Verbruggen & Havinga, 2014; K. Webb, 2005). The most current version of the GFSI’s meta-regulation, formerly titled Guidance Document, was released in 2017 as Version 7.0 and 7.1; Version 7.2 was released in March 2018 (GFSI, 2018l, 2018j, 2018a).

The Benchmarking Requirements constitute a consensus driven, principle based standard that prescribes outcomes and broad, flexible ways that these outcomes can be achieved (Coglianese & Lazer, 2003; Demortain, 2012; Havinga et al., 2015; Hobbs, 2010; Richards et al., 2011; Verbruggen & Havinga, 2014b, 2017). It was created and revised with input from industry food safety experts and specifies requirements that a certification programme must meet in order to attain GFSI recognition (GFSI, 2018a). The GFSI indirectly acknowledges that the Benchmarking Requirement is a meta-regulation in its claim that: first, it is not directly applicable to a food producer, product, or process as it is but instead is a tool that determines equivalency between the certification programmes; second, food producers cannot be certified to the Benchmarking Requirements, nor does it conduct any accreditation or certification activities; and third, it does not set policies for any actor or institution in the GFSI-system (GFSI, 2018n) (GFSI, 2018a).

Each certification programme is developed by a CPO, an organization that creates a voluntary private standard which it submits to the GFSI for ‘recognition’ through the benchmarking process (GFSI, 2018n, 2018a). These programmes include: first, a food safety standard, requirements that the food producer must implement to ensure the production of safe food; second, a scope that defines sectors in the food industry such as BI - Farming of Plants, E III - Processing of perishable animal products (e.g. deboning, cooking, pasteurization), or M - Production of Food Packaging; and third, a management system, “rules, policies and procedures which are intended to ensure the safe supply of food and protect public health” (GFSI, 2018i, 2018h, 2018g, 2018f). Like a meta-regulation, these certification programmes are also outcome-based and prescribe broad, flexible ways that these outcomes can be reached (Coglianese &

Lazer, 2003; Demortain, 2012; Havinga et al., 2015; Hobbs, 2010; Richards et al., 2011; Verbruggen & Havinga, 2014b, 2017).

Actors: GFSI auditors.

The state relies on food safety inspectors to conduct an inspection, a direct conventional governance process that assesses and confirms a food producer's compliance to the public standard. In contrast, the non-state approach relies on auditors to conduct an audit, a direct innovative governance process that assesses and confirms a food producer's compliance to the voluntary private standard (Davey & Richards, 2013; Driscoll & Webb, 2015; GFSI, 2016a; Lytton & McAllister, 2014; Surak & Wilson, 2014; Walker, 2014; K. Webb, 2005). In the GFSI-system, an auditor is hired by a CB based on their education; auditor training; understanding of the certification programme; and industry experience (American Institute of Baking, 2018; British Retail Consortium, 2017c; FSSC 22000, 2017a; GFSI, 2018h; International Featured Standards, 2018d; SQF Institute, 2017).

The audit process and auditor have been investigated from a regulatory perspective (Coglianese & Mendelson, 2009; García Martínez et al., 2007; García Martínez & Poole, 2004; Grabosky, 2013; Havinga, 2006; Oosterveer, 2015; Sodano et al., 2008; Swoffer, 2005; Bernd M.J. van der Meulen, 2011a; Verbruggen & Havinga, 2014b), a critical theory perspective (Anders et al., 2010; Burch & Lawrence, 2005; Busch, 2011a; Fuchs, Kalfagianni, & Havinga, 2011; Konefal et al., 2005; Richards et al., 2011; Sodano et al., 2008; Tanner, 2000), and from a legal perspective (Brewster & Goldsmith, 2007; Fagotto, 2014; Hawkins & Hutter, 1993; Lytton, 2017; Marks, 2016; Rouvière & Latouche, 2014; Bernd M.J. van der Meulen, 2011a). This literature includes an extensive analysis of private food safety regulatory approaches, and some discussion of the GFSI-system specifically, but has limited discussion of an audit's objectives or

the auditors' understanding of their role in the food safety and public health system (Davey & Richards, 2013; Short et al., 2014).

The primary area of investigation concerning auditors in the private food safety regulatory approach is whether or not the auditor's 'third-party' status provides a level of impartiality and independence to the auditor (Dillon, 2001; Lytton & McAllister, 2014; Short et al., 2014; Surak & Wilson, 2014; Tanner, 2000).³² The claim of impartiality and independence has been disputed by several investigators who have identified a conflict of interest between the auditor, the CB, and the food producer, including Hatanaka & Busch (2008), Lytton (2014), and Lytton & McAllister (2014). This research recognizes that the employment relationship between the CB and auditor, as well as the customer / supplier relationship between the CB and food producer creates financial dependencies that could potentially be used to influence the audit outcome (Hatanaka et al., 2005; Lytton, 2014; Lytton & McAllister, 2014). Albersmeier et al. (2009), in a preliminary empirical study of CBs and quality systems audits of voluntary private standards in several manufacturing sectors including the food sector, found very little probability of a facility failing an audit. Their analysis of audits conducted in one sector found that one CB had no audit failures whereas another CB failed 12% of their auditees; similar discrepancies can be found between auditors of the same CB (Albersmeier et al., 2009). In a study investigating third-party auditors of voluntary, consensus-based labour standards as street-level bureaucrats, Short, Toffel & Hugill (2014) found that when auditors are impacted by both the conflict of interest and social factors including age, gender, experience, and training, there is a low probability of the manufacturer failing an audit. Beyond these areas, there was little-to-no

³² A third-party auditor is 'third-party' because they are employed by an organization with no production relationship to the food producer. A 'first-party auditor' is employed by the food producer, and a 'second-party' auditor is employed by the customer of the food producer (Dillon, 2001; Dix, 2001; Tanner, 2000)

investigation into the role of the auditor or their activities during an audit, nor the auditor's understanding of their role in the food safety and public health systems.³³ This, combined with the fact that these systems were developed to decrease the retailers' liability and improve the manufacturer's due diligence, has resulted in the view that these audits protect the food industry, not the consumer (Davey & Richards, 2013; Hatanaka et al., 2005; Havinga, 2006, 2010a; Powell et al., 2013).

The importance of the auditor in the GFSI-system, however, is acknowledged by the GFSI, which states "effective delivery of food safety systems relies on the auditor and their competence" (GFSI, 2018d). The GFSI had a TWG, GFSI Food Safety Auditor Competencies and by 2014 was known as "Auditor Competence Scheme Committee" and released the first edition of its GFSI Food Safety Auditor Competencies in October 2013, which outlined requirements for the auditor's competence, including auditing skills and knowledge, technical skills and knowledge, and behaviour and systems thinking (GFSI, 2013b, p. 5, 2014). The TWG was no longer listed on the GFSI website as of December 2017, and auditor competencies were incorporated into the Benchmarking Requirements Version 7.2 (GFSI, 2013, 2018e).

The Benchmarking Requirements Version 7.2 includes requirements for CBs to ensure they hire auditors who are competent and maintain their competence in an industry sector, food safety knowledge, technical knowledge, and applicable laws and regulations (GFSI, 2018e). There are also requirements for the CPO, which must have a register of auditors that includes: a

³³ Crandall et al. (2017, 2012) have published two studies investigating the Global Food Safety Initiative. These studies have not been included because: first, these studies did not include questions or investigate the auditor in any way and second, these studies were commissioned by the CGF and Walmart, and therefore there is a conflict of interest in the conclusions.

description of their education; food industry experience; scopes for which they are approved; and the CBs for whom they conduct audits (GFSI, 2018e).³⁴

Given the requirements for education, training, and work experience in the food industry, as well as their role in ensuring compliance to a private food safety standard, the GFSI auditor can be considered a food safety professional as defined in this dissertation. However, unlike their equivalent in the public regulatory approach it is not known if they are considered to be public health practitioners. This role is theoretically analogous equivalent to the food safety inspector because it is the auditor who determines if the facility has implemented the certification programme effectively, thereby supporting public health objectives by promoting a safe food supply, although it has not yet been proven in the literature (BRC, 2017b; GFSI, 2017; Hupe et al., 2015; IFS, 2017; Short et al., 2014; SQF Institute, 2014).

Professional identity of GFSI auditors.

Just as food safety regulatory approaches have expanded to include private standards, the definition of professional has broadened to include non-traditional occupations which professionalize to create both status and knowledge boundaries and whose members recognize themselves as professionals (Gunz & Gunz, 2007; Hotho, 2008; Liddell et al., 2014; Noordegraaf, 2007; Waeraas, 2010). For example, the Certified HACCP Auditor designation granted by the American Society for Quality is used to recognize a level of knowledge and skill these auditors have demonstrated through work experience, education, and an examination, and therefore may be considered a non-traditional professional (American Society for Quality, 2018; Slay & Smith, 2011). However, unlike public sector food safety inspectors, the requirements for

³⁴ Auditors may contract their services to more than one CB.

a GFSI auditor are set by the CPO based on the Benchmarking Requirements (BRC, 2017c; CanAgPlus, 2018a; GFSI, 2018e; IFS, 2018d; Safe Quality Food Institute, 2017). As a result, the professional identity of the GFSI auditor is developed through a different socialization process than the food safety inspector, a process with no requirement for public health training.

Most research regarding third-party food safety audits focuses on auditor conflict of interest through their employment relationships, with some research into audit outcomes. However, there is a significant gap in the literature with respect to the GFSI auditor and their role in food safety and public health. Considering the importance of the GFSI-system in food production globally and in Canada, see Figure 4: Interactions of the public food safety regulatory approach and the GFSI-system in Canada, understanding how the auditor perceives their role in public health could be an important contribution to the literature about how this private food safety regulatory approach assists society with achieving its public health objectives.

Interactions of the Public and Private Regulatory Approaches

Government policies are limited in their application and enforcement to the government's jurisdiction; can be expensive to develop and enforce; and may be slow to respond to new challenges (Stoker, 1998; Baron, 2005; Cafaggi, 2011; H  ritier & Lehmkuhl, 2011; B. Guy Peters, 2012b; Stilwell, 2012; Stout, 2012; K. Webb, 2005; K. Webb & Morrison, 2004). In contrast, the non-state uses its own rule instruments, policies whose legitimacy and jurisdiction are usually based in contract law and governance arrangements which can span multiple jurisdictions, are developed and enforced without any taxpayer or public sector subsidy or support; and can be easier to develop and modify, given that they do not need to be vetted through a democratic deliberative process (Baron, 2005; Cafaggi, 2011; H  ritier & Lehmkuhl, 2011; B. Guy Peters, 2012b; K. Webb, 2005; K. Webb & Morrison, 2004). Unlike the public

approach, the non-state is ‘private’ in that it is financed by individuals and organizations and pursues its own interests, although these for-profit motivations may contribute to achievement of public goals such as providing safe food to the consumer (Heywood, 2004).

Institutions and actors in the private regulatory approach are not elected officials or bureaucrats in the public approach and are therefore only indirectly influence public policy as stakeholders in the policy cycle. Similarly, the GFSI and the CGF do not allow government institutions or actors to participate in its Board and Benchmarking Committees, allowing government representation only through participating in the TWGs or attending at the annual stakeholder meeting (GFSI, 2018e). As of March 2018, there were no government representatives on any TWG or LG, though there have been representatives from governments in the past (GFSI, 2018d).³⁵ The interactions between these regulatory approaches can be seen in Figure 4: Interactions of the public food safety regulatory approach and the GFSI-system in Canada. This figure is intended to display the parallel, complimentary nature of the public and private sector’s governing activities.

³⁵ Previous working groups also had government and international organization representation. In 2015, there was a representative of the Food and Drug Administration of the United States participates in the Global Markets Working Group and a representative of the Food and Agricultural Organization participates in the Global Regulatory Affairs Working Group. These working groups are no longer in effect as of December 2017.

These approaches are parallel, i.e. operate through similar mechanisms without directly interacting as seen in Figure 4: Interactions of the public food safety regulatory approach and the GFSI-system in Canada and Table 3: Comparison of the public and private food safety regulatory system based on Webb's (2005) governance components. The rule instruments for both the Canadian public and GFSI private regulatory approaches rely on the same base rule instrument, the Codex Alimentarius. Both the Canadian government and the GFSI instruments require the producer to assess risks and implement control measures through a HACCP plan based on the Codex Alimentarius principles (BRC, 2015b; CFIA, 2015d; Food Marketing Institute, 2017a; GFSI, 2018h; International Featured Standards, 2017). In Canada, the CFIA's Food Safety Enhancement Program requires a HACCP system based on these principles, and its General Principles of Food Hygiene, Composition and Labelling and its Guide to Food Safety are both based on the Recommended International Code of Practice-General Principles of Food Hygiene adopted by the Codex Alimentarius Commission (CFIA, 2010, 2014b; Food Safety and Consumer Protection Directorate & CFIA, 2011). The GFSI's Benchmarking Requirements state that certification programmes must include the requirement for the food producer to have a HACCP based-system with prerequisite programs based on Codex Alimentarius HACCP principles or a specified equivalent, the National Advisory Committee on Microbiological Criteria for Foods (GFSI, 2018i, p. 6).

Governance Component	Public Regulatory Approach	Private Regulatory Approach
Institutions	Codex Commission National CFIA, HC, Public Health Agency of Canada Provincial OMAFRA, MOHLTC, etc. Municipal TPH	GFSI CGF CPO CB AB TWG, LG Food retailers Food service corporations Governments are permitted representation in the TWG ³⁶
Processes	Policy Cycle Law making Policy development Enforcement Adjudication	Benchmarking process Approval of AB and CB Accreditation process of CB Certification process of food producer Technical Working Group activities.
Instruments	Codex Alimentarius Canadian Food Laws & Policies: Food and Drug Act Health Protection and Promotion Act Municipal by-laws Guidelines Inspection report	Guidance Document (draws on Codex Alimentarius) Certification programme (draws on Codex Alimentarius) Accreditation certificate for the CB Certificate for the food producer Audit report
Actors	Street-level bureaucrats (national, provincial, municipal employees)	Food producers /manufacturers GFSI auditors Stakeholders in the TWG

Table 3: Comparison of the public and private food safety regulatory approaches in Canada based on Webb's (2005) governance components.³⁷

Modified from Driscoll & Webb (2015).

The institutions in the public and private food regulatory approaches each have a direct or indirect influence on the food producer, as shown in Figure 5: Direct and indirect influence on the food producer. Two types of institutions in the private regulatory approach have direct

³⁶ No active representation as of March 2018.

³⁷ Based on Webb's (2005) governance components.

influence on the food producer: CPOs who develop the certification programme and the CB whose employee conducts the audit. In the public approach, the Regulatory Agencies (RA) have the combined responsibilities of the CPO and CB because it is these institutions who set the standard and whose actors enforce it. Indirect influences are the GFSI (the institution) because its Benchmarking Requirements are not implemented by the food producer, and the AB because the food producer does not undergo accreditation. However, both institutions may have influence on the food producer; if the GFSI recognizes a certification programme which has a weak Food Safety System or Food Safety Management System or if the AB accredits an incompetent CB, the audit may not identify food safety issues potentially placing public health at risk.

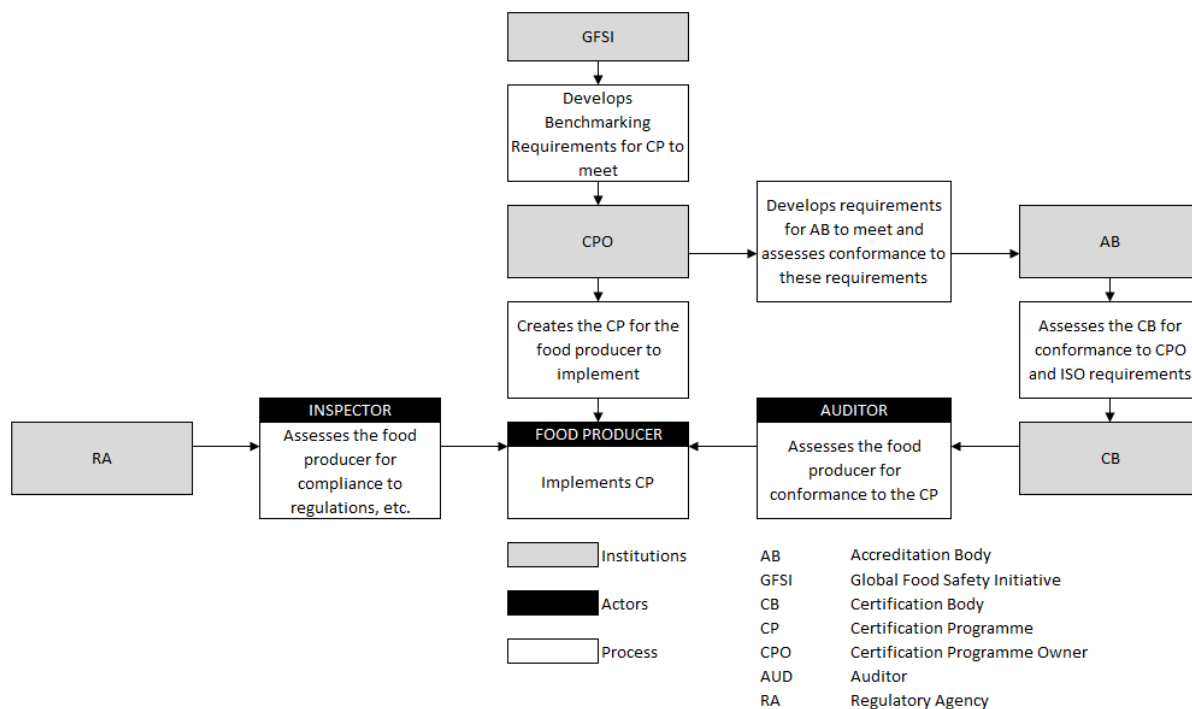


Figure 5: Direct and indirect influence on the food producer

Likewise, both approaches operate under legal obligations and enforcement mechanisms (García Martínez et al., 2007; Henson, 2008; Walker, 2014). Both approaches exercise control through their inspections (public approach) and audits (private approach), ensuring that the food producer meets the required public or private standard. The public approach operates primarily as command and control regulations, with associated enforcement mechanisms. In contrast, the private approach operates through contracts in which standards are agreed to by both parties, and enforcement is conducted through certification documents and private law instruments such as contracts. Failing to meet the requirements stated in the contract may result in the business losing a customer, revenue, and reputation.

Countries have authority only within their borders, and as a result, can only attempt to ensure the safety of the food through the regulation of food manufacturers located within its geographical boundaries or through import regulations and other policies (Drew & Clydesdale, 2015). Canada has begun investigating the use of private standards in support of their regulatory objectives, stating that “widespread adoption of private certification schemes by industry presents the Agency with an opportunity to take private certification information into account in support of better planning in the allocation of Agency resources” (CFIA, 2017d). The CFIA’s Private Certification Policy (Food Safety) refers to the GFSI by name and recognizes these certifications can help ensure the food producer meets public food safety regulatory objectives, and makes it clear that these certifications are complementary to, but are not meant to replace, the government’s regulatory and enforcement activities (CFIA, 2017d). The CFIA stated it will continue to verify compliance of regulated parties but the certification may be of assistance in their risk-based planning and prioritization, thereby impacting how the government’s resources are distributed (CFIA, 2016c). This policy came into effect on September 3, 2015, and is

available on the CFIA's website dated January 2017, but as of May 2018 no further information was available, nor has how the policy will be operationalized been made publicly available (CFIA, 2017g, 2017f). This leads to many questions about how the CFIA will use the GFSI-system or other private food safety certification programs. For example, will all GFSI-benchmarked certification programmes be accepted? If so, what information will the CFIA request from the food producer; will the audit certificate be acceptable, or will the audit report be required? Most of the GFSI-recognized certification programmes provide a rating based on the number and severity of non-conformances found: will there be a minimum acceptable rating to prompt a reduction in inspection frequency? The CFIA is also actively supporting the use of the GFSI by other governments, and the GFSI has stated in press releases that the CFIA has "played a leading role in our efforts for global public-private collaboration. Both their policy on private certification programmes and their support of the GFSI-hosted public-private dialogue (G2G and G2B meetings)" (GFSI, 2017a). As part of FSMA, the US FDA has also indicated its intention to use third-party certification through its Final Rule on Accredited Third-Party Certification. This certification will be used to assess the food producer to determine if they qualify for the Voluntary Qualified Importer Program to support an expedited importing process "to prevent potentially harmful food from reaching U.S. consumers" (U.S. Food and Drug Administration, 2017b).

Sustainable Governance

Returning to the governance arrangements presented earlier in this chapter, each examines governance activities as either state or non-state-based actions, with the state appearing to be of primary importance to all arrangements except the private and sustainable governance arrangements, i.e. the state is involved in these arrangements as either the instigator of the

arrangement or is brought into the arrangement as a primary institution (Ansell, 2012; Dietz et al., 2003; Emerson et al., 2012; Fung, 2006; Hatfield-Dodds, Nelson, Csiro, et al., 2007; Newig & Koontz, 2014; Purdy, 2012; Rogers & Weber, 2010; Speer, 2012). Sustainable governance also recognizes the government centric / controlled non-state approaches, as well as independent non-state programs. As per these arrangements, the GFSI is an example of private governance (Busch, 2011a, 2011c; Fagotto, 2015; Fuchs, Kalfagianni, & Havinga, 2011; L. J. Thompson & Lockie, 2013; Verbruggen, 2013).

The sustainable governance framework examines a social issue from a problem-focused, holistic approach, requiring that the public, private, and civil sectors be examined concurrently through the components of institutions, processes, rule instruments, and actors involved in managing the issue; since it provides a direct comparison, this framework allows for the strengths and weaknesses of each approach to be revealed and the collaborative and check-and-balance / rivalrous interactions between them. For example, a weakness of the multi-level governance approach is that, in its focus on multiple levels of governments it places less emphasis on the role of the private and civil sectors. In contrast, a weakness of the participatory governance arrangement is that, in its focus on the 'local' and actor level because it places less emphasis on the role of the public and private sectors. Similarly, a weakness of the public governance arrangement is its limited acknowledgement of the non-state, either the private or civil sectors; and the private governance arrangement has the opposite weakness; a lack of acknowledgement of the state and civil sectors. It is through the framework of sustainable governance that such weaknesses are revealed. Therefore, looking at the issue of food safety and public health it is necessary to examine the public, private, and civil sector activities strengths and weaknesses because though these sectors may operate independently, they do not operate in

isolation. Thus, the sustainable governance arrangement acknowledges that activities between the public, private, and civil sectors can be multi-level, collaborative / adversarial, participatory, and adaptive; it is the combined examination that provides value use the sustainable governance approach to examine governance arrangements.³⁸

The sustainable governance arrangement has been used to evaluate a variety of societal issues. Martin and Webb (2018) examined the combined government, private sector, and civil society regulatory approaches to address Great Lakes water quality. The Great Lakes are governed through the public governance arrangement by numerous federal, state, and provincial regulations, as well as through civil society processes such as private prosecution by the civil society non-governmental organization the Lake Ontario Waterkeeper (Martin & Webb, 2018). In addition, two non-state organizations are important participants in managing this issue. The chemical industry's Responsible Care voluntary initiative requires the chemical industry to "address their environmentally harmful behaviours" in support of government regulatory action plans (p. 10). These authors postulate that civil society rule-instrument, The Blue Flag Program can be seen as rivalrous to government activities. This program awards a "Blue Flag" based on evaluation of pre-determined criteria and "rescinding of a Blue Flag certificate from a public beach can be interpreted as an indirect commentary on the inadequacy of government protections and resources devoted to upholding water quality" (Martin & Webb, 2018, p. 11).

Torvilla and Webb (2017) examined water quality regulatory approaches in Ontario, examining how voluntary codes are converging with public regulations, concluding that this convergence takes the risk-based management systems drawing on private rule instruments and

³⁸ The civil sector initiatives have a place in ensuring safe food but are out of the scope of this dissertation.

that both governments (federal, provincial and municipal levels), as well through courts decisions to adopt these voluntary standards. This convergence supports the concept that robust and resilient governance approaches draw on both public and private regulations and together a stronger governing approach is put into place. Webb, Cruz and Walsh (2017) evaluated the ‘cleantech’ industry in Germany, the USA, and Canada through the arrangement of sustainable governance. Their analysis points to the importance of all three sectors, finding that without ongoing government support investment in cleantech is not sustainable due to a lack of market demand.³⁹ This finding reveals the importance of all three sectors in achieving ‘sustainability’. Finally, a paper written by Driscoll and Webb (in review) examining the GFSI and public regulatory approaches through the concept of sustainable governance has been accepted for publication in International Journal of Food Safety, Nutrition and Public Health and is in the review process.

Using the sustainable governance framework to analyze global food safety governance arrangements

The rationale for using the sustainable governance framework builds on the works done by Webb and his colleagues, and the interactions of the public and private regulatory approaches (Martin & Webb, 2018; Tovilla & Webb, 2017; Kernaghan Webb et al., 2017). A variety of food safety regulatory interventions have been used to promote public health, including the public regulatory approach, the private regulatory approach, and the civil regulatory approach. Despite this, four million Canadians are estimated to be sickened with a foodborne illness each

³⁹ The authors defined cleantech as “knowledge-based products or services that improve operational performance, productivity, or efficiency while reducing costs, inputs, energy consumption, waste, or pollution” (Webb et al., 2017, p. 166).

year; therefore, it can be reasonably assumed that no one approach is sufficient to promote public health. With the CFIA's recognition that food producers and consumers have a role in food safety, and their recognition of the value of private food safety certification programs in its Private Certification Policy (Food Safety) and the CanadaGAP Program, a GFSI-recognized certification programme for companies that grow, handle, or broker fruits and vegetables in Canada, this institution has acknowledged the role of the non-state, including private standards and civil actors in preventing foodborne illnesses (CFIA, 2017d; CanAgPlus, 2017; Weatherill, 2009).⁴⁰ In addition, the GFSI clearly state their support of government's public health objectives; the GFSI's vision is "Safe food for consumers, everywhere" and their Benefits webpage states two of the benefits of the GFSI for governments are "improved public health" and "promoting compliance with legislation" (GFSI, 2018b, 2018p). However, given that these approaches operate in parallel with little collaboration or overlap, therefore a holistic approach, focusing on how best to accomplish a goal without placing one sector's governing activities above the other is warranted because the public and private regulatory approaches to food safety exist concurrently. Using this framework allows for an examination of the public and private actors, the food safety inspector and GFSI auditor, role in achieving a societal goal, that of improved public health through decreased foodborne illnesses, without a presupposed bias of one approach being more appropriate or superior than the other.

Conclusion

This chapter presents an overview of the literature and current understanding of public and private food safety regulatory approaches. It begins with a description of the concept of

⁴⁰ Though it is important to understand that the consumer has a responsibility for handling food safely, this dissertation focuses on food safety regulatory approaches prior to the consumer purchasing the food.

governance, specifically food governance, and street-level bureaucrats. From here it moves to an examination of the public regulatory approach, including the public administration, public policy, and the street-level bureaucrat, the food safety inspector and then on to a private regulatory approach, the GFSI, exploring its history, framework and the GFSI auditor. Finally, it places the GFSI into the context of sustainable governance, exploring the sustainable governance framework is appropriate for this investigation.

Chapter Four - Conceptual Framework, Hypotheses, and Research Methodology

Introduction

Chapters Two and Three of this dissertation outlined the importance of food safety and public health, the challenges in providing safe food to consumers, the public and private food safety regulatory approaches, and how these approaches work together within the sustainable governance framework to support the state's public health objectives. An important actor in the public approach is the food safety inspector, a street-level bureaucrat who assesses food producers' compliance to state-developed public policies. The actor in the private approach who performs a similar function is the GFSI auditor, an employee of a CB who assesses the food producer's compliance to the certification programme. As discussed in Chapter One, this dissertation postulates that both actors help the state meet its public health objectives through their assessment of the food producer's food safety systems, i.e. the activities the food producer undertakes to promote food safety. However, while the food safety inspector is an acknowledged public health practitioner through their education, training, and employment, the GFSI auditor's place in food governance and public health system has not yet been investigated.

This chapter sets out the foundation for the research conducted. It begins with the conceptualization of the auditor's role in public health, and then outlines the foundations of this research. From here it reviews the hypotheses presented in Chapter One and then describes the methodology, concluding with the data collection and analysis techniques used.

Conceptual Framework: The Auditor's Role in Public Health

The role of the food safety inspector in public health has been acknowledged for these state-employed regulatory agents, e.g., EPHP, CFIA inspectors, Dairy Plant Specialists, etc., and

these actors are recognized public health practitioners. However, the role of the GFSI auditor in public health has not been examined, including whether or not this actor should be considered a public health practitioner has yet to be examined. The recognition of a GFSI auditor as a public health practitioner is based on the following conceptualization: food safety is a recognized component of public health, therefore, if an actor is impacting food safety, the actor is thereby impacting public health. This is visualized in Figure 6: Conceptualization of the auditor's role in public health.

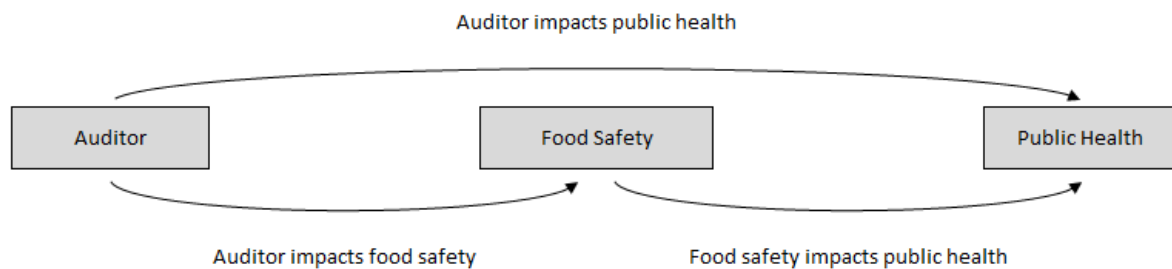


Figure 6: Conceptualization of the auditor's role in public health.

The conceptual framework of this dissertation is based the concepts of public health, sustainable governance, and professional identity previously discussed in Chapters Two and Three. The sustainable governance framework recognizes that public health objectives can be achieved through the interactions of the public and private regulatory approaches and acknowledges that actors in private systems may have an important role to play in promoting a healthy society. This framework examines the role of the GFSI auditor to determine if their role is analogous to the food safety inspector. The public health framework recognizes that morbidity and mortality in a population is a significant burden to society and that food safety is an important component of public health. It acknowledges that an improvement in food safety would be expected to result in an improvement in public health due to a decrease in foodborne

illnesses. This framework examines the role of the GFSI auditor not as a food safety professional, but instead as an important participant in the overall well-being of a society. The professional identity framework recognizes that an individual develops their professional identity through a combination of education, training, and work experience, and allows for an in-depth exploration of the participant's understanding of their role in promoting public health. It recognizes that the concept of profession has expanded from the traditional roles, e.g. teacher, doctor, or PHI, etc., to include a broad range of positions that place their practitioners in a professional role, e.g. CHA, with the associated responsibilities of the profession. These three frameworks intersect as illustrated in Figure 7: Conceptual framework. At the intersection of these three is the GFSI auditor.

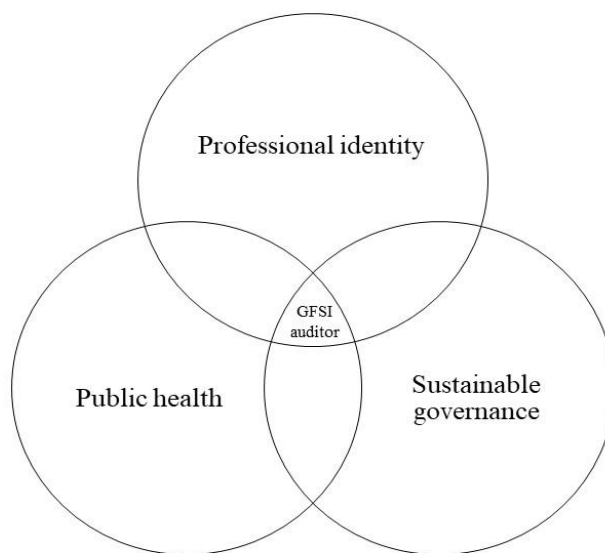


Figure 7: Conceptual framework.

Hypotheses

The hypotheses stated in Chapter One were developed based on the following rationale. First, the food safety inspector is recognized as a food safety professional through their education, expertise, and employment. Second, the food safety inspector is recognized as a public health practitioner through their food safety activities. Third, the GFSI auditor is recognized as a food safety professional through their education, expertise, and employment. Fourth, the GFSI auditor can be characterized as public health practitioners participating in the overall achievement of public health objectives through their food safety activities. Chapters Two and Three of this dissertation explored the importance of public health and the role of the food safety inspector, demonstrating that the state's food safety inspector is a public health practitioner because they assist society with the production of safe food. It remains, therefore, to examine the role of the GFSI auditor to determine if; first, they are a public health practitioner; second, if they have the professional identity of a public health practitioner; and third, if the GFSI-system, including the GFSI, CBs, ABs, RAs and food producers recognizes these actors as public health practitioners.

Hypothesis One: If the GFSI auditor is a private food safety regulatory agent analogous to the government's food safety inspector then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors may all have regulatory capabilities in support of public policy objectives, they can be characterized as public health practitioners participating in the overall achievement of public health objectives.

Hypothesis Two: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then: GFSI auditors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives.

Hypothesis Three: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then other actors in the GFSI-system are likely to consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives.

Research Methodology

Food safety has traditionally been investigated using quantitative methods such as epidemiology or microbiology in an effort to understand the cause and effect relationship between hazards and foodborne illnesses. However, it is now recognized that food safety practices have a strong behavioural component which are more appropriately investigated through qualitative methods such as interviews or document analysis (Brough et al., 2016; Le, Bazger, Hill, & Wilcock, 2014; Medeiros & Wilcock, 2006; Pham et al., 2010a; Rebellato, 2012;

Wilcock et al., 2011). Both qualitative and quantitative methods have strengths and weaknesses, and when blended presents a mixed methods approach which can improve the quality of research produced (Creswell, 2014). As this research is the first to directly investigate the GFSI auditor, it is an exploratory sequential mixed methods project which uses qualitative data obtained through a literature review and document analysis, and interviews to inform the quantitative component, an on-line survey (Creswell, 2014).

This project was reviewed and approved by Ryerson University's Research Ethics Board, REB 2016-099 for a one-year period and renewed in 2017 and 2018. Approval was also obtained for modifications to documents (e.g. extending the date of consent on recruitment scripts) as well as the on-line survey.

Data Collection

Data collection took place in 2016 and 2017. H1 was investigated between January of 2016 and December 2017; H2 was investigated between June 2016 and April 2017; and H3 was investigated between June 2016 and November 2017. H1 used the qualitative methods of a literature review and document analysis (Bourgeault et al., 2009; Davey & Richards, 2013; Newbold et al., 2008; Nguyen, Wilcock, & Aung, 2004; Riccucci, Meyers, Lurie, & Han, 2004; Sodano et al., 2008; Trede, Macklin, & Bridges, 2012). The literature review and document analysis were conducted on publicly available documents found through a combination of library research, interviews, and an internet search of Google Scholar (www.google.schoolar.ca) and Google (www.google.ca). Key words included, but were not limited to, GFSI; GFSI auditor; third-party audit; third-party auditor; food safety; food safety audit; food safety auditor; food safety inspector; regulatory agent; street-level bureaucrat; public health; and public health

practitioner. Where an interview respondent provided information outside the scope of the questions but relevant to the research the information was verified through public sources to preserve their confidentiality and verify the accuracy of the information.

H2 was investigated through a mixed methods approach, including interviews and an on-line survey. The qualitative research method of interviews has been used to investigate a variety of food safety and public health issues. Brough, Davies and Johnstone (2015) used in-depth interviews with restaurant operators to examine non-compliance in food premises in Australia (2015). Semi-structured interviews have also been used to explore food safety issues in Canada, including Sargeant et al.'s (2007) investigation of food safety policy, Rebellato's (2012) investigation of PHIs' assessment of *L. monocytogenes* in retail store delis, and Medeiros and Wilcock's (2006) investigation of PHI biases. Interviews have also been used to investigate professional identity in nurses (Hotho, 2008), faculty at higher education (Levin & Montero Hernandez, 2014; Trede et al., 2012) and other professionals (Gunz & Gunz, 2007). Other food safety research has used the quantitative method of surveys to investigate whether or not inspectors write down violations (A. C. Johnson et al., 2014), continuous improvement programs in food safety (B. Scott, Wilcock, & Kanetkar, 2009), illness exposure (Nesbitt et al., 2009), the training needs of PHIs (Pham et al., 2010b), companies' opinions of implementing a certification programme (Crandall et al., 2012, 2017), validation of inspector findings (Boyd et al., 2016), how consumers use social media to understand food related risks (Kuttschreuter et al., 2014) and consumer food safety knowledge and behaviour in Canada (Nesbitt et al., 2014).

Interview respondents were found using a snowball strategy that included the researcher's professional contacts, the publicly available SQF auditor database, LinkedIn, asking respondents to suggest other GFSI auditors, and asking CBs to distribute the recruitment script to

employees (Buckley, 2015; Chaffin et al., 2014; Davey & Richards, 2013; Gofen, 2014; Tuurnas et al., 2016; WHO, 2015b). The studies discussed in this chapter were reviewed for participant selection criteria, however, no qualitative studies pertained directly to the auditor, therefore selection criteria were developed based on practical criteria, e.g. auditors were required to have enough experience to be knowledgeable about their role. Respondent selection criteria required auditors to be qualified to conduct certification audits for at least one GFSI-recognized certification programme, have completed at least five audits of that programme, and be fluent in English (see Appendix B: Auditor Consent Form). These criteria were selected for the following reasons. First, this study investigated the role of the GFSI auditor in public health and their professional identity, therefore, all auditors had to conduct GFSI audits. Second, the criteria “number of audits completed” was selected due to the varying amount of time an GFSI-benchmarked certification programme audit can take, e.g. a CanadaGAP audit of a farm may be a half day whereas a British Retail Consortium (BRC) or FSSC 22000 audit may be three days; using the unit of ‘completed audit’ allows for the auditor to discuss the entire audit process and ensure that the auditor had sufficient experience in the GFSI-system to be able to knowledgeably discuss the GFSI audit process. Finally, the researcher’s choice of English is based on the researcher’s fluency in this language.

	2016												2017									
Hypotheses	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October
H1																						
H2																						
H3																						

Table 4: Data collection timeframe.

In total, 82 GFSI auditors were contacted by the researcher through email or LinkedIn and sent the interview recruitment script between May 2016 and March 2017 (see Appendix A: Interview Recruitment Script / Email for Auditors). These auditors were primarily from North America as per their LinkedIn profile, however, the home country of the auditors contacted through email or LinkedIn could not be confirmed due to the nature of the information available on this platform. Once the interview was arranged, auditors were required to complete a consent form (see Appendix B: Auditor Consent Form) and were given the interview guide (see Appendix C: Auditor Interview Guide and Demographic Survey) prior to the interview. All interviews were conducted between June 2016 and January 2017 and recorded using an online software, Zoom (Zoom Video Communications, 2018). Interview recordings were transcribed by Transcription Hub, an online transcription service who signed a non-disclosure agreement (see Appendix D: Non-Disclosure Agreement Elizabeth Driscoll and Transcription Hub) (Transcription Hub, 2018). A total of 18 interviews were conducted with auditors, and 17 responses were used; one respondent rescinded their permission two months after the interview was conducted and their information was removed from the dataset. Transcription was not possible for two auditors and instead they provided written responses; one interview was not recorded, and the interviewer's notes were used. Data was anonymized by assigning a number to each respondent (AUD 01 to AUD 18). The unit of analysis for auditors was the individual (Gibson, 2011; Starks & Brown Trinidad, 2007).

Interview data, once analyzed, was used to develop the online survey. The survey was pre-tested between March 1 and March 10, 2017; invitations were sent to all auditors who participated in the interview and there were four completed responses. No changes were made to the survey as a result of these responses, and the survey available from March 15, 2017 to April

2, 2017. 54 responses were received of which 38 were complete; two were ‘tested’ by the researcher to ensure the survey worked correctly when published and these were removed from the dataset. 18 respondents answered 12 or fewer questions and these 18 were considered incomplete and excluded from the data analysis. Data analysis occurred between April and October 2017. It is reasonable to assume that some auditors who were interviewed may have also completed the survey, however, the survey was anonymous, and this cannot be confirmed. It is possible but not likely that auditors completed the survey more than once, given the amount of work in answering all of the survey questions. Indeed, information indicates that more than a dozen individuals started the survey but did not complete it. This is more support for the conclusion that it is unlikely survey respondent would have completed the survey more than once.

To investigate Hypothesis Three the same qualitative methodology as Hypothesis Two was used, however, the unit of analysis was changed to the institution and no quantitative survey was conducted. Interviews for the other respondents occurred between June 2016 and October 2017 as respondents were available, with the majority of interviews taking place between June 2016 and June 2017. All categories of institutions included in Figure 5: Direct and indirect influence on the food producer were invited to contribute to this investigation (see Appendix I: Recruitment Script for Governments, Organizations & Industry), as well as an additional category of Other Stakeholders, individuals with no direct relationship to the other institutions but who had a role in the food supply chain, e.g. a lawyer, representatives of food industry associations, and a former food safety executive with a food retailer. Respondents were required to complete a consent form (see Appendix J: Voluntary Consent for Participation in Research Study for Governments, Organizations and Industry) and were given the interview guide (see

Appendix K: Interview Guide for Governments & Organizations) prior to the interview.

Respondents were assigned an institutional category and a number to maintain their confidentiality, e.g. AB 02, CB 03, CPO 04, RA 05, and OS 06. 29 interviews were conducted; only the GFSI did not participate. Table 5: Respondents from the GFSI-system summarizes the number of respondents in each category.

Respondent Group	Number of respondents	Comment
GFSI	0	GFSI were contacted directly for participation through email, voicemail, and in-person at a food safety conference.
CPO	5	Four certification programmes were for general food production, and one focused on produce.
CB	7	All CBs were based in North America and conduct GFSI benchmarked certification programmes audits.
AB	3	Identification of the AB's location would remove the confidentiality of the respondent.
RA	5	One Canadian organization (three respondents) and two EU RA organizations.
IND	3	One packaging manufacturer, one food producer, and one consultant who had left a quality assurance role in the food industry less than two months prior to the interview.
OS	6	Respondents included two organizations representing industry sectors, one lawyer, two consultants, and one retail industry quality assurance executive.
Total	29	

Table 5: Respondents from the GFSI-system

Respondents provided their personal opinions of the food safety approaches, focusing on their institution's position in the GFSI-system or food supply chain. OS responses are included where relevant, but their comments presented no clear theme or opinion, likely due to the diverse nature of the group. Notable for their absence in the data is the GFSI (the institution). Five

employees of the GFSI organization were contacted to participate in this research through emails, phone calls, and in person at an international food safety conference; the only confirmed interview was cancelled several hours before it was to occur. No follow up requests for participation were acknowledged, though the GFSI provided research material through email.

Data Analysis

The documents reviewed for Hypothesis One were analyzed for content, extracting information focusing on qualifications, authority, and role activities of both the food safety inspector and the GFSI auditor (Manning & Soon, 2016; McNulty, Zattoni, & Douglas, 2013; Trede et al., 2012; Tuurnas et al., 2016). Hypothesis Two and Hypothesis Three interview recordings were transcribed and reviewed for accuracy by the researcher, then analyzed (“coded”) for major and minor themes (Arendt, Paez, & Strohbehn, 2013; Basit, 2003; Creswell, Hanson, Clark Plano, & Morales, 2007; Elo & Kyngäs, 2008; Medeiros & Wilcock, 2006; Pham et al., 2010a; Rebellato, 2012; Sargeant et al., 2007; D. Scott, 2007; Seaman & Eves, 2006). Coding was done using NVivo Pro 11 for Windows obtained through Ryerson University (QSR International Pty Ltd, n.d.) and occurred at four different times; during the interview, when transcripts were cleaned, as a separate step, and again during the write up of the research results. Codes were first developed from the interview guides, research hypotheses, literature review and the researcher’s professional knowledge and experience but this was an iterative process; as themes and sub-themes emerged from the data, the data was re-coded to reflect this updated knowledge (Birks & Mills, 2011; A. M. Wilson et al., 2015). Any identifying information was removed from the transcripts and codes were entered into an Excel spreadsheet (Microsoft Office 365). The codes and transcripts were then analyzed by two independent coders (one individual coded the auditor transcripts for Hypothesis Two, and another individual coded the transcripts

for Hypothesis Three) to confirm the themes; these individuals were provided reference materials and instructions (see Appendix E: Research Assistant Confidentiality Agreement). Interview responses were selected based on the clarity and representativeness of the information conveyed by the respondents. Auditor demographics were collected for Hypothesis Two (e.g. age, number of audits conducted, number of GFSI benchmarked certification programmes to which the auditor is qualified to conduct audits).

Next, a quantitative survey was developed based on interview responses and pre-tested by four auditors who participated in the interview; no changes were made as a result of the pre-test (see Appendix H: Online Survey Questions and Responses). The survey was created using Opinio through Ryerson University and the on-line link sent to all 82 GFSI auditors contacted to participate in the interview; included in the Barfblog news letter; and two articles published on the researcher's LinkedIn page (see Appendix F: Online Survey Recruitment Script / Email for Auditors and Appendix G: Online Survey Recruitment Script – Social Media). A total of 54 responses were received; the data was cleaned for completeness and consent and 36 responses were used. The quantitative data analysis consisted primarily of frequency of response and descriptive statistics, i.e. how many respondents agreed with each response statement. A respondent pool of 36 is insufficient to conduct statistically valid analysis because this research could not determine a response rate. First, it is unknown how many GFSI auditors there are globally as auditors may conduct audits to more than one certification programme and for more than one CB. Second, CPOs were unwilling to provide precise information as to the number of auditors registered for their programme, citing confidentiality concerns. Third, auditors may have received the request for participation through more than one channel (e.g. through both a LinkedIn article and email request).

Research Strengths and Limitations

The strength of this research lies in its mixed methods approach, attempting to reach verifiable conclusions based on multiple sources of data; literature review, document analysis, interviews, and an online survey. These methods combined to interpret disjointed information into a coherent picture of the role of the GFSI auditor in achieving public health objectives. By accepting H1, and rejecting H2 and H3 it revealed a disconnect in the stated purpose and role of the auditor in that the auditor is a recognized and valued food safety professional, but not a recognized public health practitioner. Another strength was the attempt to include actors from all institutions influencing the food producer in order to understand the entire GFSI-system.

There were two primary limitations to this study. First, as this was an exploratory study the small sample size and the challenges in determining the number of auditors globally presents no opportunity to conduct a statistical analysis. Therefore, the conclusions must be seen as preliminary and further study is warranted. Second, the GFSI itself did not participate, though they did provide publicly available information, and therefore the position of this organization as to the role of the auditor would have been helpful to strengthen the conclusions.

Chapter Five - Investigating the GFSI Auditor as a Public Health Practitioner

Introduction

Chapter Five investigates Hypothesis One: if the GFSI auditor is a private food safety regulatory agent analogous to the government's food safety inspector then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors may all have regulatory capabilities in support of public policy objectives, they can be characterized as public health practitioners participating in the overall achievement of public health objectives.

To determine if this hypothesis is valid, this chapter begins with a comparison of the food safety inspector and GFSI auditor's qualifications and then describes the inspection and audit processes in their respective regulatory approaches. From here it examines these actors' role characteristics and policy activities to identify similarities, and then moves to a discussion of these actors as both food safety professionals and public health practitioners. Finally, using the sustainable governance framework it evaluates whether or not the GFSI auditor can be characterized as a public health practitioner similar to their public regulatory counterpart, the food safety inspector as per their employer; qualifications; processes; role characteristics; policy activities; and professional status. This evaluation leads to the conclusion that Hypothesis One should be accepted: the GFSI auditor can be characterized as public health practitioners participating in the overall achievement of public health objectives.

Food Safety Inspector and GFSI Auditor Qualifications

The public health practitioner role from which the current food safety inspector developed began in England in the late 1840s with the position of Inspector of Nuisance and by the 1870s these practitioners were known as Sanitary Inspectors with a recognized responsibility

for the implementation of sanitary policy (Brimblecombe, 2003). As society industrialized and the recognition of health hazards expanded, it was acknowledged that these actors needed formal education and qualifications (Brimblecombe, 2003). Through the establishment of professional associations; qualifying examinations and certifications; scholarly texts and journals; and an increased number of certified women the role gained both professionalism and status (Brimblecombe, 2003). In Canada, sanitary inspection began as a profession in 1913 with the formation of the Sanitary Inspectors Association of Western Canada, becoming the Canadian Institute of Sanitary Inspectors in 1934 and finally, the Canadian Institute of Public Health Inspectors in 1961 (Cross, 1961; Elliott, 1975). The first Canadian certificate based on examination and training was issued by the Canadian Institute of Sanitary Inspectors, with the designation changing to the current Certificate in Public Health Inspection (Canada) (CPHI(C)) in 1963; and a similar process was followed for the recognition of the American counterpart to the CPHI(C), the Registered Environmental Health Specialist/ Registered Sanitarian (REHS/RS) (Elliott, 1975; National Environmental Health Association, 2017; Waller, 2013).

Employment as a food safety inspector in most Canadian municipalities and some federal government positions requires the CPHI(C) designation, earned through a combination of a bachelor's degree from a CIPHI accredited program; a practicum with a Public Health Unit; and the successful completion of CIPHI's Board of Certification examination (CIPHI, 2017). Other Canadian food safety inspector positions, including those employed by most provincial and federal organizations do not insist on this designation but instead require a combination of education, employer provided training, and work experience. For example, OMAFRA's Dairy Plant Specialist is a regulatory agent in the public food safety regulatory approach who conducts inspections and audits of dairy production facilities and distribution centers, a position which

requires that the specialist be able to conduct effective inspections and audits via skills developed through a combination of education and experience (Ontario Ministry of Food Agriculture and Rural Affairs, n.d., 2016c). Most federal food safety inspectors are employees of the CFIA which requires post-secondary education in the technical sciences and receive in-house training (CFIA, 2016a, 2016b).

In the US, each state sets the requirements for their municipal food safety inspectors and may or may not require the REHS/RS. This credential requires education from an approved school and / or two years or more experience working in the environmental health field (NEHA, 2017). Some states explicitly required this designation, e.g. Wisconsin, but others require bachelors degree in science with no mention of the REHS/RS, e.g. Alabama or New York State (Alabama Public Health, 2016; New York State Department of Health, 2012; State of Alabama Personnel Department, 2012; Wisconsin Department of Safety and Professional Services, 2017). The qualification to be a food inspector with the federal organizations, the USDA FSIS or US FDA is similar to the federal and provincial government requirements in Canada; their inspectors must have either a science focused bachelors degree and / or specialized work experience (United States Office of Personnel Management, 2018b, 2018a).

In comparison, three institutions in the GFSI-system set requirements for GFSI auditor qualifications; the GFSI in its Benchmarking Requirements; the CPO in its certification programme; and the CB's employment criteria. The GFSI's criteria for auditors was developed by the Auditor Competence Scheme Committee and included auditing skills and knowledge; technical skills and knowledge; and behaviour and systems thinking; this criteria formed the basis for the auditor components of the Benchmarking Requirements – Part II – Requirements for the Management of Schemes which was released in March 2018 (GFSI, 2014c, 2018e). As a

meta-regulation the Requirements for the Management of Schemes outlines detailed requirements for the CPOs to incorporate into their certification programmes to ensure auditor competency in two ways (GFSI, 2014b, 2018e). First, as per this document, the CPOs are required to maintain a register of approved auditors which includes: information about the auditors' education; work experience in the areas they audit; the auditor's scope of approval; which CBs employ the auditor; and the auditor's competence (GFSI, 2018b, p. 5). Second, CPOs are also required to ensure the CBs meet the ISO / IEC 17065 or ISO / IEC 17021 standards and that the CB's auditors are qualified to conduct audits in the scope of activity for which the CB is accredited. These qualification include appropriate education and HACCP training; at least two years of quality assurance or food safety work experience in the appropriate sector; and the successful completion of an Auditing Skills Assessment program which includes a combination of audit days (ten) and audits (five) in supervised audits (GFSI, 2018b, p. 6-7). The CPO must also ensure that the CB has a system that confirms auditors keep up to date with emerging food safety issues; sector best practices and technologies; as well as any applicable legislation (GFSI, 2018b, p. 11). Professional conduct and personal attributes of the auditor are also documented and monitored, with the GFSI identifying ten important characteristics, e.g. ethical behaviour, observant, tenacious, and decisive (GFSI, 2018b, p. 11). Examples of sector-specific education and work experience requirements are found in Table 6: Examples of auditor competency requirements by sector category.

GFSI Scope of Recognition (Benchmarking Sector)	Benchmarking Sector	Sector Specific Auditor Education	Examples of Sector Specific Work Experience in Relation to Product Categories
BI	Farming of Plants (other than grains and pulses)	Education in an agricultural / crop-based discipline or, as a minimum, has successfully completed a food related or bioscience higher education course or equivalent.	Experience is required in the fresh fruit and vegetable farming sectors: <ul style="list-style-type: none"> • Fruit • Vegetables • Herbs and Spices • Grasses (Sugar)
EI	Processing of Perishable Animal Products	A degree in a food related or bioscience discipline or, as a minimum, has successfully completed a food related or bioscience higher education course or equivalent.	Experience is required in the following food industry sectors: <ul style="list-style-type: none"> • Red Meat Processing • Poultry Processing • Fish Processing • Seafood Processing • Meat Product Processing • Fish Product Processing • Dairy Technology • Egg Processing
EIII	Processing of Perishable Animal and Plant Products (mixed products)	A degree in a food related or bioscience discipline or, as a minimum, has successfully completed a food related or bioscience higher education course or equivalent.	Experience is required in the following food industry sectors: <ul style="list-style-type: none"> • Meat Product Processing • Fish Product Processing • Dairy Technology • Ready to Eat Food Processing
M	Production of Food Packaging	A primary qualification, a degree or higher certificate in packaging technology or material engineering, and a relevant certificate recognised by the Certification Programme Owner in food technology, food hygiene or related science subject OR a	Experience is required in the specific sectors of packaging manufacture: <ul style="list-style-type: none"> • Plastics • Paper and Board • Metal • Glass

		primary qualification in food technology, food safety / hygiene or related science subject and a certificate in packaging technology that is recognised by the Certification Programme Owner.	
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Table 6: Examples of auditor competency requirements by sector category (GFSI, 2018f)

The GFSI is also developing a knowledge exam based on the Benchmarking Requirements that all auditors will be required to pass by the end of 2021 and will include HACCP and GMP knowledge; auditing skills; and industry sector-specific skills (GFSI, 2018l). When this is complete, the exam must be provided by either the CPO or a third party that has met the ISO 17024 Conformity assessment - General requirements for bodies operating certification of persons standard but is not associated with other actors or institutions in the GFSI-system, e.g. CBs or ABs (GFSI, 2018e). The requirement for the auditor to successfully complete a knowledge exam was recommended by the Auditor Competence Scheme Committee and was added to Version 7.2 of the Benchmarking Requirements in March 2018 (GFSI, 2018e)

In addition to the requirements mandated by the GFSI, CPOs may also have specific requirements for auditors. For example, the BRC requires certification programme specific training and five years experience in the manufacturing sector and an examination; other CPOs have similar requirements (BRC, 2017c; CanAgPlus, 2018a; FSSC 22000, 2017f; GFSI, 2018h; International Featured Standards, 2018a; SQF Institute, 2017). The CB must be able to confirm their auditor's competency to both the CPO through its accreditation and the GFSI (the institution) through the GFSI's Integrity Programme, an assessment of the CPOs' systems which includes reviews of audit reports (BRC, 2015b; FSSC 22000, 2017f; GFSI, 2018d; International

Featured Standards, 2014; SQF Institute, 2017). A CB may also have its own hiring criteria, based on its corporate standards (American Institute of Baking, 2018; BRC, 2017c; FSSC 22000, 2017a; IFS, 2018d; SQF Institute, 2014). An overview of the entire auditor competency system is found in Figure 8: Institutions' roles in ensuring auditor competency.

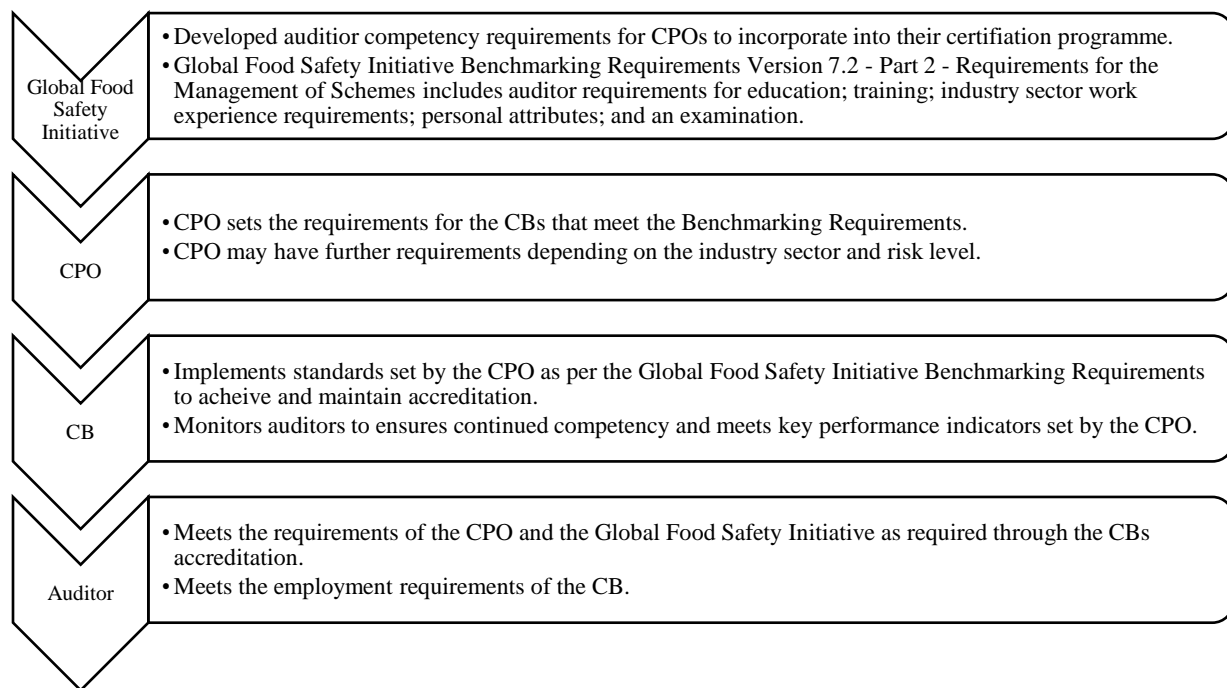


Figure 8: Institutions' roles in ensuring auditor competency.

Comparing inspector and auditor competencies, including education, training and experience of food safety inspector and GFSI auditor reveals that these actors have similar requirements for employment. First, the education expectations are similar with both the GFSI auditor and the food safety inspector required to have appropriate higher education as per their employer's standards. Second, the training expectations are similar in that both the GFSI auditor and the food safety inspector are required to have training in their respective roles. Third, the GFSI auditor undergoes several examinations to confirm their competency to conduct audits and their understanding of the certification programme; the EPHP undergoes a board examination to

earn the CPHI(C) credential, but it is unknown if CFIA or OMAFRA food safety inspector training requires an examination. Finally, the GFSI auditor must have industry sector and role experience, e.g. have been employed in food safety and quality assurance roles, the EPHP has work experience as per their internship with the Public Health Unit; provincial and federal government food safety inspectors may have relevant work experience, but this is not mandatory for employment.

Food Safety Inspection and GFSI Audit Processes

A food safety inspection is a verification activity in which the food premises is assessed for compliance with the public regulatory approach's rule instruments, and may include the premises' design and upkeep; its employees' food handling practices; written programs and records; interviews with employees; and communicating with the operator (Buckley, 2015; CFIA, 2017a; Medeiros & Wilcock, 2006; Pothukuchi et al., 2008; Powell et al., 2013).⁴¹ Food safety inspectors from the government have been seen as “the first and last line of defense for the community against the potential hazards posed by unsanitary and unsafe practices” (Pothukuchi et al., 2008, p. 321). The value of these assessments relies on the credibility and capability of the inspector as per their interpersonal skills; technical knowledge; and expertise (Boyd et al., 2016; Fineman, 1998; Medeiros & Wilcock, 2006; Powell et al., 2013; Thompson et al., 2005). Inspections are usually conducted on the basis of risk and activity, with higher risk premises (e.g. a full-service kitchen or ready-to-eat sliced meat manufacturer) receiving more frequent inspections than a low risk premises (e.g. convenience store or bakery); inspection frequency may range from daily to annual inspections (Ministry of Health and Long-Term Care, 2018; O

⁴¹ Food premises is used for a facility that is inspected as per O. Reg. 493 Food Premises, e.g. restaurants, grocery stores, etc., and these locations are not inspected through the Global Food Safety Initiative-system. ‘Food producer’ is used for any organization, from farm to distribution center, which can be audited to a certification programme.

Reg 493/17 Food Premise). The duration of an inspection depends on the foods being produced; the food premises' size and complexity; the regulation being enforced; and the number and severity of violations found. For example, a public health inspection of a retail bakery which complies with the regulation may take an hour, whereas a CFIA inspection of a federally registered facility producing ready-to-eat sliced meat has a minimum number of hours the food safety inspectors must be on site per year (CFIA, 2013a; O Reg 493/17 Food Premises).

A typical inspection proceeds in the following manner (CFIA, 2017a; Kwon, Roberts, Sauer, Cole, & Shanklin, 2014; McMahon, 2011; Medeiros & Wilcock, 2006; Powell et al., 2013; Thompson et al., 2005).⁴² The inspector arrives and introduces themselves, requesting to speak to the most senior management person present. After a discussion of changes since the previous inspection, e.g. legislative, management or facility changes, the inspector then conducts the assessment, usually in the presence of the manager, looking at such items as the temperature of food holding equipment; the premises' condition, e.g. 'floors, walls, and ceilings'; evidence of pest infestation; the availability of a probe thermometer for taking food temperatures; and sanitizer concentration when cleaning equipment. The inspection may also include items such as illegal products, e.g. eggs that have not been graded and foods made in an unlicensed kitchen, e.g. home-canned foods (O Reg 493/17 Food Premises). It will also look for basic food safety practices such as storing raw meats on lower shelves in coolers; not using the same cutting board for raw meats and vegetables; and not allowing foods to cool at room temperature. Finally, food handler practices will be assessed such as washing hands; changing aprons after taking out the garbage; and employees showing no obvious signs of illness. Documentation may also be

⁴² This description is built from a combination of my personal experience, discussions with other inspectors, the CFIA's publicly available information and the literature.

reviewed depending on the facility size and risk level, e.g. HACCP plans; Standard Operating Procedures (SOPs); records of production activities; receipts for raw materials, etc. In a small retail bakery, the food safety inspector may ask to see the receipts documenting the activities of a licenced pest control technician, whereas in a large industrial bakery the inspector might ask to see the trend analysis for the findings of pests, the technician's license, and the insurance of the company. Findings are evaluated and deemed as 'complying' or 'non-complying' to the regulations; the inspection concludes with the regulatory agent documenting their findings in an inspection report and reviewing the report with the operator (Leinwand, Glanz, Keenan, & Branas, 2017; Medeiros & Wilcock, 2006; Newbold et al., 2008; Papadopoulos et al., 2012; S. Thompson et al., 2005; Toronto Public Health, 2012a).

Just as inspectors conduct inspections, auditors conduct audits; an audit is undertaken to verify the programs implemented in the facility meet the standard and support the production of safe food (Djekic, Tomasevic, & Radovanovic, 2011; GFSI, 2018h; Powell et al., 2013; Surak & Wilson, 2014). In the GFSI-system the audit is normally announced, i.e. scheduled with the food producer on an annual basis, though several certification programmes offer the option of an unannounced audit (BRC, 2015; CanAgPlus, 2018b; Food Marketing Institute, 2017a; FSSC 22000, 2017d; IFS, 2017). The audit includes both inspection and documentation components to ensure the food producer's implementation of their food safety system is acceptable (Davey & Richards, 2013; Dix, 2001; Lytton, 2014; Marks, 2016; Surak & Wilson, 2014). The audit begins with an opening meeting in which the auditor and the management team of the facility are introduced, the audit process is discussed, and any changes made since the previous audit are reviewed (e.g. legislative, programme, management, and production activities). From here it moves to the data collection phase, including a facility inspection looking for similar items to the

public regulatory inspection, e.g. ‘floors, walls, and ceilings’; evidence of pest infestation; sanitizer concentrations; employee practices; processing equipment capabilities, etc. Other activities include a documentation review, analyzing SOPs for acceptability and records for completion, and potentially a traceability exercise. After the data is collected and findings are noted, the auditor issues the non-conformances which are reviewed with the premises during the closing meeting. Audits may be conducted as a single visit occurring over several consecutive days or in two parts; a desk audit review of the food producer’s SOPs and other paperwork that occurs in the auditor’s office and an onsite visit which includes the facility inspection described above for regulatory inspection and the documentation not seen during the desk review, e.g. food production records (BRC, 2015; CanAgPlus, 2018b; Food Marketing Institute, 2017a; FSSC 22000, 2017d; IFS, 2017). Findings are evaluated by the auditor and deemed as ‘conforming’ or ‘non-conforming’ to the standard; non-conformances are issued for items where the facility did not meet the requirement of the certification programme or did not implement the requirements adequately (BRC, 2015; Burch & Lawrence, 2005; CanAgPlus, 2018c; Davey & Richards, 2013; Food Marketing Institute, 2017a; FSSC 22000, 2017e; IFS, 2017; Surak & Wilson, 2014). After the auditor reviews the non-conformances with the food producer in a closing meeting, they submit the report to the CB who issues the certificate (BRC, 2015; CanAgPlus, 2018b; Food Marketing Institute, 2017a; FSSC 22000, 2017d; IFS, 2017). Most certification programmes in the GFSI-system require the facility to submit evidence of completed corrective actions to the CB for evaluation prior to the CB issuing the audit certificate and / or rating (BRC, 2015; CanAgPlus, 2018b; Food Marketing Institute, 2017a; FSSC 22000, 2017d; IFS, 2017). An audit report may be further scrutinized during other activities in the GFSI-system’s process; the GFSI reviews these reports during its annual Integrity Program Assessment of the CPO; the AB

reviews these reports during its accreditation assessment to ensure the CB is in compliance with the certification programme requirements and the CPO may evaluate the reports during its assessment of the CB (BRC, 2017a; FSSC 22000, 2017f; GFSI, 2017a).

Comparing inspections and audits in the public and private food safety regulatory approaches as per the concept of sustainable governance these processes can be seen as equivalent in several important respects. First, they perform similar functions in that they both assess a food premises or producer for compliance to the applicable standard. Second, both an audit and an inspection conduct this assessment through similar activities, including an inspection and a documentation review, appropriate to the size of the facility and the complexity of the rule instrument. Third, both activities are performed by individuals with similar qualifications as per their employers and the rule instrument's requirements. Finally, the institutions in both regulatory approaches have similar stated purposes, to improve public health through their rule instruments, processes, and actors. Therefore, as per the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors may all have regulatory capabilities in support of public policy objectives, the processes of inspections and audits can be considered equivalent.

Food Safety Inspector and GFSI Auditor Role Characteristics

As seen in the previous sections food safety inspectors and GFSI auditors have similar processes (inspections and audits) and qualifications (education, experience in industry, training), but the role characteristics of these actors has not yet been explored. Comparing the GFSI auditor to the food safety inspector through the sustainable governance framework it can be theorized that this actor in the private food safety regulatory approach would have the same role characteristics as the comparable actor in the public food safety regulatory approach. These

characteristics have been drawn from the literature and include client interactions, making a difference in their client's lives, conflicts of interest and bias, and scientific expertise.

Client interactions.

Food safety inspectors interact with the two sets of clients; first, the food premises which undergoes the inspection; and second, the general public through questions and complaints submitted by individuals or organizations. As discussed previously, food safety inspectors are often the only representative of the government with whom the food premises or producer interacts (Arnold, 2014; Hupe et al., 2015; Lipsky, 2010; Maynard-Moody & Musheno, 2000; Oberfield, 2014; Pothukuchi et al., 2008; Rice, 2013). For example, the owner of a food premises is unlikely to discuss a regulation with the elected official or office bureaucrat but may have a direct relationship with the food safety inspector who is on site at their facility (Baviskar & Winter, 2016; Fineman, 1998; Hupe et al., 2015). The food safety inspector can also consider the general public a client because these actors respond to food safety or foodborne illness complaints at all levels of governments in Canada. In response to a complaint these inspectors investigate the issue to determine the hazard to the consumer; how it can be corrected; and an appropriate response to the complainant (CFIA, 2017g, 2017a; Ministry of Food Agriculture and Rural Affairs, 2016a; Toronto Public Health, 2012b).

In comparison to the food safety inspector the GFSI auditor has only one client, the food producer who is undergoing the audit. Like food safety inspectors, the GFSI auditor may be the only representative of the GFSI-system with whom the food producer has significant interaction. In this private regulatory approach, the food producer is unlikely to meet an employee of the CPO, AB, or GFSI unless they attend conferences or public meetings because the actors in these institutions rarely attend an audit and though the food producer may interact with the CB as the

audit is arranged this interaction is primarily administrative and does not have either the purpose or intensity of the face-to-face interactions of a multiple-day audit. However, unlike the food safety inspector the GFSI auditor is not likely to interact with the general public.

Make a difference in their client's life.

Food safety inspectors are street-level bureaucrats and an important characteristic of this actor is a desire to improve the lives of their clients (Maynard-Moody & Musheno, 2000; Meyers & Nielsen, 2012; Oberfield, 2014; Poocharoen & Lejano, 2013; Rice, 2013; Tummers & Bekkers, 2014). Though the frequency and duration of these inspections vary, the inspector is likely on-site multiple times per year, which allows them to build a rapport with their client and facilitate the client's understanding and implementation of the rule instrument, as well as correct any non-compliances. In this role the inspector can answer questions and assist the operator to meet the standard, thus improving the client's life by decreasing the sanctions applied. These corrective actions improve the life of their other client, the general public, by promoting public health through improved safe food handling practices at the food premises which in turn should prevent foodborne illnesses (Buckley, 2015; CFIA, 2015b; Hobbs, 2010; A. C. Johnson et al., 2014; Medeiros & Wilcock, 2006; Pham et al., 2010b; Rouvière & Caswell, 2012; Thompson et al., 2005; Toronto Public Health, 2012a).

It is unknown if a desire to improve the lives of their clients is a characteristic of this actor. However, whether or not the GFSI auditor would like to assist their client in complying with the certification programme, they are prohibited from doing so through the audit process; the GFSI auditor is not permitted to consult or provide recommendations (Crandall & O'Bryan, 2015; Surak & Wilson, 2014). Instead, the auditor is expected to be an impartial assessor of the producer's implementation of the certification programme (Crandall & O'Bryan, 2015; GFSI,

2018e; Lytton & McAllister, 2014; Short et al., 2014; Surak & Wilson, 2014). As a result, it can not be determined if the auditor would like to make a difference in their client's lives by assisting the facility with improving their food safety practices because they are prohibited from doing so.

Conflict of interest & bias.

The food safety inspector is employed by state organizations with the mandate to protect public health, and as employees of these institutions they are expected to promote public health through the enforcement of its rule instruments (CFIA, 2017b; Ministry of Agriculture, 2017; Papadopoulos et al., 2012; Pothukuchi et al., 2008; Public Health Agency of Canada, 2017; Toronto Public Health, n.d.). Therefore, there is little apparent conflict of interest between the role of the inspector as an actor in the public food safety approach and their inspection activities. Individual bias is possible and was investigated by Medeiros & Wilcock (2006) who found that PHI bias occurs for a variety of reasons including availability of information; consistency with the inspector's first impression; and favouritism, among others. In particular, the 'length of relationship' bias was notable; the inspector is required to find a balance between building a rapport with the food premises operator and losing objectivity as the result of a long-term relationship (Medeiros & Wilcock, 2006). The importance of effective communication and how it might impact the inspector has also been investigated, with Pham et al. (2010a) discovering that inspectors found that language barriers between the inspector and operator impact may the results of the inspection. Pothukuchi et al.'s (2008) also found that multiple factors including poverty, race, and inspector gender could influence critical and total violations reported.

In contrast to the food safety inspectors, the issue of conflict of interest for the GFSI auditor is well acknowledged. First, the GFSI auditor is employed by the CB, who is hired by the food producer to conduct the audit; this presents a financial relationship that has been clearly

identified in the literature as a conflict of interest (Cafaggi, 2011; Lytton & McAllister, 2014; Marks, 2016; Short et al., 2014). Facilities have a choice of CB, and this provides an incentive to both the CB and the auditor to make sure the facility passes the audit; the CB could lose a client and the auditor lose employment if the audit does not result in certification (Lytton & McAllister, 2014; Marks, 2016; Short et al., 2014). This conflict of interest may be balanced by the rigour of the GFSI-system and its Integrity Programme; the certification programmes must be GFSI-recognized; the CB must be accredited by an AB; and the auditor complete numerous training courses and meet the CB requirement to be employed as an auditor. However, each of these relationships is based on a customer /supplier or employer / employee situation that reinforces the conflict of interest because businesses operate to create wealth i.e. the food producer failing to achieve certification and the CB failing to achieve accreditation could result in the supplier, the CB or AB respectively losing their customer. Despite this, auditors have important reasons to conduct a thorough and competent audit. First, auditors' employment relies heavily on their reputation as a competent auditor; should the CB or CPO determine that the auditor is "too easy", i.e. does not issue non-conformance when a deviation from the standard is found or "too hard", i.e. issues non-conformances that are inappropriate in either their severity or accuracy, the CB may terminate the auditor's contract. The evaluation is not simply by the food producer or the CB; audit reports are evaluated by the GFSI directly, auditors are evaluated by the CPO, and are subject to CB evaluation (American Institute of Baking, 2018; BRC, 2018; FSSC 22000, 2017f; GFSI, 2018e; Global, 2018; IFS, 2018d; Safe Quality Food Institute, 2017). Auditors and CBS are also named in the lawsuits that occur after a foodborne illness outbreak (Anstoetter & McDonough, 2013; U.S. House of Representatives Committee on Energy and Commerce, 2012). In the 2011 outbreak of listeriosis associated with cantaloupe in which more

than 30 people died, a contract auditor's audit was found "seriously deficient in its inspection and findings", despite having given the facility a 96% rating, and the audit report being reviewed and approved by the CB (Anstoetter & McDonough, 2013; Flynn, 2013; Neuman, 2011; U.S. House of Representatives Committee on Energy and Commerce, 2012).

Biases are less well documented in the GFSI-system, but it is reasonable to presume that the GFSI auditor, like a food safety inspector, has individual biases. Short et al. (2014) in a quantitative evaluation of supply chain auditors as street-level bureaucrats found that the auditor's gender, training, experience and repeated interactions with the auditee influenced the audit outcome. Albersmeier et al. (2009) in an assessment of a CB in Europe found that there were few audit failures and that was consistent between both auditors of each CB, and the CBs. The potential for bias has been recognized by the GFSI through its Benchmarking Requirements which requires auditors to behave in a professional manner, e.g. the auditor must be ethical, open-minded, and act with integrity (GFSI, 2018e). The GFSI-system compensates for the length-of-relationship bias by stating a maximum number of audits the auditor can conduct at a facility before a new auditor is required (GFSI, 2018e).

Scientific expertise.

Rule instruments in the public food safety regulatory approach, e.g. laws and regulations such as the Food and Drugs Act, the Food and Drugs Regulations, and the Policy on *Listeria monocytogenes* in Ready-to-Eat Foods, are based on several food science sub-fields, including microbiology, chemistry, and physics (Food and Drug Regulations, C.R.C., c. 870, Health Canada Food Directorate, 2011; Food and Drugs Act, R.S.C., 1985, C. F-27). For example, the legislated requirements for minimum cooking times and temperatures are based the fact that pathogens are killed when the food has remains at a designated temperature for a minimum

amount of time and that these times and temperatures vary by animal species and pathogen (Arnold, 2014; CFIA, 2014b; Ma et al., 2009; O Reg 493/17 Food Premises; Otto et al., 2011). While the elected official may not be familiar with the scientific foundation for the legislation, office-level bureaucrats and food safety inspectors are expected to understand the scientific rationale on which the legislation is based in order to develop effective rule instruments and conduct enforcement activities (CFIA, 2016d, 2018a; Canadian Institute of Public Health Inspectors, 2017; Ontario Public Service, 2009).

Like the food safety inspector, the auditor also is expected to have a strong scientific understanding, as required in the auditor competencies through a combination of education, training, and experience (Auditor Competence Working Group, 2014; BRC, 2017c; FSSC 22000, 2017a; SQF Institute, 2017). This requirement allows the auditor to evaluate the food producer's food safety management system to determine if they meet the certification programme's mandate to support food safety and public health because the certification programmes do not identify specific processing requirements (GFSI, 2018e).

Food Safety Inspector and GFSI Auditor Policy Activities

Continuing the comparison of the GFSI auditor to the food safety inspector through the sustainable governance framework it can be theorized that this actor in the private food safety regulatory approach would have the same policy activities. These activities have been drawn from the literature and include reducing information asymmetry, having involuntary recipients of their policy activities, operationalizing policies, displaying discretion, enforcement activities, and participating in resource distribution.

Information asymmetry.

Public policies are intended to correct information asymmetries, both between businesses and between the business and the consumer (Deaton, 2004; Fuchs, Kalfagianni, & Havinga, 2011; Hirschauer & Bavorová, 2014; Hobbs, 2004; Law, 2003). Food businesses must be licensed with one of the state's food safety institutions to produce, sell, or import food into Canada, e.g. CFIA, OMAFRA or Toronto Public Health, and obtaining this license requires the business to undergo and participate in food safety inspections carried out by a government regulatory agent (CFIA, 2018a; City of Toronto, 2012; Ontario Ministry of Food Agriculture and Rural Affairs, 2016b; O Reg 493/17 Food Premises).

Therefore, both businesses and the general public recognize that a license to operate a food business in Canada requires the government's institutions and actors to use the process of inspections to ensure safe food handling practices at that facility (Albersmeier et al., 2009; Law, 2003; Medeiros & Wilcock, 2006; Papadopoulos et al., 2012; Rouvière & Caswell, 2012). Trust in this system is further enhanced by the transparency of the government processes through such programs as Toronto Public Health's DineSafe program and the CFIA's list of Suspensions and Cancellations; these activities reduce information asymmetry by notifying the consumer or customer that the facility has not met its regulatory requirements for food safety activities (CFIA, 2017h; City of Toronto, 2012; Devaney, 2016; Fillion & Powell, 2011; Papadopoulos et al., 2012; Thompson et al., 2005).

Just as the public food safety regulatory approach originated to reduce information asymmetry, so too did the GFSI. In today's globalized food distribution system the consumer holds the food retailer responsible for food safety crises but these retailers may have little direct input into how the food is produced, e.g. a retailer based with a head office in Ontario has no

direct input into the food safety practices of a lettuce producer in California (Aung & Chang, 2014; Charlebois & Labrecque, 2009; GFSI, 2018e; Havinga et al., 2015; Konefal et al., 2005; Richards et al., 2011; van der Meulen, 2011a). Therefore, a food producer's certification to a GFSI-recognized certification programme provides assurance to its customers that it has a globally recognized food safety management system in place (Deaton, 2004; Lytton & McAllister, 2014; Marks, 2016; Short et al., 2014). Most CPOs also allow registrants in its system to identify certified food producers through their websites, and in addition several allow businesses to put the certification programmes' logo on their documentation, e.g. letter head, thereby decreasing information asymmetry between these two business (BRC, 2015, 2017a; FSSC 22000, 2017c; IFS, 2014, 2018b; SQF Institute, 2014; SQF Institute, 2018). However, the GFSI-system does little to decrease information asymmetry between businesses and consumers. Though several CPOs allow their logo to be displayed on the product label, not all permit this, and even then the general public must see the logo and understand its meaning (BRC, 2015; CanAgPlus, 2018b; Food Marketing Institute, 2017a; FSSC 22000, 2017d; IFS, 2017).⁴³ While a consumer could use the publicly available databases offered by some CPOs, the consumer is not likely to know which manufacturing site made their product if the producer has several locations.

The food safety inspector's policy activities serve to reduce information asymmetry between businesses and between businesses and consumers, however, the GFSI auditor corrects

⁴³ This is contrary to numerous other private certification schemes, such as the Canadian Organic Regulations, Forestry Stewardship Council, Marine Stewardship Council, or Vintners Quality Alliance that require or allow the certification logo to be displayed on the label or item (Auld, 2012; CFIA, 2018; Marine Stewardship Council, 2017; Rhone, Clarke, & Webb, 2004; VQA Ontario, 2017).

this issue only between businesses because the system is designed to provide very little information directly to the consumer.

Involuntary recipients of policy activities.

The food producer's participation in a government inspection is required through the state's democratic and coercive authority. First, the state's democratic authority allows it to develop and enforce food safety rule instruments that the food producer is required to implement to maintain their business license (CFIA, 2018a; City of Toronto, 2012; Ontario Ministry of Food Agriculture and Rural Affairs, 2016b). Second, the coercive authority of the state allows the inspector both the right to enter a food premises and to demand compliance to the legislation. If the food producer fails to implement the rule instruments to the satisfaction of the inspector or obstructs the inspection in any way the producer faces state-sanctioned punitive actions such as the "yellow" Dinesafe card, fines, or closure of the business. In other words, food premises can not refuse to implement or violate the public food safety regulatory rule instruments and continue to operate without government penalties. As a result, the food premises is an involuntary target group in that to remain an operating business they must adequately implement the regulations (Baviskar & Winter, 2016; Fineman, 1998; Lipsky, 2010).

The participation of the food producer in a GFSI audit is based on a more subtle form of coercion than the state's authority; it is a contractual requirement of the food producer's customer (Cafaggi, 2011; Eberlein, Abbott, Black, Meidinger, & Wood, 2013; Fulponi, 2006; Havinga, 2006; Purchase, 2004; K. Webb, 2004b, 2005; Zumbansen, 2012). Though recognized as voluntary standards because compliance with a GFSI-recognized certification programme is not required by Canadian law to operate a food production company, the literature recognizes the standards as involuntary due to the nature of commercial markets (Burch & Lawrence, 2005;

Cafaggi, 2011; Davey & Richards, 2013; Freidberg, 2007; Fuchs, Kalfagianni, & Havinga, 2011; Fulponi, 2006). Once food retailers such as Walmart, Loblaw, and Metro, as well as food manufacturers such as Maple Leaf Inc. mandated that their suppliers were required to be certified to a GFSI-recognized certification programme, this private regulatory approach became de-facto regulation, i.e. it is no longer voluntary per se, but instead a necessity to sell product to the food retail, production, or service industries (Burch & Lawrence, 2005; Crandall et al., 2017; Davey & Richards, 2013; Fuchs, Kalfagianni, & Havinga, 2011; Henson & Humphrey, 2009; Loblaw Companies Limited, 2013; Maple Leaf Foods Inc., 2015; Walmart Inc., 2008). The mandate of a business is to create wealth, and in the context of a retail business, this is usually achieved through the sale of goods or services to customers; GFSI certification is intended to create and signal a safeguard for consumer well-being, and as such is intended to maintain or increase sale of goods to customers and without this certification there are fewer customers and markets available to the producer (Busch, 2010; Busch & Bain, 2004; Davey & Richards, 2013; Havinga, 2013; Hutter, 2011a; Loblaw Companies Limited, 2012; Maple Leaf Foods Inc., 2015; Unnevehr, 2015; Bernd M.J. van der Meulen, 2011b; Walmart Inc., 2008). Furthermore, while the decision to obtain certification is made by sales and account managers, executives, or the business owner, these are not likely the actors who have to implement the certification programme in the production facility or participate in the audit. The production group is usually responsible for attaining certification; as a result the clients with which the auditor interacts during an audit are also involuntary participants (Chen, Flint, Perry, Perry, & Lau, 2015; Crandall et al., 2012, 2017; Crandall & O'Bryan, 2015).

Operationalizing policy.

Public policies are implemented by street-level bureaucrats, and as a street-level bureaucrat food safety inspectors can be seen as “policy practitioners whose day-to-day activities critically shape on-the-ground policy” (Arnold, 2014, p. 389; Considine & Lewis, 1999; Gofen, 2014; Green & Kane, 2014; Howlett et al., 2009; Hupe & Hill, 2007; Piore, 2011; Rouvière & Caswell, 2012). These actors in the public food safety regulatory approach operationalize public policy by executing the day-to-day activities of the policy, which may include the time and date of the inspection; how long is spent on the production floor or kitchen; which employees are interviewed; what is evaluated; information included in the report; and enforcement activities (Brodkin, 2015; M. Hill & Hupe, 2014; Lipsky, 2010; Oberfield, 2010).

Similar to public sector food safety inspectors who operationalize public policies, GFSI auditor operationalize the policies of the CB and the CPO. As per these institution’s policies, the auditor determines the time and date of the audit (with the CB’s input); which employees are interviewed; what is evaluated; information included in the report; and the severity of the non-conformance. Though the auditor has less influence on how long the audit will take, the time spent on the production floor and the enforcement activities, like the food safety inspector who operates within the boundaries set by the public approach, the day-to-day “work” of the audit is done by the auditor who operates within the boundaries set by the institutions in the GFSI-system (BRC, 2016a; Food Marketing Institute, 2017a; FSSC 22000, 2017; IFS, 2017).

Discretion

In the operationalization of public policies street-level bureaucrats exercise discretion (Brodkin, 2015; Hupe & Hill, 2007; Hupe et al., 2015; Lipsky, 2010; Maynard-Moody & Musheno, 2000; Piore, 2011; Tummers & Bekkers, 2014). Discretion results from their work in

complicated situations that are not easily bound by rules and require the inspector to make decisions about situations that the office-level bureaucrat could not have foreseen (Lipsky, 2010; Oberfield, 2010; Piore, 2011; Tummers & Bekkers, 2014). It is particularly important given that regulations and policies are often vague and challenging to understand, and therefore inspectors must interpret the regulation for themselves, as well as their clients (Arnold, 2014; Buckley, 2015; CFIA, 2015c; H. C. Hill, 2003; May & Winter, 2009; Oberfield, 2010; Yapp & Fairman, 2005). For example, hazardous foods in Ontario, e.g. milk or eggs, must be stored at less than or equal to 4°C and if a food safety inspector finds a refrigerator containing these foods at a temperature higher the legislative standard it is an infraction as per O Reg 493/17 Food Premises s 27(1) (O Reg 493/17 Food Premises). Technically, this infraction should be documented on the inspection report and enforcement measures taken to achieve compliance. In practice, however, the inspector is likely to exercise discretion by evaluating the situation and then decide what actions to take. What is the actual temperature of the cooler? What food is being stored? What time of day was the infraction noted? If the cooler is at 5°C and the premises has just finished a busy lunch or production run the inspector may ask the operator to change the temperature setting on the cooler; if the cooler is at 17°C before the premises opens for business or begins production the inspector will likely require corrective actions be implemented immediately, e.g. thrown the food out, discontinue use of the equipment, etc. Enforcement activities also require discretion; the inspector could also choose to issue a ‘yellow’ sign as per the disclosure system in the municipality or could issue a ticket or summons, requiring a court appearance by the operator, or simply discuss the issue with the operator.

The GFSI auditor exercise discretion during an audit similar to the public-sector food safety inspectors who exercises discretion during an inspection. Auditors also have some

discretion in the types of enforcement activities applicable through the number and type of non-compliances documented, as well as the recommendation of certification. For example, a major non-conformance can be issued for a serious issue, e.g. an employee working with obvious illness, or repeated issues against a single requirement, e.g. multiple instances of documentation not being completed correctly; the number and severity of non-conformances impacts whether or not the auditor recommends to the CB that the food producer achieve certification (BRC, 2015; CanAgPlus, 2018c; Food Marketing Institute, 2017a; FSSC 22000, 2017e; IFS, 2017).

Enforcement.

Enforcement is the activity which ensures compliance with the regulatory approach and requires ongoing monitoring and evaluation of the business's activities to ensure continued conformity (Fineman, 1998; Hutter, 2011a; Rouvière & Latouche, 2014; Yapp & Fairman, 2005). Food safety inspectors use a variety of enforcement mechanisms, including issuing reports; disclosure placards; tickets; and summons to ensure compliance to the public policy and to promote public health through safe food handling practices (Baviskar & Winter, 2016; García Martinez et al., 2007; Gofen, 2014; Law, 2006; Lipsky, 2010; Medeiros & Wilcock, 2006; Pothukuchi et al., 2008; Rouvière & Caswell, 2012; Walker, 2014). For example, Toronto Public Health's DineSafe uses a "name and shame" enforcement activity which has proven to be an effective way to ensure compliance as the food premise does not want the public to know of their regulatory infractions (Arthur et al., 2009; Erdozain, Allen, Morley, & Powell, 2013; Filion & Powell, 2011; Hirschauer & Bavorová, 2014; Papadopoulos et al., 2012; S. Thompson et al., 2005).

In addition to hard (e.g. tickets, premises closure) and soft (e.g. DineSafe placard) enforcement techniques food safety inspectors have other responsibilities to ensure prevent

foodborne illnesses. For example, if a meatball has not been cooked to the legislated temperature the food safety inspector has several options, all of which serve to mitigate the public health risk to consumers. First, there are immediate activities to ensure the potentially unsafe food does not reach the consumer: they can order the food to be destroyed or order the food to be reprocessed to ensure that it is cooked to the legislated temperature; or order the facility to stop producing completely. Second, they have the authority to initiate recalls (federal level) or involve the CFIA (provincial or municipal levels) to ensure that the unsafe food does not reach the consumer. Third, they have the ability to require the facility to undergo food handler training as required by the legislation.

Unlike food safety inspectors, the GFSI auditor has no direct authority to restrict production, place food on hold, order a recall or demand a producer change their food handling practices. When a facility has not met the standard, the auditor documents the non-conformance in the audit report or in the case of a critical non-conformance that compromises the safety or legality of the food, contact the CB for guidance (BRC, 2015; CanAgPlus, 2018c; Food Marketing Institute, 2017a; FSSC 22000, 2017e; IFS, 2017). Non-conformances are presented to the food producer by the auditor in a closing meeting at the end of the audit and submitted to the CB. It is the CB who makes the decision to issue the certificate; ensures corrective actions are completed as required by the certification programme; and issues the report to the food producer (BRC, 2015; CanAgPlus, 2018c; Food Marketing Institute, 2017a; FSSC 22000, 2017e; IFS, 2017). . For example, the SQF Food Safety Code for Manufacturing Edition 8 states “The certification decision shall be made by the certification body based on the evidence of compliance and nonconformity recommended by the SQF food safety auditor during the SQF audit” (Food Marketing Institute, 2017, p. 23). In addition, as an actor in the private food safety

regulatory approach the GFSI auditor does not have the authority to require the food producer to cease manufacturing the food; place the hazardous product on hold; or require the food producer contact the government should the auditor witness a violation of the certification programme standard or government legislation (if needed) (Lytton & McAllister, 2014).⁴⁴

Therefore, the auditor makes a certification recommendation to the CB, but they do not have the authority to stop a facility from producing or selling unsafe or illegal product or to contact the appropriate regulatory agencies to inform them of an issue; both of these actions would promote food safety and public health. Instead, they operate through the CB's refusal to issue the certification, which has the potential to impact sales of the food producer their contract with their customer. Enforcement in this private food safety regulatory approach, therefore is an activity done by the CB and the customer, not the GFSI auditor. Furthermore, the audit is conducted under the authority of contract law, and there is no requirement for a food retailer or manufacturer to discontinue using this supplier other than through due diligence.⁴⁵

Resource distribution.

Food safety inspectors actively participate in the redistribution of public resources because they operate within the public food safety regulatory approach to determine which facilities will be inspected each day; how long each inspection will take; what help they will provide to the facility; and what enforcement actions will be taken (Buckley, 2015; Medeiros & Wilcock, 2006; Pham et al., 2010b; Pothukuchi et al., 2008; Waller, 2013). These actions are an example of the redistributive effect of public policy; the government receives funds from the

⁴⁴ This may change with the regulations under FSMA and SFCA, and while it is expected that the auditor or CB will be required to contact the applicable regulatory authority

⁴⁵ The only option currently available to the auditor is to anonymously inform the government of the issue, though this may change when the Private Certification Policy (Food Safety) from the CFIA is operationalized.

public, usually in the form of taxation or penalties (e.g. parking tickets) which is then redistributed to the public through the inspector's time and assistance to the food premises, e.g. suggestions for compliance or the distribution of hand washing placards (Buckley, 2015; Jarvis, 2013; Levi-Faur, 2009; Lipsky, 2010; Powell et al., 2013; Rouvière & Caswell, 2012).

GFSI auditors do not redistribute public resources because they operate in a private, fee-for-service system. The CPOs determine the duration and processes for the audit, and auditors not allowed to consult, i.e. present information to assist the facility in achieving compliance to the private standard (Crandall & O'Bryan, 2015; IFS, 2014; Safe Quality Food Institute, 2014). For example, a GFSI auditor could note the lack of a handwashing sign at a sink where employees enter the production area and issue a non-conformance, but unlike the food safety inspector they can not suggest what type of sign to use; what language it should be in; or provide the placard itself. However, the GFSI audit process is an example of how a business redistributes its own wealth; the money spent to upgrade food safety programs and the production facility to meet a GFSI-benchmarked certification programme's standard and the cost of the audits could have been spent on other resources.

Food Safety Inspector and GFSI Auditors as Professionals and Public Health Practitioners

Having explored the qualifications, role characteristics, and policy activities of two actors in the public and private regulatory approaches, identifying both similarities and differences, this section examines their positions as food safety professionals and public health practitioners.

Food safety inspectors and GFSI auditors as professionals.

Cruess et al. (2004) define a profession as:

An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its

members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of the public good within their domain. (p. 74).

Within this definition are a number of characteristics which pertain to both the food safety inspector and the GFSI auditor. First, both roles are occupations based upon the mastery of a complex body of knowledge and skills, including food safety; food processing; the standards and enforcement activities as per the regulatory structure in which they work; and interpersonal skills such as interacting with the food premises or production facility. Second, both roles require scientific expertise and the exercise of discretion. The inspector or auditor has to determine both the adequacy of the facility's compliance to the standard and, if applicable, a non-compliance's severity and potential impact on food safety and public health. These individuals act in the service to others because both roles protect the public from foodborne illnesses; the inspector through their employment in a public health institution and the auditor through their audit training to the GFSI-recognized certification programme. Third, both actors are governed by ethics and display a commitment to competence, integrity and morality; the inspector through their employment in a state institution and the auditor through the GFSI Benchmarking Requirements, conformance to the CPO requirements for auditors, and the CB's hiring policies. Furthermore, both regulatory approaches have stated a commitment to public health, which can be viewed as a public good in their domain (CFIA, 2015a; Canadian Institute of Public Health Inspectors, 2014, 2017; GFSI, 2018i; National Environmental Health Association, 2017; Queen's Printer for Ontario, 2015; U.S. Food and Drug Administration, 2015; United States Department of Agriculture, n.d.).

Both roles have been identified as professionals in the literature (Lytton & McAllister, 2014; Powell et al., 2013; Short et al., 2014; Walker, 2014). Food safety inspectors at all levels of government are recognized as food safety professionals (Buckley, 2015; CFIA, 2016b;

Lipsky, 2010; Lyons & Malowany, 2009; Medeiros & Wilcock, 2006; Pham et al., 2010a; Powell et al., 2013; Public Health Agency of Canada, 2010; Rice, 2013). In a comparison of inspections and audits, Powell et al. (2013) stated “third-party audits are analogous in many ways to regulatory municipal inspections of foodservice operations”, therefore, because the food safety inspector is a professional, the analogy leads to the conclusion that the auditor is also a food safety professional (p. 687). Lytton & McAllister (2014) also recognize the food safety auditor as a professional and the need for further study into this role because “the professional obligations of food safety auditors are not as well defined as those of some other professions” (p. 301). Furthermore, Short et al. (2014) not only identified the auditor as a practitioner but also as a street-level bureaucrat, a direct comparison to the food safety inspector.

Food safety inspectors and GFSI auditors as public health practitioners.

However, food safety inspectors are not simply professionals, they are public health practitioners as per Public Health Agency of Canada (2010):

Syn: public health professional, public health worker. A generic term for any person who works in a public health service or setting. They may be classified according to profession (nurse, physician, dietitian, etc.); according to role and function (direct contact with members of the public or not); whether their role is hands-on active interventions or administrative; or in various other ways.

This concept of public health practitioner emphasizes several important aspects of their role. First, the actor in question works in a public health service or setting; the food safety inspector enters into a food premise to ensure the safe production of food. While not a traditional public health setting, the food premises or production facility may be considered a public health setting; where a nurse supports public health by encouraging good infection control practices and providing information to their clients about communicable diseases and how to prevent the transmission of a pathogen, with the goal of reducing the incidence of communicable

diseases. The food safety inspector supports public health by encouraging safe food handling practices by providing information to their clients about foodborne illnesses and pathogens and enforcing the public approach's rule instruments, with the goal of reducing the incidence of foodborne illnesses. Second, these inspectors can be classified by role, function, and profession; their role and function are to promote public health through the production of safe food and some have a professional designation in this field. Third, the role of food safety inspectors can be considered a hands-on intervention because they are present as food is being produced and are assessing the food premises or production facility in situ. The GFSI auditor too meets Public Health Agency of Canada's definition of public health practitioner in a role that is analogous to the food safety inspector. First, the GFSI auditor supports public health by encouraging safe food handling practices and assessing the private approach's rule instruments, with the goal of reducing the incidence of foodborne illnesses. Second, the auditor can also be classified by role, function, and profession; as with the food safety inspector their role and function are to promote public health through the production of safe food in the private regulatory approach, and some have a professional designation in this field. Third, the role of the GFSI auditor can be considered a hands-on intervention because they are present as food is being produced and are assessing the food premises or production facility in situ.

GFSI Auditors as Public Health Practitioners

Thus far, this chapter has presented an overview of two actors in the public and private food safety regulatory approaches, exploring both groups' qualifications; processes; role characteristics; policy activities; and their status as professionals and public health practitioners. It now returns to Hypothesis One to evaluate whether or not this hypothesis should be accepted.

Hypothesis One: If the GFSI auditor is a private food safety regulatory agent analogous to the government's food safety inspector then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors may all have regulatory capabilities in support of public policy objectives, they can be characterized as public health practitioners participating in the overall achievement of public health objectives.

Employer.

The most explicit difference between the food safety inspector and the GFSI auditor is their employers. Inspectors are employees of institutions with the mandate to protect public health, and therefore have a well-defined role as public health practitioners. However, the GFSI auditor is an employee of institutions with a different mandate, and therefore, to confirm the GFSI auditor is a public health practitioner it is necessary to acknowledge that these roles can exist outside of traditional government employment.

As per the concept of governance, the state now uses non-state institutions, processes, rule instruments, and actors to meet its objectives; this challenges the boundaries of public administration and requires a broader view of institutions and actors, including street-level bureaucrats (Ansell & Gash, 2007; Considine & Lewis, 1999; Emerson et al., 2012; Hooghe & Marks, 2002; Hupe et al., 2015; Jordan, Wurzel, & Zito, 2005; Kjær, 2011; Loyens & Maesschalck, 2010; Pahl-Wostl, 2009; Kernaghan Webb, 2005; Weiss, 2013). This is particularly the case in policy fields where it is challenging for the state to manage the issue on its own (M. Lee, 2003; Tollefson et al., 2012). While public regulatory approaches to decrease

the incidences of foodborne illnesses have been in place for more than a century in Canada, the four million foodborne illness per year indicates that an added layer of surveillance could be of assistance to promoting public health.

Both the GFSI and governments have recognized that this private food safety regulatory approach can support public efforts. The GFSI has clearly stated its commitment to public health in its rule instrument, The Benchmarking Requirements. As per this document, a significant component of a certification programme is the food safety management system, a rule instrument “intended to ensure the safe supply of food and protect public health” (GFSI, 2018b, p. 6). In addition, governments have signaled that they intend use the third-party audits to support their regulatory activities, and as such, governments are placing these auditors into public health roles (CanadaGAP, 2017; CFIA, 2014a; U.S. Food and Drug Administration, 2017). Therefore, employment in the private food safety regulatory approach does not prevent these actors from being a public health practitioner.

Independent and complementary regulatory approaches.

Exploring the public food safety regulatory system through the framework of sustainable governance as envisioned by Webb (2005), the role of the government inspector and the GFSI auditor can be viewed through its four components; institutions, processes, rule instruments, and actors as per Table 7: Comparison of the public and private regulatory system based on the concept of sustainable governance. Though operating under different authority and through different institutions, processes, rule instruments, and actors these approaches are comparable.

Governance Component	Public Regulatory System	Inspector Activities	Private Regulatory System	Auditor Activities
Institutions	National Provincial Municipal	Employee of a government institution	GFSI CGF CPO AB CB	Employee of the CB
Processes	Law making & Policy development Inspection Enforcement Adjudication	Inspection Enforcement	Benchmarking process and monitoring of certification programmes Approval of AB Accreditation process of CB Certification process of the food producer	Audit Recommendation for certification
Instruments	Codex Alimentarius Canadian Food Laws & Policies: Food and Drug Act Health Protection and Promotion Act Municipal by-laws Guidelines Inspection report	Inspection report Education information Enforcement activities, e.g. tickets, summons, etc.	Guidance Document Certification Programme Accreditation Certificate (CB) Certificate (food producer) Audit report	Audit report
Actors	National, Provincial, Municipal, employees	Conducts inspections; implements public policy	Food retailers Food service corporations Food producers /manufacturers	Conducts audits; implements private policy

Table 7: Comparison of inspector and auditor activities based on Webb's (2005) governance components.

(Based on Driscoll & Webb 2015 and modified for this dissertation).

Qualifications.

Comparing the qualifications of food safety inspectors and auditors in the public and private food safety regulatory approaches as per the concept of sustainable governance it can be concluded that the required qualifications are analogous. Both actors require role-appropriate

higher education; training specific to the approach in which they operate; GFSI auditors and some food safety inspectors require examinations to prove their knowledge of food safety and the regulatory approach; and finally, the GFSI auditor and some food safety inspectors require sector-specific work experience prior to employment.

Processes.

The processes of the inspection and the audit are also similar. In both processes the actor assesses a food premises or producer to evaluate their implementation of the applicable rule instrument. Both activities evaluate the facility's food production environment and processes; safe food handling practices; and programs and other documentation to support these practices. The value of both assessments are based on the inspector or auditor's interpersonal skills, technical knowledge, and expertise (Boyd et al., 2016; Fineman, 1998; Medeiros & Wilcock, 2006; Powell et al., 2013; Tanner, 2000; S. Thompson et al., 2005).

Role Characteristics.

The role characteristics are also similar, though the client interactions and conflict of interest vary between these two actors. Food safety inspectors have two recognized clients, the food premises and the general public, whereas the GFSI auditor has one client, the food producer. This impacts the next characteristic, the desire of the actor to make a difference in their client's life. The food safety inspector, as a street-level bureaucrat, has recognized desire to improve the life of their clients; the desire of the auditor to make a difference in their client's life has not been investigated in the literature, presenting an opportunity for further research. The employment relationship between the auditor and the CB, as well as the customer-supplier arrangement between the CB and auditee have been identified as conflicts of interest; government have the potential for a conflict of interest through their institutions. Food safety

inspectors have been identified as having biases in their interactions with the food premises, but this not been explored in the private regulatory approach, again presenting an opportunity for further research. Finally, both the inspector and the auditor have education and experience that provides them with scientific expertise used in the execution of their roles.

Policy Activities.

Comparing their policy activities, it is evident that these food safety inspectors and GFSI auditor roles also are comparable. Both roles correct information asymmetry between businesses, though the food safety inspector has the further function of correcting information asymmetry between businesses and consumers. Both also work with involuntary recipients of the policy activities; neither the food premise nor the food producer has the option of declining an inspection or audit, either through regulatory or contractual requirements. These actors also operationalize policy and exercise discretion through their evaluation of the facility and the non-compliances seen. The greatest difference between the two roles is seen in the enforcement and resource distribution aspects of their policy activities; the food safety inspector has role-dependent enforcement and resource distribution activities that are not in place in the private regulatory approach.

Professionals and public health practitioners.

Both roles are considered professionals in the literature (Lyons & Malowany, 2009; Lytton & McAllister, 2014; Medeiros & Wilcock, 2006; Munthe, 2008; Pothukuchi et al., 2008; Powell et al., 2013, 2011). Professionals are individuals who have a mastery of complex knowledge and skills used in the service of others; ethical responsibilities; commitments to competence and integrity; and the promotion of public good; these characteristics are shown by both the food safety inspector and the GFSI auditor (Cruess et al., 2004). The qualification of

both roles demonstrates a mastery of complex knowledge and skill; their ethical responsibilities are defined in their institutions' documents; and both regulatory approaches have acknowledged the promotion of the public good through their support of public health through safe food handling practices. Both roles can be characterized as public health practitioners participating in the overall achievement of public health objectives as per Public Health Agency of Canada's definition.

Conclusion: Reconceptualizing GFSI Auditors as Public Health Professionals

The concept of sustainable governance states that many institutions, including governments, the private sector, and civil society, can develop processes, rule instruments and utilize actors in regulatory roles to support of public policy objectives. This chapter has explored the role of the food safety inspector and the GFSI auditor in their respective regulatory approaches by comparing their qualifications; processes; role characteristics; policy activities; and their profession as a public health practitioner using the actor as its unit of analysis.

Category	Aspect	Analogous
Qualifications	Education Designation / Training Work Experience	Yes
Process	Site visit Documentation review	Yes
Role Characteristics	Client interactions Make a difference Conflict of interest Bias Scientific expertise	Partial
Policy Activities	Information asymmetry Involuntary recipients Operationalize policy Resource distribution	Yes

Table 8: Summary of Hypothesis One conclusions

Through the framework of sustainable governance both operate within regulatory approaches with stated public health objectives and can be considered public health practitioners whose activities ensure and promote public health. Therefore, Hypothesis One is accepted

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Chapter Six - The Professional Identity of GFSI Auditors

Introduction

Chapter Five accepted Hypothesis One, finding that the GFSI auditor can be characterized as a private food safety regulatory agent analogous to the government's food safety inspector and therefore a public health practitioner participating in the achievement of public health objectives as viewed through the concept of sustainable governance. Having established this, Hypothesis Two (H2) investigates whether or not these GFSI auditors recognize their role in the public health system, and if so, have the professional identity of public health practitioners.

Hypothesis Two: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then GFSI auditors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives.

H2 was investigated through two methods; a semi-structured interview and an on-line survey, outlined in Chapter Four: Conceptual Framework, Hypotheses and Research Methodology. 17 auditors consented to participate in the interview component, which was directed by the Auditor Interview Guide and Demographic Survey (see Appendix C). This guide was structured to allow the conversation to flow between questions without leading the respondent to a conclusion. Both the interview guide and the auditor's responses were used to

develop the on-line survey which was completed by 36 auditors. Results are presented by interview question theme and incorporate both interview and survey data.

Auditor Description

Age	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74
Interview	0	1	3	1	2	1	5	3	1	0
Survey	1	3	2	4	4	4	7	7	2	2

Table 9: Auditor Demographics, Age

Gender	M	F	Unwilling to disclose
Interview	7	10	0
Survey	22	13	1

Table 10: Auditor Demographics, Gender

Education	Post Secondary Diploma	Bachelor degree	Master degree	Doctorate degree	Not provided
Interview	2	7	6	2	0
Survey	7	11	9	5	4

Table 11: Auditor Demographics, Highest Level of Education

Professional designations	CHA	CFS	P.Ag.	CQA	ThPA	PCQI	DVM	No designation stated	Other
Interview	4	1	2	0	0	0	0	11	3
Survey	11	2	3	3	1	1	1	13	1

Table 12: Auditor Demographics, Professional Designations

CHA – Certified HACCP Auditor; CFS – Certified Food Scientist; P.Ag. – Professional Agrologist; CQA - Certified Quality Auditor; ThPA - Thermal Process Authority; PCQI – Process Control Qualified Individual; DVM – Doctor of Veterinary Medicine
Note: individuals may hold more than one designation

Auditors' Background: Becoming a GFSI auditor

The interview began with the question “How did you come to be a GFSI Auditor (GFSI) auditor?” which was intended to determine if food safety or public health was a primary motivation for the individual to seek this employment. All auditors interviewed spoke of their work experience as their principal introduction to the auditing profession; several mentioned their education; and others mentioned specific technical expertise that drew them to this career. AUD 01 provided a typical career path for the individuals to become GFSI auditors:

I had worked in the food industry since I graduated from college. I have a Bachelor's degree in agriculture, and then upgraded training over the years in HACCP and food safety. [I] started consulting after I worked in the industry for a number of years, and then there was a need for auditors in this area, and so I became certified as an auditor.

As mentioned by AUD 01, all auditors who participated had a combination of education and work experience. All but one (16) interview respondents had formal post-secondary science-based college or university education (the remaining auditor upgraded their knowledge through training courses offered by a CB), as did 32 survey respondents (89%) (see Table 11: Auditor Demographics, Highest Level of Education). Work experience had an important impact in the individuals' decision to begin auditing, and several auditors spoke of the need for a new challenge in their career. AUD 16 worked in quality assurance in the food industry and then moved to auditing: “Well, prior to becoming a GFSI auditor I'd been with the food industry for the past seven years, and then there was an opportunity presented by a CB looking for food safety auditors and I grabbed that”. Similarly, AUD 05 had been employed by a food producer and involved with internal audits and supplier assessments, and then decided to pursue

employment as a GFSI auditor: “I thought “This could be interesting.”, and I enquired with the CB”.

One auditor’s career was almost entirely auditing, and AUD 08 spent nearly 30 years auditing to other private standards in the food industry before becoming a GFSI auditor:

Actually, I was already an auditor but not necessarily for an accredited scheme. Prior to GFSI being formed and the benchmarking of the standards had started, we used to have these one-day audits ... therefore, when the GFSI had been formed and all the benchmarks had started, I was a sort of shoe-fin through the experience that I had from industry, my qualifications, as well as the auditing that I had done.

Some interview respondents spoke of their other employment activities, e.g. training or consulting, stating that auditing supported their work in these areas. For example, AUD 04 began with training and consulting activities in the GFSI-system, and then moved to auditing: “I got trained to be a trainer and ...became an independent contractor and worked as a trainer and as an auditor and as a consultant on SQF”.⁴⁶ Finally, several auditors were looking for a new challenge in their career. AUD 10 had spent more than 30 years in a variety of industry sectors and roles and then moved to auditing:

My background is in industry, so I spent a fair bit of time on the other side of the table, taking several sites to GFSI standards while I was in the industry. When the time came that I was thinking that doing something a little bit different might be a good thing to do

⁴⁶ The auditor did not participate in the development of SQF. The conversation indicates that the word should be ‘for’ not ‘on’.

and looking for ways to sort of take a controlled approach to retirement, I decided that I might in fact be interested in auditing.

Response	No.	%
Auditing compliments my consulting and / or training activities.	15	42
I was recruited by a certification body.	7	19
I wanted to keep working in the food safety field, but not in a quality assurance (i.e. manufacturing facility) role.	6	17
I was required to become a GFSI auditor by my employer.	5	14
I needed a new challenge in my career.	3	8
I had worked in a public health role, e.g. inspector, officer, etc., and wanted to remain in public health.	0	0
I'm not sure.	0	0
Decline to answer.	0	0
Other:	0	0
	36	100%

Table 13: Why did you become a GFSI (GFSI) auditor?

More than half the respondents in the survey agreed; 15 survey respondents (42%) agreed that “Auditing compliments my consulting and / or training activities.” and 9 (25%) stated that “I wanted to keep working in the food safety field, but not in a quality assurance (i.e. manufacturing facility) role.” or “I needed a new challenge in my career.”.

No auditors, either in the interview or the survey, mentioned the importance of their activities in promoting public health. However, two interview respondents presented their auditing role as not just employment or a profession, but as “a calling”. AUD 16 said: “As the GFSI auditor, our primary role is to ensure that the organization is in compliance with the set product or food safety standard or scheme” and then examined her role from a philosophical

view: “I believe also that in a way there is nobility in what we do because we help ensure food safety”. AUD 04 spoke of the number of foodborne illnesses per year in the US, and then said:

For me it was kind of a personal quest. As long as I could do it, I was going to do what I could to try and help save people from getting sick. And training and auditing were two things that were quite beneficial for that and I took both very, very seriously.

From these results it can be seen that respondents’ motivations to become a GFSI auditor focused on employment opportunities, not an interest in public health. Even the two auditors who recognized that their role is an important one in public health were motivated by employment e.g., AUD 16 who stated that there is nobility in her activities was the auditor who stated she was recruited by a CB to do these audits after working in industry.

Auditors’ Understanding their Role in the Food Safety System

Auditors are required to have a strong understanding of food safety and food safety management systems, and this is confirmed through the auditor certification and employment process as discussed in Chapters Three and Five. A total of 16 interview and 35 survey respondents (94 % and 97 % respectively; one survey respondent declined to answer) had post-secondary education in a science and / or food safety field. Seven interview and 19 survey respondents (41% and 52% respectively) had professional designations that incorporate food safety, or an area strongly related to food safety area (e.g. CFS, P.Ag., DVM).

Interviewed auditors felt that their role in the food safety system was to confirm compliance to the standard to which they are auditing, and then to support industry in the production of safe food. AUD 16 stated this most clearly: “Well, as the GFSI auditor, our primary role is to ensure that the organization is in compliance with the set [of] product or food safety standard or scheme” and AUD 02 stated: “My job is to go and assess company’s food

safety programs against particular standards that I'm auditing to". AUD 08 linked this to the certification programme, indicating that the assessment is for both the food producer and the CPO:

I would describe my role as making the assessment of any given scheme being implemented at any site, location or company simply using the auditing tools, and giving an assessment to the site, as well as to the standard owner, which wants to make sure that all the certificates issued are justly done.

AUD 10 describe their role as investigative confirmation:

"Investigative confirmation" is the best way to say it... you have schemes which the people are supposed to be following, and your role is to ensure as best you can that they are following those schemes to the best of their ability.

The field of food safety uses industry-specific language to express important concepts, and some of these phrases were used by auditors. HACCP systems require the facility to verify and validate their programs, and several auditors used this language to discuss their role. AUD 13 stated: "Verify or give some kind of assurance to the client, usually the client's customers, that they are at adhering to some kind of program" and AUD 03 stated: "My opinion as an auditor is that you're there to verify, as a verifier, to double check that the company has systems in place so that they can manage and control food safety. You're there just to verify that their system works". AUD 14 used the term validate in place of verify: "As an auditor we are basically there to making sure that every company, that we verify ... that they are doing good job... That's kind of a validation procedure that we're doing".

The survey asked respondents about the role of the GFSI auditor in the GFSI's private food safety regulatory approach through three questions, and the responses presented in the

survey were developed from interview respondents replies to the question “How would you describe your role in the food safety system?”. The first question was “What it is the role of GFSI auditor?”, a general question to determine the auditor’s role without having the respondent consider how their activities contribute to the safety of the food produced at the facility. The second question was “What it is the GFSI auditor’s primary role in food safety?”, a more focused question asking the auditor to consider their role in food safety. The third question, “Considering only your work as a GFSI auditor, what is your primary role in the food safety system?”, required the respondent to consider their food safety activities outside of any other role, e.g. consultant or trainer, and focus on if and / or how their activities contribute to the safety of the food produced at the facility. The intent of this repetition was to: first, confirm the consistency of responses; and second, narrow their focus from their general understanding to their personal role in this system.

	What it is the role of GFSI auditor?		What it is the GFSI auditor's primary role in food safety?		Considering only your work as a GFSI auditor, what is your primary role in the food safety system?	
	No.	%	No.	%	No.	%
Assess the facility for compliance to a certification programme.	29	81	26	72	24	67
Support industry in the production of safe food.	2	6	3	8	4	11
Confirm that the facility is producing safe food.	2	6	2	6	4	11
Ensure unsafe food doesn't reach the consumer.	1	3	1	3	2	6
Ensure continuous improvement in the facility's food safety programs.	0	0	1	3	0	0
Educate the facility in food safety and / or the certification programme	0	0	0	0	0	0
I do not have a role in food safety. / The GFSI auditor does not have a role in food safety.	0	0	0	0	0	0
I'm not sure. / I don't know.	0	0	0	0	0	0
Decline to answer.	0	0	0	0	0	0
Other:	2	6	3	8	2	6
	36	100%*	36	100%	36	100%*
* Rounding errors make these numbers 102% and 101% respectively.						

Table 14: Auditor's understanding of their role in food safety.

Table 14: Auditor's understanding of their role in food safety presents the results of the three questions asked. The first response presented an indirect role for the auditor in food safety

because “Assess the facility for compliance to a certification programme.” transfers the responsibility for the safety of food from the auditor to the certification programme. In other words, unsafe food may not be the result of a facility or auditor error, but instead the requirement of the certification programme may not ensure food safety. Therefore, this response indicates that the auditor believes they have an indirect role in the production of safe food and this was the primary answer to all three questions with 29, 26, and 24 respondents responding using this answer (82%, 72% and 67% respectively). The decrease from 29 to 24 for the response “Assess the facility for compliance to a certification programme.” as the questions shifted to focus on the individual’s perception of their personal role indicates that, with reflection, more auditors consider themselves to have a direct role in the production of safe food.

The next three responses, “Support industry in the production of safe food.”, “Confirm that the facility is producing safe food.”, and “Ensure unsafe food doesn’t reach the consumer.” place more responsibility for the safety of food on the auditor, and interestingly, responses in each of these categories doubled by the third question. These questions indicate a direct relationship between the auditor, the food producer, and food safety. No auditors felt that they do not, or weren’t sure of, having a role in food safety.

Survey respondents were asked: “Who is responsible for food safety?” and provided 17 independent answers. Given the myriad of contributors to safe food production, from farmers to consumers, this question investigated whether or not the respondents understood which contributors could be considered to be responsible for food safety.

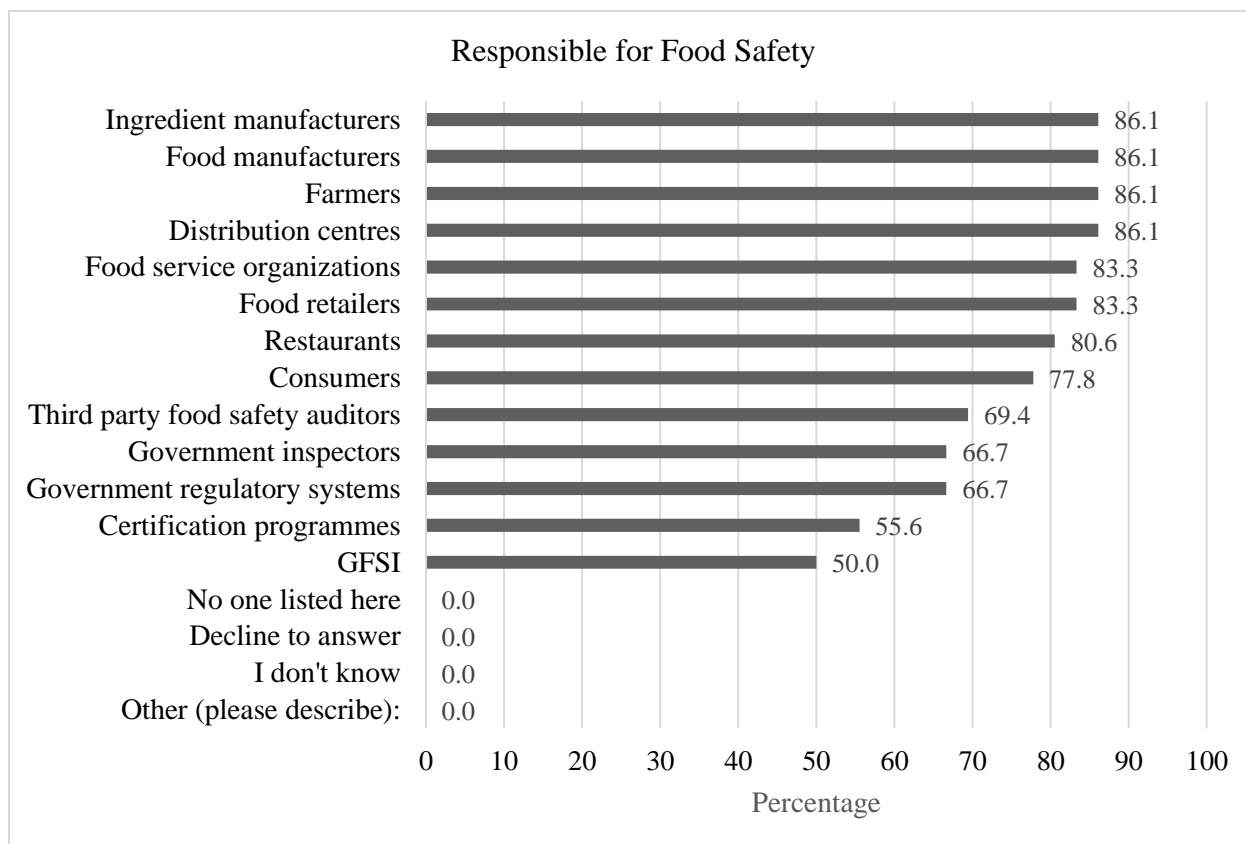


Figure 9: Who has a responsibility for food safety?

Two important comparisons can be made from the data presented in Table 14: Auditor's understanding of their role in food safety to Figure 9: Who has a responsibility for food safety? The question "Considering only your work as a GFSI auditor, what is your primary role in the food safety system?" was intended to determine if the GFSI auditor believes they have a direct responsibility for food safety through the responses of "Support industry in the production of safe food.", "Confirm that the facility is producing safe food." and "Ensure unsafe food doesn't reach the consumer.". 10 survey respondents (28%) responded to the survey question with one of these three answers, indicating that they feel they have a responsibility in the safe production of food. However, when asked in Figure 9: Who has a responsibility for food safety? 25 survey respondents (69%) responded that they have a responsibility for food safety. Second, though 24

auditors (66%) responded to their primary role in food safety as being: “Assess the facility for compliance to a certification programme.” only 20 respondents (55%) felt that the certification programme was responsible for food safety, and even fewer, 18 respondents (50%) indicated that the GFSI as an institution also bears a responsibility to food safety. These results indicate that the GFSI auditor understands they have a role in food safety, however, there appears to be a disconnect in their understanding of the importance of the institutions (CPO and GFSI) in the promotion of food safety.

Auditors’ Understanding of Public Health and their Role in the Public Health System

Two questions in the interview guide investigated the auditor’s understanding of their role in the public health system, “What is your understanding of public health?” and “Do you have a role in the public health? If so, what is it?”. Interview respondents spoke of public health in terms of food safety, foodborne illnesses, or had described a more encompassing jurisdiction than simply food, with 10 (59%) stating that public health includes food safety, prevents illness, or is multifaceted. AUD 09 provided the broadest definition: “Well, that’s stopping the masses getting sick and dying in the streets”, an accurate, if grandiose, statement. AUD 08 recognized that public health activities are based on the premise of information asymmetry:

There are certain aspects in life, whether we’re shopping for food or anything else, the consumers or the public doesn’t have much control over certain things. So that’s where the public health, in general the concept, comes in. In my opinion that assures the public’s health and safety’s, whether it’s government or the companies or the other parties that are involved.

Several auditors spoke of public systems to promote public health. AUD 04 stated: “We have a public health system where we look to care for the health of the public and we do that in

many different ways through many different organizations” and AUD 03 provided a more general answer: “Public health is ... having public systems that helps the health of all individuals, and so different things, different programs, different ways, every tool is different, stuff that will then help the public in general”. Other auditors narrowed their focus to the public regulatory system for food safety, placing food safety in the broader understanding of public health. AUD 05, who said:

They’re definitely linked because food manufactures are making product for consumers to consume, and the intent is that they’re going to consume healthy products, or the products are not going to injure or harm any consumers. Public health in terms of food safety and food safety management systems I think have a direct inter-linkage.

AUD 04 described the Canadian food safety regulatory system in detail, and AUD 02 concurred:

Basically, I think of public health as being the regulatory side of things. So, the things that a food company *has* to do in order to make sure they are producing safe food, and also to comply with the regulatory requirements or their legislative requirements to be able to produce food and put it for sale.

Two auditors spoke of public health with respect to food safety as a retail / food service level activity. AUD 01 said: “It’s after the food is being distributed at the retailer or the consumer level.” and AUD 06 focused on PHIs: “And so, in my mind traditionally PHIs — public health is just food service and restaurants, and sort of fast food that kinds of things, as oppose to, the grand scope of food processing.”.

Auditors also spoke of public health as being the responsibility of the individual as well as the government. AUD 08 prefaced his statement regarding consumers and information asymmetry above with the comment: “Obviously, first of all each individual has certain

responsibilities in terms of maintaining his or their health and safety.”. AUD 03 expanded their comments regarding public health systems to individual responsibility: “Everybody has the responsibility of their due diligence to do the best they can to not hurt everybody else around them or their neighbor.”. AUD 10 included all respondents in the food chain with their comment: “Everybody that has a hand in the food chain needs to be making sure that they keep things safe at every stage...I think that that really goes right to the public, make sure that you follow cooking directions, etc.”.

When asked about their role in the public health system, several auditors didn’t connect their role in food safety with public health. The two auditors (AUD 01 and 06) who placed public health at the retail level through provincial or municipal level inspections didn’t associate their role with public health. Both auditors failed to recognize not only their own role, but also the role of other regulatory agencies in food processing, e.g., the CFIA or OMAFRA.

Ten auditors recognized their role in public health, for example, AUD 05 recognized that there is a public health function in their role: “I think as a food auditor, I mean we know about the impact of what we do is going to affect public health.” and continued by connecting their audit to both safe food and the audit standard, recognizing that the standard has a public health function: “Is safe product being shipped out of this facility? And if they’re making a product, and it happens to be an issue, how does the site control that to make sure that it’s not being released into the public?” and AUD 16 concurred: “You help ensure that those companies that you audit operate according to their standards. Specifically, in my field that would have to be food safety.”. AUD 12 also made a direct connection between the standard and their personal food safety activities:

I think that we have a big role. The role of the auditor is to verify if the company used a standard and hoping that the standard does it well... My role is important to ensure that the company use, understand, maintain, and improve their responsibility in food safety.

However, several auditors recognized their role, and then distanced themselves from public health. AUD 01, who didn't recognize a role in public health for either themselves or levels of government other than the municipal level PHI stated that auditors support the public health system: "I would say as an auditor we definitely support the production of safe food through inspection and enforcement, investigation, basically the same as public health but the level before it reaches a public health issue.". As with their previous comment, this individual does not recognize public health activities prior to the retail level. AUD 03 also spoke of supporting public health indirectly:

The role in public health is challenging the people you audit ... questioning manufacturers or producers or whatever it is that you're auditing, to make sure that they can prevent any catastrophe and maintain public health.... Indirectly, we just make those groups stronger. I don't direct[ly] influence public health, I'm not the one growing that apple or mixing that bucket of whatever, but I can ask questions to make sure that, indirectly, the people I'm auditing are doing the best they can.

Through this comment, AUD 03 supports the conclusion reached in the section "Auditors' Understanding of their Role in the Food Safety System"; auditors view their role as an indirectly supporting food safety. AUD 02 also spoke of their understanding of their role as indirect:

So, in a broadest sense yes, because I am helping to ensure that a company is producing safe food, but in a strictest sense not really, because I have nothing to do with regulations,

and if they fail a GFSI audit they could still keep selling food to the public. If I do an audit and they don't pass, then ultimately that doesn't necessarily have any impact on whether or not public health will be affected. So, they could still keep selling food, they could have a recall, people can still get sick.

The survey focused on how food safety is related to public health. A total of 34 individuals (94%) responded to the question “How is food safety related to public health?” with an understanding that food safety is a component of public health, and no one responded that food safety is not related to public health. Two ‘other’ answers were received, one provided no comment, and the other placed the responsibility for food safety on the consumer: “It is only as good as the final user, i.e. consumer”.

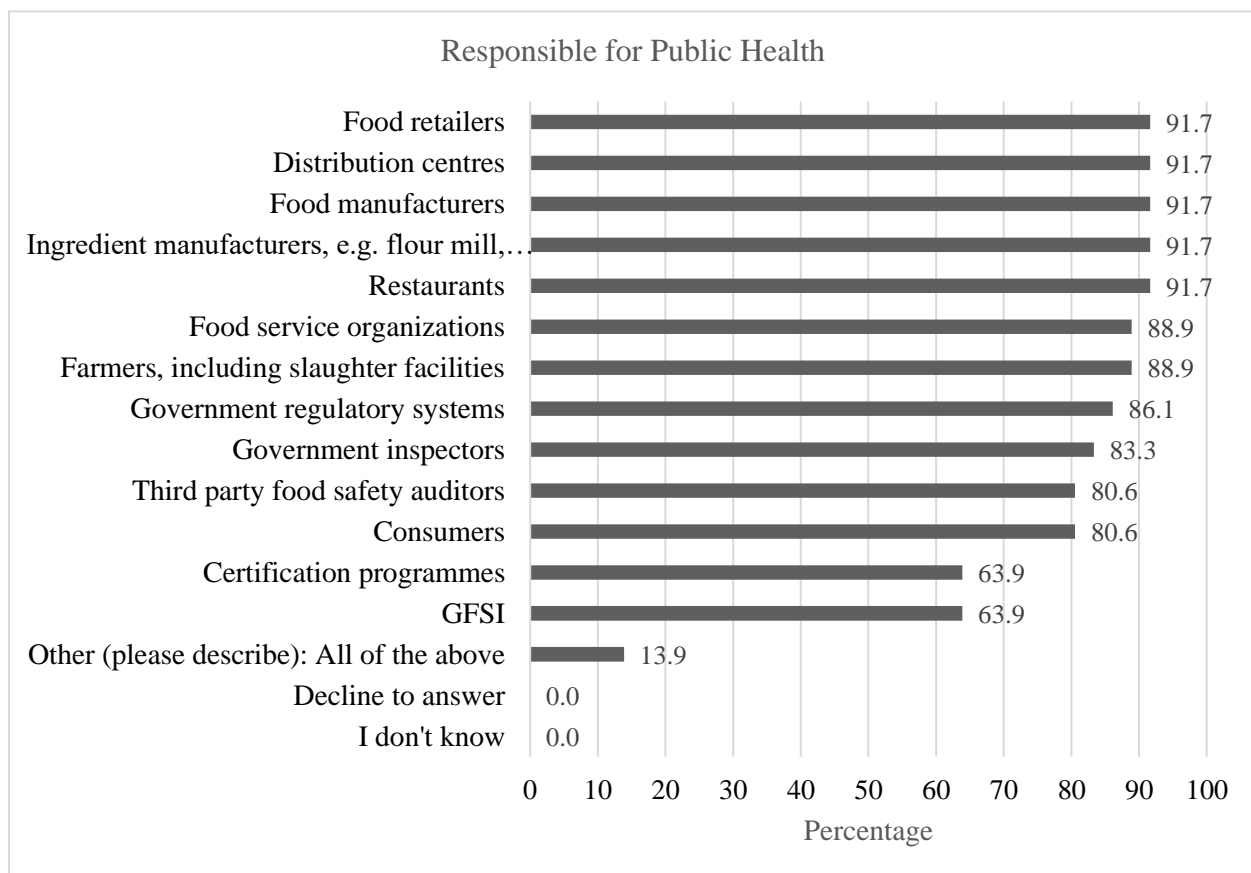


Figure 10: Who has a responsibility for public health?

Figure 10: Who has a responsibility for public health? shows that 29 survey respondents (81%) felt that they have a responsibility for public health, yet only 25 (69%) of auditors felt they have a responsibility for food safety. This indicates confusion on the part of the auditors; as per Table 19: Does your work as an auditor help to prevent foodborne illnesses, 29 individuals (81%) felt that their work prevents foodborne illness and Table 20: What is your professional identity within the food system? 35 (97%) felt that they were either ‘food safety auditor’ or ‘food safety professional’ and only one (3%) stated that their professional identity was that of a public health professional. Given that this research focused on food safety and public health, and that auditors understood food safety is a component of public health these responses are counterintuitive; it would be expected that more auditors felt they have a responsibility for food safety than for public health. Why auditors would feel that they have a responsibility to public health that doesn’t include food safety presents an opportunity for further research.

The GFSI and Public Health

As discussed in Chapters One, Three and Five, the GFSI claims a responsibility for public health through its objectives and in its definition of food safety system and food safety management system, and therefore locates the auditor in a public health role. To determine if the auditors viewed themselves in this light, two questions were asked of interview respondents “Can you describe how the GFSI improves public health?” and “Can you tell me about an incident where your GFSI audits impacted public health in a tangible way?”.

A variety of factors were discussed by auditors during the interviews as to how the GFSI improves public health, all focusing on the food safety system at the food producer. Responses included requiring strong(er) food safety programs; staff educated to understand food safety; and the benefit of another evaluation these systems (an “extra set of eyes”). AUD 01 stated these

clearly: “By improving the standards, by creating awareness, by having another entity evaluate food safety.” and these themes reverberated throughout the responses. As AUD 08 stated: “The idea is to assure that the public safety is not compromised, that’s why the food safety schemes are there as well”. AUD 15 concurred:

[The GFSI] helps to lift the standard of food safety...because to maintain the GFSI certification, a plant would have to prove that they have safe food handling practices in place, and once they maintain these practices then that would be an improvement in public health.

The importance of this theme throughout the food industry was captured by AUD 02, who stated the GFSI: “Requires that the company who might not have a very robust food safety program, if they’re not regulated, to have one.”. AUD 12 focused on the hazards: “[The] GFSI standard has helped companies to be sure that they have minimally in place GMPs; they have identified their different hazards; and work to reduce, eliminate, or decrease the risk of those hazards.” and AUD 11 concurred: “GFSI improves understanding of risk, know[ing] what the risks [are].”. AUD 10 expressed this as:

Raising the bar in terms of the thoroughness of your programs and the things that you need to be looking at and documenting... really ensure that you’re covering off all the bases as opposed to “Yeah, here’s our HACCP plan, here are the three or four critical control points that we have to monitor, and here's the records for those three or four points”. It’s raised the bar in terms of what’s required around that what the pre-requisite programs are.

Recognizing the scientific basis of food safety activities, AUD 01 focused this understanding of risk and the knowledge level of the staff:

GFSI has done a good job at making sure that the people in charge of food safety had the right level of education... I think that's one of the main contributing factors to improving food safety is having people that are educated to understand food safety.

AUD 02 concurred:

If the company has implemented, done well in implementing a GFSI program, typically all the people who work in that company or at least people who are responsible for food safety, are going to have a higher level of knowledge. So, that might go a long way towards improving the food safety controls in that company.

When asked to describe an incident where their GFSI audit had impacted public health in a tangible way, respondents presented examples of how their audit had identified two food safety hazards; allergens; and the potential for food to be contaminated with the pathogen *L. monocytogenes*. AUD 02 spoke of how their audit identified an ingredient as one of the CFIA's priority allergen in the product development process:

When discussing priority allergens, the Director of Food Safety for a multinational company had no idea that a certain product was an allergen and said "Oh, I think I'm going to have to go back and check on this new product we are developing."

AUD 05 discovered an ingredient declaration that was incorrect: "Doing the label review of the product we found ... A subcomponent of an ingredient was an allergen, and it wasn't declared... their certificate was suspended but they actually had bigger problems because they had to initiate a recall."⁴⁷ The auditor did not speak of how this recall was initiated but implied that the company contacted the appropriate government organization.

⁴⁷ Labels must accurately represent the ingredients of the product, and if not, the product label is 'illegal' as it does not meet the Consumer Packaging and Labelling Act.

Two individuals spoke of situations in which the pathogen *L. monocytogenes* could be a concern. AUD 14: “A situation where in a seafood plant condensation [was] taking place into a cooler right under the fan. Product right underneath it, cooked product ready-to-eat and not covered.”. This presents a hazard to the consumer because condensation is a well recognized source of *L. monocytogenes* and because the food is ‘ready-to-eat’, the pathogen would not be destroyed as there is no post processing ‘kill step’, i.e. cooking at the consumer level (Brashears et al., 2012; Olaimat & Holley, 2012). The auditor continued: “Those are the kinds of situations I think [my] first reaction is the consumer. If somebody gets to eat that product and it’s [condensation] falling, who knows if there’s going to be *Listeria* or anything like that”. AUD 06 also mentioned this pathogen:

They made a high care product and they just started making it, eight months before, and there was no *Listeria* swabbing, they have not even considered the Health Canada’s *Listeria* [policy]. They fell into that category of having to swab, because it was refrigerated, non-cooked product and then I realized that they hadn’t even taken that into consideration... that could have been a major health issue because they were supplying this [to] every [industry sector] across Canada.

Several auditors didn’t provide an example, but instead spoke of improvements that facilities made to their food safety program in order to achieve certification. AUD 10, when discussing a recall triggered by their audit, explained that a GFSI audit looks at systems: “That’s what really these systems boil down to; you’re probably adding layers of insurance; I guess you could say you’re making not just double sure, but maybe triple or quadruple sure, that things are going to be safe.”. AUD 09 stated the GFSI-system assists public health:

It helps public health when [the] wheels do fall off that the companies are more in control... they can go, “Okay, do the trace back or know how to contact, or know where to look, or know what to ask” Where before maybe they might have been, “Oh my goodness I don't even know what I did yesterday.”.

Recognizing the origins of the GFSI-system as being retailer and manufacturer driven, AUD 08 linked it to the benefit of the consumer: “Really, the companies and the large corporations are asking for it, but at the end this is for the consumer, which is for the benefit of the consumer to make sure that they have safe products”.

Two questions were used to determine survey respondents’ perceptions of the GFSI’s role in public health, “What is the purpose of a GFSI audit?” and “The most important reason for conducting a GFSI audit is?”.

Auditors were asked the purpose of a GFSI audit, with three answers directly related to public health through food safety activities: “Support industry in the production of safe food.”; “Confirm that the facility is producing safe food.”; and “Ensure unsafe food doesn’t reach the consumer.”. Three responses were indirectly related to public health: “Assess the facility for compliance to a certification programme.”; “Ensure continuous improvement in the facility's food safety programs.”; and “Educate the facility in food safety and / or the certification programme.”.

Twenty-six respondents (72%) selected an answer that indirectly supports public health, “Assess the facility for compliance to a certification programme.”, again transferring responsibility for food safety and therefore public health to the certification programme. Nine respondents (25%) indicated that the purpose of the GFSI audit is directly related to public health.

Response	No.	%
Assess the facility for compliance to a certification programme.	26	72
Support industry in the production of safe food.	5	14
Confirm that the facility is producing safe food.	3	8
Ensure unsafe food doesn't reach the consumer.	1	3
Ensure continuous improvement in the facility's food safety programs.	0	0
Educate the facility in food safety and / or the certification programme.	0	0
I'm not sure.	0	0
Decline to answer.	0	0
Other: Most of the first five bullet points is included in the purpose. If I only choose one, I would not want anyone to think the others are not important	1	3
	36	100%

Table 15: What is the purpose of a GFSI audit?

Auditors were later asked what the most important reason for conducting a GFSI audit was, with two answers directly related to public health: “Ensuring the retailer is selling safe food.” and “Ensuring unsafe food doesn’t reach the consumer.”. and one indirectly related to public health “Assessing for compliance to the standard.”. 14 respondents (39%) indicated that the purpose of the GFSI audit is directly related to public health through their responses of “Ensuring the retailer is selling safe food.” and “Ensuring unsafe food doesn’t reach the consumer.”. 21 respondents (58%) responded that the purpose was indirect, again transferring responsibility for food safety and therefore public health to the certification programme.

Response	No.	%
Assessing for compliance to the standard.	21	58
Ensuring the retailer is selling safe food.	2	6
Ensuring unsafe food doesn't reach the consumer.	12	33
Educating the facility.	0	0
None of the above.	0	0
I don't know.	0	0
Decline to answer.	0	0
Other: Most of the first five bullet points is included in the purpose. If I only choose one, I would not want anyone to think the others are not important"	1	3
	36	100%

Table 16: The most important reason for conducting a GFSI audit is:

The Oxford dictionary defines purpose as “the reason for which something is done”, therefore these two questions can be considered equivalent (Oxford University Press, n.d.). The answers which indicate direct support for public health are those that include safe food production: “Support industry in the production of safe food.”; “Confirm that the facility is producing safe food.”; and “Ensure unsafe food doesn't reach the consumer”. The responses to these two questions confirm that the auditor's understanding that their role is indirectly related to public health.

Question	Direct support for public health	Indirect support for public health
What is the purpose of a GFSI audit?	9 (27%)	26 (72%)
The most important reason for conducting a GFSI audit is: (direct or indirect)	14 (40%)	21 (58%)

Table 17: Comparison of direct and indirect responses to the reason or purpose of the GFSI audit.

Survey respondents were asked who they were protecting during an audit, and the answers were independent. 20 respondents (55%) stated they were protecting the public. Other

answers ranged from 5 respondents (13%) protecting the AB to 11 (30%) protecting the retailer who required the audit. 19 auditors (52%) indicated that they are protecting everyone in the GFSI-system listed here.

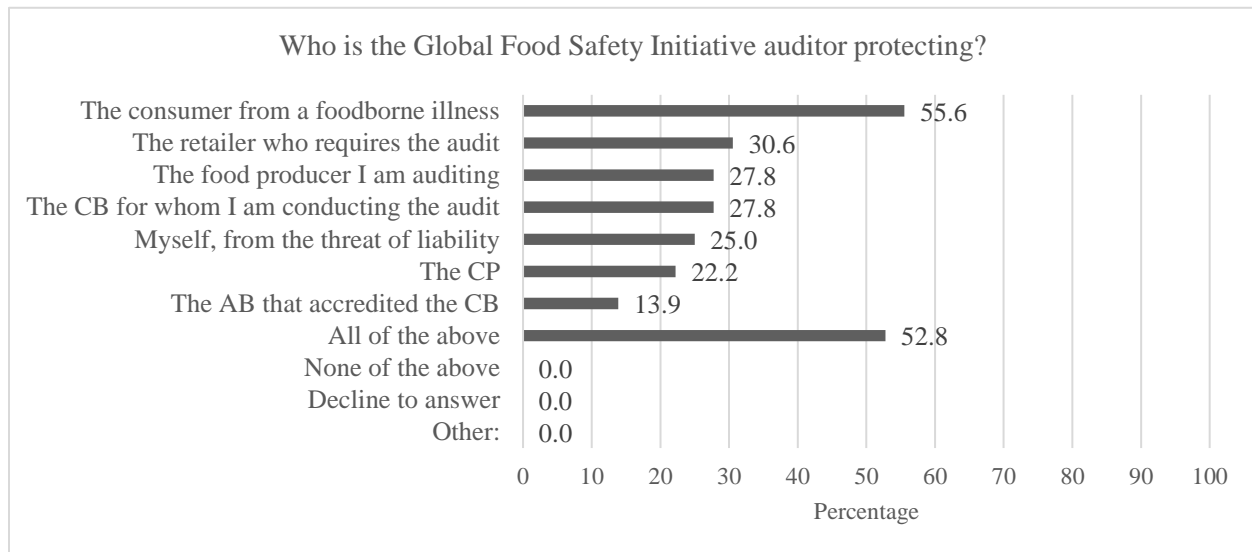


Figure 11: Who is the GFSI auditor protecting?

This supports the information discussed in Chapter Four that the auditors have a conflict of interest; it is difficult to protect the consumer and the food producer at the same time because the actions which may be required to protect the consumer can be detrimental to the food producer. Using the example presented by AUD 05 in which the auditor found a label that had an incorrect allergen declaration, the action to protect the consumer was taken (i.e. a recall was initiated). Recalls, though, are expensive, and because the purpose of a business is to create wealth it can be argued that it is not in the food producer's best interest to initiate a recall but instead hope that there were no illnesses or fatalities from the consumption of this product (García Martínez et al., 2007; Hutter, 2011a; Pozo & Schroeder, 2016; Thomas et al., 2015; Todd et al., 2010). Therefore, the auditor could not protect the public and the food producer at the same time.

Finally, auditors were asked directly if they felt their actions contribute to public health. The majority, 31 respondents (81%) felt that their work contributes to public health, and four (11%) were unsure; no respondent felt that they do not contribute to public health.

Response	Number	%
Yes	31	86
No	0	0
Unsure	4	11
Decline to answer	0	0
Other: Same answer at # 14	1	3
	36	100

Table 18: Does your work as an auditor contribute to public health?

Professional Identity

Every person carries multiple identities which may shift and / or develop throughout their lifetime. These identities reflect specific roles that individuals play; employee; family member; race; gender, etc. Developing these identities depends on a variety of influences, including but not limited to: education; training; employment; and personal characteristics. Of these identities, one of the most powerful is the individual's professional identity (Gunz & Gunz, 2007; M. D. Johnson, Morgeson, Ilgen, Meyer, & Lloyd, 2006; Slay & Smith, 2011). The professional identity of auditors was investigated in both the interview and the survey portions of the research. During the interview three questions were posed: "How would you define your professional identity?"; "How did you develop your professional identity?"; and "Do government inspectors and GFSI auditors perform the same role / function? If so, how do they compare to each other?". Auditors were provided with the definition of professional identity put forth by Slay and Smith (2011) and how professional identity is developed as per Hotho (2008)

and Liddell et al. (2014). The first two questions were to determine the auditor's professional identity and what factors influenced its development. The third question requires the respondent to place their activities in comparison with the widely recognized public health practitioner of food safety inspectors.

Interview respondents identified their professional identity as being part of the food industry and self-categorized their roles as: "auditor"; "auditor, consultant, trainer"; or "food safety expert / professional"; and only three individuals stated that they have differing professional identities. Five auditors describe themselves as "auditors". AUD 03 said that: "I'm an auditor verifying people's systems to ensure food safety... [as an] auditor in the food industry, and I'm there to verify that folks, companies, producers, whatever, is doing the best they can, with the systems to prevent making the public sick.". AUD 06 confirmed: "I tell them that I audit food processing facilities, to ensure they are meeting proper food safety standards". AUD 08 recognized that most people don't understand the role and said: "Depending on how detail[ed] the discussion is, I start with that I work in food industry.... then if this continues on, I audit food plants, food manufacturing plants for the food safety systems on behalf of third-party companies". AUD 10 concurred:

When people ask me what I do, I tell them that I am a food safety auditor. And that often or usually brings along some follow-up questions like "Oh really? What does that mean?" And basically, the way I describe it is that I visit places that manufacture and handle food, and I confirm that they're doing things properly and following the right set of rules if you will or regulations. So, I think that is the simplest explanation of what my professional identity is.

However, more auditors felt they had a larger role in food safety, expanding their professional identity to include training and consulting activities. AUD 02 stated: “I guess I see myself as food safety professional. So, I see myself as an auditor, consultant or trainer”. Similarly, AUD 05 used the same phrase: “I say that I work in the food safety industry and I’m an auditor, trainer, and a consultant”.

AUD 04 stated: “I say to them I’m a food safety expert and I focus on the safety of food in processing establishments and right now, ... it means that I know what I do not know, and I know when I have to get help”. AUD 16 discussed trying to explain their activities can be difficult: “It’s very hard to explain to people what we exactly do. Just to simplify things, I tell them that I, simply put, I am food safety practitioner”.

Other auditors had more complex identities. AUD 01 spoke of supporting a culture of food safety:

My approach to projects and auditing has always been that it is a practical approach. I want to influence, I guess you can say the culture of food safety by evaluating and inspecting and making sure compliance with certain standards.... I would say that I look for creating an awareness of food safety at all levels.

AUD 13 discussed a broader role as well, but at farm level, integrating quality and food safety:

I again I put on my buyer hat at that time, I’m looking for quality, I am looking for quantity, I’m looking for the right attitude, I’m looking for growing conditions... making sure the post-harvest is correct, all of this effects the quality, and in that mix is food safety.

Two auditors were hesitant to describe their identity as an auditor. AUD 15:

It depends on who I'm speaking to, because I do many different things besides food safety auditing. I would say if I'm talking about the food safety auditing, I would just say "Yes, I audit food companies." And – just keep it very general, I tend to talk about my other activities more than the food safety auditing.

Similarly, AUD 09 won't discuss auditing:

I might just say I'm a trainer... I just skip – I skip the whole auditing thing because it's just too hard. I do training, I do consulting, and auditing. So, if it was just a run of the mill somebody I didn't know, total stranger, I'd just say I was a trainer.

In developing their professional identity, respondents discussed a variety of influences, including work experience, education, and training. AUD 01 spoke of both negative and positive experiences:

I've worked for people in the past where they've had an approach, then I thought I definitely do not want to be like that. And so, having that experience, what you don't like, is important. That particular experience was a dictatorship approach. So, I always thought I did not want to follow in that road... When I first started the industry, there was a veterinary inspector on site, and he was very fair but firm. And I always appreciated that approach. I mean you can be an enforcer. You can audit and enforce to a particular standard, but if people understand and know that you're doing it because "Here's the reason this is why we do it, now do it.", it's a much better approach than just bullying your way through it. So, I follow that approach, firm but fair. I like that. Not an enforcer or bully.

AUD 16 also spoke of the influence of colleagues:

I'd like to think that I've been blessed with good mentors along the way... the CB that I've been affiliated with has given me the wonderful opportunity to be able to work with a global network. So, more or less those people have helped me along the way to develop my professional identity.

AUD 03 discussed blending training and experience:

I think it's a combination; you take public training because then you learn the book stuff on how to perform an audit, but then there's a lot of informal [learning] in your interactions while you're doing an audit... it's both, it's learning the general techniques from a course so that you know that you have to do an opening meeting and then what the protocols are but then the soft skills are learned on the job.

Auditors also discussed how important continuing education is to their professional identity. AUD 01 stated: "Keeping up-to-date with current issues in food safety and then production, production of food. And asking lots of questions ... [an] appreciative inquiry approach, networking, upgrading, training, in technical and the soft skills". AUD 12 commented: "How [do] I develop my identity? I attended conference, webinar, seminar, I read. We never can stop [the] study, to be [to] update, all your scientific information must be [to] update, each day". AUD 13 concurred, focusing on how a CB assisted one GFSI auditor with updating her training, given their vast practical experience in both a family food business, on-going industry employment, and assisting with the development of a food safety standard: "[The CB] asked me to join them. They back filled me with all the programs that I knew intuitively, but they gave me the science and credentials. I got all my micro, all my HACCP, all my GMPs, all my prerequisites".

AUD 14 discussed a shift from “food process specialist” to “food safety specialist”:
“Looking after food process and improving food processes and things like that. Then gradually, as I was doing audits and was more in food safety... I think I shifted to food safety specialist probably two to three years ago”. AUD 15 also spoke of a “specialist” identity developed through training, education, and experience:

Certainly, the training for the BRC standard as well as a general food science education and working in the industry. I think working in the industry really helped me identity as a food industry professional in general, I would say food industry professional, as opposed to food safety auditor. I consider myself a technical consultant for the food industry and auditing is just a piece of that.

Few auditors felt that the government inspector and the GFSI auditor are comparable, and those that did often had a conflicting statement. AUD 01 stated that the activities are similar, but the GFSI auditor “audit for customers”:

I guess they compare to each other because we are both inspecting and auditing for compliance to a particular standard when rating deficiencies, we’re following up or writing reports, you know. So, in that way they’re comparable for sure..., we do, we do the same thing but under a different umbrella.

AUD 07 expanded on this theme:

[I] think that the function is similar, but the accountabilities are different. Government auditors are responsible to uphold the law and ultimately responsible to citizens. Private auditors are responsible to serve as [a] guarantee to business which are ultimately responsible to their consumers. Most of the times private sector has better technical

capabilities but does not have the power to enforce things. I like to make the analogy to private security guards and police officers.

Other auditors felt the roles were generally comparable, but still had differences. AUD 06 stated: “So I mean I guess day to day government inspectors, I would say are not auditors, but their auditing system is an auditing system...and so in some aspects we do have the same role but ours I think is more diverse”. AUD 02 expanded on this:

Well, in a broadest sense I guess there is like the similar threads of ensuring if the food is safe or evaluating whether the food is safe but or certain aspects of food safety. But I think in application the roles were very different. The government inspector’s role is more of checking to make sure the regulations are met. But the GFSI auditor, they are there to evaluate the standard for food safety which may or may not be the same as the regulation. Typically, the regulations would be the base of a GFSI standard. And I think that a lot times the job of a GFSI auditor, so yes, you’re there to say, “Are they meeting the standard, are they doing what the standard says you are supposed to do?” but part of our job is also to see whether what a company has done is actually effective. So, it’s not so much of ticking a box but in, you know, has it been validated, has it, is it actually working for this company and is it working consistently. And I think that that part is sometimes missed by the regulatory as well.

AUD 03 explained that intent behind the private vs. public activities is different and are: “More comprehensive, more big picture I think, more systems-based”. They went on to state:

I think an inspector or public health person it's, "Well you didn't wash your hands for 20 minutes", and that's it, you fail. Where as an auditor, you can ask, "Well, you have validation why you're not 20 seconds wash[ing] your hands for 20 seconds. Okay, that

makes sense in this place.” Where an inspector it's like, "Well, the rule is 20 seconds, so you fail, and here's your ticket.”

AUD 05 concurred:

I really don't think that the government inspectors and GFSI are the same things because I think that inspectors inspect, and they do more from a GMP kind of perspective.

Whereas GFSI auditors, we do auditing, but we also assess systems. We assess the actual systems that sites have implemented and have in place, and not just what's just happening in the plant.... but we also follow trails within like the management systems, within procedures and training and record to see how does everything work together.

As did AUD 12:

For me, an inspector [and] an auditor is not the same role. Until now the inspector checks points, check regulations, check the limits, and inform the company when it's over or not compliant. The auditor has the same intent, but we use the regulation and the requirements in all the system; and the system is not only the regulation. So, when an auditor comes it's a more a view, the auditor has to look at, than during an inspection.

Other auditors felt there was no comparison between the two roles. AUD 10 stated outright:

I think they are very different roles. The inspectors carry that weight of legislative requirements where if you're not meeting the inspector's requirements you could be out of business tomorrow... I would say that your regulatory inspectors enforce basic requirements whereas GFSI auditors are confirming that you are going over and above those basic requirements.

AUD 14 spoke of the how government inspectors have less flexibility than GFSI auditor:

You're there to apply a regulation. You're the law, it's a make or break situation. You say, "Yes it's good, or no, it's not good". There's not so much of a gray zone here, where you know either it's compliant or not.... An auditor, it's a little bit more, obviously we're there too with a checklist and there's guidelines that, requirements that we are applying. But it's also, it has much more, not like, e.g., a text of a regulation where "Yes, we need to do this, to have this distance between the product and the wall." and so on...it's not as clear as that.

It is clear from these comments that auditors view their role as different from that of a government inspector in its execution, if not its intent. Auditors expressed the purpose of the government inspector is to assure compliance to the regulations whereas their own role is to ensure compliance to the certification programme. However, the execution of these activities is different; government inspectors were seen to be confined to the letter of the law, with little room for discretion. An example of this would be the requirement mentioned by AUD 14 in which regulations specify a minimum distance between the wall and stored items. While regulations are prescriptive with a level of discretion executed by the inspector, the role of the GFSI auditor was seen to be more investigative. In the example presented by AUD 14, a GFSI auditor has the discretion to evaluate how far the items are placed away from the wall, and if a reasonable distance is not possible due to the facility layout, the GFSI auditor can assess other systems, e.g. sanitation and pest control, to ensure that there are no risks presented by placing the pallets next to the walls.

Two questions "Does your work as an auditor help to prevent foodborne illnesses?" and "What is your professional identity within the food system?" attempted to set a baseline for whether or not the respondents identified as public health practitioners. As per Table 19: Does

your work as an auditor help to prevent foodborne illnesses?, 29 (81%) felt their work helps to prevent foodborne illness and only two (6%) felt their auditing activities have no role in preventing foodborne illness. Table 20: What is your professional identity within the food system? had 35 survey respondents (97%) identified their professional identity as a food safety auditor or professional (one (3%) directly identified as a public health practitioner) and. The five respondents who were unsure as to if their role prevents foodborne illness and the two who felt that their work doesn't prevent foodborne illness is an opportunity for further research. Therefore, since the majority of auditors feel that they have a role in preventing foodborne illness through their food safety activities, the auditors can be considered to have indirectly identified their role as a public health practitioner.

<i>Response</i>	Number	%
Yes	29	81
No	2	6
Unsure	5	14
Decline to answer	0	0
Other:	0	0
This is a rounding error	36	101

Table 19: Does your work as an auditor help to prevent foodborne illnesses?

However, when asked directly, only one individual placed themselves as a public health practitioner.

<i>Response</i>	Number	%
Food safety auditor.	16	44
Food safety professional (e.g. trainer, consultant, auditor, etc.).	19	53
Public health practitioner.	1	3
None of the above.	0	0
I don't know.	0	0
Decline to answer.	0	0
Other:	0	0
	36	100

Table 20: What is your professional identity within the food system?

In order to determine if respondents consider themselves to be public health practitioners, it is first necessary to determine if they consider themselves, in their auditing role, to be a professional. As per Tables 21: As an auditor, do you consider yourself to be a professional? and 22: Do you consider yourself a public health practitioner? all respondents felt they are professionals (with one person not responding) and 19 respondents (53%) consider themselves to be public health practitioners. Therefore, while recognizing that their role prevents a foodborne illness and promotes public health, only just over half these individuals identify directly as public health practitioners. To confirm this disconnect, respondents were asked again to classify their professional identity through the question: “With which role do you most closely identify?”, and while no respondent felt that they were public health practitioners, 34 (94%) felt that they have an indirect role through their food safety activities of auditing, training, and consulting.

Response	Number	%
Yes	35	97
No	0	0
Unsure	0	0
Decline to answer	0	0
Other:	0	0
No answer given in data	1	3
	36	100

Table 21: As an auditor, do you consider yourself to be a professional?

Response	Number	%
Yes	19	53
No	13	36
Unsure	3	8
Decline to answer	1	3
Other:	0	0
	36	100

Table 22: Do you consider yourself a public health practitioner?

Response	Number	%
Auditor (any audit conducted in the food safety system)	14	39
Trainer (any training conducted in the food safety system)	0	0
Consultant (any consulting conducted in the food safety system)	3	8
Food safety professional	14	39
Public health practitioner	0	0
Decline to answer	1	3
Other: Auditor and Consultant	2	6
Other: Auditor, Trainer, and Consultant	1	3
No answer given in data (not the same respondent as Table 12)	1	3
* Rounding errors make this 101%	36	100*

Table 23: With which role do you most closely identify?

In order to determine if the survey respondents were lead by the survey questions to understand that they are a public health practitioner, the following question was asked: “Did you consider yourself to have a role in public health prior to this survey?” to which 25 (70%) responded that they had. This presents an interesting result; respondents understood that they have a role in public health, while at the same time not identifying as a public health practitioner.

Response	Answer	%
Yes	25	70
No	8	22
Unsure	1	3
Decline to answer	1	3
Other: A minor role	1	3
	36	100

Table 24: Did you consider yourself to have a role in public health prior to this survey?

Discussion

As theorized in Chapter Five, the role of the GFSI auditor can be characterized as a public health practitioner analogous to the food safety inspector. This chapter attempted to determine if GFSI auditors who participated in the interview and survey had the professional identity of a public health practitioner through a mixed methods research approach. Using both qualitative (in-person interviews) and quantitative (on-line survey) methodologies it attempted to prove Hypothesis Two: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then: GFSI auditors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives.

Placing the auditor in the public health system is based on several criteria: first, that food safety is a component of public health; second, the GFSI is intended to protect public health through food safety management systems; third, the GFSI auditor has a role in public health. These three requirements have been proven in this dissertation; food safety is recognized as a component of public health as discussed in Chapter Two: Food Safety and Public Health; the GFSI's claim to promote public health was discussed in Chapter Three: Public and Private Food Safety Regulatory Systems; and Figure 6: Conceptualization of the auditor's role in public health recognizes the auditor's role in public health. Therefore, it remains to be determined if Hypothesis Two can be accepted. To prove this hypothesis, it is necessary to show the following: first, the auditor understands that they have a role and responsibility in safe food

production; second, the auditor has the professional identity of food safety professional; third, the auditor understands that they have a role and responsibility in public health, and finally, that the auditor has the professional identity of a public health practitioner. Table 25: Summary of Answers for Hypothesis Two A presents the rationale, including the survey respondent's information, for this conclusion.

Question	Source	Answer	No.	%
Does your work as an auditor help to prevent foodborne illnesses?	Table 19	Yes	29	81
Who has a responsibility for food safety?	Figure 9	GFSI auditor	25	69
What is your professional identity within the food system?	Table 20	Food safety auditor / Food safety professional (e.g. trainer, consultant, auditor, etc.) /	35	97
		Public health practitioner.	1	3
Who has a responsibility for public health?	Figure 10	GFSI auditor	29	81
Do you consider yourself a public health practitioner?	Table 22	Yes	19	53
With which role do you most closely identify?	Table 23	Food Safety Professional (including auditor, trainer and consultant responses)	31	86
		Public health practitioner	0	0

Table 25: Summary of Answers for Hypothesis Two

However, despite recognizing their audits have an impact on food safety and that food safety is a component of public health, as well as considering themselves to be public health practitioners, no respondents had the professional identity of a public health practitioner. When asked in the survey, only one GFSI auditor stated agree that this was their professional identity when asked “What is your professional identity within the food system?” and no GFSI auditor stated that they were a public health practitioner when asked “With which role do you most closely identify?”. Form this it can be concluded that GFSI auditors do not have professional identity of a public health practitioner.

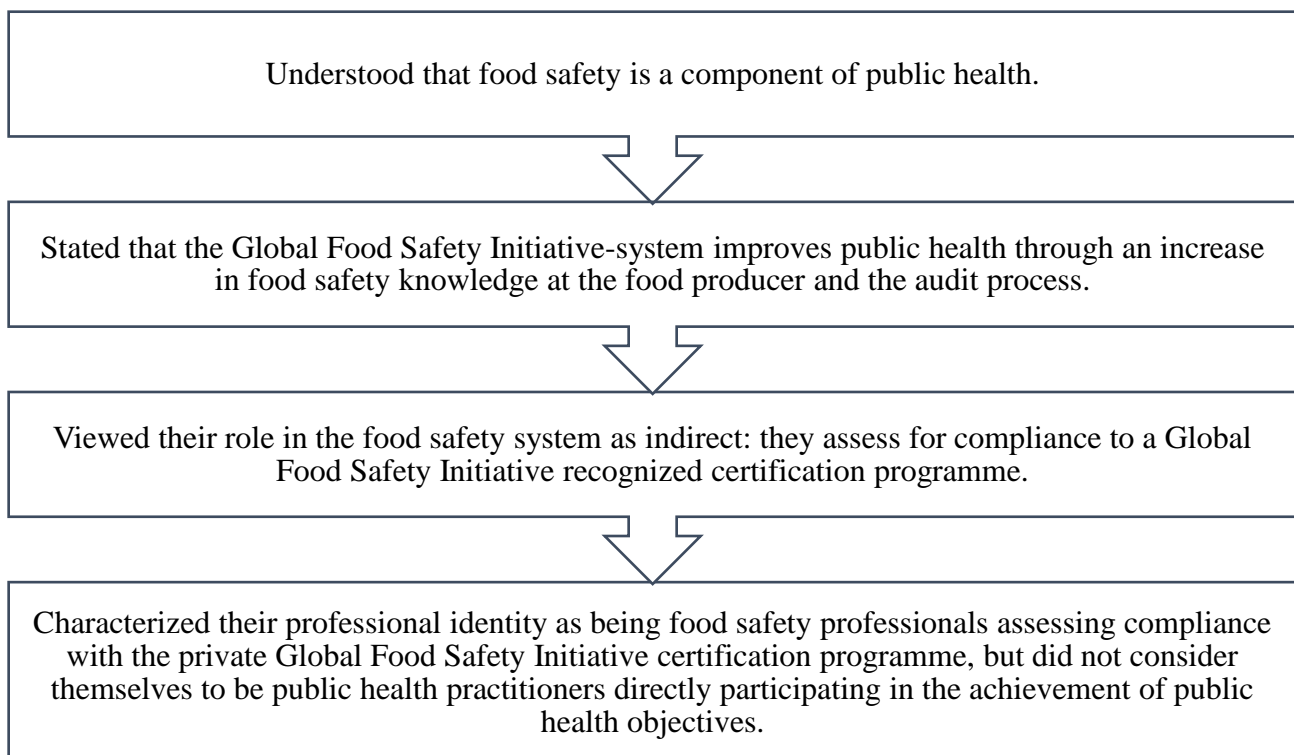


Figure 12: Summary of rationale to reject Hypothesis Two

Conclusion: GFSI Auditors do not have the professional identity of a public health practitioner

Therefore, H2 Since the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives: The GFSI auditors are likely to consider themselves to be public health practitioners participating in the achievement of public health objectives must be rejected. GFSI auditors understood their role in food safety and public health, and recognized their role as a food safety professional, the research for this study suggests that they are not likely to characterize their professional identity as public health practitioners. This finding was unexpected, particularly given that auditors understood their role in the public health system before participating in this research and considered themselves to be public health practitioners when asked directly in interviews and a survey. Therefore, this presents an excellent opportunity for further research, for example, conducting interviews to determine why the auditors didn't view themselves as public health practitioners.

Chapter Seven - Recognition of the GFSI Auditor as a Public Health Practitioner by Actors in the GFSI-system

Introduction

Having theorized that the GFSI auditor can be considered to be a public health practitioner in Chapter Five and finding that auditors do not identify themselves as such in Chapter Six, this chapter explores how other actors who are representatives of institutions in the GFSI-system understand the role of the GFSI auditor. Hypothesis Three investigates whether or not these GFSI auditors recognize their role in the public health system, and if so, have the professional identity of public health practitioners.

Hypothesis Three: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then: other actors in the GFSI-system are likely to consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives.

To prove this hypothesis, it is necessary to show the following: first, that actors who are representatives of institutions in the GFSI-system recognize the importance of food safety; second, they recognize that food safety is a component of public health; third, that they identify the role of the auditor in food safety; and fourth, that they identify the role of the auditor in public health. Hypothesis Three was investigated through semi-structured interviews with actors

representing the institutions in the GFSI-system (see Table 5: Respondents from the GFSI-system), including CPOs, CBs, ABs, RAs, INDs, and OS. A total of 29 actors consented to participate in the interview component, which was directed by the Auditor Interview Guide and Demographic Survey (see Appendix K: Interview Guide for Governments & Organizations). This guide was structured to allow the conversation to flow between questions without leading the respondent to a conclusion. Results are presented by interview question theme organized by institution; CPO; CB; AB; RA; IND and OS responses are included where relevant.

Respondents' Understanding of Food Safety and their Institution's Role in the Food Safety System

Whether or not actors in the GFSI-system understand the concept of food safety and their institution's role in the private food safety regulatory approach was investigated through two questions: "What is your organization's understanding of food safety?" and "How would you describe your organization's role in the food safety system?". Using the CFIA's definition, the expected understanding of food safety is that the food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use, i.e. prevents foodborne illnesses. Therefore, their institution's role is to conduct GFSI-system activities related to preventing these illnesses, e.g. create rule instruments or conduct assessments that assist in preventing these illnesses.

Only CPO 02 directly provided a definition of food safety and connected their certification programme with preventing harm to the consumer:

Our understanding of food safety is that people are implementing good agricultural practices or good manufacturing practices...so that they can minimize the potential

contamination of the products that they're producing or handling or distributing. The idea is so that people do not get sick from the food that they're eating.

CPO 04 focused on their interactions between the food producer and certification programme but did not mention foodborne illnesses: "Our understanding of food safety is working with food producing organizations to ensure that their practices of manufacture of food is the best that they can be to produce safe food". This comment appears to assume that 'safe food' will prevent foodborne illnesses, but the connection is implied rather than stated. CPO 01 provided an outcome for their activities but did not define the term: "Our ultimate goal is to enhance food safety on a global basis" and CPO 03, stated that their standard: "Defines those elements of a food safety management system that an organization must have. So, whether that definition of food safety is in the standard in the glossary terms... all the pieces that form the standard are there". CPO 05 did not provide a connection to food safety but instead connected their program to retailer standards: "It's not only related to food safety [certification programme] was developed for retailers ... to protect all of their private labels".

When asked about their institution's role in the food safety system, CPOs focused on the GFSI and its Benchmarking Requirements; four included in their responses that their schemes are benchmarked to the GFSI standard. This was explicitly stated by CPO 03: "The content and legitimacy of that particular standard, and obviously the content and the knowledge of food safety, bore out when it was benchmarked to [the] GFSI [Benchmarking Requirements], and continues to be benchmarked to the GFSI recognition process" and confirmed by CPO 05: "It's benchmarked by [the] GFSI and the main purpose is to check that manufacturers have implemented all necessary requirements, all necessary processes to guarantee that they can produce a safe product according to customer specification". This comment recognizes that their

standard should assist a food manufacturer in producing safe product, but again transfer's responsibility to the GFSI's rule instrument.

These comments suggest that only one CPO recognized their direct role in food safety as illustrated in Figure 5: Direct and Indirect influences on the food producer. Since the CPO is one of two institutions that have a direct influence on the food producer, it would be expected that these institutions would acknowledge their responsibility for food safety and their role in the private food safety regulatory approach, but only one of the four CPOs recognized this; the other four transferred responsibility to the Benchmarking Requirements.

In contrast, CBs provided clear definitions of food safety which included human illnesses and prevention, using phrases such as: "trust", "inability to inflict harm" and "the most vulnerable of our populations". CB 02 stated: "Food safety is an inherent trust that consumers have with products they're buying, that the products that they're going to purchase isn't going to kill them or make them sick", which was confirmed by both CB 05: "Our organization's understanding of food safety is the absence of a food or food manufacturer's ability to inflict harm" and CB 04: "Everything that goes into process of ensuring that the food that is presented for consumption is safe for the most vulnerable of our populations". CBs spoke of their direct role in food safety as "assessor to a standard", i.e. the certification programme. CB 01 stated this most clearly: "Our role in supply chain food safety is to really protect the food by being a diligent assessor of food safety programs in the industry". This was confirmed by CB 06 who stated: "As a CB we're involved in auditing to the total food chain and all of those activities to ensure compliance. That compliance is, as you know, to set of standards that is built around food safety". Importantly, while recognizing their direct role as the employer of the auditor, these

statements also transfer the responsibility for food safety to the certification programme developed by the CPO and is the same response given by the auditors.

Like CPOs, ABs didn't have organizational definitions of food safety but instead their responses focused on the competence of their assessors in the food safety. All three commented that their assessors are highly competent through a combination of education and experience.

AB 02 stated:

We wouldn't have a definition of food safety, but do we have a number of food technologists on staff that have an intimate knowledge of food safety and food safety systems - management systems - and that sort of things. So, I think we would have a very, very good understanding of what food safety is.

AB 03 confirmed:

We don't have... a definition of the food safety... we have an understanding of all the requirements of food safety, from the handling, the preparation and storage, every aspect... we can identify right from the start of the process for production of food, right to the actual consumption and the end user.

As with CPOs and CBs, ABs transferred the responsibility for food safety to the standard of assessment, both the certification programme and other international standards, ISO 12021 ISO/IEC 17065:2012 Conformity assessment - Requirements for bodies certifying products, processes and services and ISO/TS 22003:2013 Food safety management system - Requirements for bodies providing audit and certification of food safety management systems. Therefore, the respondents recognized the ABs indirect interaction with food safety and role in the food safety system.

RA response varied by country. The three Canadian RA provided a definition of food safety that closely mirrors that published by the CFIA. RA 01 explicitly spoke of food safety: “Food safety is anything that can cause harm to a consumer and ensuring that the products that are produced in are meeting that criteria from a biological, chemical, and physical point of view”. Neither European RA (03 or 05) provided a definition of food safety but, similar to the CPO, focused on their standards. RA 03, speaking of its inspection role, stated: “Well, we are the competent authority for food safety, that include standards and hygiene... ensuring that there’s the correct level of hygiene”. RA 05 connected food safety to public health: “We have different kinds of subjects to, we have to regulate ... public health, the food safety part”. All RAs emphasizing the importance of regulatory involvement in response to the question: “What is your organization’s understanding of food safety?”. RA 01 stated: “We ensure that they are meeting those laws of Canada to make sure that they are producing safe food” and described by RA 04 as: “Performing inspections on facilities to see if they are conforming with the regulatory requirements”. Both EU RAs explained their roles as inspectors. RA 03 confirmed: “Ensuring that there’s the correct level of hygiene. We’ve got a whole code of practice that sets out our standard”, as did RA 05: “We have a lot of so called food inspectors within our organization and they go to inspections and also audits and all kind of different food operating businesses”.

Only one industry respondent had a definition of food safety, however, all three organizations recognized their role in keeping the public safe. IND 02 stated: “So, our understanding of food safety is obviously that safe food is for all consumers of [company name] it's our ultimate goal. Our principles of food safety are obviously to prevent food from becoming contaminated, causing food poisoning”. Focusing on their role in food safety, IND 01, representing an organization who makes food packaging, stated: “We start at the beginning, if

our packaging isn't safe and then you put the food in it, that is unsafe., we can contaminate food". IND 03 concurred: "Trying to create processes that would mitigate any risks to the consumer when they get the product".

The OSs had a general understanding of food safety as stated by OS 01 who stated: "Food safety concerns are things that would result in illness or injury". OS 03 connected food safety to public health: "I think the pinnacle of the food safety mountain, let's, say, is protecting the population. So, you know, making sure that people do not get sick". Each OS provided a unique perspective on their organization's role in food safety. OS 01, an organization representing farmers, spoke of working with RA to influence policy:

We provide an opportunity for them to come together to share this information, to identify common problems and seek options or solutions. We do work very closely with the regulators... Making sure that the regulatory community understands some of the concerns, compliance concerns, policy concerns, and again, that we can ultimately find solutions.

OS 03 took direct responsibility for food safety: "I think the grocery industry, being kind of a unique position, we are basically the front line". OS 04 provided an interesting counterpoint and spoke of how private lawsuits against the food producer can be seen as an enforcement mechanism: "We held the industry accountable for the outbreaks that occur... the role of civil litigation is not to only compensate people, it is supposed to help monetize the problem, to help encourage people from doing the same thing again".

All institutions either explicitly or implicitly stated that food safety prevents foodborne illnesses, however, only the RA and IND explicitly accepted responsibility for food safety. Most CPOs spoke of assisting manufacturers with producing safe food, but transferred the

responsibility to the GFSI Benchmarking Requirements, failing to recognize the direct role their certification programme has in food safety. CBs transferred responsibility but to the certification programme by speaking of assessment to a standard, failing to recognize the direct role their institution has in food safety. ABs recognized their indirect role using ISO and CPO standards for their assessment, i.e. no actual assessment of food safety activities. RAs also spoke of the importance of regulations and regulatory requirements; interestingly while respondents in various groups spoke of the CPO requiring facilities to meet government regulations, and the certification programme documents specifically state that the food producer must meet all applicable government requirements in both the country of production and the country it is being imported into, no CPO or other respondent recognized this support for food safety.

Respondents' Understanding of Public Health and their Institution's Role in the Public Health System

As with the first two questions, whether or not institutions understand the concept of public health and their role in this system was investigated through two questions “What is your organization’s understanding of public health?” and “How would you describe your organization’s role in the public health?”. The intent was to set a baseline for their comprehension of their role in this system, and as per Public Health Agency of Canada’s definition, an expected understanding of public health would be “preventing foodborne illnesses or promoting consumer well-being”, and their role would be to promote public health through food safety activities.

No CPO provided a formal definition of public health, but all five recognized that food safety is included in this concept. CPO 02 explained:

One aspect of public health would be making sure that the food that is available to the public is not contaminated and will not cause illness or death... Other aspects of public health ... could be nutrition, healthy food choices, protection against non-foodborne illness and diseases.

CPO 05 spoke of public health in broad terms: “Public health could be hospitals... How kids grow up with right foods, education about food and so on. That is what I mean by public health, and food safety is just one topic”, whereas CPO 04 was more succinct: “But I think food safety is an important part of public health, but it’s not the only thing”. Despite making the connection between food safety and public health, only one made a direct link between their certification programme and public health, the same organization that had a definition of food safety. CPO 02 clearly stated:

I think that what we’re trying to do with our program... follow the requirements as they’re set out and that they’re certified to, then that contributes to public health because [thousands of producers] are doing whatever they can to minimize the risk of that product being contaminated before it gets to the consumer.

Other CPOs felt their programmes provide indirect support through both their standard and the standard’s support of government regulations or industry best practices. This was articulated by CPO 05: “I think we don’t have an active role, but the fact that we care about food safety, and that we provide the tools to check the performance of manufacturers ... I think they have an indirect impact on public health”, sentiments echoed by CPO 04: “By providing a tool for food manufacturers to use to produce safe food and contribute to continued improvements of food safety, and not having a negative effect on public health”. While CPO 03 did recognize that these activities are supportive of public health, it was through the certification programme’s

support of government regulations: “No, other than through the requirement to meet local food laws and legislations.... obviously, this is all done in the auspices of improving public health through improvements of food safety within the supply chain”. CPO 01 stated that their role in public health is it to provide governments with data regarding non-conformances in each food sector and support government activities:

We are also willing to share, let’s call it big data, from our results with them to help them both shape policy and also, we’re willing to hear what their policy need to be and what their concerns are. It is a hand in hand role, that regulatory authorities they have a role, we have a complimentary role to play with them, or a supportive role, with between us.

As with CPOs, CBs recognized the broad nature of public health. CB 03 stated: “I define public health as two different components. One is the food safety aspect and then the other is the medical-clinical sort of aspect of public health, which is vaccination, education, communicable disease control, outside the food realm”. CB 04 also spoke of public health being more than food safety: “Public health [is] preventing disease, contributing to longevity, safe and healthy environment...But ultimately to make sure that, just aside from food safety to make sure that we are protecting people from themselves in most cases”. Only two CBs felt their organization played a direct role in public health. CB 01 stated: “Our role is to ensure that public health priorities are met in manufacturing plants and farms and fish... by ensuring that they are following the rules set up by the GFSI relating to food safety and public health”. However, CB 01 went on to place the responsibility for public health not on the GFSI but on the but on the entire system: “It’s not just GFSI, it’s not just the CB, and it’s not just the industry. It’s a whole dynamic of public health and the demands that the public has on systems provide safe foods for

consumption”. CB 07 spoke of an indirect role for their organization in public health through the concept of information asymmetry:

Because they depend on us in a roundabout way, because when you buy a bag of lettuce off the shelf, you have this assurance that that bag of lettuce is clean, that assurance goes back to the certification that that company received and the company before it, and the company before it, and the company before it. In a sense, public health is reinforced... the risk profile is reinforced by the type of certification and the health of that entire supply chain, and all those certifications up and down it. Then we will issue a faulty piece of paper ... which allows him to contaminate the public health, the public, and we don't want that responsibility.

CB 02 confirmed: “In terms of public health, our CB's role is to assure the supply chain, the retailer, who has an even greater responsibility to the public and public health because of the volume and the sheer reach that they have”. Not all CBs agreed, as CB 06 stated: “I don't pretend I move in the public health sector even though I lived my whole life in food safety... I mean it's just so much more than food safety”. Finally, other CBs brought forward unexpected understandings of public health, including a responsibility to farm workers and assisting governments to stay current in their food manufacturing knowledge.

All three ABs felt that public health is broad, and that food safety is only one component of it. AB 03 stated: “But it is all about helping the public to stay healthy and protecting them from threats to their health. But it's not just about foods. It's also, there's lots of others, there's health and safety, and environmental safety”. They also recognized their indirect role of accrediting other organizations. AB 01 stated: “When we're accrediting CBs for programs that impact public health, and two specifically that I know of, the accreditation program for food

safety and accreditation program for medical devices, that's where we can have an impact on public health". This comment recognizes the concept of information asymmetry as their accreditation provides confidence to other institutions in this private food safety regulatory approach.

Two RAs described their role in the food safety system when asked to explain their organization's understanding of public health; one spoke of food safety and other responsibilities; one spoke of their public health responsibilities; and one didn't understand the question. RA 01 stated: "Public health is extremely important, it's a partnership approach. So, to be able to ensure food safety from a regulatory point of view, a government oversight point of view, and we have to all be working together". RA 03 explained that: "It's our core purpose to protect public health in relation to food matters" but didn't elaborate on what public health is to their organization and RA 05 placed food safety in public health explicitly: "I think for example food safety is one of the issues for public health". The RA's role in public health was stated more clearly, but again from a narrow perspective of enforcement. RA 05 stated: "Well, we have the department of public health and [other Departments] ... They are the policy makers and we are the regulators... we're enforcing according to this legislation". Defining their role in public health presented a challenge for the RAs and was more clearly answered in response to the question five: "How does your organization envision the role of the government in food safety and public health?". RA 01 and 02 spoke of multiple levels of government in Canada, from federal to municipal. From an enforcement aspect, RA 03 stated their role is assurance only: "We are the competent authority with that role in assurance", which implies inspection and enforcement activities. Only RA 04 and 05 specifically mentioned their role in enforcement of legislation. RA 04 connected enforcement to public health: "...Acts and Regulations and

enforcing them, I guess, that the food that the consumer is eating or is being exported to other countries or being imported from other countries is safe, that's our role in public health".

Interestingly, this RA participates in the policy development process, but is not responsible for legislation in their country.

All three industry respondents focused on the food safety aspect of public health. IND 02 recognized that their role in public health was to produce safe food: "Public health works to ensure that the local level, the food safety regulatory environment enforcement framework, consumer food safety being maintained, obviously keep people healthy and prevent injury, illness, improving healthy wellbeing" and IND 03 stated: "I guess being that you are supplying to the public, you are part of public health". IND 01 connected their role as protecting public health: "Absolutely, I think ours has a role in our ensuring that the packaging we provide to the food suppliers is safe for use. So, if we fail in ours, then we fail public health" and IND 02 agreed: "Our role is obviously to support public health initiative, to protect and promote food safety and health". IND 03 further stated: "Ensuring that as a company we are providing safe food for the consumer. So, we're not – we are basically not another risk, or not providing product that might be at a higher risk for causing any sort of public health issue".

OSs, too, recognized that public health encompasses more than just food safety, from nutrition to disease control and their roles varied with their place in the system. One spoke of the nutritional importance of the produce industry in public health, whereas others spoke of the difficulty in assigning a causative agent and food to an outbreak. However, OS 05 provided the clearest statement: "But from our perspective we see food safety as an element of a supporting part of the infrastructure. Safe food is part of the public health system and industry's perspective is that we have a responsibility to provide safe food".

A comparison of the responses presented above indicate that all the GFSI-system's institutions, CPOs, ABs, CBs, INDs, as well as OSs recognized the broad nature of public health whereas the government's institution, the RA, did not. CPOs recognized that food safety is but one aspect of public health but did not recognize their place in public health and instead, they felt that their role was indirect, supporting manufacturers or government regulations through their certification programme; only one made a direct link between their certification programme and public health, the same organization that had a definition of food safety. CBs, too, recognized that public health is broader than just food safety, but their role varied from a direct responsibility to the public to the concept of information asymmetry, and unrelated aspects such as farm worker safety. ABs understood public health is broader than food safety, focusing on the accreditation of other institutions, an indirect role. Given that all three RA institutions operate in a governmental capacity, and several spoke of ties to public health agencies, the lack of awareness of other aspects of public health was unexpected. All RAs spoke of only food safety, failing to recognize that public health encompasses other activities, and all explained their role in food safety when asked to explain their institutions' definition public health. All three IND respondents recognized that food safety is a factor of public health, and their role is to produce safe food.

Respondents' Understanding of the GFSI Auditor's Role in Food Safety and Public Health

The role of the GFSI auditor in public health through their food safety activities was presented in Figure 6: Conceptualization of the auditor's role in public health. The question "What does your organization think is the role of the GFSI auditor in food safety?" explored whether or not the respondents felt the auditor is a food safety professional. The next question, "Can you, on behalf of your organization, describe how the GFSI improves public health?"

explored whether or not the respondents understood or could extrapolate the auditor's role in public health. Asking these questions together provided an opportunity for the respondent to reach their own conclusion.

Unlike previous questions in which institutions differed in their responses and opinions, the CPOs, CBs, and RAs agreed that the role of the GFSI auditor in food safety is to assess the food producer for compliance to the certification programme, and that the auditor has a direct impact on food safety. CPO 01 spoke in a more colloquial fashion: "They are the delivery vehicle. They are the contact, they are the conduit between what is wanted and what is delivered. They are the linchpin of everything that happens". CPO 02 stated: "The role of the auditor is to understand the standard that they're auditing against and then assess whether the facility meets the standard". CPO 04: I see public health as being much bigger than food safety and the GFSI auditor, but I think that they have a huge role in making sure that people are doing what they say they are doing, which in turn contributes to the maintenance of public health.

CBs agreed, with CB 01 stating: "To measure against a standard and the standards provided by the various schemes that have developed" and CB 04 confirming: "What they are expected to do is to assess facilities for compliance and requirements, they are to identify anywhere where a requirement hasn't been met". CB 05 explicitly stated: "Auditors are confirming whether or not the facility is in compliance with the requirements of the standard".

ABs also understood the auditor's role to be assessing to the standard. AB 01 confirmed: "They're responsible for, well ... the compliances of the organization with the requirements in the standard". RAs also felt that the auditor participates by fixing issues found during the audit. RA 01 stated:

By them coming out with their non-compliances, and ensuring industry's correcting these non-compliances, and following up, they [are] indirectly helping to ensure that compliance is being adhered to by industry as a whole.

This was confirmed by RA 05: "The food business operator can ... correct his process and it's all because of - the information the auditor is giving him or it's because of the result of the audit report of the auditor of the certifying body".

All three IND stated that the GFSI auditor's role is to confirm compliance to the certification programme. IND 01 stated:

Just making sure that we are doing what we say we are doing. That's making sure that program that we put in place, the training is effective, that the employees are doing what we are supposed to be doing and that we are not just – just writing a bunch of policies and not implementing them.

IND 02 agreed: "I see the role of the GFSI auditor is to come in, audit, ensure that [company name] is compliant with the [certification programme]" as did IND 03:

[The auditor] make[s] sure that you are following the GFSI standard. As much as they only get a snapshot, they do, the auditors – they're pretty in-depth audits and they do get a good overall picture of what your processes are and what your facility is like. So, I think it is really important for food safety.

INDs indicated that the auditor helps them improve their systems. IND 01 stated: "I think the role of the auditor helps us catch gaps in our systems". IND 03 agreed:

[It's] just a portion of public health, the food safety, but they definitely play a role because obviously if you are a facility that – is that adhering to good GFSI standards, is

having audits and passing their audits, I think that's less likely that really high-risk contamination that could affect public safety would happen.

When discussing how the GFSI-system promotes public health, CPO 01 was succinct: "You are not putting bad food out" and CPO 02 concurred: "Anybody out there who's implementing one of these programs will be following practices that will lower the potential risk of contamination". CPO 03: clearly linked the food safety to public health through food safety:

Well, the overriding purpose of GFSI is to improve public health by ensuring that food safety audits, private food safety audits that have been done in the marketplace, are being done to the rigor and the oversight that audits that are being done in any part of the world, under any different standard can be deemed equivalent.

CPO 04 also spoke of the global impact of the GFSI:

[I] think that they are contributing sort of to global public health through food safety, if you like, by maintaining and raising the bar in countries all across the world and by bringing in consistency and harmonization it helps kind of world trade and communication and everybody is kind of talking the same language in food safety.

CB 06 agreed: "We're talking about food safety and we're talking about public health, it's about consistency across the world. And again, we need them to do that because this is about killing people.... that's what you and I are all about, we're trying to prevent it.

CBs connected GFSI to the manufacturer and the standard. CB 01 stated that it is the GFSI-system that promotes public health:

It's not the GFSI itself that improves public health. Public health is only improved by the manufacturers and processors and farmers and agriculturalists. They are the ones that are

required to improve the standards that they process under and they are required to because the industries they sell to are demanding it and the industries that are demanding it are doing so because of consumer backlash and issues we have had with food safety type outbreaks that sort of the thing. It's not just GFSI, it's not just the certification body and it's not just the industry. It's a whole dynamic of public health and the demands that the public has on systems provide safe foods for consumption.

CB 02 connected the auditor to public health without the GFSI-system:

I mean it's all very much interconnected. I mean it's certainly not a direct benefit to public health. I think the auditors doing that--I think the auditors performing their function and it is benefiting public health, it is that the concept of an audit keeps businesses accountable even if they're the ones paying for it, they know that, the QA manager and everyone knows that the president has authorized--the president of the company has authorized the expenditure of the audit, and that they better do well and many QA managers are even incentivized based on their performance at audit time. So, I think indirectly the auditor is the catalyst for change, is the catalyst for improvement within the business which is has the end benefit of improving public health.

CB 05 connected the GFSI to keeping safe food from reaching the consumer, and specifically mentioned recalls:

They [the GFSI] attempt to keep adulterated food off store shelves...There's still a significant amount of food making it out into commerce that needs to come back because it's adulterated or you know there's a there's a cross contact with allergens or there's metal in the food. So, I think GFSI plays a significant role in protecting public health

All three AB stated the GFSI supports public health through the certification programme. AB 01 stated: “They use their financial leverage to drive high standards and high levels of performance that’s related to ensuring the public health safety of products”. AB 03 was more direct: “[The] GFSI does – if the GFSI benchmarks standard, if they’re audited and implementing correctly it will improve health”.

Industry felt that the GFSI auditor supports public health through their audit and the strength of the GFSI-recognized certification programmes. IND 01 explained: “[The] GFSI standards are a lot more stringent, so I think it just makes it more – better for the end consumer if the processor or the packager is doing their due diligence”. IND 03 concurred: “They’re really high standards, so if you are GFSI, you have a pretty solid program. So, it definitely helps at least with regards to food safety and the risk of food-borne illness or injury or anything like that.” IND 02 spoke of how public health institutions could use the GFSI to support their activities:

“[The] GFSI, the standards give public health the assurance that [company name] has the proper tools and methods to manufacture safe food for all of our consumers. Those that are certified against the standard will obviously help public health in putting their resources into food facilities that actually require more attention and maybe plus at a higher risk.

Respondents’ Understanding of the Role of the Government and GFSI institutions in Food Safety and Public Health

Two questions, “How does your organization envision the role of the government in food safety and public health?” and “How does your organization envision the role of the GFSI in

food safety and public health?” explored the respondents understanding of the current independent and complementary regulatory approaches.

All CPOs felt that the role of the government focuses on regulation and this plays a role in public health. CPO 01 felt that: “[The government’s] role is to protect their constituents. They have the measure, so that if they see something is presenting a risk or actually presenting an issue to step in and put necessary mitigating strategies in place”. CPO 02 stated an explicit responsibility for the government, who is: “Responsible for setting regulations to achieve a level of food safety in terms of how the industry is expected to operate”. CPO 04 emphasized that changes in regulations, speaking of changes to the Canadian and American federal legislation are important to public health:

But the government does, I think play a role, I think they are changing legislation of recent times is going to have a big impact... The manufacturers are going to have to invest in improvements to meet the regulation... some organizations may not make the grade in which case that hopefully is going to have a positive effect on public health.

While all focused on the importance of government regulations, these organizations viewed the GFSI as a common minimum standard and referred to the benchmarking process. CPO 02 stated: “That’s basically what benchmarking means, right, is that it sets out a list of requirements that a so-called good food safety programs has to meet. And then it will analyze whether a given program actually meets those requirements or not”. CPO 04 explained that the strength of the program is based on the food retailer and manufacturing community:

I think the GFSI works to get the best information from the best of the best in the food industry throughout the world. It raises the bar for shared information and writing its

benchmarking document for the certification. It works [by] providing harmonized approach which means that everybody is being certified to a consistently high standard.

CPO 03 summarized these comments by saying: “Because it’s a base minimum that’s expected of the supply chain”.

In contrast to the CPOs, the CBs felt that the government provides the minimum standard through their regulations and that the GFSI supports public health. CB 02 explained how governments have a requirement to set the minimum standard: “The government ... sets, in my opinion, a minimum bar for what businesses have to do to be in business and legally comply with the law” and this was confirmed by CB 01:

They provide regulations. They provide food law and companies have to follow that food law, but that food law is... not as robust in terms of food safety as it could be, and then government themselves are stretched far too thin to be able to effectively monitor to all of the various food industries are in Canada and the US”.

CB 05 spoke directly of food safety and the importance of government, particularly in regard to companies that deliberately flout the law:

I think the government needs to be a partner with industry...I think industry has taken, has done a great job of taking, a good job maybe not great, a good job of taking responsibility. But I think it’s also very important that the government plays a role.

They went on to provide an example of an example of a food producer in the USA who, in 2016, was sentence to a 15-month prison term for selling cheese they knew was contaminated (Beach, 2016). One CB felt that government regulations are necessary to promote confidence in the food production system. CB 06 explained the importance of regulations: “The government has the oversight to make the consumer... confident that there's an adequate regulatory environment/

regulatory laws and its created, these laws are created with scientific evidence and background to ensure food safety and good public health”. Discussing the role of the GFSI in public health, CBs felt that there was an important role. CB 01 spoke of a direct role: “GFSI have a role to play in public health, they have put out a guidance document that all of the various GFSI schemes follow... and it’s relating to every aspect of food protection within the confines of a single facility” as did CB 02: “[The] GFSI, in my view, is assuring the public’s health at the retailer level, not in the food service level, but at the retail level where the consumers typically consume most of the food from”. However, unlike the CPOs, CBs did not view the GFSI benchmarked certification programmes as the minimum standard, though it does have a place in public health, particularly in comparing national regulations. CB 02 stated: “I think that GFSI is, has been, at least started off as a retailer driven organization, and that was the focus there, to make retailers or to help retailers to better handle on the risk that is food safety, and that would lower their exposure and that had the public benefit of being good for public health”. CPO 04 spoke indirectly of information asymmetry: “Because they don’t know from country to country, they just have no idea what the standards, are nor would they spend the time to learn as they say, because so much of the supply base is international... the GFSI schemes are a way of sort of leveling the playing field to some extent, if you will, “We don’t really care what country you are in, if you can’t get GFSI certification of some form or other, from a recognized certification body, then you are not at the standards that we expect of you regardless of what your government entity might say”. This comment doesn’t place the certification programme higher or lower than government standards, but it acknowledges the difficulty in comparing regulations between nations.

ABs' thoughts on how that governments should be involved in food safety and public health reflected how their national regulatory systems are organized. Two AB, both of whom operate under regulatory inspection system similar to Canada's felt that the role of government was to establish regulations and legislation. AB 01, which operates in a system that uses government inspectors for enforcement of government regulations stated that: "Government has a primary role for establishing regulations that affect organizations and others that are involved with anything affecting public health and may also be involved in licensing and inspections of organizations". AB 03 confirmed this, stating: "Government... they determine legislation or regulation requirements for the production of food but that's, a different level to the certification scheme. So, the role of government as far, as we look at it, is to purely to determine the legislation". ABs spoke indirectly of sustainable governance and information asymmetry. AB 01 stated that the GFSI is:

A unifying force for setting food safety levels that are probably higher than national regulations in general because they put all of those national regulations together and figure out where do we have to be to make sure we don't want to fall out of any national regulations.

RAs discussed the role of the government in food safety and public health in two ways. First, all five spoke of their enforcement role. RA 01 expressed a clearer opinion of their institution's role in food safety and public health than in their prior remarks: "We have to ensure that we are enforcing the laws of Canada... that's really what our role is, is to verify industry's compliance to those regulations and ensuring that whatever is being produced is meeting the criteria set for it". Both EU RA expressed similar sentiments. RA 03 stated: "We are the competent authority with that role in assurance" and RA 05 confirmed: "We are the regulators,

so we have to regulate according to this regulation”. When asked to discuss the role of the GFSI in food safety and public health, the RAs responded with future plans for regulation modifications, not their current understanding. For example, RA 02 stated: “I think it’s going to fit in more so, like we’re in a time of transition right now as well where many of these other food safety systems are being recognized” and RA 03 further explained:

So, they may have internal audit, they may have third-party audits, they do something. They’re using technology. They’re doing the best they can to fulfill their role, which is good... And we are interested in developing a food system that takes that into account.

Industry respondents understood that the government has a role in public health, but due to their industries (packaging, produce, and bakery) have little interaction with the government inspectors. IND 01: “The government’s not as important in that sense for us. They are there, should there be a recall, should there be, whatever. Obviously, the government’s there, but, no, I don’t really do a lot with the government I would say, no”. This organization only had contact with a government inspector for their weight scales through Measurement Canada. IND 03, representing the produce industry commented that: “We don’t see the government in any form, in [the] facility that I was in because we didn’t do processing”. For the GFSI’s role in food safety, respondents agreed that having a certification programme in place reassured their customers that they are following global standards for food safety. IND 02 stated: “I think that the role of GFSI in our organization puts more trust in the public health system that [company name] is still agreeing, you know, our commitment to food safety through consistently producing safe products”. IND 03 claimed: “If a company is GFSI-audited, normally they are pretty good company and they have safe procedures in place and all that” and IND 01 concurred: “For us, it’s a higher standard like, it’s not just the GMP program [and] it’s more and I think that it speaks

well that you take the time to work at a higher level”. The impetus to meet a higher standard was driven by customers. IND 03 acknowledged this: “For us, GFSI definitely takes a bigger role ... which is why we have such a high food safety system. So, we like – we have a really good program, but again that’s because, if customers didn’t require it I highly doubt that we would have it”. IND 01 stated: “I think that GFSI standards are a lot more stringent, so I think it just makes it more – more better, for the end consumer if the processor or the packager is doing their due diligence”. However, all three felt that the GFSI improves public health through improving the safety of their products. IND 02 spoke of public health as an institution: “I think GFSI, the standards, give public health the assurance that [company name] has the proper tools and methods to manufacture safe food for all of our consumers” but also spoke of the advantage of having certification to a GFSI-recognized certification program as: “Those that are certified against the standard will obviously help public health in putting their resources into food facilities that actually require more attention and maybe plus at a higher risk”. IND 03 directly connected their certification as an important step to supporting public health: “They’re really high standards, so if you are GFSI, you have a pretty solid program. It definitely helps at least with regards to food safety and the risk of food-borne illness or injury or anything like that. It definitely helps in that respect”.

OS 02 and 03 felt that the government’s role in food safety was to: “Set the minimum standards that needs to be followed to ensure food is safe” and OS 04 connected government’s responsibility to information asymmetry:

The vast majority of foodborne illnesses cases, the person who poisoned you is likely never to be held responsible. So, there is no capitalistic, economic incentive because ... you don’t have complete or even for the most part any knowledge of what makes you

sick. It's hard to get the leverage of capitalism to work properly. So, when you have a situation like that, the only fallback position really is to try to avoid poisoning people in the first place, and if there is little chance of getting caught, there is very little incentive to actually do anything about it, unless you have a great moral compass, or you are so worried about your brand that you want to invest in something that is unlikely to ever occur. In all those circumstances that is why in my view, government regulation is so vital and government inspection or private inspection that is transparent and unbiased and without conflict is so necessary to make our food supply [safe].

One OS mentioned that the role of the GFSI is to act as a second verification, to ensure that food safety is being done at all time. OS 01 stated: "I think that GFSI and other audits play a role in kind of keeping people in check is that verification tool" and this was confirmed by OS 02:

Most companies have something more than the regulations these days, the GFSI programs they also help ensure, they are usually above and beyond what the regulations require...They kind of set a higher bar for the safety of food and for manufacturers to follow, like it's higher than the regulations.

Two, OS 04 and OS 06, both spoke of the complimentary nature of the systems. OS 06 summarized with:

As things have moved forward over the last sixteen years, there has been more of a recognition of the fact that the public health system, and the private system if you consider GFSI as a private system, are both working towards the same end.

The two direct respondents in the private food safety system, the CPO and the CB, had conflicting understandings of the role of the government and the role of the GFSI and where the

CPO felt that the GFSI sets the minimum standard for food safety, CBs held the opposite opinion, that it is governments who set the minimum standard and this was supported by the AB, RA, and OS respondents. As with their answers to earlier questions, this indicates that the CPO views their role as an indirect respondent; while they do acknowledge a direct role for the GFSI-system, they again transfer the responsibility to the GFSI as an institution.

Respondents' View of how Governments should use the GFSI

The intent of this question was to investigate respondents conception of sustainable governance in an indirect manner. CPOs and CBs felt that the GFSI could be used to support government activities, e.g., governments prioritize their inspection activities based on GFSI audit reports. CPO 05 articulated this most clearly: “A company that’s certified against a private scheme ... then they [the government] the feeling: “Okay, we can trust this certificate” then they can use the certificate”. Similarly, CPO 03 stated:

But I think there would benefits to industry if they gave clear definition, perhaps by risk or type of industry sector where they would accept a certificate as being compliant, perhaps maybe lower risk foods where you know maybe they would say: “Hey, we will [do a] government audit every four years” and in the interim, they can supply a compliance certificate on an annual basis.

CBs agreed, discussing how a certificate could be used. CB 02 simply said: “I think harmonization or at least a recognition of it would be advantageous”. CB 04 clearly stated it can decrease government activity at the facility: “Is there any way that it can be incorporated or give them a pass on something things when it comes to CFIA inspection activities is there anything they can be given credit for?”. CB 05 spoke of the strength of the standard, and the work the facility has done to implement it:

I think that suppliers or food manufacturers and growers are spending a lot of time and money and effort to comply with GFSI standards and I think the government should recognize those standards. I mean, they are well crafted, they are far more rigorous than government standards are, and I think the government should recognize it.

No consistent theme emerged from the AB respondents, however AB 01 outlined how this could occur:

Well, what they need to do upfront is actually look at the equivalence, so look at how not just the requirements of the standards but also the type of or the amount of auditing against the standards, and the frame work that, that auditing sits within. And then they can have confidence that there's actually the oversight as well as you know, compliances with the requirements... I think a lot of the day-to-day auditing can be replaced by the fact that they've got a certificate issue by an accredited body to another GFSI standards...

Similar to the other institutions, RAs spoke of how the GFSI can assist the government but approached it from a slightly different perspective. RA 01 explained:

In a perfect world scenario would be that we should all be working together because the competent auditors from the schemes coming in, they've got intel or information that can be definitely ... so that we all share the information and making sure that at the end of the day it's part of continuous compliance".

RA 03 agreed with the previous statements, but furthered it with:

But there will be more compliance, more visibility, more openness and sharing of information ... So, we've got GFSI auditors, and we're also looking at industry assurance schemes that undertake checks and ensure people operated at a certain

standard. And again, why don't we use these? Because these are another layer of people that are out there looking at what food businesses are doing.

Respondents were supportive of using the GFSI to supplement government activities, with the common view that, if the audit is required, there should be further benefit to the facility.

Industry respondents felt that certification to a GFSI benchmarked certification programme would support government activities but presented two ways this could be done that were not mentioned by other respondents. First, IND 02 stated that government inspections could support the facility in its GFSI audit: "Maybe you utilize public health to go in and do an audit before the surveillance [inspection]?" and IND 03 suggested that the GFSI standards could be used to revise government regulations: "If they took a role in GFSI and where maybe adopted some standards or maybe improved their standards based on GFSI".

Discussion

Respondents acknowledged the role of the auditor in food safety and provided three key characteristics of this role. First, the auditor must understand the standard, as it is the standard that sets forth the food safety requirements, and the standard must be rigorous. Second, the auditor must have a broad base of knowledge, from microbiology to food production methods and associated hazards, to statistics, recognizing that the competence of the auditor is important to ensuring safe food for the consumer. And finally, the auditor supports government's role in food safety by providing a sort of 'pre-inspection', by identifying issues and making sure the issues are corrected, prior to a regulatory inspection. These themes demonstrate that categories of respondents identified the auditor as an important component of the food safety system. All categories indicated explicitly that the GFSI supports public health but unlike the auditor's role in food safety, only one CPO drew a direct correlation between the auditor and public health.

Interviews with institutions within the GFSI-system recognized the GFSI auditor as a food safety professional but did not characterized these actors as public health practitioners participating in the overall achievement of public health objectives. This can be seen from the three themes arose from the responses to the question Respondents' Understanding of the GFSI Auditor's Role in Food Safety and their Perception of the GFSI Role in Public Health. First, respondents felt that the certification programme is critical to food safety through a rigorous CPO. CPO 02 stated this most clearly:

If it's a GFSI-recognized scheme, I guess we need to make the assumption that the standard has an appropriate technical rigor to it, and then so that means the auditor is confirming or refuting whether the company has an effective food safety program in place.

CBs concurred, with CB 05 stating: "Auditors are confirming whether or not the facility is in compliance with the requirements of the standard. And the standard is written specifically to ensure that food is being produced safely". CB 02 emphasized the conformance aspect of the audit: "Attempting to either confirm that the program is satisfactory program or identify areas of weaknesses that need to be improved that may cause risk or at least not conforming to the standards". CB 06, when asked this question, relied on the GFSI Benchmarking Requirements to provide the level of food safety: "GFSI ...was committed just to food safety" and CB 07: "They impact food safety because they understand that the standard has been vetted, it's a good standard, and there's a reason for the standard". AB 03 also mentioned the importance of the standard: "To give confidence when the customers need the [GFSI benchmarked scheme certification] that they are confident that the products had been produced safely". RA 02

confirmed: “Well, they should be ensuring that the operator is following their program and the program they have meets requirements”.

Second, the competence of the auditor is paramount to the success of the audit. CPO 01 stated they are the: “lynchpin of everything that happens”. CPO 02 confirmed:

Not every auditor will pick up everything and no one is perfect, but a good auditor will be, sort of, the eyes and ears on the ground collecting information about what’s going on at a facility and determining whether the criteria of the standard is being met.

CB 02 based this competence on objectivity and experience:

I think the auditors’ role is to be that objective set of eyes to say: “Hey. I’m an expert in my field, I have this number of years, and based on my experience and based on what I’m reading and based on my training this is not correct, or this is correct please continue to do what you’ve been doing”.

CB 07 described the extent of the auditor’s required knowledge:

[Its’s] more than just reading the standard. You’ve got to have the experience and the education, you’ve got to be able to understand what a trend is. You’ve got to understand what statistics are.... You’ve got to know what microbiology is about. You’ve got to know what an *E. coli* is, and its characteristics. You’ve got to know the specific and implied requirements behind the standard.

Even AB 01 agreed: “So how well they do their job is paramount, because they are assessing the compliances and if they are not doing a good enough job, then there's some organizations that will get through that shouldn't have got through”. RAs felt that the role of the auditor was to support the public health system by acting as a pre-inspection to the audit. RA 01 stated:

Where they do help is, they do help by fixing things that, yeah, I'll use that kind of language where they fix things. Well then, then hopefully that when that public health officer or RA or provincial Inspector goes in, the issues aren't there to be noted as non-compliant.

As RA 05 explained: "[The] business operator ... [is] going to correct his process and it's [all] because of the information the auditor is giving him, or it's because of the result of the audit report of the auditor of the certifying body". OS 01 summarized these views with their comment:

I'm sure that you've heard this from other people, but you can put together the best audit standard out there and if you have a terrible auditor it doesn't matter if your standard is good or not. So that's one of the greatest criticism with the audits is that you know even for the same audit standard that there's so much variation in auditors and their interpretation that it's not – that there are many gaps that we can fill there.

Third, the importance of the auditor, whatever the standard, is their independent view of perspective to the facility, allowing the facility to make improvements. CB 02 explained:

The auditor's role is to be an objective set of eyes looking at existing food program and attempting to either confirm that the program is [a] satisfactory program or identify areas of weaknesses that need to be improved that may cause risk, or at least not conforming to the standards.

This 'fresh set of eyes' allows the producer to see things that otherwise have become common place as CB 04 stated clearly:

And that is why I think one of the great roles of the auditor... we go in and even when its somewhere we have been several times A lot of things change, and you know we will

go in and see something ... and it takes somebody from the outside coming in and giving them that fresh perspective and say hey you know what about this, why are we doing this, how did we consider this, and you know really making them to think about it”.

Only one of the three themes presented above speak to an understanding of the food safety professional’s role, that is, the theme of the competence of the auditor. The importance of the certification programme in respondents’ responses transfers the responsibility for food safety to the certification programme, and the comment from the institutions about the auditor being a ‘fresh set of eyes’ could be applied to any individual, from a pest control operator to a public tour. However, the competence of the auditor speaks to their understanding of all aspects of food safety, from understanding the microbiological hazards of the raw materials to the public health implications of certification.

Investigating the institutions’ opinions of how the GFSI improves public health had two objectives. The first was to provide the respondents with the opportunity to discuss peer-reviewed evidence that the GFSI improves public health, i.e. to use the language of HACCP, that the GFSI was validated through scientific (e.g. microbiological or epidemiological) channels. Unfortunately, respondents did not provide any peer reviewed information other than articles discussed in the literature review, though several spoke of a presentation given at a GFSI conference that was based on a research project. The second was an attempt to draw forth the respondents opinion’s as to the role of the GFSI auditor in public health. Since the understanding of how the GFSI improves public health rests on a theoretical argument rather than scientific evidence, it tried to determine if respondents saw the connection between the auditor’s role in food safety and their hypothesized role in public health. All respondents in the

GFSI-system, including the RAs, explained that the GFSI promotes food safety by providing safer food to the consumers. CPO 03 stated:

The overriding purpose of GFSI is to improve public health by ensuring that food safety audits, private food safety audits that have been done in the marketplace are being done to the rigor and the oversight that audits that are being done in any part of the world, under any different standard can be deemed equivalent.

CPO 04 emphasized information asymmetry in their answer:

I think that they are contributing sort of to global public health through food safety, if you like, by maintaining and raising the bar in countries all across the world and by bringing in consistency and harmonization it helps kind of world trade and communication and everybody is kind of talking the same language in food safety....

One respondent linked the number of recalls to the GFSI. CB 01 stated:

Oh, I think benefits are profound because since the GFSI there have been more recalls and there are only more recalls because there are more people looking... So, there is so much more attention paid to the overall safety of food that's available for public consumption.

AB 02 stated:

So that, that then drives down to the certified organization, so only those that are really meeting the requirements are being certified. So, I think in that way it's effecting food safety on the ground and public health, so it's just ensuring that a scheme has tighter control.

RA 02 explained: "Well it means that they're taking the steps forward to ensure they're producing safe food" and RA 05 furthered this with: "when you have some food business...

being inspected by an auditor or certifying body they can get a corrective action and make the process better and, in that way, ... make the public health any better”.

Two interesting points were raised in the interviews, one of which has been seen in the literature and one that presented an outcome not previously discussed. AB 01 presented the idea of financial leverage being used to promote public health:

Being comprised of global suppliers of consumer goods including food stuff, with their purchasing power they have the leverage to set a very high level of requirement or a high bar for food safety that those in the supply chain will actually work hard to achieve. So, they use their financial leverage to drive high standards and high levels of performance that's related to ensuring the public health safety of products. the other is the concept of promoting food security.

While both CPO 01 and 04 recognized that certification programmes are expensive to implement, CPO 01 mentioned not just food safety, but also food security: “In the long-term, you are making the system as efficient and effective as possible. So, you are driving ways of effort and activity”. OS 05 stated clearly the conceptual foundation of the GFSI:

The theory behind what GFSI promotes and the theory behind a lot of what industry, in behind been trying to do is that if you can put in a good system, food safety management system, that has both strong scientific basis and results in strong policies and procedures and strong management system elements that go along with that management responsibility, internal audits, internal reviews, updating, those kind of things that you're going to bring the safety level of the food that's being produced by an organization up.

The responses to these two questions show that there is a significant disconnect between the understanding of the role of the auditor, which all respondents agreed was to assess the

compliance of the food producer to the certification programme and how the GFSI improves public health. As discussed, all respondents acknowledged the importance of the auditor and the standard in food safety and connected the GFSI with public health through both food safety and other mechanism such as increasing recalls. Connecting the auditor to public health however, was only done by CPO 04 with their comment: “So I think that they are a facilitator in public health”.

Only one organization in the GFSI-system, one CPO, took direct responsibility for food safety and public health. The CPOs transferred responsibility from their certification programme to the GFSI Benchmarking Requirements, the CBs transferred responsibility to the certification programme and the CPOs, and the ABs transferred responsibility to the ISO standards and the certification programme standards. Furthermore, when asked about the GFSI, each respondent spoke of the GFSI as an institution, not a system. This was unexpected because the concept of sustainable governance was put forth by all categories except ABs, who focused on the legislative role of the government; institutions in all categories discussed the need for a partnership between the government and industry, with the RAs and CBs stating explicitly that this partnership is important.

Unlike the focused discussion with auditors, the discussion with this group of respondents was wide ranging and lead to the themes presented above, e.g. only two auditors mentioned the concept of information asymmetry whereas numerous non-auditor respondents commented on this theme. This was unexpected and may have occurred for several reasons. First, these institutions are directly involved with the GFSI-system, whereas the auditor only interacts with the CB, e.g. CBs interact with CPOs, ABs, and INDs, whereas the auditor only interacts with their employer, the CB. Second, this group of respondents was broad and there

were more respondents in total, drawing from several institutions in the system, each with their own perspective of the system. Third, auditors may have a very narrow focus, conducting one activity in the food safety system; audits are required a great deal of work in a very short time period, therefore, their answers were often succinct and efficient, whereas other institutions were not. Finally, auditors are often self employed, and therefore time spent participating in an interview is time that is not earning revenue, whereas other respondents were most often salaried employees of the organizations.

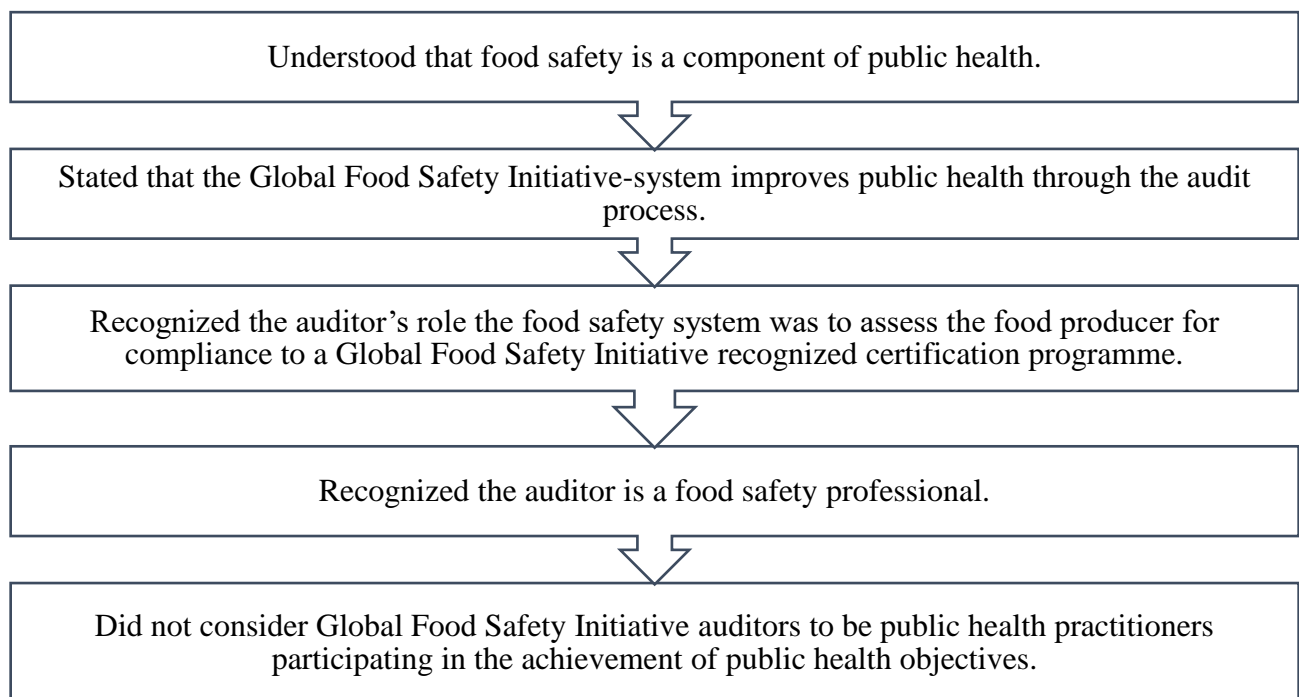


Figure 13: Summary of rationale to reject Hypothesis Three

Conclusion: Actors in the GFSI-system do not recognize the GFSI Auditor as a Public Health Practitioner

Therefore, Hypothesis Three: If the GFSI auditor can be characterized as a public health practitioner participating in the achievement of public health objectives through their private food safety regulatory activities then, in keeping with the concept of sustainable governance

which maintains that governments, the private sector, and civil society institutions, processes, rule instruments, and actors all have regulatory capabilities in support of public policy objectives, then: other actors in the GFSI-system are likely to consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives must be rejected. No respondent explicitly connected the GFSI auditor to a role in the public health system, nor characterized the auditors as public health practitioners participating in the overall achievement of public health objectives, despite explicit recognition by each institution that first, the auditor has an important role in food safety, and second, that food safety is an important component of public health and third, that the GFSI-system supports public health.

This finding was unexpected, because the logic of the argument is one recognized by the private regulatory system and supported by responses from all categories and virtually all respondents; it appears that the food industry and its governance systems simply fail to make a connection between the auditor's role and public health. Therefore, this presents an excellent opportunity for further research.

Chapter Eight: Theoretical Insights, Policy Recommendations, and Further Research

This research has examined two food safety regulatory approaches: the public food safety regulatory approach and a private food safety regulatory approach, the GFSI, through the framework of sustainable governance as per Webb (2005). Both approaches consist of institutions, processes, rule instruments, and actors; their interactions are outlined in Figure 4: Interactions of the public food safety regulatory approach and the GFSI-system in Canada and Table 7: Comparison of the public and private regulatory system. Though there are numerous non-state food regulatory approaches, including civil sector religious based systems such as Kosher and Halal, private sector quality standards such as Vintners Quality Alliance, and production standards such as the Marine Stewardship Council, the GFSI is the predominant private food safety regulatory approach in Canada and globally. It is an industry-centric approach that was developed by food retailers in response to food safety crises in the late 1990s and is currently a strategic pillar of the CGF.

As a NSMD system, the GFSI consists of two rule instruments: a meta-regulation, the Benchmarking Requirements; and numerous private standards, the certification programmes, developed and implemented by a variety of institutions and actors through consensus-based process. This system was developed independently from the state, and the state has very little involvement in the system, i.e. input or influence in the Benchmarking Requirements or certification programmes. The government and GFSI regulatory approaches largely operate independently from each other, and are complementary systems with some commonalities; both approaches have stated public health objectives; both use rule instruments to outline their requirements; both use an actor, to determine the food facility's conformance to the standard (for the government, the food safety inspector, and for the GFSI, the GFSI auditor) and both

Canadian federal rule instruments and the private GFSI certification programmes draw on the Codex Alimentarius. Since the 2014 release of the CFIA's Private Certification Policy (Food Safety) there has been some acknowledgement of the GFSI by the CFIA in that the CFIA has stated that it is considering using the GFSI to support its regulatory objectives and this Canadian institution is actively promoting the use of the GFSI to other national governments (CFIA, 2017d; GFSI, 2017b).

It is widely recognized today that the process of societal governing can usefully involve a combination of state and non-state institutions, processes, rule instruments, and actors. The literature reviewed for this study includes seven governance arrangements; of these it is the concept of sustainable governance that is particularly well suited to analyzing these two systems because it is this arrangement that recognizes that governance arrangements may be initiated and managed independently by the private sector, providing support to the state's activities. Viewed through the sustainable governance framework, the government and GFSI approaches are components of the broader public health system that both have the goal of promoting public health through the provision of safe food to the consumer and both function to correct unsafe food handling practices.

The focus of this research has been on the GFSI auditor, an actor in the private regulatory approach who assesses the food producer's compliance to the private standard. This research hypothesized that the role of the GFSI auditor is functionally analogous to the food safety inspector, the street-level bureaucrat who conducts similar activities in the public regulatory approach and is characterized as a public health practitioner as defined by Public Health Agency of Canada and in the literature (Hypothesis One). It further hypothesized that GFSI auditors would have the professional identity of public health practitioners (Hypothesis Two) and that

other actors representing institutions in the GFSI-system would characterize the GFSI auditor as a public health practitioner participating in the overall achievement of public health objectives (Hypothesis Three). These three hypotheses were investigated using a mixed methods approach; Hypothesis One through a literature review and document analysis; Hypothesis Two through interviews and an on-line survey; and Hypothesis Three through interviews. The results of this research are as follows. First, in an examination of the GFSI auditor and the food safety inspector's function, qualifications, processes, role characteristics, and policy activities, the GFSI auditor was characterized as a public health practitioner participating in the overall achievement of public health objectives, and therefore Hypothesis One was accepted. Second, based on the results of interviews and an online survey, GFSI auditors did not consider themselves to be public health practitioners participating in the achievement of public health objectives and did not have the professional identity of a public health practitioner, and therefore Hypothesis Two was rejected. Third, based on interviews of individuals representing institutions in the GFSI-system, regulatory authorities and other stakeholders these respondents did not consider GFSI auditors to be public health practitioners participating in the achievement of public health objectives, though they did consider the GFSI auditor to be a food safety professional and understood that the auditor has a role in the public health system, and therefore Hypothesis Three was rejected

Theoretical Insights

The theoretical insights of this dissertation can be seen in three areas of policy studies: public health policy; food governance; and street-level bureaucrats.

Public health policy.

As discussed in Chapters Two and Three, food safety is an important component of public health and the GFSI is the predominant private food safety regulatory approach in Canada. Therefore, public health in Canada and globally is directly impacted by the GFSI Benchmarking Requirements, recognized certification programmes, and the institutions and actors involved in the processes of the GFSI-system. However, an important actor in this system, the GFSI auditor, does not consider themselves to be a public health practitioner participating in the achievement of public health objectives, nor do actors in other institutions that are part of the GFSI system consider the auditor to be a public health practitioner. This has a potentially deleterious effect on public health in Canada; a public health practitioner has an obligation to protect the health of the public, and their food safety actions should reflect this obligation. Though the auditor was found to be a public health practitioner as per their function, qualifications, role characteristics, and policy activities, and though the GFSI claims to promote public health, the obligation of the auditor to protect public health is not clearly stated in the GFSI-system's documentation, and most interviewees were not familiar with this aspect of the auditor's role. Although the purpose of this dissertation was not to evaluate the effectiveness of the GFSI, a conclusion that can be reached from the research is that the efficacy of the GFSI approach in addressing food safety could potentially be improved through greater awareness by GFSI auditors and recognition by the GFSI-system of the auditor's role as public health practitioners. Therefore, the health of Canadians is potentially negatively affected by having actors performing a public health practitioner role who do not recognize that they are performing this public health role.

Food governance.

This research also contributes to the food governance literature in three ways. First, this investigation shows the concept of sustainable governance as put forth by Webb (2005) is an useful concept to undertake an analysis of governance arrangements when such arrangements are developed independently by the public and private sectors. By analyzing the public and private food safety regulatory approaches concurrently this investigation was able to show that the approaches operate in parallel with little-to-no overlap and that actors in the system have analogous but largely independent roles (see Tables 3 and 6). Several authors have considered the use of private standards by governments, suggesting that these standards could be used as a form of co-regulation (García Martinez et al., 2013, 2007; Gulbrandsen, 2014; Rouvière & Caswell, 2012). Other authors have discussed the ‘hybridization’ of food governance approaches (Cafaggi, 2011; Fagotto, 2107; Marks, 2016; Verbruggen & Havinga, 2017). While recognizing that the GFSI can be supportive of state activities, use in this thesis of the concept of sustainable governance to examine the interactions of the public and private food safety approaches suggests that the strength of these regulatory approaches is in their independence, and rather than framing the food safety regulatory approaches as ‘hybridized’ or suggesting that these systems formally acknowledge each other (i.e. through co-regulation) this dissertation suggests that a more appropriate phrase is ‘complimentary’, i.e. that both approaches operate largely independently to achieve the stated objective of public health.

Finally, this research also contributes to the food governance literature through an indirect examination of the auditor’s conflict of interest, as identified by Lytton and McAllister (2014) in their claim that “there is a conflict between the auditor’s financial interest and his professional obligation to protect the public from food safety risks. The professional obligations

of food safety auditors are not as well defined as those of some other professions” (p. 301). The results support the statement that the professional obligation of food safety auditors is not as well defined as other professions; auditors were uncertain as to their role in the food safety system (see Table 14: Auditor’s understanding of their role in food safety) and more than half the survey respondents (see Figure 10: Who is the GFSI auditor protecting?) responded that they are protecting either the consumer from a foodborne illness or everyone in the GFSI-system (“all of the above”). Auditors who participated in this study did not identify their financial conflict of interest directly; it appears that the auditors were either unwilling to discuss this issue or do not understand that this conflict of interest exists.

Street-level bureaucrats.

The comparison of the GFSI auditor’s function, qualifications, role, and policy activities with the food safety inspector in Chapter Five reveals that the GFSI auditor may be considered a public health practitioner. This suggests that the role of a street-level bureaucrat should be examined from the perspective of the activities they perform (food safety activities) and the outcome (preventing foodborne illness) instead of their employer (public or private sector). This research supports the work of Hupe et al. (2015) and Short et al. (2014) who expand the concept of street-level bureaucrat to include private sector actors.

The Importance of Acknowledging GFSI Auditors as Public Health Practitioners

This research suggests that from a functional standpoint, the GFSI auditor can be considered a public health practitioner analogous to the food safety inspector. Even though the traditional employer of public health practitioners is the state, actors in the GFSI-system acknowledged that food safety is an important component of public health. The importance of recognizing and understanding the broader system in which a food safety professional operates is

critical to promoting public health through the production of safe food, as seen through both the state and private employers' requirements for their actors to have appropriate education, qualifications, and work experience. Recognizing that the improvement of public health can be considered a secondary motive for the GFSI-system in that private sector firms have a primary preoccupation with profit, protecting reputation, and avoiding liability, the GFSI explicitly claims a role in the public health system through its focus on food safety in its website and its Benchmarking Requirement. The potential for conflict of interest of private auditors that has been identified in the literature is exacerbated when auditor's role as a public health practitioner is not recognized because, as per the GFSI's statements and the findings of this dissertation, their role and employment assists in societal protection of public health through their food safety activities.

Since the GFSI as an institution asserts in its publicly available documents that the GFSI-system is intended to improve food safety and public health, it can be argued that the GFSI (the institution) has an obligation to ensure that other institutions and actors in the GFSI-system recognize the auditor's public health practitioner status. This recognition should assist the GFSI-system in meeting its public health objectives by making clear the public health obligations of the auditor, and assist the auditor to perceive and manage conflict of interest situations presented by their employment.

Policy Recommendations

Policy recommendations can be made for both the public and private regulatory approaches from this research. For the public system, utilization of the GFSI audit as a tool to support public health under the concept of sustainable governance should require that these

individuals be acknowledged formally by the state but that private standards should not replace the state's food safety activities. This leads to several public policy recommendations.

1. The public sector should not consider a formal requirement in public policy that food producers achieve certification as envisioned through co-regulation or hybridization of the public and private food safety regulatory approaches as per Martinez (2007) or Havinga and Verbruggen (2017). The strength of these approaches in promoting public health through food safety lies in their complementarity. Furthermore, it is the opinion of the researcher that it is important that the government retains a primary role in food safety and public health. A policy requirement for food producers to attain certification to a GFSI-benchmarked certification programme may be considered to be a movement towards deregulation or privatization of the public food safety and public health approaches.
2. Governments could review and approve GFSI-recognized certification programmes that meet the state's requirements for food safety in food processing, as it has done with the CanadaGAP program. This will ensure that only government recognized programmes are used to support the state's public health objectives.
3. Annual submission of a GFSI benchmarked certification programme audit report to the appropriate regulatory authority, conducted by a government approved auditor and CB. By providing the report, not just the audit certificate, governments will have a better understanding of the strengths and weaknesses of the food producer. This will assist the food safety inspector and state institution in their resource allocation as per the CFIA's Private Certification Policy (Food Safety).

4. GFSI auditors should complete formal, government recognized training in public health.

This will assist the auditors in understanding their role in the public health system and should decrease the conflict of interest. This will provide the government with assurance that the auditors are, and continue to be, qualified to conduct public health activities.

5. A registry of auditors and CBs approved to conduct GFSI audits that can be submitted to the government for consideration with respect to modified regulatory activities, e.g. decrease in inspection frequency.

To support these government requirements, and contribute to the broader food safety governance system in Canada and globally the GFSI-system should require:

1. Clarification of the auditor's role to minimize their conflict of interest and promote public health as stated in the GFSI's "Benefits" information.
2. Stronger statements of the importance of supporting public health in the GFSI documentation and the CPO to acknowledge their certification programme's role in public health. This will assist the auditors, and the food producers, in recognizing their role in public health.
3. The CPO include a requirement for the auditor to have completed training in public health and how the GFSI supports public health objectives. For example, this could be included in auditor training requirements to be an approved GFSI auditor for the certification programme.
4. Stronger auditor competencies in the field of public health and inclusion of public health questions in the proposed auditor examination.

Further Research

There are several opportunities for further research as a result of this investigation. Examining civil sector approaches to ensuring safe food, e.g. Kosher or Halal, as per the sustainable governance framework could provide a complete view of the current state of food safety governance. Other non-food safety regulatory approaches could also be investigated, for example an investigation into the public and private fisheries sustainability regulatory approaches of the public, private, and civil sectors; the concept of sustainable governance, and the methodology used here could be applied to these approaches and would likely provide a deeper understanding of the governance of environmental sustainability as it relates to the food fishery.

The exploratory nature of this study and its conclusions present significant opportunity for further research with respect to the actors and institutions involved. First, greater investigation into the auditor's understanding of their role in public health is warranted. This study did not investigate, for example, why the auditors didn't recognize themselves as public health practitioners nor did it investigate why the other institutions concurred and understanding this would be helpful for designing training programs for these actors and increasing their awareness of their role in public health and managing the conflict of interest discussed above. Though it can be theorized as to why this disconnect occurred, i.e. the auditors do not recognize their role as a public health practitioner because the role is not directly in the state's public health system and they are not employed by public institutions; this should be explored in further research. Second, research into the efficacy of the GFSI in promoting public health should be explored, particularly in light of the CFIA's Private Certification Policy. Though the CFIA states that it is a "science-based" regulatory agency the literature into the effectiveness of the

GFSI in promoting food safety are opinion-based, and there is little food science or epidemiology-based research available; further quantitative studies into whether or not a concurrent decrease in foodborne illnesses were seen with the introduction of the GFSI are warranted (CFIA, 2015a; Crandall et al., 2012, 2017). Third, investigations into the CB and auditor as per Albersmeier (2009) and Short et al. (2014) would be of value. Finally, this dissertation provides a model for analysis of private actors in other contexts who can be functionally considered to be participating in the achievement of public interest goals, and whether there are benefits such recognition. Considering GFSI auditors as street-level bureaucrats analogous to the government's food safety inspector and as public health practitioners raises questions of whether a similar analysis can be made as to whether or not other 'non-traditional' street-level bureaucrat would benefit from recognition of their societal role in protecting the public interest. For example, auditors in other private governance systems such as ISO 14001 or the MSC could be investigated to determine if these actors consider themselves to be assisting in the protection of common resources or just as elements of the operations of private businesses, and what benefit is there to these auditors recognizing their role in environmental protection?

Conclusion

Having examined the role of the GFSI auditor in the public health system to determine if they are public health practitioners, as well as their understanding and actors in other institutions in the GFSI-system, this investigation has identified that, despite their place in meeting public health objectives as envisioned by the sustainable governance framework, the actors in this system do not identify the GFSI auditor as a public health practitioner. This research fills a gap in the literature identifying the auditor as an important part of the public health system and its

conclusions can be used by public regulatory agencies and the GFSI-system to assist these institutions with meeting their public health objectives.

Appendix A: Interview Recruitment Script / Email for Auditors

I am inviting you to participate in a research project that investigates the perceptions of GFSI (GFSI) auditors' role in public health. Its goal is to determine i) the professional identity of these auditors, and how they understand their role in public health and ii) how the food production industry, governments, and the private regulatory system understand the auditors' role in public health.

This project is entirely focused on the role of the GFSI auditor in public health. The interview is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the interview contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

Your responses will be anonymized prior to use so that you will not be identified. There are no personal benefits to participating in this research, and you may withdraw at any point until April 1, 2017; should you withdraw prior to this, your responses will not be used. After April 1, 2017, the data will have been analyzed.

To participate in this project, you must:

- i) be fully certified to conduct GFSI audits for at least one benchmarked scheme,
- ii) have completed at least five GFSI audits of that scheme,
- iii) be fluent in English.

This project will be conducted as an interview and brief demographic survey, requiring approximately one hour of your time and can occur at a time or place of your choosing.

Conflict of interest declarations: The researcher is a contract employee for NSF-GFTC, but does not conduct GFSI audits. This information is being collected solely for the researcher's graduate degree, and is not being collected for any organization associated with the GFSI or NSF-GFTC, or institution other than Ryerson University.

If you would like to participate, please contact Beth Driscoll at 416-985-9941 or edriscol@ryerson.ca. Your contact information will be kept confidential and if possible, please provide personal contact information, not your organizational contact information." Questions can be directed to the researcher or Richard Meldrum, Associate Professor, Ryerson University at meldrum@ryerson.ca

Appendix B: Auditor Consent Form

Introduction

You are being asked to participate in a research study. Before you give your consent to participate, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Principal Investigator name and contact info

Principle Investigator	Elizabeth Driscoll
Purpose	Doctoral research in Public Policy and Administration
Contact Information	edriscol@ryerson.ca
Organization	Ryerson University, Policy Studies Department
Supervisors	Dr. Richard Meldrum Dr. K. Webb
Contact Information	<u>meldrum@ryerson.ca</u> (416) 979-5000, ext. 4621

Title of the study: Public and Private Food Safety Regulatory Systems: Exploring the Role of Third Party Auditors in Achieving Public Health Objectives

Purpose of the study: To investigate the role of third party auditors in public health.

Description of the study

This project will explore the role of the GFSI auditor in public health. Its goal is to determine i) the professional identity of these auditors, and how they understand their role in public health and ii) how the food production industry, governments, and the private regulatory system understand the auditors' role in public health. There are no personal benefits to the participants.

If you choose to participate, you will be asked about your professional identity and your understanding of your role in public health through the audits you conduct to a GFSI (GFSI) benchmarked Food Safety Scheme, and asked to complete a demographic survey.

The interviews will take place at a location of your choice, or by phone. These interviews will be recorded and transcribed for analysis, however, you can opt not to have this done. The interview is expected to last approximately one hour.

Should you agree, the interviews will be audiotaped and transcribed for analysis by the researcher and research team. Your information will be confidential; your name will not be used and instead you will be given a participant number. No identifying information will be used in the dissertation or other materials produced from this research. If you decide to participate you are free to refuse to answer any question, stop participation altogether, and withdraw your consent at any time before April 1, 2017; should you withdraw, your responses will not be used. After April 1, 2017 the data will have been analyzed and will be used.

The data will be stored in electronic format on secure USB key and Ryerson servers. Hardcopies of all information will be maintained in a locked filing cabinet at Ryerson University.

Your information and responses will not be shown to any other participant or organization, nor will they be informed that you have participated.

Participation in this study is voluntary. Your decision to take part (or not) will in no way influence your current or future opportunities and relationship with Ryerson University, or with any of the researchers involved in this study.

If you have any questions about the research now, please ask. If you have questions later, please contact Beth Driscoll at edriscoll@ryerson.ca. If you have concerns about this study, please contact Dr. Richard Meldrum at meldrum@ryerson.ca

This research is being conducted for the purpose of completing a Doctor of Philosophy dissertation by the principle investigator. The research will be used for the dissertation, journal publications, conference presentations and other potential publications, e.g., industry events. You will not be identified in publications. The data you provide may be useful in other research. You will be asked at the end of this form to indicate if you are willing to have your data used in other studies.

This study has undergone review through the Ryerson University Research Ethics Board. If you have questions about your rights as a research participant, you may contact the Ryerson Research Ethics Board at rebchair@ryerson.ca.

Conflict of interest declarations: Beth Driscoll is a contract employee for NSF-GFTC. This information is being collected solely for the researcher's graduate degree, and is not being

collected for any organization associated with the GFSI or NSF-GFTC, or institution other than Ryerson University.

This project is entirely focused on the role of the GFSI auditor in public health. The interview is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government, or other organization. Should the interview contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

The data collected may be used for future research projects. Please indicate on the third page whether you agree to allow your data to be used.

Consent to participate in the research study: Public and Private Food Safety Regulatory Systems: Exploring the Role of Third Party Auditors in Achieving Public Health Objectives

Eligibility for this survey includes the following criteria. Please check the following boxes:

- ☐ You are certified to at least one GFSI benchmarked scheme.
- ☐ You have completed at least five GFSI audits of that scheme.

The data collected may be used for future research projects. Please check one of the following boxes.

- ☐ The information I provide may be used in further research projects which have ethics approval as long as my name and contact information is removed before it is given to the researcher.
- ☐ The information I provide cannot be used for other research projects unless I am contacted to provide my permission.
- ☐ The information I provide cannot be used except for this project.

Your signature below indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate by Oct. 1, 2016. You have been given a copy of this agreement.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

Participant Signature: _____

Participant Name (please print): _____

Date: _____

Principle Investigator Signature: _____

Principle Investigator Name: _____

Date: _____

Consent to be audio taped

Your signature below indicated that you agree to have the interview audio recorded.

Signature:

Name (please print):

Date:

Appendix C: Auditor Interview Guide and Demographic Survey

Interview Questions

1. Please confirm your eligibility for this interview:
 - i) You are certified to at least one GFSI benchmarked scheme, which one?
 - ii) You have completed at least five GFSI audits of that scheme,
 - iv) This interview will be conducted in English.
2. How did you come to be a GFSI (GFSI) auditor? (Training, experience in industry, education, etc.)
3. How would you describe your role in the food safety system?
4. What is your understanding of public health?
5. Do you have a role in the public health? If so, what is it?
6. One definition of professional identity is “[one’s] professional self-concept based on attributes, beliefs, values, motives, and experiences (Slay & Smith, 2011, p. 86).
How would you define your professional identity?
7. The development of an individual’s professional identity occurs through socialization, through both formal (education, training, etc.) and informal (interactions with colleagues, etc.) methods (Hotho, 2008; Liddell et al., 2014).
How did you develop your professional identity?
8. Do government inspectors and a GFSI auditor perform the same role / function? If so, how do they compare to each other?
9. Can you describe how the GFSI improves public health?
10. Can you tell me about an incident where your GFSI audits impacted public health in a tangible way? (For example, a recall was initiated as a result of your audit, ‘failed’ a facility for not having strong enough food safety controls, etc.)
11. Have you ever worked as a government regulatory agent or employee in a food safety / public health program (e.g. Public Health Inspector, CFIA Inspector)? What organization and role? How did your role as a government inspector compare to your role as an auditor?
12. Is there anything you would like to add or comment on?
13. Can you recommend other auditors for me to interview? Can you recommend anyone in the government, GFSI itself, Accreditation Body or Certification Body me to interview?

Demographic survey

1. What is your age: 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-80.
2. Gender:
3. What is your education?
4. What is your professional designation?
5. Did you work in industry or government before becoming an auditor?
6. What food industry sectors (will present a list of the common food industry sector descriptions as per the Food Safety Schemes)?
7. How many years were you working in industry or government before you became a GFSI auditor? (Please state the number of years in each).
8. How many audits have you conducted (both GFSI and non-GFSI audits)?
9. How many GFSI audits have you conducted?
10. How many GFSI schemes do you conduct audits for?
11. How many Certification Bodies do you conduct audits for?
12. What categories?

Appendix D: Non-Disclosure Agreement Elizabeth Driscoll and Transcription Hub

This Non-Disclosure Agreement (the "Agreement") is entered into by and between Elizabeth Driscoll and Transcription Hub (Transcription Hub) for the purpose of preventing the unauthorized disclosure of Confidential Information as defined below. The parties agree to enter into a confidential relationship with respect to the disclosure of certain proprietary and confidential information ("Confidential Information").

- 1) Definition of Confidential Information. For purposes of this Agreement, "Confidential Information" shall include all information or materials that have been provided to Transcription Hub, including information present in the recordings, as well as the final product.
- 2) Exclusions from Confidential Information. There are no exclusions from Confidential Information.
- 3) Obligations of Receiving Party. Transcription Hub shall hold and maintain the Confidential Information in strictest confidence for the sole and exclusive benefit of the ELIZABETH DRISCOLL. No information provided to Transcription Hub will be shared with any party other than the transcriber and Transcription Hub at any time.
- 4) Destruction of Materials. Transcription Hub and its employees / contractors will destroy all files associated with each transcription, including electronic files, seven (7) days after the transcripts are provided to Elizabeth Driscoll.
- 5) Confidentiality. Transcription Hub and all employees or contractors agree to maintain and provide full confidentiality in regards to any and all audio files and documentations received from Elizabeth Driscoll related to her research study. This includes:
 - a) to hold in strictest confidence the identification of any individual or any identifying information that may be revealed during the transcription of audio-taped interviews, or in any associated documents;
 - b) to not make copies of any audio files or transcriptions of the transcribed interviews texts;
 - c) to store all study-related audio files and materials in a locked safe, secure location and electronic files encrypted (electronic), and to ensure that no other individuals have access to these files;
 - d) the information in all research files is not to be shared with individuals other than Transcription Hub.
 - e) Electronic files should be encrypted and papers locked in a secure filing cabinet.

- 6) The parties agree that no failure or delay by the other party in exercising any right, power or privilege hereunder shall operate as a waiver of the exercise of any such right, power or privilege.
- 7) The Transcription Hub acknowledges and agrees that any breach of this agreement would result in irreparable harm to the Elizabeth Driscoll and that damages would be an inadequate remedy. In the event of a breach or threatened breach of this agreement, the Elizabeth Driscoll shall be entitled to an injunction restraining any such breach, in addition to any other rights or remedies it may have and the Transcription Hub agrees not to oppose such application or proceeding.
- 8) Elizabeth Driscoll and the Transcription Hub acknowledge and agree that this agreement does not obligate the Transcription Hub or Elizabeth Driscoll to enter into any further agreements relating to the Project or otherwise.
- 9) Transcription Hub shall, at all times in the performance of its duties hereunder, act as an independent contractor, and nothing contained herein shall be construed to create the relationship of principal and agent, or employer and employee, between the Transcription Hub and Elizabeth Driscoll.
- 10) This agreement constitutes the entire understanding and agreement of and between the parties with respect to the subject matter hereof and supersedes all prior representations and agreements. Any amendment of this agreement shall only be valid if contained in a written document executed by the parties.
- 11) This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.
- 12) If any provision of this agreement shall be held invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
- 13) This agreement constitutes the entire understanding and agreement of and between the parties with respect to the subject matter hereof. Any modification to this agreement shall only be valid if in writing and signed by both parties.

The nondisclosure provisions of this Agreement shall survive the termination of this Agreement and Transcription Hub's duty to hold Confidential Information in confidence shall remain in effect at all times.

The failure to exercise any right provided in this Agreement shall not be a waiver of prior or subsequent rights.

Transcription Hub is aware that they can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if information is disclosed

The Transcription Hub agent who signs the Agreement has the authority to act on behalf of, speak on behalf of, and bind Transcription Hub with respect to this agreement.

This Agreement and each party's obligations shall be binding on the representatives and successors of such party. Each party has signed this Agreement through its authorized representative.

Beth Driscoll

Elizabeth Driscoll, Researcher

Date: August 24, 2016

_____ (Signature)

_____ (Typed or Printed Name)

_____ (Title)

Transcription Hub

Date: _____

Appendix E: Research Assistant Confidentiality Agreement

This study, **Public and Private Food Safety Regulatory Systems: Exploring the Role of Third Party Auditors in Achieving Public Health Objectives**, is being undertaken by Elizabeth Driscoll, a PhD Candidate at Ryerson University.

The purpose of this study is to investigate how GFSI auditors understand their professional identity and how they are viewed in the larger food safety system.

Data from this study will be used for the researcher's degree, and will be published in various formats (e.g. dissertation, journal articles, etc.).

I, (name of research assistant), agree to:

1. Keep all the research information shared with me confidential by not discussing or sharing the research information in any form or format (e.g. disks, tapes, transcripts) with anyone other than the Principal Investigator(s);
2. Keep all research information in any form or format secure while it is in my possession;
3. Return all research information in any form or format to the Principal Investigator(s) when I have completed the research tasks;
4. After consulting with the Principal Investigator(s), erase or destroy all research information in any form or format regarding this research project that is not returnable to the Principal Investigator(s) (e.g. information stored on computer hard drive).
5. Keep confidential the in-review paper by E. Driscoll and K. Webb (2016) Food Safety Governance at the Global Level. *This paper has been submitted to a journal and is currently in-review. It should not be shared with anyone for any reason with E. Driscoll's express written permission.*

Research Assistant:

(print name) (signature) (date)

Principal Investigator:

(print name) (signature) (date)

If you have any questions or concerns about this study, please contact: Professor Richard Meldrum, Professor, Ryerson University at meldrum@ryerson.ca.

This study has been reviewed and approved by the Research Ethics Board at Ryerson University.

For questions regarding participants rights and ethical conduct of research, contact the Ryerson University Research Ethic Board Chair, rebchair@ryerson.ca or 416-979-5000.

Appendix F: Auditor Responses - Code, Code Description, and Example of Code Used

Question	Code	Code Description	Primary Example of Code Used
How did you come to be a GFSI (GFSI) auditor?	Work experience	Auditors were introduced to the auditing profession through their work experience.	I learned how to audit for [Company name] company that was my introduction to food safety auditing... being audited by super markets and large food service operations like [Customer name] and [Customer name]. All these different companies would bring in their auditors to audit the company that I worked for. I learned from auditors at that stage and refined my own auditing skills and after this I worked for [Company name] in their corporate office in California. [AUD 15]
How would you describe your role in the food safety system?	Ensure compliance with third party audit standards	Auditors compare the food producer's food safety programs and the implementation of these programs to the third-party audit standard.	And then we go into facilities and we assess programs and make decisions based on our backgrounds and educations and trainings on whether or not food sites are meeting those requirements. [AUD 05]
			By being an auditor because you are comparing them to a standard or comparing to them what they should be [AUD 06]
What is your understanding of public health?	Food safety is part of public health	Recognizing that food safety is a component of public health.	I guess food safety then fits into the bigger picture, if people's food is safe then public health is increased. [AUD 04]
Do you have a role in the public health? If so, what is it?	Recognition of a public health role	Audit acknowledged a direct role in public health.	I guess I'm part of public health system as far as making sure that what producers produce, going to consumers, is safe to eat. [AUD 06]
			Helping the middleman between the supplier and the consumer, at least ensure that the products they're bringing in are relatively safe. [AUD 13]
	Indirect role in public health	Auditor acknowledged and indirect role in public health.	Indirectly we just make those groups stronger, is my opinion, I don't direct influence on Public Health, I'm not the one growing that apple or mixing that bucket

			of whatever, but I can ask questions to make sure that indirectly the people I'm auditing are doing the best they can. [AUD 03].
	Does not protect public health	Auditor did not acknowledge a role in public health.	So, in a broadest sense yes, because I am helping to ensure that a company is producing safe food, but in a strictest sense not really because, I have nothing to do with regulations, and if they fail a GFSI audit they could still keep selling food to the public. [AUD 02]
How would you define your professional identity?	Food safety auditor	An individual whose primary professional identity is a food safety auditor.	I'm a food safety auditor. I go into plants and verify that their quality program and their food safety program is as good as they say it is. Usually that's about the answer. [AUD 14]
	Multiple identities	An individual whose does not have one professional identity.	It depends on who I'm speaking to because I do many different things besides food safety auditing, so I would say if I'm talking about the food safety auditing I would just say yes, I audit food companies. And – just keep it very general, I tend to talk about my other activities more than the food safety auditing. [AUD 15]
How did you develop your professional identity?	Work experience	The individual's work experience helped form their professional identity.	I would definitely say it was more so industry experience. So, working in manufacturing facilities, dealing with the food, like real food safety issues, as well as working with suppliers in dealing with issues that they had. [AUD 05]
	Education	The individual's education helped form their professional identity.	[I did a] Bachelor of Science in Chemistry but I did that through a co-op program and probably half of my co-op placements were in the food industry. I would say that that's when it sort of began. [AUD 10]
Do government inspectors and a GFSI auditor	Comparable	The GFSI auditor and a government inspector have comparable roles in food safety.	Well, they have their own standard that you're working against that the two standards to have similarities –so even if the structure is different -- these final goals is the same to ensure that site

perform the same role / function? If so, how do they compare to each other?			structure is good. And then looking at food processes to make sure they're sound in in terms of reducing risks. So, their final goal is the same, even if the auditing standard is different. [AUD 15]
	Not comparable	The GFSI auditor and a government inspector role are not comparable.	I think they are very different roles. The inspectors carry that weight of legislative requirements where if you're not meeting the inspector's requirements you could be out of business tomorrow. Whereas I think a third-party auditor doesn't necessarily carry that same regulatory clout, but it is that much more, I don't want to say respected, but more importance put on it by the customers in my mind so from the, I guess from the point of view of industry I would say that your regulatory inspectors enforce basic requirements whereas third party auditors are confirming that you are going over and above those basic requirements. [AUD 10]
Can you describe how the GFSI improves public health?	GFSI strengthens food safety programs	The GFSI strengthens food safety programs at the food producer's facility.	GFSI is a global standard so it takes all the things that happen internationally, and kind of puts them on the table. so, although, the food fraud isn't maybe as high incidents in Canada, and I don't know if it is [or] not, at least it's on the table, where people do assess. Where as in traditional Canadian regulations, whether it be CFIA provincial food safety, that's not even a thought or concept on the table, so it kind of ups the ante and puts those preventative controls in place sort of ahead of the game. [AUD 06]
	Another set of eyes	The auditor can provide a new perspective or provide new insight into conformances or non-conformances	By improving the standards, by creating awareness, by having, you know, another entity evaluates food safety. [AUD 01]

Can you tell me about an incident where your GFSI audits impacted public health in a tangible way?	No code developed	-	Examples were provided by respondents
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Appendix G: Online Survey Recruitment Script / Email for Auditors

My name is Beth Driscoll, and I am inviting you to participate in a brief, online survey. This survey will take approximately 15 minutes to complete, and investigates the perceptions of GFSI (GFSI) auditors' role in public health. This survey is being conducted for my doctoral research project at Ryerson University.

To participate in this project, you must:

- i) be fully certified to conduct GFSI audits for at least one benchmarked scheme,
- ii) have completed at least five GFSI audits of that scheme,
- iii) be fluent in English.

The survey is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the responses to the survey questions contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

Conflict of interest declarations: I am a contract employee for NSF International. This information is being collected solely for my graduate degree, and is not being collected for any organization associated with the GFSI or NSF International, nor do I conduct GFSI audits.

If you choose to participate, you will be asked to complete an online survey about your professional identity and your understanding of your role in public health through the audits you conduct to a GFSI (GFSI) benchmarked Food Safety Scheme. The survey is confidential is using Opinio, Ryerson University's Online Survey Program, and all data is stored at Ryerson University. This study has undergone review through the Ryerson University Research Ethics Board and if you have questions about your rights as a research respondent, you may contact the Ryerson Research Ethics Board at rebchair@ryerson.ca. If you have any questions about the survey please contact the researcher, Beth Driscoll, at edriscol@ryerson.ca or Dr. Richard Meldrum at meldrum@ryerson.ca before continuing.

Please feel free to forward this email to anyone you feel may be qualified to participate. To participate, please go to the following website: [insert web address]

Appendix H: Online Survey Recruitment Script – Social Media

Request for participation in an on-line survey involving GFSI auditors

You are invited to participate in an online survey investigating the perceptions of GFSI (GFSI) auditors' role in public health. It will take approximately 15 minutes to complete. This survey is being conducted by Beth Driscoll, a Doctor of Philosophy Candidate at Ryerson University in Toronto, Ontario, for her doctoral dissertation.

To participate in this project, you must:

- i) be fully certified to conduct GFSI audits for at least one benchmarked scheme,
- ii) have completed at least five GFSI audits of that scheme,
- iii) be fluent in English.

The survey is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the responses to the survey questions contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

Conflict of interest declarations: Beth Driscoll is a contract employee for NSF International. This information is being collected solely for the researcher's graduate degree, and is not being collected for any organization associated with the GFSI or NSF International, nor does she conduct GFSI audits.

If you choose to participate, you will be asked to complete an online survey about your professional identity and your understanding of your role in public health through the audits you conduct to a GFSI (GFSI) benchmarked Food Safety Scheme. The survey is confidential is using Opinio, Ryerson University's Online Survey Program, and all data is stored at Ryerson University. This study has undergone review through the Ryerson University Research Ethics Board. If you have questions about your rights as a research participant, you may contact the Ryerson Research Ethics Board at rebchair@ryerson.ca. If you have any questions about the survey please contact the researcher, Beth Driscoll, at edriscol@ryerson.ca or Dr. Richard Meldrum at meldrum@ryerson.ca before continuing.

Please feel free to forward this email to anyone you feel may be qualified to participate.

To participate, please go to the following website: [insert web address]

Appendix I: Online Survey Questions and Responses

No.	Question	Answer
1.	Why did you become a GFSI (GFSI) auditor?	I was recruited by a certification body.
		I was required to become a GFSI auditor by my employer.
		Auditing compliments my consulting and / or training activities.
		I needed a new challenge in my career.
		I wanted to keep working in the food safety field, but not in a quality assurance role.
		I had worked in a public health role, e.g. inspector, officer, etc., and wanted to remain in public health.
		Other:
		Decline to answer
2.	What is the purpose of a GFSI audit?	Assess the facility for compliance to a Food Safety Scheme.
		Ensure continuous improve in their food safety programs.
		Educate the facility in food safety and / or the Food Safety Scheme
		Support industry in the production of safe food.
		Confirm that the facility is producing safe food.
		Ensure unsafe food doesn't reach the consumer.
		I do not have a role in food safety.
		Other:
		Decline to answer
3.	What it is the role of GFSI auditor?	Assess the facility for compliance to a Food Safety Scheme.
		Ensure continuous improve in their food safety programs.
		Educate the facility in food safety and / or the Food Safety Scheme
		Support industry in the production of safe food.
		Confirm that the facility is producing safe food.
		Ensure unsafe food doesn't reach the consumer.
		I do not have a role in food safety.
		Other:

		Decline to answer
4.	What it is the GFSI auditor's primary role in food safety.	Assess the facility for compliance to a Food Safety Scheme.
		Ensure continuous improve in their food safety programs.
		Educate the facility in food safety and / or the Food Safety Scheme
		Support industry in the production of safe food.
		Confirm that the facility is producing safe food.
		Ensure unsafe food doesn't reach the consumer.
		I do not have a role in food safety.
		Other:
		Decline to answer
5.	Who has a responsibility for food safety? (Check all that apply)	Farmers, including slaughter facilities
		Ingredient manufacturers, e.g. slaughter house, flour mill, flavour or colouring manufacturer, etc.
		Food manufacturers
		Distribution centres
		Food retailers
		Food service organizations
		Restaurants
		Consumers
		GFSI
		Food Safety Schemes
		Government regulatory systems
		Government inspectors
		Third party food safety auditors
		Other:
		Decline to answer
6.	How is food safety related to public health?	Food safety is a component of public health
		Food safety is not related to public health
		Other:
		Decline to answer
7.	Who has a responsibility for public health? (Check all that apply)	Farmers, including slaughter facilities
		Ingredient manufacturers, e.g. slaughter house, flour mill, flavour or colouring manufacturer, etc.
		Food manufacturers
		Distribution centres
		Food retailers

		Food service organizations
		Restaurants
		Consumers
		GFSI
		Food Safety Scheme
		Government regulatory systems
		Government inspectors
		Third party food safety auditors
		Other:
		Decline to answer
8.	My professional identity within the food safety system is:	Food safety auditor
		Food safety professional (e.g. trainer, consultant)
		Public health practitioner
		None of the above
		I don't know
		Other:
		Decline to answer
9.	When you conduct an audit, who are you protecting?	The consumer from a foodborne illness
		The food producer I am auditing
		The retailer who requires the audit
		The Food Safety Scheme
		The Certification Body for whom I am conducting the audit
		The Accreditation Body that accredited the Certification Body
		Myself, from the threat of liability.
		All of the above
		None of the above
		Other:
		Decline to answer
10.	Please rank from first to last the who you are protecting when you are conducting an audit.	The consumer from a foodborne illness
		The food producer I am auditing
		The retailer who requires the audit
		The Food Safety Scheme
		The Certification Body for whom I am conducting the audit
		The Accreditation Body that accredited the Certification Body
		Myself, from the threat of liability

		All of the above
		None of the above
		Other:
		Decline to answer
11.	The most important reason for conducting a GFSI audit is	Assessing for compliance to the standard.
		Ensuring the retailer is selling safe food.
		Ensuring unsafe food doesn't reach the consumer.
		Educating the facility.
		None of the above.
		Assessing for compliance to the standard.
		Other:
12.	Considering only your work as a GFSI auditor, what is your primary role in the food safety system?	Decline to answer
		Assessing for compliance to the Food Safety Scheme
		Ensuring continuous improvement in their food safety programs
		Educating the facility in food safety and / or the Food Safety Scheme
		Supporting industry in the production of safe food
		Confirming that the facility is producing safe food
		Ensuring unsafe food doesn't reach the consumer
		I do not have a role in food safety
		Other:
		Decline to answer
13.	Does your work as an auditor help to prevent foodborne illnesses?	Yes
		No
		Unsure
		Other:
		Decline to answer
14.	Does your work as an auditor contribute to public health?	Yes
		No
		Unsure
		Other:
		Decline to answer
15.	As an auditor, do you consider yourself to be a professional?	Yes
		No
		Unsure

		Other:
		Decline to answer
17.	Do you consider yourself a public health practitioner?	Yes
		No
		Unsure
		Other:
		Decline to answer
18.	Which role do you identify most closely with?	Auditor (any audit conducted in the food safety system)
		Trainer (any training conducted in the food safety system)
		Consultant (any consulting conducted in the food safety system)
		Public health practitioner
		Food safety professional
		Other:
		Decline to answer
19.	Did you consider yourself to have a role in public health prior to this survey?	Yes
		No
		Unsure
		Other:
		Decline to answer
20.	How do you describe your role to other people, for example, at a dinner party or chatting with a stranger on an airplane?	

Appendix J: Recruitment Script for Governments, Organizations & Industry

My name is Beth Driscoll, and I am a Doctor of Philosophy Candidate in Policy Studies at Ryerson University.

I am inviting you to participate in a research project that investigates the GFSI (GFSI) auditors' role in public health. Its goal is to determine i) the professional identity of these auditors, and how they understand their role in public health and ii) how the food production industry, governments, and the private regulatory system understand the auditors' role in public health.

This project is entirely focused on the role of the GFSI auditor in public health. The interview is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the interview contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

If you choose to participate, you will be asked about your understanding of the role of these auditors in public health. There are no personal benefits to participating in this research, and you may withdraw at any point until August 1, 2017; should you withdraw, your responses will not be used. After August 1, 2017 the data will have been analyzed and will be used.

This project will be conducted as an interview and possibly a demographic survey, requiring approximately one hour of your time and can occur at a time or place of your choosing.

Conflict of interest declarations: Beth Driscoll is a contract employee for NSF-GFTC. I do not conduct GFSI audits. This information is being collected solely for the researcher's graduate degree, and is not being collected for any organization associated with the GFSI or NSF-GFTC.

If you would like to participate, please contact Beth Driscoll at 416-985-9941 or edriscoll@ryerson.ca. Your contact information will be kept confidential and if possible, please provide personal contact information, not your organizational contact information. Questions can be directed to the researcher or Richard Meldrum, Associate Professor, Ryerson University at meldrum@ryerson.ca.

Appendix I: Industry – Recruitment Script - Social

You are invited to participate in a research study investigating industry's perceptions of the GFSI (GFSI) auditors' role in public health. Its goal is to determine the food production industry perception of the auditors' role in public health. The interview will take approximately an hour and is being conducted by Beth Driscoll, a Doctor of Philosophy Candidate at Ryerson University in Toronto, Ontario, for her doctoral dissertation.

To participate in this project, you must:

- i) Be, or have been, employed as the primary audit contact for a facility which has undergone an audit to a GFSI benchmarked scheme within the last three years.
- ii) be fluent in English.

The interview is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the interview responses contain information that would identify one of these organizations, or the facility which was undergoing the audit, the identifying information will be anonymized prior to use.

Conflict of interest declarations: Beth Driscoll is a contract employee for NSF International. This information is being collected solely for the researcher's graduate degree, and is not being collected for any organization associated with the GFSI or NSF International, nor does she conduct GFSI audits.

This study has undergone review through the Ryerson University Research Ethics Board. If you have questions about your rights as a research participant, you may contact the Ryerson Research Ethics Board at rebchair@ryerson.ca. If you have any questions about the survey please contact the researcher, Beth Driscoll, at edriscol@ryerson.ca or Dr. Richard Meldrum at meldrum@ryerson.ca before continuing.

Please feel free to forward this email to anyone you feel may be qualified to participate.

Appendix K: Voluntary Consent for Participation in Research Study for Governments, Organizations and Industry

Introduction

You are being asked to participate in a research study. Before you give your consent to participate, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Principal Investigator name and contact info

Principle Investigator	Elizabeth Driscoll
Purpose	Doctoral research in Public Policy and Administration
Contact Information	edriscol@ryerson.ca

Organization	Ryerson University, Policy Studies Department
Supervisors	Dr. Richard Meldrum Dr. K. Webb
Contact Information	<u>meldrum@ryerson.ca</u> (416) 979-5000, ext. 4621

Title of the study: Public and Private Food Safety Regulatory Systems: Exploring the Role of Third Party Auditors in Achieving Public Health Objectives

Purpose of the study: To investigate the role of third party auditors in public health.

Description of the study

This project will explore the role of the GFSI auditor in public health. Its goal is to determine i) the professional identity of these auditors, and how they understand their role in public health and ii) how the food production industry, governments, and the private regulatory system understand the auditors' role in public health. There are no personal benefits to the participants.

If you choose to participate, you will be asked about your organization's understanding of the role of third party auditors in role in public health through the audits conducted to a GFSI

benchmarked Food Safety Scheme during the interview, and asked to complete a demographic survey.

The interviews and survey will take place at a location of your choice, or by phone. These interviews will be recorded and transcribed for analysis, however, you can opt not to have this done. The interview is expected to last approximately one hour.

Should you agree, the interviews will be audiotaped and transcribed for analysis by the researcher and research team. Your information will be confidential; your name will not be used, just the organization. No personal identifying information will be used in the dissertation or other materials produced from this research. If you decide to participate you are free to refuse to answer any question, stop participation altogether, and you may withdraw at any point until August 1, 2017; should you withdraw, your responses will not be used. After August 1, 2017 the data will have been analyzed and will be used.

The data will be stored in electronic format on secure USB key and Ryerson servers. Hardcopies of all information will be maintained in a locked filing cabinet in the researcher's house.

Participation in this study is voluntary. Your decision to take part (or not) will in no way influence your current or future opportunities and relationship with Ryerson University, or with any of the researchers involved in this study.

If you have any questions about the research now, please ask. If you have questions later, please contact Beth Driscoll at edriscoll@ryerson.ca. If you have concerns about this study, please contact Dr. Richard Meldrum at meldrum@ryerson.ca

Your information and responses will not be shown to any other participant or organizations, nor will they be informed that you have participated.

This research is being conducted for the purpose of completing a Doctor of Philosophy dissertation by the principle investigator. The research will be used for the dissertation, journal publications, conference presentations and other potential publications, e.g., industry events. You will not be identified in publications.

This study has undergone review through the Ryerson University Research Ethics Board. If you have questions about your rights as a research participant, you may contact the Ryerson Research Ethics Board at rebchair@ryerson.ca.

Conflict of interest declarations: Beth Driscoll is a contract employee for NSF-GFTC. This information is being collected solely for the researcher's graduate degree, and is not being collected for any organization associated with the GFSI or NSF-GFTC.

This project is entirely focused on the role of the GFSI auditor in public health. The interview is not intended to investigate or assess the GFSI, a GFSI benchmarked Food Safety Scheme, Certification Body, Accreditation Body, government or other organization. Should the interview contain information that would identify one of these organizations, the identifying information will be anonymized prior to use.

The data collected may be used for future research projects. Please indicate on the third page whether you agree to allow your data to be used.

Consent to participate in the research study: Public and Private Food Safety Regulatory Systems: Exploring the Role of Third Party Auditors in Achieving Public Health Objectives

Your signature below indicates that you have read the information in this agreement and have had a chance to ask as many questions you have about this study.

Please check one of the following boxes, initial each page and sign the third page.

- ☐ The information I provide can be used in further research projects which have ethics approval as long as my name and contact information is removed before it is given to them.
- ☐ The information I provide cannot be used for other research projects unless I am contacted to provide my permission.
- ☐ The information I provide cannot be used except for this project.

Your signature below indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

Participant Signature:

Participant Name (please print):

Date:

Principle Investigator Signature:

Principle Investigator Name:

Date:

Consent to be Audio taped

Your signature below indicated that you agree to have this interview audio recorded.

Signature:

Name (please print):

Date:

Appendix L: Interview Guide for Governments & Organizations

Interview Questions

1. What is your organization's understanding of food safety?
2. How would you describe your organization's role in the food safety system?
3. What is your organization's understanding of public health?
4. How would you describe your organization's role in public health?
5. How does your organization envision the role of the government in food safety and public health?
6. How does your organization envision the role of the GFSI in food safety and public health?
7. What does your organization think is the role of the GFSI auditor in food safety?
8. Can you, on behalf of your organization, describe how the GFSI improves public health?
9. How would your organization like to see the GFSI used by governments in support of public health?
10. Inspector Specific: One definition of professional identity is "[one's] professional self-concept based on attributes, beliefs, values, motives, and experiences (Slay & Smith, 2011, p. 86). How would you define your professional identity?
11. Inspector Specific: The development of an individual's professional identity occurs through socialization (Hotho, 2008; Liddell et al., 2014). How did you develop your professional identity?
12. Is there anything you would like to add or comment on?
13. Can you recommend anyone else for me to interview, i.e. government, industry or other organization?

**Appendix M: Non-Auditor Participant Responses - Codes, Code Description, and Example
of Code Used**

Question	Code	Code Description	Primary Example of Code Used
What is your organization's understanding of food safety?	Meet GFSI Requirements	Food safety is meeting the GFSI Benchmarking Requirements.	As a scheme owner, and we own several schemes, on food for example a scheme to certify food manufacturers. It's benchmarked by GFSI and the main purpose is to check manufacturers that have implemented all necessary requirements, all necessary processes to guarantee that they can produce a safe product according to customer specification. [CPO 05]
			From our point of view, food safety is the successful completion of an audit. [CB 07]
	Producing safe food	Food safety is producing safe food.	We are very much involved in food safety and our understanding of food safety is working with food producing organizations to ensure that their practices of manufacture of food is the best that they can be to produce safe food. [CPO 04]
	Preventing foodborne illness	Food safety is preventing illnesses in the population.	Anything that can cause harm to a consumer and ensuring that the products that are produced in are meeting that criteria from a biological, chemical and physical point of view. [RA 01]
			That food safety is quite frankly from protecting the people, the consumer/society the world from food borne illness. [CB 06]
			We start kind of the beginning if our packaging isn't safe and then you put the food in it, that is safe, we can contaminate food safety. So, I think it just – it's part of the line and it affects everybody so. [IND 01]

	No definition food safety	The institution does not have a definition of food safety.	We wouldn't have a definition of food safety, but do we have a number of food technologist on staff that have an intimate knowledge of food safety and food safety systems -- management systems and that sort of things. I think we would have a very, very good understanding of what food safety is. [AB 02]
How would you describe your organization's role in the food safety system?	Ensure compliance with third party audit standards	Auditors compare the food producer's food safety programs and the implementation of these programs to the third-party audit standard.	Our role as a certification body is to conduct audits and provide a lay of confidence to the purchasers of products. Those purchases being one step up from in the supply chain that is they're typically major manufacturers or retailers, and / or retailer. [CB 02]
	Assess CBs for compliance	The organization assesses the CBs for compliance to the appropriate ISO standard.	Well, my body is an accreditation body, which means we oversee the certification bodies that undertake the audits, and certifications of food facilities to the GFSI schemes, putting in the context with GFSI. We assess the conformance of the CBs to the requirement of the international standards for CBs, like, 17021 and 22003 for the food safety management systems, or to 17065 for the product schemes, plus the additional requirements of course on the specific schemes. [AB 01]
	Ensure compliance to regulations	The organization ensure compliance to regulations	We're ensuring that they're meeting the regulations from various acts & regulations, that the companies are adhering to those. We will do assessments on their food safety systems to ensure that they are meeting regulatory requirements. [RA 02]
	Develop FS regulations	The organization develops food safety regulations.	We've got a whole code of practice that sets out our standard. [RA 03]

	Prevent foodborne illness	The organization's role is to prevent foodborne illness.	Our role is to ensure safe food, to achieve compliance with both customer and regulatory requirements. [IND 02]
What is your organization's understanding of public health?	Many aspects of PH (incl food safety)	Public health has many components	First of all, I define public health as two different components. One is the food safety aspects and then the other is the medical clinical sort of aspect of public health, which is vaccination, education, communicable disease control, outside the food realm. [CB 03]
			We have a very good understanding of public health, implications of food safety with respect to public health, the importance with respect to your productivity, etc. [AB 02]
	Food safety	Food safety is an important part of public health.	Well I think for example food safety is one of the issues for public health. [RA 05]
			My understanding of public health public health works to ensure that the local level, the food safety regulatory environment enforcement framework, consumer food safety being maintained, obviously keep people healthy and prevent injury, illness, improving healthy wellbeing. [IND 02]
How would you describe your organization's role in public health?	Improve food safety.	Improving food safety will improve public health.	Obviously, this is all done in the auspices of improving public health through improvements of food safety within the supply chain. [CPO 03]
			Ensuring that as a company we are providing safe food for the consumer. So, we're not – we are basically not another risk or not providing product that might be at a higher risk for causing any sort of public health issue. [IND 03]

	Protect CB or manufacturer	The organization's role in food safety is to protect the food producer	The vision for any company involved in food safety should be focused on the consumer, to say that that's who we're protecting, but ultimately, our customer is the manufacture and the person growing or making the food. [CB 02]
	Competent employees	Employees conducting accreditation activities must be competent in their fields to ensure food safety / public health.	We have to make sure that we have assessors that are competent in those fields. So, we do have some of them that do have that expertise. [AB 01]
			Well, it's our core purpose to protect public health in relation to food matters. [RA 03]
How does your organization envision the role of the government in food safety and public health?	Inspection only.	Government's should be inspecting food premises, i.e. retail level.	The first role is to inspect the service of food, so the food service organization like Chipotle, and other organizations and other companies that was within a city or state or however they otherwise do it, so they have that food, and I guess that last step, that certification bodies don't cover, at least traditionally have not covered, that's their responsibility on a maybe to county level or city level or state level, to assure that. [CB 02]
	Government responsible for regulations.	Governments are responsible for legalisation ensuring food safety and food production.	It's important for the government be involved, because they can bring a lot of people together, but ultimately, they're the ones that's responsible. We see them as one that's responsible for the determination of the legislation and the regulation of the food environment. [AB 03]
			Well, we have to ensure that we are enforcing the laws of Canada, ensuring that industry is producing product that is safe, wholesome, unadulterated and so on. And that's really what our role is, is to verify industry's compliance to those regulations and ensuring that whatever is

			being produced is meeting the criteria set for it. [RA 01]
How does your organization envision the role of the GFSI in food safety and public health?	Protects public health.	The role of the GFSI is to improve food safety and protect public health.	I think GFSI--I mean GFSI in my view, is assuring the public's health at the retailer level, not in the food service level, but at the retail level where the--where consumers typically consume most of the food from. [CB 02]
	GFSI improves the certification programme.	The role of the GFSI is to improve the certification programme.	With GFSI it provides a benchmarking, and in a way it's sort of drives change in the schemes in that, their requirements that sit for the benchmarking process is actually effecting change in the schemes as well. [AB 02]
	Assurance to the government	The role of the GFSI is to provide assurance to the government that the manufacturer is producing safe food.	They may have internal audit, they may have third party audits, they do something. They're using technology. They're doing the best they can to fulfill their role, which is good. And we are interested in developing a food system that takes that into account, so that working in partnership with the business, we would say to them, okay we're coming to look at your business, show us what you do, show us what sampling you take, show us how you're making sure what you're producing is safe and is authentic. And we want to be able to use what they're doing to help us have a picture of the business and to help us assure. [RA 03]
What does your organization think is the role of the GFSI auditor in food safety?	Auditor has role in public health.	The auditor has a role in public health.	The auditor is the focal point, it's not the certifying body, that's easy. We have tons of forms you have to follow to make sure the audits are done correctly, fair and balanced. But the auditors are where the rubber meets the road, and they've got to know their business in short hand. [CB 07]

			Just a portion of public health, the food safety, but they definitely play a role because obviously if you are a facility that – is that adhering to good GFSI standards, is having audits and passing their audits, I think that's less likely that really high-risk contamination that could affect public safety would happen. [IND 03]
	Assess for compliance	The auditor assesses the food producer for compliance to the certification programme.	How well they do their job is paramount, because they are assessing the compliances and if they are not doing a good enough job, then there's some organizations that will get through that shouldn't have got through. [AB 02]
			I guess it's you know, I guess it's just another level of auditing to ensure that they are meeting a set criteria, there may be criteria set out by GFSI. [RA 04]
Can you, on behalf of your organization, describe how the GFSI improves public health?	GFSI improves public health.	The GFSI improves public health.	I think they help, they raise the bar for production, they raise the bar for safety standard ... I think that they are contributing sort of to global public health through food safety [CPO 04].
			I think indirectly the auditor is the catalyst for change, is the catalyst for improvement within the business which is has the end benefit of improving public health. [CB 02]
			They use their financial leverage to drive high standards and high levels of performance that's related to ensuring the public health safety of products. [AB 01]
	Decrease foodborne illness	The GFSI decreases	Well, I mean, obviously with great food standards we can reduce the amount of foodborne illness, can't we? [RA 03]

		foodborne illnesses.	They're really high standards, so if you are GFSI, you have a pretty solid program. It definitely helps at least with regards to food safety and the risk of food-borne illness or injury or anything like that. It definitely helps in that respect. [IND 03]
How would your organization like to see the GFSI used by governments in support of public health?	Government use standard to support regulatory activities	Government can use certification to a GFSI-recognized certification programme to inform their activities.	I believe it FDA will accept those audit results. I think that rather than requiring additional inspection or auditing if the facility is already GFSI-certified, FDA inspector is going to walk in and say, "Okay, great, you've got your GFSI certification under SQF and you've had an audit, you've past with a B, you're good to go. We recognize that." [CB 05]
			Well, what they need to do upfront is actually look at the equivalence, so look at how not just the requirements of the standards but also the type of or the amount of auditing against the standards, and the frame work that, that auditing sits within. And then they can have confidence that there's actually the oversight as well as you know, compliances with the requirements, so then they should be able just to recognize the equivalence. [AB 02]

Bibliography

- Agriculture and Agri-Food Canada. (2016). Overview of the Food and Beverage Processing Industry. Retrieved May 19, 2018, from <http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/processed-food-and-beverages/overview-of-the-food-and-beverage-processing-industry/?id=1174563085690>
- Alabama Public Health. (2016). Employment Opportunities. Retrieved February 21, 2017, from <http://adph.org/employment/index.asp?id=474>
- Albersmeier, F., Schulze, H., Jahn, G., & Spiller, A. (2009). The reliability of third-party certification in the food chain: From checklists to risk-oriented auditing. *Food Control*, 20(10), 927–935. <https://doi.org/10.1016/j.foodcont.2009.01.010>
- Albersmeier, F., Schulze, H., & Spiller, A. (2010). System dynamics in food quality certifications: development of an audit integrity system. *International Journal of Food System Dynamics*, 1(1), 69–81.
- Almeida, F., Pessali, H. F., & de Paula, N. M. (2010). Third-Party Certification in Food Market Chains: Are You Being Served? *Journal of Economic Issues*, 44(2), 479–485. <https://doi.org/10.2753/JEI0021-3624440220>
- American Institute of Baking. (2018). BRC Contract Lead Auditor. Retrieved March 28, 2018, from https://workforcenow.adp.com/jobs/apply/posting.html?client=aibonline&ccId=119464703_5408&type=MP&lang=en_US#
- American Society for Quality. (2018). Certified HACCP Auditor. Retrieved January 10, 2018, from <https://asq.org/cert/haccp-auditor>
- Anders, S., Souza-Monteiro, D., & Rouvière, E. (2010). Competition and Credibility of Private Third-Party Certification in International Food Supply. *Journal of International Food & Agribusiness Marketing*, 22(3–4), 328–341. <https://doi.org/10.1080/08974431003641554>
- Andersson, K., & Van Laerhoven, F. (2007). From Local Strongman to Facilitator: Institutional Incentives for Participatory Municipal Governance in Latin America. *Comparative Political Studies*, 40(9), 1085–1111. <https://doi.org/10.1177/0010414006288977>
- Ansell, C. (2012). Collaborative Governance. In D. Levi-Faur (Ed.), *The Oxford Handbook of Governance* (pp. 499–511). Oxford: Oxford University Press.
- Ansell, C., & Gash, A. (2007). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18, 543–571. <https://doi.org/10.1093/jopart/mum032>
- Anstoetter, M. D., & McDonough, M. M. (2013). Cantaloupe growers sue safety-audit company over listeria outbreak. Retrieved May 19, 2018, from <https://www.lexology.com/library/detail.aspx?g=fd93d598-092c-411c-b099-ea8fa035e625>
- Antle, J. M. (1999). Benefits and Costs of Food Safety Regulation. *Food Policy*, 24, 605–623.
- Arendt, S. W., Paez, P., & Strohbehn, C. (2013). Food safety practices and managers' perceptions: a qualitative study in hospitality. *International Journal of Contemporary Hospitality Management*, 25(1), 124–139. <https://doi.org/10.1108/09596111311290255>

- Arnold, G. (2014). Policy learning and science policy innovation adoption by street-level bureaucrats. *Journal of Public Policy*, 34(2014), 1–26. <https://doi.org/10.1017/S0143814X14000154>
- Arthur, A., Gournis, E., McKeown, D., & Yaffe, B. (2009). *Toronto Public Health: Foodborne Illness in Toronto*.
- Aucoin, P., Smith, J., & Dinsdale, G. (2004). *Responsible Government: Clarifying Essentials, Dispelling Myths and Exploring Change*.
- Auditor Competence Working Group. (2014). Auditor Competence Scheme Committee Progress. Retrieved September 15, 2015, from <http://www.mygfsi.com/news-resources/news/283-auditor-competence-scheme-committee-progress.html>
- Auld, G. (2010). Assessing Certification as Governance: Effects and Broader Consequences for Coffee. *The Journal of Environment & Development*, 19(2), 215–241. <https://doi.org/10.1177/1070496510368506>
- Auld, G. (2012). Emerging Private Governance: The Challenges of Choosing a Policy Focus. *Osgoode Hall Law School Comparative Research in Law & Political Economy*, 08(09), 1–30.
- Aung, M. M., & Chang, Y. S. (2014). Traceability in a Food Supply Chain: Safety and Quality Perspectives. *Food Control*, 39, 172–184. <https://doi.org/10.1016/j.foodcont.2013.11.007>
- Backlund, A. (2000). The Definition of System. *Kybernetes*, 29(4), 444–451. <https://doi.org/10.1108/03684920610675157>
- Barling, D. (2007). Food Supply Chain Governance And Public Health Externalities: Upstream Policy Interventions And The UK State. *Journal of Agricultural and Environmental Ethics*, 20(3), 285–300. <https://doi.org/10.1007/s10806-007-9034-0>
- Barling, D., & Lang, T. (2003). A Reluctant Food Policy? The First Five Years of Food Policy under Labour. *Political Quarterly*, 74(1), 8–18. <https://doi.org/10.1111/1467-923X.00507>
- Baron, D. P. (2005). Competing for the public through the news media. *Journal of Economics and Management Strategy*, 14(2), 339–376. <https://doi.org/10.1111/j.1530-9134.2005.00044.x>
- Bartle, I. (2011). Regulatory Approaches to Climate Change Mitigation. In D. Levi-Faur (Ed.), *Handbook on the Politics of Regulation* (pp. 629–641). Cheltenham: Edward Elgar Publishing Limited.
- Basit, T. N. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational Research*, 45(2), 143–154. <https://doi.org/10.1080/0013188032000133548>
- Baviskar, S., & Winter, S. C. (2016). Street-Level Bureaucrats as Individual Policymakers: The Relationship between Attitudes and Coping Behavior toward Vulnerable Children and Youth. *International Public Management Journal*, 0(0), 1–39. <https://doi.org/10.1080/10967494.2016.1235641>
- Beach, C. (2016). Miami cheese company owner draws 15-month prison term. Retrieved September 29, 2017, from <http://www.foodsafetynews.com/2016/11/miami-cheese-company-owner-draws-15-month-prison-term/#.WcQhB8iGPIU>

- Bell, S., & Hindmoor, A. (2009). The Governance of Public Affairs. *Journal of Public Affairs*, 9(s), 149–159. <https://doi.org/10.1002/pa.306>
- Benz, A., & Eberlein, B. (1999). The Europeanization of regional policies: Patterns of multi-level governance. *Journal of European Public Policy*, 6(2), 329–348.
- Bernstein, S. (2011). Legitimacy in intergovernmental and non-state global governance. *Review of International Political Economy*, 18(1), 17–51. <https://doi.org/10.1080/09692290903173087>
- Bernstein, S., & Cashore, B. (2007). Can non-state global governance be legitimate? An analytical framework. *Regulation and Governance*, 1(4), 347–371. <https://doi.org/10.1111/j.1748-5991.2007.00021.x> ^a 2007
- Bernstein, S., & Cashore, B. (2012). Complex global governance and domestic policies: four pathways of influence. *International Affairs*, 88(3), 585–604.
- Bertelli, A. M. (2012). *The Political Economy of Public Sector Governance*. New York, NY: Cambridge University Press.
- Bevir, M. (2011). Governance as Theory, Practice, and Dilemma. In M. Bevir (Ed.), *The SAGE Handbook of Governance* (pp. 1–16). Los Angeles, CA: SAGE Publications.
- Bevir, M., Rhodes, R. A. W., & Weller, P. (2003). Traditions of Governance: Interpreting the Changing Role of the Public Sector in Comparative and Historical Perspective. *Public Administration*, 81, 1–17.
- Birks, M., & Mills, J. (2011). *Grounded Theory: A Practical Guide*. Thousand Oaks, California: Sage Publications Ltd.
- Block, L. G., Grier, S. a, Childers, T. L., Davis, B., Ebert, J. E. ., Kumanyika, S., ... van Ginkel Bieshaar, M. N. . (2011). From Nutrients to Nurturance: A Conceptual Introduction to Food Well-Being. *Journal of Public Policy & Marketing*, 30(1), 5–13. <https://doi.org/10.1509/jppm.30.1.5>
- Bodman, S., Taylor, S., & Morris, H. (2012). Politics, policy and professional identity. *English Teaching: Practices and Critique*, 11(3), 14–25.
- Born, B., & Purcell, M. (2006). Avoiding the Local Trap: Scale and Food Systems in Planning Research. *Journal of Planning Education and Research*, 26(2), 195–207. <https://doi.org/10.1177/0739456X06291389>
- Bourgeault, I. L., Demers, C., & Donovan, S. (2009). *Public health workforce development models: literature scan, review & synthesis*. Region of Peel: Peel Public Health.
- Boyd, A., Addicott, R., Robertson, R., Ross, S., & Walshe, K. (2016). Are inspectors assessments reliable? Ratings of NHS acute hospital trust services in England. *Journal of Health Services Research & Policy*, 0(0), 1–9. <https://doi.org/10.1177/1355819616669736>
- Bradford, N. (2003). Public-Private Partnership? Shifting Paradigms of Economic Governance in Ontario. *Canadian Journal of Political Science/Revue Canadienne de Science Politique*, 36(5), 1005–1033. <https://doi.org/10.1017/S0008423903778949>
- Braithwaite, J., Coglianese, C., & Levi-Faur, D. (2007). Can regulation and governance make a difference ? *Regulation & Governance*, 1(1), 1–7. <https://doi.org/10.1111/j.1748->

- Brandsen, T., & Honingh, M. (2013). Professionals and Shifts in Governance. *International Journal of Public Administration*, 36(12), 876.
<https://doi.org/10.1080/01900692.2013.798809>
- Brashears, M. M., Garmyn, A. J., Brooks, J. C., Harris, D., Loneragan, G., Echeverry, A., ... Miller, M. F. (2012). Microbial quality of condensation in fresh and ready-to-eat processing facilities. *Meat Science*, 90(3), 728–732. <https://doi.org/10.1016/j.meatsci.2011.11.003>
- Brewster, N. A. T., & Goldsmith, P. D. (2007). Legal systems, institutional environment, and food safety. *Agricultural Economics*, 36(1), 23–38.
- Brimblecombe, P. (2003). The emergence of the Sanitary Inspector in Victorian Britain. *The Journal of the Royal Society for the Promotion of Health*, 123(2), 124–131.
- British Retail Consortium. (2015a). *Global Standard - Food Safety (Issue 7)*.
- British Retail Consortium. (2015b). *Global Standard for Food Safety, Issue 7, North American*. London.
- British Retail Consortium. (2016). *BRC Global Standard for Food Safety F701: Audit Duration Calculator*.
- British Retail Consortium. (2017a). BRC Directory. Retrieved December 15, 2017, from <https://brcdirectory.co.uk/>
- British Retail Consortium. (2017b). General Questions - Reviewing Certification Bodies. Retrieved April 15, 2017, from <https://www.brcglobalstandards.com/specifiers/brc-global-standards-directory>
- British Retail Consortium. (2017c). How to Become a BRC Global Standards Auditor. Retrieved March 20, 2017, from <https://www.brcglobalstandards.com/partners/certification-bodies/how-to-become-a-brc-global-standards-auditor/>
- British Retail Consortium. (2018). How to Become a BRC Global Standards Auditor. Retrieved April 17, 2018, from <https://www.brcglobalstandards.com/partners/certification-bodies/how-to-become-a-brc-global-standards-auditor/>
- Brodkin, E. Z. (2015). The inside story: street-level reaserch in the US and beyond. In P. Hupe, M. Hill, & A. Buffat (Eds.), *Understanding Street-Level Bureaucracy2* (pp. 25–42). Bristol: Policy Press.
- Brough, M., Davies, B., & Johnstone, E. (2016). Inside the black box of food safety: A qualitative study of ‘non-compliance’ among food businesses. *Health Promotion Journal of Australia*, 27(1), 10–14. <https://doi.org/10.1071/HE15013>
- Buckley, J. A. (2015). Food safety regulation and small processing: A case study of interactions between processors and inspectors. *Food Policy*, 51, 74–82.
<https://doi.org/10.1016/j.foodpol.2014.12.009>
- Burch, D., & Lawrence, G. (2005). Supermarket own Brands, Supply Chains and the Transformation of the Agri-Food System. *International Journal of Sociology of Agriculture and Food*, 13(1), 1–18.
- Busch, L. (2010). Can fairy tales come true? The surprising story of neoliberalism and world

- agriculture. *Sociologia Ruralis*, 50(4), 331–351. <https://doi.org/10.1111/j.1467-9523.2010.00511.x>
- Busch, L. (2011a). Food standards: The cacophony of governance. *Journal of Experimental Botany*, 62(10), 3247–3250. <https://doi.org/10.1093/jxb/erq439>
- Busch, L. (2011b). Quasi-states? The Unexpected Rise of Private Food Law. In B. M. J. van der Meulen (Ed.), *Private Food Law: Governing Food Chains through Contract Law, Self-regulation, Private Standards, Audits and Certification Schemes* (pp. 51–73). Wageningen, NL: Wageningen Academic Publishers.
- Busch, L. (2011c). The private governance of food: Equitable exchange or bizarre bazaar? *Agriculture and Human Values*, 28(3), 345–352. <https://doi.org/10.1007/s10460-009-9210-0>
- Busch, L., & Bain, C. (2004). New! Improved? The Transformation of the Global Agrifood System*. *Rural Sociology*, 69(3), 321–346. <https://doi.org/10.1526/0036011041730527>
- Caduff, L., & Bernauer, T. (2006). Managing Risk and Regulation in European Food Safety Governance. *Policy Studies*, 23(1), 153–168. <https://doi.org/10.1111/j.1541-1338.2006.00190.x>
- Cafaggi, F. (2011). New Foundations of Transnational Private Regulation. *Journal of Law and Society*, 38(1), 20–49. <https://doi.org/10.1111/j.1467-6478.2011.00533.x>
- Cafaggi, F., & Renda, A. (2014). Measuring the effectiveness of private regulatory organizations. *Strijbis Foundation Report*.
- Campbell, H., Murcott, A., & MacKenzie, A. (2011). Kosher in New York City, Halal in Aquitaine: Challenging the relationship between neoliberalism and food auditing. *Agriculture and Human Values*, 28(1), 67–79. <https://doi.org/10.1007/s10460-010-9260-3>
- Canadian Food Inspection Agency. (2010). *Guide to Food Safety*.
- Canadian Food Inspection Agency. (2013a). *2014–15 Report on Plans and Priorities* (Vol. CFIA P0878). Ottawa, ON: Government of Canada.
- Canadian Food Inspection Agency. (2013b). Reference Database for Hazard Identification. Retrieved November 23, 2016, from <http://www.inspection.gc.ca/food/safe-food-production-systems/food-safety-enhancement-program/rdhi/eng/1384900871739/1384900941583>
- Canadian Food Inspection Agency. (2014a). *An Integrated Agency Inspection Model: The Case for Change*.
- Canadian Food Inspection Agency. (2014b). Food Safety Enhancement Program.
- Canadian Food Inspection Agency. (2015a). About the Canadian Food Inspection Agency. Retrieved March 18, 2018, from <http://www.inspection.gc.ca/about-the-cfia/eng/1299008020759/1299008778654>
- Canadian Food Inspection Agency. (2015b). CFIA at a glance. Retrieved May 19, 2018, from <http://www.inspection.gc.ca/about-the-cfia/organizational-information/at-a-glance/eng/1358708199729/1358708306386>
- Canadian Food Inspection Agency. (2015c). Code of Conduct. Retrieved March 17, 2017, from

- <http://www.inspection.gc.ca/about-the-cfia/cfia-jobs/hr-information/code-of-conduct/eng/1341156915280/1341157034490>
- Canadian Food Inspection Agency. (2015d). Compliance and Enforcement Operational Policy. Retrieved March 25, 2017, from <http://www.inspection.gc.ca/about-the-cfia/accountability/compliance-and-enforcement/operational-policy/eng/1326788174756/1326788306568#a3>
- Canadian Food Inspection Agency. (2015e). Guide to Importing Food Products Commercially. Retrieved September 6, 2016, from <http://www.inspection.gc.ca/food/imports/commercial-importers/importing-food-products/eng/1376515896184/1376515983781?chap=0>
- Canadian Food Inspection Agency. (2015f). Healthy and Safe Food for Canadians Framework. Retrieved May 19, 2018, from <http://www.inspection.gc.ca/food/action-plan/framework/eng/1385063041685/1385063100087>
- Canadian Food Inspection Agency. (2015g). Safe Food for Canadians Act: An Overview. Retrieved August 25, 2015, from <http://www.inspection.gc.ca/about-the-cfia/acts-and-regulations/regulatory-initiatives/sfca/eng/1338796071420/1338796152395>
- Canadian Food Inspection Agency. (2016a). 2015-2016 Departmental Performance Report. Retrieved May 19, 2018, from <http://inspection.gc.ca/about-the-cfia/accountability/reports-to-parliament/2015-2016-dpr/eng/1472053055708/1472053099163?chap=0>
- Canadian Food Inspection Agency. (2016b). Career Profiles. Retrieved February 21, 2017, from <http://www.inspection.gc.ca/about-the-cfia/cfia-jobs/career-profiles/eng/1299858033819/1299858089960#d>
- Canadian Food Inspection Agency. (2016c). Import and Interprovincial Requirements for Dairy Products - Overview. Retrieved January 11, 2017, from <http://www.inspection.gc.ca/food/dairy-products/imports-interprovincial-trade/eng/1300214060169/1300214161699>
- Canadian Food Inspection Agency. (2016d). Questions and Answers: Applying for a job at the CFIA. Retrieved February 21, 2017, from <http://www.inspection.gc.ca/about-the-cfia/cfia-jobs/how-to-apply/questions-and-answers/eng/1340823087902/1340823252986>
- Canadian Food Inspection Agency. (2017a). A Processor's Guide to Canadian Food Inspection Agency (CFIA) Inspections. Retrieved May 19, 2018, from <http://www.inspection.gc.ca/about-the-cfia/accountability/statement-of-rights-and-service/processor-s-guide/eng/1326315699856/1326316165541>
- Canadian Food Inspection Agency. (2017b). Complete listing of all recalls and allergy alerts - Chemical. Retrieved December 4, 2017, from <http://www.inspection.gc.ca/about-the-cfia/newsroom/food-recall-warnings/complete-listing/eng/1351519587174/1351519588221?ay=2017&fr=16&fc=0&fd=0&ft=2>
- Canadian Food Inspection Agency. (2017c). Complete listing of all recalls and allergy alerts - Extraneous Materials. Retrieved December 4, 2017, from <http://www.inspection.gc.ca/about-the-cfia/newsroom/food-recall-warnings/complete-listing/eng/1351519587174/1351519588221>
- Canadian Food Inspection Agency. (2017d). Private Certification Policy (Food Safety).

- Retrieved May 24, 2017, from <http://www.inspection.gc.ca/about-the-cfia/accountability/consultations-and-engagement/regulatory-risk-based-oversight/private-certification-policy/eng/1452808755126/1452808821799?chap=0>
- Canadian Food Inspection Agency. (2017e). Private Certification Policy (Food Safety) Effective Date. Retrieved May 18, 2018, from <http://inspection.gc.ca/about-the-cfia/accountability/consultations-and-engagement/regulatory-risk-based-oversight/private-certification-policy/eng/1452808755126/1452808821799?chap=12>
- Canadian Food Inspection Agency. (2017f). Report a Food Safety or Labelling Concern. Retrieved March 18, 2018, from <http://www.inspection.gc.ca/food/information-for-consumers/report-a-concern/eng/1364500149016/1364500195684>
- Canadian Food Inspection Agency. (2017g). Suspensions and Cancellations. Retrieved April 15, 2017, from <http://www.inspection.gc.ca/about-the-cfia/accountability/compliance-and-enforcement/licences/eng/1324052022644/1324052753628>
- Canadian Food Inspection Agency. (2018a). About the Canadian Food Inspection Agency. Retrieved June 28, 2018, from <http://www.inspection.gc.ca/about-the-cfia/eng/1299008020759/1299008778654>
- Canadian Food Inspection Agency. (2018b). Chemical Residues in Food. Retrieved February 16, 2018, from <http://www.inspection.gc.ca/food/chemical-residues-microbiology/chemical-residues/eng/1324258929171/1324264923941>
- Canadian Food Inspection Agency. (2018c). Organic Products. Retrieved April 2, 2018, from <http://www.inspection.gc.ca/food/organic-products/eng/1300139461200/1300140373901>
- Canadian Food Inspection Agency. (2018d). Proposed Safe Food for Canadians Regulations: Would you need a licence? Retrieved from <https://na1se.voxco.com/SE/default.aspx>
- Canadian Institute for Health Information. (2017). Environmental Public Health Professionals. Retrieved November 23, 2017, from <https://www.cihi.ca/en/environmental-public-health-professionals>
- Canadian Institute of Public Health Inspectors. (2014). Continuing Professional Competencies (CPC) Program.
- Canadian Institute of Public Health Inspectors. (2015). Board of Certification. Retrieved September 14, 2015, from <http://www.ciphi.ca/careers/board-of-certification/>
- Canadian Institute of Public Health Inspectors. (2017). Board of Certification. Retrieved February 21, 2017, from <http://www.ciphi.ca/careers/board-of-certification/>
- Canadian Public Health Association. (n.d.). Who is responsible for public health in Canada?
- CanAgPlus. (2017). CanadaGAP Program Receives Full Government Recognition. Retrieved March 3, 2018, from <https://www.canadagap.ca/wp-content/uploads/English/Publications/Communiqués/2017/CanadaGAP-communique-Government-Recognition-March-2017-ENG.pdf>
- CanAgPlus. (2018a). CanadaGAP Auditor Requirements. Retrieved April 13, 2018, from https://www.canadagap.ca/wp-content/uploads/English/CanadaGAP-Program/Auditors/CanadaGAP-Auditor-Requirements-2018_EN.pdf

- CanAgPlus. (2018b). *CanadaGAP Food Safety Manual for Fresh Fruits and Vegetables Version 7.1*.
- CanAgPlus. (2018c). *CanadaGAP Food Safety Manual for Greenhouse Product Version 7.1*.
- CanAgPlus. (2018d). Overview of CanadaGAP. Retrieved May 18, 2018, from <https://www.canadagap.ca/program/>
- Centers for Disease Control and Prevention. (2013). Outbreak of Escherichia coli O104:H4 Infections Associated with Sprout Consumption - Europe and North America, May-June 2011. *Morbidity and Mortality Weekly Report*, 62(50), 1026–8.
- Centers for Disease Control and Prevention. (2017). Guide to Confirming an Etiology in Foodborne Disease Outbreak. Retrieved December 4, 2017, from https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html
- Chaffin, B. C., Gosnell, H., & Cosens, B. A. (2014). A decade of adaptive governance scholarship: synthesis and future directions. *Ecology and Society*, 19(3), 56. <https://doi.org/http://dx.doi.org/10.5751/ES-06824-190356>
- Charlebois, S., & Labrecque, J. (2009). Sociopolitical Foundations of Food Safety Regulation and the Governance of Global Agrifood Systems. *Journal of Macromarketing*, 29(4), 363–373. <https://doi.org/10.1177/0276146709346255>
- Chen, E., Flint, S., Perry, P., Perry, M., & Lau, R. (2015). Implementation of non-regulatory food safety management schemes in New Zealand: A survey of the food and beverage industry. *Food Control*, 47, 569–576. <https://doi.org/10.1016/j.foodcont.2014.08.009>
- Choi, J., & Almanza, B. (2012). Health Inspectors' Perceptions of the Words Used to Describe Violations. *Food Protection Trends*, 32(1), 26–33.
- Choi, T., & Robertson, P. J. (2013). Deliberation and Decision in Collaborative Governance: A Simulation of Approaches to Mitigate Power Imbalance. *Journal of Public Administration Research and Theory*, 24(2), 495–518. <https://doi.org/10.1093/jopart/mut003>
- City of Toronto. City of Toronto By-Law No. 678-2006 (2006).
- City of Toronto. (2012). DineSafe Regulation and Licensing Requirements. Retrieved November 29, 2016, from <http://www.toronto.ca/health/dinesafe/regulation.htm>
- Codex Alimentarius Commission. (2003). *General Principles of Food Hygiene CAC/RCP 1-1969. Codex Alimentarius - Basic Texts Food Hygiene*.
- Coglianesi, C., & Lazer, D. (2003). Management-Based Regulation: Prescribing Private Management to Achieve Public Goals. *Law & Society Review*, 37(4), 691–730.
- Coglianesi, C., & Mendelson, E. (2009). Meta-Regulation and Self-Regulation. (M. Cave, R. Baldwin, & M. Lodge, Eds.), *The Oxford Handbook on Regulation*. Oxford: Institute for Law & Economics.
- Cohen, D. (2004). The Role of the State in a Privatized Regulatory Environment. In *Voluntary codes: private governance, the public interest and innovation* (pp. 35–55). Ottawa, ON: Carlton Research Unit on Innovation, Science and Environment.
- Colebatch, H. K. (2009). Governance as a conceptual development in the analysis of policy.

- Critical Policy Studies*, 3(1), 58–67. <https://doi.org/10.1080/19460170903158107>
- Considine, M., & Lewis, J. M. (1999). Governance at Ground Level: The Frontline Bureaucrat in the Age of Markets and Networks. *Public Administration Review*, 59(6), 467–480.
- Crandall, P. G., Mauromoustakos, A., O'Bryan, C. A., Thompson, K. C., Yiannas, F., Bridges, K., & Francois, C. (2017). Impact of the global food safety initiative on food safety worldwide: Statistical analysis of a survey of international food processors. *Journal of Food Protection*, 80(10), 1613–1622. <https://doi.org/10.4315/0362-028X.JFP-16-481>
- Crandall, P. G., & O'Bryan, C. A. (2015). Global Food Safety Initiative - Implementation and Perspectives. In S. C. Ricke, J. R. Donaldson, & C. A. Phillips (Eds.), *Food Safety: Emerging Issues, Technologies, and Systems* (pp. 3–8). London: Elsevier Inc.
- Crandall, P. G., Van Loo, E. J., O'Bryan, C. A., Mauromoustakos, A., Yiannas, F., Dyenson, N., & Berdnik, I. (2012). Companies' Opinions and Acceptance of Global Food Safety Initiative Benchmarks after Implementation. *Journal of Food Protection*, 75(9), 1660–1672.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Vol. Fourth). Thousand Oaks: California: Sage Publications Ltd.
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative Research Designs: Selection and Implementation. *The Counseling Psychologist*, 35(2), 236–264. <https://doi.org/10.1177/0011000006287390>
- Crona, B. I., & Parker, J. N. (2012). Learning in Support of Governance : Theories , Methods , and a Framework to Assess How Bridging Organizations Contribute to. *Ecology and Society*, 17(1), 32.
- Cross, A. (1961). In the Beginning. Retrieved November 15, 2016, from <http://www.ciphi.ca/files/documents/history/itb.pdf>
- Cruess, S. R., Johnston, S., & Cruess, R. L. (2004). “Profession”: A Working Definition for Medical Educators. *Teaching and Learning in Medicine*, 16(1), 74–76. https://doi.org/doi:10.1207/s15328015tlm1601_15
- Curran, V., Sargeant, J., & Hollett, A. (2007). Evaluation of an interprofessional continuing professional development initiative in primary health care. *Journal of Continuing Education in the Health Professions*, 27(4), 241–252. <https://doi.org/10.1002/chp.144>
- Dahl, R. A. (1947). The Science of Public Administration: Three Problems. *Public Administration Review*, 7(1), 1–11.
- Davey, S. S., & Richards, C. (2013). Supermarkets and private standards: Unintended consequences of the audit ritual. *Agriculture and Human Values*, 30, 271–281. <https://doi.org/10.1007/s10460-012-9414-6>
- David, J. M., Ravel, A., Nesbitt, A., Pintar, K., & Pollari, F. (2014). Assessing multiple foodborne , waterborne and environmental exposures of healthy people to potential enteric pathogen sources: effect of age , gender , season , and recall period. *Epidemiology & Infection*, 142(1), 28–39. <https://doi.org/10.1017/S0950268813000770>
- Deaton, J. (2004). A Theoretical Framework for Examining the Role of Third-Party Certifiers. *Food Control*, 15(8), 615–619.

- DeLind, L. B., & Howard, P. H. (2008). Safe at any scale? Food scares, food regulation, and scaled alternatives. *Agriculture and Human Values*, 25(3), 301–317. <https://doi.org/10.1007/s10460-007-9112-y>
- Demortain, D. (2012). Enabling global principle-based regulation: The case of risk analysis in the Codex Alimentarius. *Regulation & Governance*, 6, 207–224. <https://doi.org/10.1111/j.1748-5991.2012.01144.x>
- Devaney, L. (2016). Good governance? Perceptions of accountability, transparency and effectiveness in Irish food risk governance. *Food Policy*, 62, 1–10. <https://doi.org/10.1016/j.foodpol.2016.04.003>
- Dietz, T., Ostrom, E., Stern, P. C., Dietz, T., Ostrom, E., & Stern, P. C. (2003). The Struggle to Govern the Commons. *Science*, 302(5652), 1907–1912.
- Dillon, M. (2001). Introduction. In M. Dillon & C. Griffith (Eds.), *Auditing in the Food Industry* (pp. 1–2). Cambridge, England: Woodhead Publishing Limited.
- Directorate General for Internal Policies. (2015). *Food Safety Policy and Regulation in the United States*.
- Dix, S. (2001). What Auditors Look For. In M. Dillon & C. Griffith (Eds.), *Auditing in the Food Industry* (pp. 18–28). Cambridge, England: Woodhead Publishing Limited.
- Djekic, I., Tomasevic, I., & Radovanovic, R. (2011). Quality and food safety issues revealed in certified food companies in three Western Balkans countries. *Food Control*, 22(11), 1736–1741. <https://doi.org/10.1016/j.foodcont.2011.04.006>
- Dorff, E. (2014). *The changing face of the Canadian fruit and vegetable sector 1941 to 2011*. Statistics Canada.
- Drew, C. A., & Clydesdale, F. M. (2015). New food safety law: effectiveness on the ground. *Critical Reviews in Food Science and Nutrition*, 55(5), 689–700. <https://doi.org/10.1080/10408398.2011.654368>
- Driscoll, E., & Webb, K. (n.d.). Positioning the Global Food Safety Initiative in the Governance Literature. *International Journal of Food Safety, Nutrition and Public Health*.
- Driscoll, E., & Webb, K. (2015). Positioning the Global Food Safety Initiative in the Governance Literature. In *International Symposium on Corporate Responsibility and Sustainable Development*. Toronto, ON: Ryerson University.
- Eberlein, B., Abbott, K. W., Black, J., Meidinger, E., & Wood, S. (2013). Transnational business governance interactions: Conceptualization and framework for analysis. *Regulation & Governance*, 8(1), 1–22. <https://doi.org/10.1111/rego.12030>
- Elliott, T. E. (1975). Up the Years. Retrieved November 15, 2016, from <http://www.ciphi.ca/files/documents/history/uptheyears.htm>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Emerson, K., & Gerlak, A. (2014). Adaptation in Collaborative Governance Regimes. *Environmental Management*, 54(4), 768–781. <https://doi.org/10.1007/s00267-014-0334-7>
- Emerson, K., Nabatchi, T., & Balogh, S. (2012). An Integrative Framework for Collaborative

- Governance. *Journal of Public Administration Research and Theory*, 22(1), 1–29.
<https://doi.org/10.1093/jopart/mur011>
- Erdozain, M. S., Allen, K. J., Morley, K. A., & Powell, D. (2013). Failures in sprouts-related risk communication. *Food Control*, 30(2), 649–656.
<https://doi.org/10.1016/j.foodcont.2012.08.022>
- Fagotto, E. (2014). Private roles in food safety provision: the law and economics of private food safety. *European Journal of Law and Economics*, 37(1), 83–109.
<https://doi.org/10.1007/s10657-013-9414-z>
- Fagotto, E. (2015). Are we being served? The relationship between public and private food safety regulation. In T. Havinga, D. Casey, & F. van Waarden (Eds.), *The Changing Landscape of Food Governance* (pp. 201–221). Cheltenham: Edward Elgar Publishing Limited.
- Fagotto, E. (2017). Resolving gaps in third-party certification for food safety hybridization. In P. Verbruggen & T. Havinga (Eds.), *Hybridization of Food Governance: Trends, Types and Results* (pp. 54–77). Cheltenham: Edward Elgar Publishing Limited.
- Farouk, M. M., Al-Mazeedi, H. M., Sabow, A. B., Bekhit, A. E. D., Adeyemi, K. D., Sazili, A. Q., & Ghani, A. (2014). Halal and kosher slaughter methods and meat quality: A review. *Meat Science*, 98(3), 505–519. <https://doi.org/10.1016/j.meatsci.2014.05.021>
- Farouk, M. M., Regenstein, J. M., Pirie, M. R., Najm, R., Bekhit, A. E. D., & Knowles, S. O. (2015). Spiritual aspects of meat and nutritional security: Perspectives and responsibilities of the Abrahamic faiths. *Food Research International*, 76(P4), 882–895.
<https://doi.org/10.1016/j.foodres.2015.05.028>
- FDA, & U.S. Food and Drug Administration. (2016). Frequently Asked Questions on FSMA. Retrieved June 13, 2017, from <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm247559.htm>
- Ferris, J. M., & Tang, S.-Y. (1993). The New Institutionalism and Public Administration: An Overview. *Journal of Public Administration Research and Theory*, 3(1), 4–10.
- Filion, K., & Powell, D. (2011). Designing a National Restaurant Inspection Disclosure System for New Zealand. *Journal of Food Protection*, 74(11), 1869–1874.
<https://doi.org/10.4315/0362-028X.JFP-11-007>
- Fineman, S. (1998). Street-level Bureaucrats and the Social Construction of Environmental Control. *Organization Studies*, 19(6), 953–974.
<https://doi.org/10.1177/017084069801900603>
- Flint, J. A., Doré, K., Majowicz, S. E., Edge, V. L., & Sockett, P. (2004). From stool to statistics: Reporting of acute gastrointestinal illnesses in Canada. *Canadian Journal of Public Health*, 95(4), 309–313.
- Flynn, D. (2013). Jensen Brothers Take Responsibility But Blame PrimusLabs. Retrieved May 19, 2018, from <http://www.foodsafetynews.com/2013/10/jensen-brothers-sue-primus-over-third-party-audit-they-say-was-faulty/#.WwBhx0gvzIU>
- Food and Agriculture Organization of the United Nations, & World Health Organization. (2018). About Codex Alimentarius. Retrieved February 27, 2018, from <http://www.fao.org/fao->

who-codexalimentarius/about-codex/en/

Food and Drugs Act. Food and Drugs Act, Statutes of Canada 1985, c. F-27., 2014 § (2014).

Food Marketing Institute. (2017a). *SQF Food Safety Code for Manufacturing Edition 8*.

Food Marketing Institute. (2017b). *SQF Quality Code Edition 8*.

Food Safety and Consumer Protection Directorate, & Canadian Food Inspection Agency. (2011). *General Principles of Food Hygiene, Composition and Labelling*.

Food Safety and Quality Act, 2001, S.O. 2001, C. 20. (n.d.). Retrieved March 11, 2018, from <https://www.ontario.ca/laws/statute/01f20?search=slaughter>

Frank, C., Werber, D., Cramer, J. P., Askar, M., Faber, M., Bernard, H., ... Stark, K. (2011). Epidemic Profile of Shiga-Toxin–Producing E coli O104 - H4 in Germany - Preliminary Report. *The New England Journal of Medicine*, 365, 1771–80. <https://doi.org/10.1056/NEJMoa1106483>

Freidberg, S. (2007). Supermarkets and imperial knowledge. *Cultural Geographies*, 14(3), 321–342. <https://doi.org/10.1177/1474474007078203>

FSSC 22000. (2017a). *Annex 5: Auditor Competence*.

FSSC 22000. (2017b). *Food Safety System Certification 22000 Annex 2: Audit time calculation*.

FSSC 22000. (2017c). *Food Safety System Certification 22000 Part 1: Scheme Overview*.

FSSC 22000. (2017d). *Food Safety System Certification 22000 Part 2: Requirements for Certification*.

FSSC 22000. (2017e). *Food Safety System Certification 22000 Part 4 : Requirements for Certification Bodies*.

FSSC 22000. (2017f). *Food Safety System Certification 22000 Version 4 Annex 5: Auditor Competence*.

Fuchs, D., & Kalfagianni, A. (2010). The causes and consequences of private food governance. *Business and Politics*, 12(3). <https://doi.org/10.2202/1469-3569.1319>

Fuchs, D., Kalfagianni, A., Clapp, J., & Busch, L. (2011). Introduction to symposium on private agrifood governance: Values, shortcomings and strategies. *Agriculture and Human Values*, 28(3), 335–344. <https://doi.org/10.1007/s10460-011-9310-5>

Fuchs, D., Kalfagianni, A., & Havinga, T. (2011). Actors in Private Food Governance: the Legitimacy of Retail Standards and Multistakeholder Initiatives with Civil Society Participation. *Agriculture and Human Values*, 28(3), 353–367.

Fulponi, L. (2006). Private voluntary standards in the food system: The perspective of major food retailers in OECD countries. *Food Policy*, 31(1), 1–13. <https://doi.org/10.1016/j.foodpol.2005.06.006>

Fung, A. (2006). Varieties of Participation in Complex Governance. *Public Administration Review*, 66(Special Issue: Collaborative Public Management), 66–75.

García Martínez, M., Fearne, A., Caswell, J. a., & Henson, S. (2007). Co-regulation as a possible model for food safety governance: Opportunities for public-private partnerships. *Food*

- Policy*, 32(3), 299–314. <https://doi.org/10.1016/j.foodpol.2006.07.005>
- García Martínez, M., & Poole, N. (2004). The development of private fresh produce safety standards: Implications for developing Mediterranean exporting countries. *Food Policy*, 29(3), 229–255. <https://doi.org/10.1016/j.foodpol.2004.04.002>
- García Martínez, M., Poole, N., Skinner, C., Illés, C., & Lehota, J. (2006). Food safety performance in European Union accession countries: benchmarking the fresh produce import sector in Hungary. *Agribusiness*, 30(1), 31–45. <https://doi.org/10.1002/agr>
- García Martínez, M., Verbruggen, P., Fearn, A., García Martínez, M., Verbruggen, P., & Fearn, A. (2013). Risk-based approaches to food safety regulation: what role for co-regulation? *Journal of Risk Research*, 16(9), 1101–1121. <https://doi.org/10.1080/13669877.2012.743157>
- Gibson, B. (2011). Window into Grounded Theory. In M. & M. Birks Jane (Ed.), *Grounded Theory: A Practical Guide* (pp. 25–26). Thousand Oaks, California: Sage Publications Ltd.
- Gilad, S. (2010). It runs in the family: Meta-regulation and its siblings. *Regulation and Governance*, 4(4), 485–506. <https://doi.org/10.1111/j.1748-5991.2010.01090.x>
- Giraud-Héraud, E., Hammoudi, A., Hoffmann, R., & Soler, L. G. (2012). Joint Private Safety Standards and Vertical Relationships in Food Retailing. *Journal of Economics and Management Strategy*, 21(1), 179–212. <https://doi.org/10.1111/j.1530-9134.2011.00320.x>
- Global Food Safety Initiative. (2013). *Global Food Safety Initiative Food Safety Auditor Competencies*.
- Global Food Safety Initiative. (2014a). Auditor Competence Scheme Committee Progress. Retrieved September 15, 2015, from <http://www.mygfsi.com/news-resources/news/312-auditor-competence-scheme-committee-progress-2.html>
- Global Food Safety Initiative. (2014b). *Explaining the GFSI Auditor Competence Scheme Summary*.
- Global Food Safety Initiative. (2015). GFSI Guidance Document Version 6.4. The Consumer Goods Forum.
- Global Food Safety Initiative. (2016a). GFSI Applauds New Canadian Policy on Private Certification of Food Facilities. Retrieved May 25, 2017, from <file:///C:/6 - All References Unsorted 1-7-2017/GFSI/GFSI Applauds New Canadian Policy on Private Certification of Food Facilities.pdf>
- Global Food Safety Initiative. (2016b). Structure and Governance.
- Global Food Safety Initiative. (2017a). Benchmarking Requirements | Guidance Document. Retrieved from <http://www.mygfsi.com/schemes-certification/benchmarking/gfsi-guidance-document.html>
- Global Food Safety Initiative. (2017b). Building a Safer and More Progressive Food Industry Through Public-Private Partnerships. Retrieved January 26, 2018, from <http://www.mygfsi.com/news-resources/news/news-blog/1288-building-a-safer-and-more-progressive-food-industry.html>
- Global Food Safety Initiative. (2017c). Frequently Asked Questions. Retrieved June 27, 2017,

from <http://www.mygfsi.com/news-resources/faq/faq-accordion-7/230-how-does-gfsi-benchmarking-work.html>

Global Food Safety Initiative. (2017d). GFSI Benchmarking Requirements: Part IV Glossary of Terms Version 7.0.

Global Food Safety Initiative. (2017e). *GFSI Benchmarking Requirements Version 7.1 - Part IV: Glossary of Terms*.

Global Food Safety Initiative. (2017f). *GFSI Benchmarking Requirements Version 7.1 - Process Manual for the GFSI Benchmarking Process V 7.1*.

Global Food Safety Initiative. (2017g). *GFSI Benchmarking Requirements Version 7 - Part I: The Benchmarking Process*.

Global Food Safety Initiative. (2017h). *GFSI Governance Model & Rules of Procedure*.

Global Food Safety Initiative. (2018a). Benchmarking Overview. Retrieved January 3, 2018, from <http://www.mygfsi.com/schemes-certification/benchmarking/benchmarking-overview.html>

Global Food Safety Initiative. (2018b). Benefits. Retrieved January 31, 2018, from <http://www.mygfsi.com/about-us/about-gfsi/benefits.html>

Global Food Safety Initiative. (2018c). GFSI Benchmarking Requirements Version 7.2 - Part I - The Benchmarking Process.

Global Food Safety Initiative. (2018d). GFSI Benchmarking Requirements Version 7.2 - Part II - Requirements for the Management of Schemes.

Global Food Safety Initiative. (2018e). GFSI Benchmarking Requirements Version 7.2 - Part III - BI - Farming of Plants.

Global Food Safety Initiative. (2018f). GFSI Benchmarking Requirements Version 7.2 - Part III - EIII - Processing of Animal and Plant Perishable Products (Mixed Products).

Global Food Safety Initiative. (2018g). GFSI Benchmarking Requirements Version 7.2 - Part III - M - Production of Food Packaging.

Global Food Safety Initiative. (2018h). GFSI Benchmarking Requirements Version 7.2 - Part IV - Glossary of Terms.

Global Food Safety Initiative. (2018i). GFSI Benchmarking Requirements Version 7.2 - Process Manual for the GFSI Benchmarking Process.

Global Food Safety Initiative. (2018j). GFSI Board. Retrieved March 1, 2018, from <http://www.mygfsi.com/about-us/gfsi-board.html>

Global Food Safety Initiative. (2018k). GFSI Unveils its New Benchmarking Requirements, Strengthening FMCG Supply Chains. Retrieved March 18, 2018, from <https://www.mygfsi.com/news-resources/news/press-releases/1353-gfsi-unveils-its-new-benchmarking-requirements.html>

Global Food Safety Initiative. (2018l). How to Achieve Certification. Retrieved January 15, 2018, from <http://www.mygfsi.com/certification/certification/how-to-achieve-certification.html>

- Global Food Safety Initiative. (2018m). Local Groups. Retrieved June 28, 2018, from <http://www.mygfsi.com/about-us/local-groups.html>
- Global Food Safety Initiative. (2018n). Recognised Certification Programmes. Retrieved August 20, 2018, from <http://www.mygfsi.com/certification/recognised-certification-programmes.html>
- Global Food Safety Initiative. (2018o). Scopes of Recognition. Retrieved August 20, 2018, from <https://www.mygfsi.com/certification/benchmarking/scope-of-recognition.html>
- Global Food Safety Initiative. (2018p). Technical Working Groups. Retrieved January 15, 2018, from <http://www.mygfsi.com/about-us/technical-working-groups.html>
- Global Food Safety Initiative. (2018q). What is GFSI. Retrieved February 2, 2018, from <http://www.mygfsi.com/about-us/about-gfsi/what-is-gfsi.html>
- Gnirss, G. (2008). A History of Food Law in Canada. *Food in Canada*, 38, 2008.
- Gofen, A. (2014). Mind the Gap: Dimensions and influence of street-level divergence. *Journal of Public Administration Research and Theory*, 24(2), 473–493. <https://doi.org/10.1093/jopart/mut037>
- Gormley, W. T. (1998). Regulatory Enforcement Styles. *Political Research Quarterly*, 51(2), 363–383. <https://doi.org/10.1177/106591299805100204>
- Gostin, L. O., & Stewart, K. F. (2011). Food and Drug Administration Regulation of Food Safety. *Journal of the American Medical Association*, June 14, 2, 13–16.
- Gould, L. H., Walsh, K. a, Vieira, A. R., Herman, K., Williams, I. T., Hall, A. J., & Cole, D. (2013). Surveillance for foodborne disease outbreaks - United States, 1998-2008. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C. : 2002)*, 62(2), 1–34.
- Government of Canada. (2011). *Action on Weatherill Report Recommendations to Strengthen the Food Safety System: Final Report to Canadians* (Vol. A22–551/20). Ottawa: Government of Canada.
- Government of Canada. (2014). Health Portfolio. Retrieved August 25, 2015, from <http://www.healthycanadians.gc.ca/minister-ministre/portfolio-eng.php>
- Grabosky, P. (2013). Beyond Responsive Regulation: The expanding role of non-state actors in the regulatory process. *Regulation & Governance*, 7(1), 114–123. <https://doi.org/10.1111/j.1748-5991.2012.01147.x>
- Grant, M., Butler, E., & Stuckey, J. (2012). All Together Now: Regulation and Food Industry Performance, (February).
- Grant, W. (2011). The Political Economy of Global Food Governance. *International Studies Review*, 13(2), 304–309. <https://doi.org/10.1111/j.1468-2486.2011.01028.x>
- Green, R. M., & Kane, K. (2014). The effective enforcement of HACCP based food safety management systems in the UK. *Food Control*, 37(1), 257–262. <https://doi.org/10.1016/j.foodcont.2013.09.016>
- Greig, J. D., & Ravel, A. (2009). Analysis of foodborne outbreak data reported internationally for source attribution. *International Journal of Food Microbiology*, 130(2), 77–87.

- <https://doi.org/10.1016/j.ijfoodmicro.2008.12.031>
- Griffith, C. J. (2006). Food safety: where from and where to? *British Food Journal*, 108(1), 6–15. <https://doi.org/10.1108/00070700610637599>
- Gulbrandsen, L. H. (2014). Dynamic governance interactions: Evolutionary effects of state responses to non-state certification programs, (September 2012), 74–92. <https://doi.org/10.1111/rego.12005>
- Gunningham, N. (2009). The New Collaborative Environmental Governance: The Localization of Regulation. *Journal of Law and Society*, 36(1), 145–166.
- Gunningham, N., & Rees, J. (1997). Industry Self-Regulation: An Institutional Perspective. *Law & Policy*, 19(4), 363–414. <https://doi.org/10.1111/1467-9930.t01-1-00033>
- Gunz, H., & Gunz, S. (2007). *Hired professional to hired gun: An identity theory approach to understanding the ethical behaviour of professionals in non-professional organizations*. *Human Relations* (Vol. 60). <https://doi.org/10.1177/0018726707080079>
- Guthman, J. (2008). Neoliberalism and the making of food politics in California. *Geoforum*, 39(3), 1171–1183. <https://doi.org/10.1016/j.geoforum.2006.09.002>
- Handler, A., Issel, M., & Turnock, B. (2001). A conceptual framework to measure performance of the public health system. *American Journal of Public Health*, 91(8), 1235–1239. <https://doi.org/10.2105/AJPH.91.8.1235>
- Hatanaka, M. (2014). Standardized food governance? Reflections on the potential and limitations of chemical-free shrimp. *Food Policy*, 45, 138–145. <https://doi.org/10.1016/j.foodpol.2013.04.013>
- Hatanaka, M., Bain, C., & Busch, L. (2005). Third-party certification in the global agrifood system: An objective or socially mediated governance mechanism? *Sociologia Ruralis*, 48(1), 73–91. <https://doi.org/10.1111/j.1467-9523.2008.00453.x>
- Hatfield-Dodds, S., Nelson, R., & Cook, D. (2007). Adaptive governance: An introduction, and implications for public policy, No 10440. In *51st Annual conference of the Australian Agricultural and Resource Economics Society* (Vol. Queenstown, pp. 1–13).
- Hatfield-Dodds, S., Nelson, R., Csiro, D. C., & Cook, D. (2007). Adaptive governance: An introduction, and implications for public policy, No 10440. In *51st Annual conference of the Australian Agricultural and Resource Economics Society* (Vol. 2006, pp. 1–13).
- Havelaar, A. H., Galindo, A. V., Kurowicka, D., & Cooke, R. M. (2008). Attribution of foodborne pathogens using structured expert elicitation. *Foodborne Pathogens and Disease*, 5(5), 649–659. <https://doi.org/10.1089/fpd.2008.0115>
- Havinga, T. (2006). Private Regulation of Food Safety by Supermarkets. *Law & Policy*, 28(4), 515–533. <https://doi.org/10.1111/j.1467-9930.2006.00237.x>
- Havinga, T. (2010a). Actors and regulatory roles in private and mixed forms of food regulation. *Regulation*, 9049, 1–13.
- Havinga, T. (2010b). Regulating Halal and Kosher Foods: Different Arrangements between State, Industry and Religious Actors. *Erasmus Law Review*, 3(4), 241–256. <https://doi.org/10.3868/s050-004-015-0003-8>

- Havinga, T. (2011). On the Boarderline between State Law and Religious Law. In B. M. J. van der Meulen (Ed.), *Private Food Law: Governing Food Chains through Contract Law, Self-regulation, Private Standards, Audits and Certification Schemes* (pp. 265–287). Wageningen, NL: Wageningen Academic Publishers.
- Havinga, T. (2013). Food Retailers as Drivers for Food Safety Standards. *Nijmegen Sociology of Law Working Papers Series*, 03. <https://doi.org/10.2139/ssrn.2331869>
- Havinga, T. (2015). Conceptualizing regulatory arrangements: Complex networks and regulatory roles. In T. Havinga, F. van Waarden, & D. Casey (Eds.), *The Changing Landscape of Food Governance* (pp. 19–36). Cheltenham: Edward Elgar Publishing Limited.
- Havinga, T., Casey, D., & van Waarden, F. (2015). Changing Regulatory Arrangements in Food Governance. In T. Havinga, F. van Waarden, & D. Casey (Eds.), *The Changing Landscape of Food Governance* (pp. 3–18). Cheltenham, UK: E.
- Havinga, T., & Verbruggen, P. (2017). The Global Food Safety Initiative and state actors: Paving the way for hybrid food safety governance. In P. Verbruggen & T. Havinga (Eds.), *Hybridization of Food Governance: Trends, Types and Results* (pp. 183–214). Cheltenham: Edward Elgar Publishing Limited.
- Hawkins, K., & Hutter, B. M. (1993). The response of business to social regulation in England and Wales: An enforcement perspective. *Law & Policy*.
- Health Canada. (2008). Canada's Food and Drugs Act & Regulations. Retrieved August 25, 2015, from http://www.hc-sc.gc.ca/fn-an/legislation/acts-lois/act-loi_reg-eng.php
- Health Canada. (2009). *Lessons Learned Health Canada's Response to the 2008 Listeriosis Outbreak - Executive Summary*. Health Canada.
- Health Canada. (2011). Eating Well with Canada's Food Guide. Retrieved August 17, 2018, from https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/view_eatwell_vue_bienmang-eng.pdf
- Health Canada. (2012). Food Safety. Retrieved from <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety.html>
- Health Canada. (2016). About Health Canada. Retrieved January 2, 2018, from <http://www.hc-sc.gc.ca/ahc-asc/activit/about-apropos/index-eng.php#obj>
- Health Canada Food Directorate. (2011). Policy on *Listeria monocytogenes* in Ready-to-Eat Foods.
- Health Protection and Promotion Act, R.S.O. 1990, c. H.7., Pub. L. No. R.S.O. 1990, H.7file:///C:/Users/Elizabeth/Desktop/New References/Voluntary Codes-Ch 1-Understanding voluntary codes.pdf.
- Henson, S. (2008). The role of public and private standards in regulating international food markets. *Journal of International Agricultural Trade and ...*, 4(1), 63–81.
- Henson, S. (2011). Private agrifood governance: Conclusions, observations and provocations. *Agriculture and Human Values*, 28(3), 443–451. <https://doi.org/10.1007/s10460-011-9309-y>
- Henson, S., & Caswell, J. A. (1999). Food safety regulation: An overview of contemporary

- issues. *Food Policy*, 24(6), 589–603. [https://doi.org/10.1016/S0306-9192\(99\)00072-X](https://doi.org/10.1016/S0306-9192(99)00072-X)
- Henson, S., & Hooker, N. H. (2001). Private sector management of food safety: public regulation and the role of private controls. *The International Food and Agribusiness Management Review*, 4(1), 7–17. [https://doi.org/10.1016/S1096-7508\(01\)00067-2](https://doi.org/10.1016/S1096-7508(01)00067-2)
- Henson, S., & Humphrey, J. (2009). The Impacts of Private Food Safety Standards on the Food Chain and on Public Standard-Setting Processes. *Bulletin of the World Health Organisation*, 13(May), 1–59.
- Henson, S., & Humphrey, J. (2010). Understanding the Complexities of Private Standards in Global Agri-Food Chains as They Impact Developing Countries. *Journal of Development Studies*, 46(9), 1628–1646. <https://doi.org/10.1080/00220381003706494>
- Henson, S., & Reardon, T. (2005). Private agri-food standards: Implications for food policy and the agri-food system. *Food Policy*, 30(3), 241–253. <https://doi.org/10.1016/j.foodpol.2005.05.002>
- Héritier, A., & Lehmkuhl, D. (2011). New Modes of Governance and Democratic Accountability. *Government and Opposition*, 46(1), 126–144. <https://doi.org/10.1111/j.1477-7053.2010.01333.x>
- Herzfeld, T., Drescher, L. S., & Grebitus, C. (2011). Cross-national adoption of private food quality standards. *Food Policy*, 36(3), 401–411. <https://doi.org/10.1016/j.foodpol.2011.03.006>
- Heywood, A. (2004). *Political Theory: An Introduction* (Vol. Third). New York: Palgrave MacMillan.
- Hill, C. J. (2006). Casework job design and client outcomes in welfare-to-work offices. *Journal of Public Administration Research and Theory*, 16(2), 263–288. <https://doi.org/10.1093/jopart/mui043>
- Hill, H. C. (2003). Understanding Implementation: Street-Level Bureaucrats’ Resources for Reform. *Journal of Public Administration Research and Theory*. <https://doi.org/10.1093/jopart/mug024>
- Hill, M., & Hupe, P. (2014). *Implementing Public Policy: An Introduction to the Study of Operational Governance* (3rd ed.). London: Sage Publications Ltd.
- Hirschauer, N., & Bavorová, M. (2014). Advancing consumer protection through smart food safety regulation. *European Food and Feed Law Review*, 9(2), 91–104.
- Hobbs, J. E. (2004). Information Asymmetry and the Role of Traceability Systems. *Agribusiness*, 20(4), 397–415. <https://doi.org/10.1002/agr.20020>
- Hobbs, J. E. (2010). Public and private standards for food safety and quality: international trade implications. *Estey Centre Journal of International Law and Trade Policy*, 11(1), 136–152.
- Hoffmann, S., & Harder, W. (2010). Food Safety and Risk Governance in Globalized Markets. *Health Matrix: Journal of Law-Medicine*, 20(5), 5–54.
- Holleran, E., Bredahl, M. E., & Zaiabet, L. (1999). Private incentives for adopting food safety and quality assurance. *Food Policy*, 24(6), 669–683. [https://doi.org/10.1016/S0306-9192\(99\)00071-8](https://doi.org/10.1016/S0306-9192(99)00071-8)

- Honig, D. (2013). Denied Disability? Try Another State: Discretion and Inequity in Eligibility Determinations of US Federal Disability Programs. *Working Paper*, 1–24.
- Hooghe, L., & Marks, G. (2002). Types of Multi-Level Governance. *Les Cahiers Europeens de Sciences Po. Uropeens de Sciences Po.*, 2.
- Hooghe, L., & Marks, G. (2003). Unraveling the Central State, but How? Types of Multi-level Governance. *American Political Science Review*, 97(2), 233–243.
<https://doi.org/10.1017.S0003055403000649>
- Hotho, S. (2008). Professional identity – product of structure, product of choice: Linking changing professional identity and changing professions. *Journal of Organizational Change Management*, 21(6), 721–742. <https://doi.org/10.1108/09534810810915745>
- Howlett, M. (2009a). Governance modes, policy regimes and operational plans: A multi-level nested model of policy instrument choice and policy design. *Policy Sciences*, 42(1), 73.
- Howlett, M. (2009b). Policy analytical capacity and evidence-based policy-making: Lessons from Canada. *Canadian Public Administration*, 52(2), 153–175.
https://doi.org/10.1111/j.1754-7121.2009.00070_1.x
- Howlett, M., Ramesh, M., & Perl, A. (2009). *Studying Public Policy: Policy Cycles and Policy Subsystems* (Vol. Third). Don Mills, ON: Oxford University Press Canada.
- Hupe, P., & Hill, M. (2007). Street-Level Bureaucracy and Public Accountability. *Public Administration*, 85(2), 279–299. <https://doi.org/10.1111/j.1467-9299.2007.00650.x>
- Hupe, P., Hill, M., & Buffat, A. (2015). Introduction: defining and understanding street-level bureaucracy. In P. Hupe, M. Hill, & A. Buffat (Eds.), *Understanding Street-Level Bureaucracy*. Bristol: Policy Press.
- Hutter, B. M. (1989). Variations in Regulatory Enforcement Styles. *Law & Policy*.
<https://doi.org/10.1111/j.1467-9930.1989.tb00024.x>
- Hutter, B. M. (2011a). *Managing food safety and hygiene: governance and regulation as risk management*. Northampton, MA: Edward Elgar.
- Hutter, B. M. (2011b). Understanding the New Regulatory Governance: Business Perspectives. *Law & Policy*, 33(4), 459–476. <https://doi.org/10.1111/j.1467-9930.2011.00346.x>
- Hutter, B. M., & Jones, C. (2007). From Government to Governance: External Influences on Business Risk Management. *Regulation & Governance*. <https://doi.org/10.1111/j.1748-5991.2007.00004.x>
- Ingraham, P. W., Moynihan, D. P., & Andrews, M. (2008). Formal and Informal Institutions in Public Administration. In J. Pierre, B. G. Peters, & G. Stoker (Eds.), *Debating Institutionalism* (pp. 66–85). Manchester: Manchester University Press.
- International Accreditation Forum, I. (2018). Multilateral Recognition Arrangement Documents. Retrieved from http://www.iaf.nu/articles/MLA_Documents/39
- International Featured Standards. (2014). *IFS Food Standard for auditing quality and food safety of food products Version 6.0*. International Featured Standards.
- International Featured Standards. (2017). *IFS Food - Standard for auditing quality and food safety of food products - Version 6.1*.

- International Featured Standards. (2018a). Auditor Examinations. Retrieved April 11, 2018, from <https://www.ifs-certification.com/index.php/en/ifs-certification-bodies-auditors-en/auditor-examinations-en>
- International Featured Standards. (2018b). IFS Database. Retrieved March 17, 2018, from <https://www.ifs-certification.com/index.php/en/tools/ifs-database>
- International Featured Standards. (2018c). Minimum audit time. Retrieved April 7, 2018, from https://www.ifs-certification.com/calc_audittime.php
- International Featured Standards. (2018d). Requirements for IFS Auditors. Retrieved April 7, 2018, from <https://www.ifs-certification.com/index.php/en/ifs-certification-bodies-auditors-en/auditor-approval-en>
- International Organization for Standardization. (2018a). ISO/IEC 17065:2012 Conformity assessment -- Requirements for bodies certifying products, processes and services. Retrieved February 20, 2018, from <https://www.iso.org/standard/46568.html>
- International Organization for Standardization. (2018b). Management System Standards. Retrieved February 20, 2018, from <https://www.iso.org/management-system-standards.html>
- Jackson, L. S. (2009). Chemical Food Safety Issues in the United States: Past, Present, and Future. *Journal of Agricultural and Food Chemistry*, 57(18), 8161–8170. <https://doi.org/10.1021/jf900628u>
- Jackson, P. (2010). Food stories: consumption in an age of anxiety. *Cultural Geographies*, 17(2), 147–165. <https://doi.org/10.1177/1474474010363844>
- Jann, W., & Wegrich, K. (2007). Theories of the Policy Cycle. In F. Fischer, G. Miller, & M. S. Sidney (Eds.), *Handbook of public policy analysis: theory, politics, and methods*. Boca Raton, FL: CRC/Taylor & Francis.
- Jarvis, D. S. L. (2013). State theory and the rise of the regulatory state. In E. Araral, S. Fritzen, M. Howlett, M. Ramesh, & X. Wu (Eds.), *Routledge Handbook of Public Policy*. Independence, KY: Routledge.
- Jensen, K. K., & Sandøe, P. (2002). Food Safety and Ethics: The Interplay between Science and Values. *Journal of Agricultural and Environmental Ethics*, 15(3), 245–253. <https://doi.org/10.1023/A:1015726423707>
- Johnson, A. C., Almanza, B. A., & Nelson, D. C. (2014). Factors That Influence Whether Health Inspectors Write Down Violations on Inspection Reports. *Food Protection Trends*, 34(4), 226–236.
- Johnson, M. D., Morgeson, F. P., Ilgen, D. R., Meyer, C. J., & Lloyd, J. W. (2006). Multiple professional identities: examining differences in identification across work-related targets. *The Journal of Applied Psychology*, 91(2), 498–506. <https://doi.org/10.1037/0021-9010.91.2.498>
- Jordan, A., Wurzel, R. K. W., & Zito, A. (2005). The Rise of ‘New’ Policy Instruments in Comparative Perspective: Has Governance Eclipsed Government? *Political Studies*, 53(3), 477–496. <https://doi.org/10.1111/j.1467-9248.2005.00540.x>
- Kaan, C., & Liese, A. (2011). Public private partnerships in global food governance: Business

- engagement and legitimacy in the global fight against hunger and malnutrition. *Agriculture and Human Values*, 28(3), 385–399. <https://doi.org/10.1007/s10460-009-9255-0>
- Khandaker, S. A., & Alauddin, M. (2005). Economic Analysis of Food-Borne Diseases Control Program in Australia. *International Journal of Social Economics*, 32(9), 767–782. <https://doi.org/http://dx.doi.org/10.1108/03068290510612575>
- Kjær, A. M. (2011). Rhodes' contribution to governance theory: Praise, criticism and the future governance debate. *Public Administration*, 89(1), 101–113. <https://doi.org/10.1111/j.1467-9299.2011.01903.x>
- Kleimann, A., Toto, S., Eberlein, C. K., Kielstein, J. T., Bleich, S., Frieling, H., & Sieberer, M. (2014). Psychiatric symptoms in patients with shiga toxin-producing *E. coli* O104:H4 induced haemolytic-uraemic syndrome. *PLoS ONE*, 9(7), 5–12. <https://doi.org/10.1371/journal.pone.0101839>
- Konefal, J., Mascarenhas, M., & Hatanaka, M. (2005). Governance in the global agro-food system: Backlighting the role of transnational supermarket chains. *Agriculture and Human Values*, 22(3), 291–302. <https://doi.org/10.1007/s10460-005-6046-0>
- Kuttschreuter, M., Rutsaert, P., Hilverda, F., Regan, Á., Barnett, J., & Verbeke, W. (2014). Seeking information about food-related risks: The contribution of social media. *Food Quality and Preference*, 37, 10–18. <https://doi.org/10.1016/j.foodqual.2014.04.006>
- Kwon, J., Roberts, K. R., Sauer, K., Cole, K. B., & Shanklin, C. W. (2014). Food Safety Risks in Restaurants and School Foodservice Establishments: Health Inspection Reports. *Food Protection Trends*, 31(1), 25–35.
- Laforest, R. (2013). Shifting scales of governance and civil society participation in Canada and the European Union. *Canadian Public Administration*, 56(2), 235–251. <https://doi.org/10.1111/capa.12016>
- Lang, T. (2003). Food Industrialisation and Food Power: Implications for Food Governance. *Development Policy Review*, 21(5–6), 555–568. <https://doi.org/10.1111/j.1467-8659.2003.00223.x>
- Law, M. T. (2003). The Origins of State Pure Food Regulation. *The Journal of Economic History*, 63(04), 1103–1130. <https://doi.org/10.1017/S0022050703002547>
- Law, M. T. (2006). How do regulators regulate? Enforcement of the Pure Food and Drugs Act, 1907–38. *Journal of Law, Economics, and Organization*, 22(2), 459–489. <https://doi.org/10.1093/jleo/ewj014>
- Lawley, R., Curtis, L., & Davis, J. (2012). *The Food Safety Hazard Guidebook* (2nd ed.). Cambridge: UK: Royal Society of Chemistry.
- Le, S., Bazger, W., Hill, A. R., & Wilcock, A. (2014). Awareness and perceptions of food safety of artisan cheese makers in Southwestern Ontario: A qualitative study. *Food Control*, 41(1), 158–167. <https://doi.org/10.1016/j.foodcont.2014.01.007>
- Lee, L. M. (2012). Public Health Ethics Theory: Review and Path to Convergence. *The Journal of Law, Medicine & Ethics*, 40(1), 85–98. <https://doi.org/10.1111/j.1748-720X.2012.00648.x>

- Lee, M. (2003). Conceptualizing the New Governance: A New Institution of Social Coordination. In *Institutional Analysis and Development Mini-Conference* (Vol. Indiana Un, pp. 1–26).
- Leinwand, S. E., Glanz, K., Keenan, B. T., & Branas, C. C. (2017). Inspection Frequency, Sociodemographic Factors, and Food Safety Violations in Chain and Nonchain Restaurants, Philadelphia, Pennsylvania, 2013–2014. *Public Health Reports*, 132(2), 003335491668774. <https://doi.org/10.1177/0033354916687741>
- Lelieveld, H. (2012). Global harmonisation of food safety regulations. *African Journal of Food, Agriculture, Nutrition and Development*, 12.
- Levi-Faur, D. (2009). Regulatory capitalism and the reassertion of the public interest. *Policy and Society*, 27(3), 181–191. <https://doi.org/10.1016/j.polsoc.2008.10.002>
- Levi-Faur, D. (2011). Regulation and Regulatory Governance. In D. Levi-Faur (Ed.), *The Handbook on the Politics of Regulation* (pp. 3–21). Cheltenham: Edward Elgar Publishing Limited.
- Levi-Faur, D. (2012). From “Big Government” to “Big Governance”? In D. Levi-Faur (Ed.), *The Oxford Handbook of Governance* (pp. 3–18). Oxford: Oxford University Press.
- Levin, J. S., & Montero Hernandez, V. (2014). Divided Identity: Part-Time Faculty in Public Colleges and Universities. *The Review of Higher Education*, 37(4), 531–558. <https://doi.org/10.1353/rhe.2014.0033>
- Liddell, D. L., Wilson, M. E., Pasquesi, K., Hirschy, A. S., & Boyle, K. M. (2014). Development of professional identity through socialization in graduate school. *Journal of Student Affairs Research and Practice*, 51(1), 69–84. <https://doi.org/10.1515/jsarp-2014-0006>
- Lipsky, M. (1980). *Street-level bureaucracy: dilemmas of the individual in public services*. New York: Russell Sage Foundation.
- Lipsky, M. (2010). *Street Level Bureaucracy: Dilemmas of Individuals in Public Service*. New York: Russell Sage.
- Lobel, O. (2005). The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought. *Legal Studies Research Paper Series*, 07(27), 130.
- Loblaw Companies Limited. (2011). 2010 Corporate Social Responsibility Report. Retrieved September 30, 2015, from <http://www.loblaw-reports.ca/responsibility/2010/source-with-integrity.php>
- Loblaw Companies Limited. (2012). Loblaw CSR Report outlines the Company’s environmental and social achievements for 2011.
- Loblaw Companies Limited. (2013). 2012 Corporate Social Responsibility Report: Quality Assurance and Food Safety.
- Loyens, K., & Maesschalck, J. (2010). Toward a theoretical framework for ethical decision making of street-level bureaucracy existing models reconsidered. *Administration & Society*, 42(1), 66–100. <https://doi.org/10.1177/0095399710362524>
- Lyons, C., & Malowany, M. (2009). Who’s a public health professional? The struggle for recognition by sanitary inspectors in early 20th Century Canada. *Canadian Journal of Public Health*, 100(6), 409–412.

- Lytton, T. D. (2014). Competitive Third-Party Regulation: How Private Certification Can Overcome Constraints That Frustrate Government Regulation. *Theoretical Inquiries in Law*, 15, 539–572.
- Lytton, T. D. (2017). The taming of the stew: Regulatory intermediaries in food safety governance. *Annals of the American Academy of Political and Social Science*, 670(1), 78–92. <https://doi.org/10.1177/0002716217690330>
- Lytton, T. D., & McAllister, L. K. R. (2014). Oversight in Private Food Safety Auditing: Addressing Auditor Conflict of Interest. *Wisconsin Law Review*, 289, 290–335.
- Ma, L., Zhang, G., Gerner-Smidt, P., Mantripragada, V., Ezeoke, I., & Doyle, M. P. (2009). Thermal inactivation of Salmonella in peanut butter. *Journal of Food Protection*, 72(8), 1596–1601.
- MacLellan, D., Lordly, D., & Gingras, J. (2011). Professional socialization in dietetics: a review of the literature. *Canadian Journal of Dietetic Practice and Research*, 72(1), 37–42. <https://doi.org/10.3148/72.1.2011.37>
- Manning, L., & Baines, R. N. (2004). Effective management of food safety and quality. *British Food Journal*, 106(8), 598–606. <https://doi.org/10.1108/00070700410553594>
- Manning, L., & Soon, J. M. (2016). Food Safety, Food Fraud, and Food Defense: A Fast Evolving Literature. *Journal of Food Science*, 81(4), R823–R834. <https://doi.org/10.1111/1750-3841.13256>
- Maple Leaf Foods Inc. (2015). Maple Leaf Foods announces new food safety commitment at annual symposium - GFSI. Retrieved from <http://www.mapleleaffoods.com/news/maple-leaf-foods-announces-new-food-safety-commitment-at-annual-symposium-company-to-require-all-suppliers-to-become-certified-to-gfsi-recognized-standards/>
- Marine Stewardship Council. (2017). What is the MSC? Retrieved May 17, 2017, from <https://msc.org/about-us/what-is-the-msc>
- Marks, A. B. (2016). A New Governance Recipe for Food Safety Regulation. *Loyola University Chicago Law Journal*, 47(3), 907–9–68.
- Martin, M., & Webb, K. (2018). Water Quality Protection of the Canada-U.S. Great Lakes: Examining the Emerging State/Nonstate Governance Approach. *International Journal of Innovation and Sustainable Development*, Forthcomin.
- May, P. J. (2012). Policy design and implementation. In B. G. Peters & J. Pierre (Eds.), *The SAGE handbook of public administration*. (Vol. Second). London: SAGE Publications Ltd.
- May, P. J., & Winter, S. C. (2009). Politicians, Managers, and Street-Level Bureaucrats: Influences on Policy Implementation. *Journal of Public Administration Research and Theory*, 19(3), 453–476. <https://doi.org/10.1093/jopart/mum030>
- May, P. J., & Wood, R. S. (2003). At the Regulatory Front Lines: Inspectors' Enforcement Styles and Regulatory Compliance. *Journal of Public Administration Research and Theory*, 13(2), 117–139. <https://doi.org/10.1093/jopart/mug014>
- Maynard-Moody, S., & Musheno, M. (2000). State Agent or Citizen Agent: Two Narratives of Discretion. *Journal of Public Administration Research and Theory*, 10(2), 329–258.

<https://doi.org/10.1093/oxfordjournals.jpart.a024272>

- McGinnis, M. D. (2011). An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *Policy Studies Journal*, 39(1), 169–183. <https://doi.org/10.1111/j.1541-0072.2010.00401.x>
- McGregor, S. L. T. (2011). Home economics in higher education: Pre-professional socialization. *International Journal of Consumer Studies*, 35(5), 560–568. <https://doi.org/10.1111/j.1470-6431.2011.01025.x>
- McInden, T., Sargeant, J. M., Thomas, M. K., Papadopoulos, A., & Fazil, A. (2014). Component costs of foodborne illness: a scoping review. *BMC Public Health*, 14(1), 1–12. <https://doi.org/10.1186/1471-2458-14-509>
- McMahon, M. (2011). Standard fare or fairer standards: Feminist reflections on agri-food governance. *Agriculture and Human Values*, 28(3), 401–412. <https://doi.org/10.1007/s10460-009-9249-y>
- McNulty, T., Zattoni, A., & Douglas, T. (2013). Developing Corporate Governance Research through Qualitative Methods: A Review of Previous Studies. *Corporate Governance: An International Review*, 21(2), 183–198. <https://doi.org/10.1111/corg.12006>
- Medeiros, P., & Wilcock, A. (2006). Public Health Inspector Bias and Judgment during Inspections of Food Service Premises. *Food Protection Trends*, 26(12), 930–940.
- Medical Officer of Health. (2009). Food Safety and Foodborne Illness in Toronto, 1–11.
- Meidinger, E. (2009). Private Import Safety Regulation and Transnational New Governance. *Buffalo Legal Studies Research Paper Series*, 1, 452–462.
- Meuwissen, M. P. M., Velthuis, A. G. J., Hogeveen, H., & Huirne, R. B. M. (2003). Traceability and Certification in Meat Supply Chains. *Risk Management*, 2(2), 167–181.
- Meyers, M. K., & Nielsen, V. L. (2012). Street-Level Bureaucrats and the Implementation of Public Policy. In B. G. Peters & J. Pierre (Eds.), *The SAGE Handbook of Public Administration* (Second, pp. 264–277). Sage Publications Ltd.
- Miller, H. T. (2008). Governmentality, pluralism, and deconstruction. *Administrative Theory & Praxis*, 30(3), 363–368.
- Ministry of Health and Long-Term Care. (2018). Food Safety Protocol, 2018.
- Mintrom, M., & Williams, C. (2013). Public Policy Debate and the Rise of Policy Analysis. In E. Araral, S. Fritzen, M. Howlett, M. Ramesh, & X. Wu (Eds.), *Routledge Handbook of Public Policy*. Independence, KY: Routledge.
- Mosier, S. L., & Thilmany, D. (2016). Diffusion of food policy in the U.S.: The case of organic certification. *Food Policy*, 61, 80–91. <https://doi.org/10.1016/j.foodpol.2016.02.007>
- Munthe, C. (2008). The Goals of Public Health: An Integrated, Multidimensional Model. *Public Health Ethics*, 1(1), 39–52. <https://doi.org/10.1093/phe/phn006>
- National Advisory Committee on Microbiological Criteria for Foods. (1998). Hazard Analysis and Critical Control Point Principles and Application Guidelines. *Journal of Food Protection*, 61(9), 1246–1259.

- National Environmental Health Association. (2017). Registered Environmental Health Specialist/Registered Sanitarian, Candidate Information Brochure.
- Nesbitt, A., Majowicz, S. E., Finley, R., Marshall, B. J., Pollari, F., Sargeant, J. M., ... Sittler, N. (2009). High-risk food consumption and food safety practices in a Canadian community. *Journal of Food Protection*, 72(12), 2575–2586.
- Nesbitt, A., Thomas, M. K., Marshall, B. J., Snedeker, K., Meleta, K., Watson, B., & Bienefeld, M. (2014). Baseline for consumer food safety knowledge and behaviour in Canada. *Food Control*, 38, 157–173. <https://doi.org/10.1016/j.foodcont.2013.10.010>
- Neuman, W. (2011, October 19). Listeria Outbreak Traced to Cantaloupe Packing Shed. *New York Times*.
- New York State Department of Health. (2012). Public Health Sanitarian Series. Retrieved February 21, 2017, from https://www.health.ny.gov/prevention/public_health_works/careers/public_health_sanitarian.htm
- Newbold, K. B., McKeary, M., Hart, R., & Hall, R. (2008). Restaurant inspection frequency and food safety compliance. *Journal of Environmental Health*.
- Newig, J., & Fritsch, O. (2009). Environmental Governance: Participatory, Multi-Level - and Effective? *Environmental Policy and Governance*, 19(2009), 197–214. <https://doi.org/10.1002/eet.509>
- Newig, J., & Koontz, T. M. (2014). Multi-level governance, policy implementation and participation: the EU's mandated participatory planning approach to implementing environmental policy. *Journal of European Public Policy*, 21(2), 248–267. <https://doi.org/10.1080/13501763.2013.834070>
- Nguyen, T., Wilcock, A., & Aung, M. (2004). Food safety and quality systems in Canada: An exploratory study. *International Journal of Quality & Reliability Management*, 21(6), 655–671. <https://doi.org/10.1108/02656710410542052>
- Noordegraaf, M. (2007). From “Pure” to “Hybrid” Professionalism: Present-day professionalism in ambiguous public domains. *Administration & Society*, 39(6), 761–785. <https://doi.org/10.1177/0095399707304434>
- Norris, P. (2011). Cultural Explanations of Electoral Reform: A Policy Cycle Model. *West European Politics*, 34(3), 531–550. <https://doi.org/10.1080/01402382.2011.555982>
- Oberfield, Z. W. (2010). Rule Following and Discretion at Government's Frontlines: Continuity and Change during Organization Socialization. *Journal of Public Administration Research and Theory*, 20(4), 735–755.
- Oberfield, Z. W. (2014). *Becoming bureaucrats: Socialization at the front lines of government service*. Philadelphia: University of Pennsylvania Press.
- Office of Consumer Affairs. (2010). Voluntary Codes Guide – What is a Voluntary Code? Retrieved May 25, 2017, from <https://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca00963.html>
- Ojo, M. (2011). Co-operative and competitive enforced self regulation, 19(2), 139–155. <https://doi.org/10.1108/13581981111123852>

- Olaimat, A. N., & Holley, R. A. (2012). Factors influencing the microbial safety of fresh produce: A review. *Food Microbiology*, 32(1), 1–19. <https://doi.org/10.1016/j.fm.2012.04.016>
- Ontario Ministry of Food Agriculture and Rural Affairs. (n.d.). OMAFRA's Dairy Food Safety Program. Retrieved April 15, 2017, from <http://www.omafra.gov.on.ca/english/food/inspection/dairy/page-3-landing.htm>
- Ontario Ministry of Food Agriculture and Rural Affairs. (2016a). Compliance and Enforcement Activities. Retrieved June 9, 2017, from http://www.omafra.gov.on.ca/english/food/inspection/meatinsp/compliance_enforcement.htm
- Ontario Ministry of Food Agriculture and Rural Affairs. (2016b). Complying with Ontario's agriculture and food legislation. Retrieved March 18, 2018, from <http://www.omafra.gov.on.ca/english/food/foodsafety/compliance/compliance.htm>
- Ontario Ministry of Food Agriculture and Rural Affairs. (2016c). OMAFRA's Dairy Food Safety Program. Retrieved January 11, 2017, from <http://www.omafra.gov.on.ca/english/food/inspection/dairy/page-3-landing.htm#3>
- Ontario Ministry of Food Agriculture and Rural Affairs. (2017). Food. Retrieved April 15, 2017, from <http://www.omafra.gov.on.ca/english/food/index.html>
- Ontario Public Service. (2009). Job Specification - Dairy Plant Specialist. Retrieved February 21, 2017, from <https://www.gojobs.gov.on.ca/PDR.aspx?Language=English&JobID=19069>
- Ontario Regulation 493/17 Food Premises. (n.d.).
- Oosterveer, P. (2015). Authority and Legitimacy in Governing Global Food Chains. In T. Havinga, F. van Waarden, & D. Casey (Eds.), *The Changing Landscape of Food Governance* (pp. 117–133). Cheltenham, UK.
- Ostrom, E. (1994). Neither Market Nor State: Governance of Common-Pool Resources in the Twenty-first Century. *International Food Policy Research Institute Policy Research Institute, IFPRI Lect.*
- Ostrom, E. (1999). Coping with Tragedies of the Commons. *Annual Review of Political Science*, 2(1), 493–535. <https://doi.org/10.1146/annurev.polisci.2.1.493>
- Ostrom, E. (2011). Background on the Institutional Analysis and Development Framework. *Policy Studies Journal*, 39(1), 7–27. <https://doi.org/10.1111/j.1541-0072.2010.00394.x>
- Otto, C., Zahn, S., Rost, F., Zahn, P., Jaros, D., & Rohm, H. (2011). Physical Methods for Cleaning and Disinfection of Surfaces. *Food Engineering Reviews*, 3(3–4), 171–188. <https://doi.org/10.1007/s12393-011-9038-4>
- Oxford University Press. (n.d.). Oxford Dictionaries.
- Pahl-Wostl, C. (2009). A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes. *Global Environmental Change*, 19(3), 354–365. <https://doi.org/10.1016/j.gloenvcha.2009.06.001>
- Papadopoulos, A., Sargeant, J. M., Majowicz, S. E., Sheldrick, B., McKeen, C., Wilson, J., & Dewey, C. E. (2012). Enhancing public trust in the food safety regulatory system. *Health*

- Policy*, 107(1), 98–103. <https://doi.org/10.1016/j.healthpol.2012.05.010>
- Parker, C. (2007). Chapter 8 Meta-Regulation : Legal Accountability for Corporate Social Responsibility ? Forthcoming in Doreen McBarnet , Aurora Voiculescu and Tom Campbell (eds), *The New Corporate Accountability : Corporate Social Responsibility and the Law* , Cambridge. In D. McBarnet, A. Voiculescu, & T. Campbell (Eds.), *The New Corporate Accountability: Corporate Social Responsibility and the Law*. Cambridge: Cambridge University Press.
- Parker, C. (2008). The Pluralization of Regulation. *Theoretical Inquiries in Law*, 9(2), 349–370.
- Parker, J. S., Wilson, R. S., LeJeune, J. T., & Doohan, D. (2012). Including growers in the “food safety” conversation: Enhancing the design and implementation of food safety programming based on farm and marketing needs of fresh fruit and vegetable producers. *Agriculture and Human Values*. <https://doi.org/10.1007/s10460-012-9360-3>
- Pattberg, P. (2005). The institutionalization of private governance: How business and nonprofit organizations agree on transnational rules. *Governance*, 18(4), 589–610. <https://doi.org/10.1111/j.1468-0491.2005.00293.x>
- Pautz, M. C. (2009). Trust between regulators and the regulated: A case study of environmental inspectors and facility personnel in Virginia. *Politics and Policy*. <https://doi.org/10.1111/j.1747-1346.2009.00210.x>
- Pautz, M. C., & Rinfret, S. R. (2011). Making sense of the front lines: Environmental regulators in Ohio and Wisconsin. *Journal of Environmental Studies and Sciences*, 1(4), 277–288. <https://doi.org/10.1007/s13412-011-0041-0>
- Peters, B. G. (2012a). Governance as Political Theory. In *The Oxford Handbook of Governance* (pp. 19–32). Oxford, England: Oxford University Press.
- Peters, B. G. (2012b). Is Governance for Everybody? The Use and Abuse of Governance. In A. M. Bissessar (Ed.), *Governance: is it for Everyone?* (pp. 1–15). Nova Science Publishers, Inc.
- Peters, B. G., & Pierre, J. (2012). Introduction: The Role of Public Administration in Governing. In B. G. Peters & J. Pierre (Eds.), *The SAGE Handbook of Public Administration* (p. 816). London: Sage Publications Ltd. <https://doi.org/10.4135/9781446200506.n1>
- Pham, M. T., Jones, A. Q., Sargeant, J. M., Marshall, B. J., & Dewey, C. E. (2010a). A qualitative exploration of the perceptions and information needs of public health inspectors responsible for food safety. *BMC Public Health*, 10(1), 345. <https://doi.org/10.1186/1471-2458-10-345>
- Pham, M. T., Jones, A. Q., Sargeant, J. M., Marshall, B. J., & Dewey, C. E. (2010b). Specialty food safety concerns and multilingual resource needs: an online survey of public health inspectors. *Foodborne Pathogens and Disease*. <https://doi.org/10.1089/fpd.2010.0580>
- Phillips, L. (2006). Food and Globalization: *Annual Review of Anthropology*, 35, 37–57.
- Piore, M. J. (2011). Beyond Markets: Sociology, street-level bureaucracy, and the management of the public sector. *Regulation and Governance*, 5(1), 145–164. <https://doi.org/10.1111/j.1748-5991.2010.01098.x>

- Pires, S. M., Evers, E. G., van Pelt, W., Ayers, T., Scallan, E., Angulo, F. J., ... Hald, T. (2009). Attributing the human disease burden of foodborne infections to specific sources. *Foodborne Pathogens and Disease*, 6(4), 417–424. <https://doi.org/10.1089/fpd.2008.0208>
- Poocharoen, O., & Lejano, R. P. (2013). Bureaucracy and the Policy Process. In E. Araral, S. Fritzen, M. Howlett, M. Ramesh, & X. Wu (Eds.), *Routledge Handbook of Public Policy*. Independence, KY: Routledge.
- Pothukuchi, K., Mohamed, R., & Gebben, D. (2008). Explaining disparities in food safety compliance by food stores: Does community matter? *Agriculture and Human Values*, 25(3), 319–332. <https://doi.org/10.1007/s10460-008-9132-2>
- Powell, D., Erdozain, S., Dodd, C., Costa, R., Morley, K., & Chapman, B. J. (2013). Audits and inspections are never enough: A critique to enhance food safety. *Food Control*, 30(2), 686–691. <https://doi.org/10.1016/j.foodcont.2012.07.044>
- Powell, D., Jacob, C. J., & Chapman, B. J. (2011). Enhancing food safety culture to reduce rates of foodborne illness. *Food Control*, 22(6), 817–822. <https://doi.org/10.1016/j.foodcont.2010.12.009>
- Pozo, V. F., & Schroeder, T. C. (2016). Evaluating the costs of meat and poultry recalls to food firms using stock returns. *Food Policy*, 59, 66–77. <https://doi.org/10.1016/j.foodpol.2015.12.007>
- Prospectus, S. (2013). IDF World Dairy Summit 2013.
- Public Health Agency of Canada. (2010). Glossary of Terms. Retrieved February 15, 2017, from <http://www.phac-aspc.gc.ca/php-psp/ccph-cesp/glos-eng.php#p>
- Public Health Agency of Canada. (2016a). Estimates of Foodborne Illness in Canada. Retrieved November 23, 2016, from <http://healthycanadians.gc.ca/eating-nutrition/risks-recalls-rappels-risques/surveillance/illness-estimates-estimations-maladies/yearly-annuel-eng.php>
- Public Health Agency of Canada. (2016b). Food Safety. Retrieved January 31, 2018, from <https://www.canada.ca/en/public-health/services/food-safety.html>
- Public Health Agency of Canada. (2016c). What is Public Health? Retrieved November 23, 2016, from http://www.phac-aspc.gc.ca/about_apropos/faq-eng.php
- Public Health Agency of Canada. (2017). About the Agency. Retrieved from <https://www.canada.ca/en/public-health/corporate/mandate/about-agency.html>
- Public Health Agency of Canada. (2018). Yearly food-borne illness estimates for Canada. Retrieved June 17, 2018, from <http://healthycanadians.gc.ca/eating-nutrition/risks-recalls-rappels-risques/surveillance/illness-estimates-estimations-maladies/yearly-annuel-eng.php>
- Public Health Ontario. (2013). *PHO technical report: Update on raw milk consumption and public health: A scientific review for Ontario public health professionals*. Toronto, ON: Queen's Printer for Ontario.
- Public Service Alliance of Canada. (2018). Canadian Food Inspection Agency. Retrieved May 19, 2018, from <http://psacunion.ca/node/1481>
- Purchase, B. (2004). The Political Economy of Voluntary Codes. In K. Webb (Ed.), *Voluntary codes: private governance, the public interest and innovation*2 (pp. 77–95). Ottawa: Carlton

Research Unit on Innovation, Science and Environment.

- Purdy, J. M. (2012). A Framework for Assessing Power in Collaborative Governance Processes. *Public Administration Review*, 72(3), 409–417. <https://doi.org/10.1111/j.1540-6210.2011.02525.x>
- QSR International Pty Ltd. (n.d.). NVivo Pro 11.
- Queen's Printer for Ontario. (2015). Regulator's Code of Practice: Integrity in Pursuit of Compliance. Retrieved March 17, 2017, from <https://www.ontario.ca/page/regulators-code-practice-integrity-pursuit-compliance#section-1>
- R.R.O. 1990, Regulation 562, Food Premises. (n.d.).
- R.S.C. Food and Drug Act (1985).
- Raadschelders, J. C. N. (2011). Public Administration: The Interdisciplinary Study of Government. Oxford, England: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199693894.001.0001>
- Radosavljevic, V., Finke, E.-J., & Belojevic, G. (2014). Escherichia coli O104:H4 outbreak in Germany--clarification of the origin of the epidemic. *European Journal of Public Health*, 25(1), 125–129. <https://doi.org/10.1093/eurpub/cku048>
- Rahim, M. M. (2011). Meta-Regulation Approach of Law: A Potential Legal Strategy to Develop Socially Responsible Business Self-Regulation in Least Developed Common Law Countries. *Common Law World Review*, 40(2), 174–206. <https://doi.org/10.1350/clwr.2011.40.2.0220>
- Raspor, P., & Jevsnik, M. (2008). Good nutritional practice from producer to consumer. *Critical Reviews in Food Science and Nutrition*, 48(3), 276–292. <https://doi.org/10.1080/10408390701326219>
- Rebellato, S. (2012). *Listeria monocytogenes and Ready-to-Eat Meats: Tackling a Wicked Problem using Grounded Theory*. University of Waterloo.
- Reeve, B. (2013). Private Governance, Public Purpose? Assessing Transparency and Accountability in Self-Regulation of Food Advertising to Children. *Bioethical Inquiry*, 10, 149–163. <https://doi.org/10.1007/s11673-013-9441-z>
- Regenstein, J. M., Chaudry, M. M., & Regenstein, C. E. (2003). Halal Food Laws. *Comprehensive Reviews in Food Science and Food Safety*, 2(1994), 111–127.
- Rhodes, R. A. W. (1996). The New Governance: Governing without Government. *Political Studies*, 44(4), 652–667. <https://doi.org/10.1111/j.1467-9248.1996.tb01747.x>
- Rhodes, R. A. W. (2007). Understanding governance: Ten years on. *Organization Studies*, 28(8), 1243–1264. <https://doi.org/10.1177/0170840607076586>
- Rhone, G. T., Clarke, D., & Webb, K. (2004). Two Voluntary Approaches to Sustainable Forestry Practices. In K. Webb (Ed.), *Voluntary codes: private governance, the public interest and innovation*. Ottawa: Carleton Research Unit on Innovation, Science and Environment, Carleton University.
- Riccucci, N. M. (2010). *Public Administration : Traditions of Inquiry and Philosophies of Knowledge*. Washington: Georgetown University Press.

- Riccucci, N. M., Meyers, M. K., Lurie, I., & Han, J. S. (2004). The Implementation of Welfare Reform Policy: The Role of Public Managers in F... *Social Sciences*, 64(4), 438–448.
- Rice, D. (2013). Street-Level Bureaucrats and the Welfare State: Toward a Micro-Institutionalist Theory of Policy Implementation. *Administration & Society*, 45(9), 1038–1062. <https://doi.org/10.1177/0095399712451895>
- Richards, C., Lawrence, G., & Burch, D. (2011). Supermarkets and agro-industrial foods: The strategic manufacturing of consumer trust. *Food, Culture and Society*, 14(1), 29–47. <https://doi.org/10.2752/175174411X12810842291146>
- Rittel, H., & Webber, M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, 4(2), 155–169.
- Robichau, R. W. (2011). The Mosaic of Governance: Creating a Picture with Definitions, Theories, and Debates. *Policy Studies Journal*, 39(1), 113–131.
- Robichau, R. W., & Lynn Jr., L. E. (2009). The Implementation of Public Policy: Still the Missing Link. *Policy Studies Journal*, 37(1), 21–36. <https://doi.org/10.1111/j.1541-0072.2008.00293.x>
- Rogers, E., & Weber, E. (2010). Thinking Harder About Outcomes for Collaborative Governance Arrangements. *The American Review of Public Administration*, 40(5), 546–567. <https://doi.org/10.1177/0275074009359024>
- Rose, N., & Miller, P. (2010). Political power beyond the State: problematics of government. *British Journal of Sociology*, 61(s1), 271–303. <https://doi.org/10.1111/j.1468-4446.2009.01247.x>
- Rouvière, E., & Caswell, J. A. (2012). From punishment to prevention: A French case study of the introduction of co-regulation in enforcing food safety. *Food Policy*, 37(3), 246–254. <https://doi.org/10.1016/j.foodpol.2012.02.009>
- Rouvière, E., & Latouche, K. (2014). Impact of liability rules on modes of coordination for food safety in supply chains. *European Journal of Law and Economics*, 37(1), 111–130. <https://doi.org/10.1007/s10657-013-9413-0>
- Rudder, C. E. (2008). Private governance as public policy: A paradigmatic shift. *Journal of Politics*, 70(4), 899–913. <https://doi.org/10.1017/S002238160808095X>
- Rutgers, M. R. (1997). Beyond Woodrow Wilson. *Administration & Society*, 29(3), 276–300. <https://doi.org/10.1177/009539979702900302>
- Rutgers, M. R. (2008). The Purpose of the State. *Administrative Theory & Praxis*, 30(3), 349–354.
- Sabatier, P. (1987). Knowledge, Policy-Oriented Learning, and Policy Change. *Science Communication*, 8(4), 649–692. <https://doi.org/10.1177/0164025987008004005>
- Safe Quality Food Institute. (2014a). *Criteria for SQF Auditors* (8th ed.).
- Safe Quality Food Institute. (2014b). *SQF Code Edition 7.2*.
- Safe Quality Food Institute. (2017a). *Criteria for SQF Food Safety Auditors, Quality Auditors and Technical Reviewers Competency and Registration*.

- Safe Quality Food Institute. (2017b). SQF Auditor. Retrieved March 15, 2017, from <http://www.sqfi.com/sqf-professional/auditor/>
- Safe Quality Food Institute. (2018). Assessment Database: Public Search. Retrieved March 18, 2018, from <http://www.sqfi.com/suppliers/assessment-database/public-search/>
- SAI Global. (2018). SAI Global BRC Auditor. Retrieved May 19, 2018, from <https://www.careersinfood.com/brc-auditor-job-902255.htm>
- Sargeant, J. M., Ramsingh, B., Wilkins, A., Travis, R. G., Gavrus, D., & Snelgrove, J. W. (2007). Constraints to Microbial Food Safety Policy: Opinions from Stakeholder Groups along the Farm to Fork Continuum. *Zoonoses and Public Health*, 54(5), 177–184. <https://doi.org/10.1111/j.1863-2378.2007.01042.x>
- Saulo, A. A., & Moskowitz, H. R. (2011). Uncovering the mind-sets of consumers towards food safety messages. *Food Quality and Preference*, 22(5), 422–432. <https://doi.org/10.1016/j.foodqual.2011.02.005>
- Scallan, E., Hoekstra, R. M., Angulo, F. J., Tauxe, R. V., Widdowson, M. A., Roy, S. L., ... Griffin, P. M. (2011). Foodborne illness acquired in the United States-Major pathogens. *Emerging Infectious Diseases*, 17(1), 7–15. <https://doi.org/10.3201/eid1701.P11101>
- Scharff, R. L. (2012). Economic Burden from Health Losses Due to Foodborne Illness in the United States. *Journal of Food Protection*, 75(1), 123–131. <https://doi.org/10.4315/0362-028X.JFP-11-058>
- Scott, B., Wilcock, A., & Kanetkar, V. (2009). A survey of structured continuous improvement programs in the Canadian food sector. *Food Control*, 20(3), 209–217. <https://doi.org/10.1016/j.foodcont.2008.04.008>
- Scott, C., Cafaggi, F., & Senden, L. (2011). The Conceptual and Constitutional Challenge of Transnational Private Regulation. *Journal of Law and Society*, 38(1), 1–19.
- Scott, D. (2007). Resolving the quantitative–qualitative dilemma: a critical realist approach. *International Journal of Research & Method in Education*, 30(1), 3–17. <https://doi.org/10.1080/17437270701207694>
- Seaman, P., & Eves, A. (2006). The management of food safety-the role of food hygiene training in the UK service sector. *International Journal of Hospitality Management*, 25(2), 278–296. <https://doi.org/10.1016/j.ijhm.2005.04.004>
- Sewell, G. (2005). Nice Work? Rethinking Managerial Control in an Era of Knowledge Work. *Organization*, 12(5), 685–704. <https://doi.org/10.1177/1350508405055943>
- Shaffer, G., & Pollack, M. A. (2012). Hard and Soft Law: What Have We Learned? In J. L. Dunoff & M. A. Pollack (Eds.), *International Law and International Relations: Insights from Interdisciplinary Scholarship* (Vol. Minnesota). New York: Cambridge University Press. <https://doi.org/http://dx.doi.org/10.2139/ssrn.2044800>
- Short, J. L., Toffel, M. W., & Hugill, A. (2014). *Monitoring the Monitors: How Social Factors Influence Supply Chain Auditors* (No. 14-032). *Harvard Business School Working Paper*.
- Skok, J. E. (1995). Policy issue networks and the public policy cycle: A structural-functional framework for public administration. *Public Administration Review*, 55(4), 325.

- Slay, H. S., & Smith, D. A. (2011). Professional identity construction: Using narrative to understand the negotiation of professional and stigmatized cultural identities. *Human Relations*, 64(1), 85–107. <https://doi.org/10.1177/0018726710384290>
- Smith, G. (2009). *Interaction of Public and Private Standards in the Food Chain*. *OECD Food, Agriculture and Fisheries Working Papers* (Vol. 15). <https://doi.org/10.1787/221282527214>
- Sodano, V., Hingley, M., & Lindgreen, A. (2008). The usefulness of social capital in assessing the welfare effects of private and third-party certification food safety policy standards: Trust and networks. *British Food Journal*, 110(4–5), 493–513. <https://doi.org/10.1108/00070700810868988>
- Speer, J. (2012). Participatory Governance Reform : A Good Strategy for Increasing Government Responsiveness and Improving Public Services ? *World Development*, 40(12), 2379–2398. <https://doi.org/10.1016/j.worlddev.2012.05.034>
- Stahl, M. (1981). Toward A Policy-Making Paradigm of Public Administration. *The American Review of Public Administration*, 15(1), 7–15. <https://doi.org/10.1177/027507408101500103>
- Starks, H., & Brown Trinidad, S. (2007). Choose Your Method: A Comparison of Phenomenology, Discourse Analysis, and Grounded Theory. *Qualitative Health Research*, 17(10), 1372–1380. <https://doi.org/10.1177/1049732307307031>
- State of Alabama Personnel Department. (2012). Public Health Environmentalist – 20652.
- Steinberger, P. J. (2004). *The Idea of the State*. New York: Cambridge University Press.
- Steurer, R. (2013). Disentangling governance: a synoptic view of regulation by government, business and Civil society. *Policy Sciences*. <https://doi.org/10.1007/s11077-013-9177-y>
- Stilwell, F. J. B. (2012). *Political Economy: the contest of economic ideas*. (Third). Victoria, Australia: Oxford University Press.
- Stoker, G. (1998). Governance as theory: five propositions. *International Social Science Journal*, 50(155), 17–28. <https://doi.org/10.1111/1468-2451.00106>
- Stout, M. (2012). Competing Ontologies: A Primer for Public Administration. *Public Administration Review*, 72(3), 388–398. <https://doi.org/10.1111/j.1540-6210.2011.02530.x>
- Sumner, J. (2015). Standards as a commons: Private agri-food standards as governance for the 99 percent. *Canadian Food Studies / La Revue Canadienne Des Études Sur l'alimentation*, 2(1), 119. <https://doi.org/10.15353/cfs-rcea.v2i1.30>
- Surak, J. G., & Wilson, S. (2014). *The Certified HACCP Auditor*. (J. G. Surak & S. Wilson, Eds.) (Third Edit). Milwaukee, WI: ASQ Quality Press.
- Svara, J. H. (2001). The Myth of the Dichotomy: Complementarity of Politics and Administration in the Past and Future of Public Administration. *Public Administration Review*, 61(2), 176–183.
- Swoffer, K. (2005). Increasing Role of Private Based Standards, (November).
- Tanner, B. (2000). Independent assessment by third-party certification bodies. *Food Control*, 11(5), 415–417. [https://doi.org/10.1016/S0956-7135\(99\)00055-9](https://doi.org/10.1016/S0956-7135(99)00055-9)

- The Consumer Goods Forum. (2018a). Industry Resolutions. Retrieved March 1, 2018, from <https://www.theconsumergoodsforum.com/who-we-are/overview/>
- The Consumer Goods Forum. (2018b). The Consumer Goods Forum. Retrieved from <https://www.theconsumergoodsforum.com/>
- Thomas, M. K., & Murray, R. (2014). Estimating the burden of food-borne illness in Canada. *Canada Communicable Disease Report*, 40(14), 299–302. <https://doi.org/http://dx.doi.org/10.1108/17506200710779521>
- Thomas, M. K., Murray, R., Flockhart, L., Pintar, K., Pollari, F., Fazil, A., ... Marshall, B. J. (2013). Estimates of the burden of foodborne illness in Canada for 30 specified pathogens and unspecified agents, circa 2006. *Foodborne Pathogens and Disease*, 10(7), 639–48. <https://doi.org/10.1089/fpd.2012.1389>
- Thomas, M. K., Vriezen, R., Farber, J. M., Currie, A., Schlech, W., & Fazil, A. (2015). Economic Cost of a *Listeria monocytogenes* Outbreak in Canada, 2008. *Foodborne Pathogens and Disease*, 12(12), 966–971. <https://doi.org/10.1089/fpd.2015.1965>
- Thompson, L. J., & Lockie, S. (2013). Private standards, grower networks, and power in a food supply system. *Agriculture and Human Values*, 30(3), 379–388. <https://doi.org/10.1007/s10460-012-9404-8>
- Thompson, S., de Burger, R., & Kadri, O. (2005). The Toronto food inspection and disclosure system: A case study. *British Food Journal*, 107(3), 140–149. <https://doi.org/10.1108/00070700510586461>
- Todd, E. C. D., Michaels, B. S., Holah, J., Smith, D., Greig, J. D., & Bartleson, C. A. (2010). Outbreaks Where Food Workers Have Been Implicated in the Spread of Foodborne Disease. Part 10. Alcohol-Based Antiseptics for Hand Disinfection and a Comparison of Their Effectiveness with Soaps. *Journal of Food Protection*, 73(11), 2128–2140.
- Tollefson, C., Zito, A. R., & Gale, F. (2012). Symposium Overview: Conceptualizing New Governance Arrangements. *Public Administration*, 90(1), 3–18. <https://doi.org/10.1111/j.1467-9299.2011.02003.x>
- Toronto Public Health. (n.d.). Food Safety.
- Toronto Public Health. (2012a). DineSafe Inspection and Disclosure System. Retrieved March 10, 2018, from <https://www.toronto.ca/health/dinesafe/system.htm>
- Toronto Public Health. (2012b). Food Premises Complaint Form. Retrieved March 18, 2018, from <https://secure.toronto.ca/dinesafe/complaint.html>
- Tovilla, E., & Webb, K. (2017). Examining the emerging environmental protection policy convergence in the Ontario municipal drinking water, wastewater and stormwater sectors. *Water Quality Research Journal of Canada*, 52(3), 209–228. <https://doi.org/10.2166/wqrj.2017.043>
- Transcription Hub. (2018). Transcription Hub. Retrieved January 10, 2018, from <http://www.transcriptionhub.com>
- Trede, F., Macklin, R., & Bridges, D. (2012). Professional identity development: a review of the higher education literature. *Studies in Higher Education*, 37(3), 365–384.

- <https://doi.org/10.1080/03075079.2010.521237>
- Treib, O., Bähr, H., & Falkner, G. (2007). Modes of governance: towards a conceptual clarification. *Journal of European Public Policy*, 14(1), 1–20.
<https://doi.org/10.1080/135017606061071406>
- Tummers, L., & Bekkers, V. (2014). Policy Implementation, Bureaucracy, and the Importance of Discretion. *Public Management Review*, 16(4), 527–547.
<https://doi.org/10.1080/14519037.2013.841978>
- Tuurnas, S., Stenvall, J., & Rannisto, P.-H. (2016). The impact of co-production on frontline accountability: the case of the conciliation service. *International Review of Administrative Sciences*, 82(1), 131–149. <https://doi.org/10.1177/0020852314566010>
- U.S. Food and Drug Administration. (2015a). Ethics. Retrieved March 22, 2017, from <https://www.fda.gov/AboutFDA/WorkingatFDA/Ethics/default.htm>
- U.S. Food and Drug Administration. (2015b). Key Requirements: Final Rule on Accredited Third-Party Certification.
- U.S. Food and Drug Administration. (2016a). FDA Food Safety Modernization Act (FSMA). Retrieved November 24, 2016, from <http://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm>
- U.S. Food and Drug Administration. (2016b). Retail Food Protection. Retrieved June 9, 2017, from <https://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/default.htm>
- U.S. Food and Drug Administration. (2017a). FDA Investigated Multistate Outbreak of Shiga toxin-producing E. coli Infections Linked to Flour. Retrieved March 1, 2018, from <https://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm504192.htm>
- U.S. Food and Drug Administration. (2017b). FSMA Final Rule on Accredited Third-Party Certification. Retrieved June 28, 2017, from <https://www.fda.gov/food/guidanceregulation/fsma/ucm361903.htm>
- U.S. Food and Drug Administration. (2018). Formal Agreement between USDA and FDA Relative to Cooperation and Coordination. Retrieved March 11, 2018, from <https://www.fda.gov/Food/InternationalInteragencyCoordination/DomesticInteragencyAgreements/ucm594371.htm>
- U.S. House of Representatives Committee on Energy and Commerce. (2012). *Report on the Investigation of the Outbreak of Listeria monocytogenes in Cantaloupe at Jensen Farms*.
- United States Department of Agriculture. (n.d.). USDA Office of Ethics. Retrieved March 17, 2017, from <https://www.ethics.usda.gov/newemployees.htm>
- United States Office of Personnel Management. (2018a). Classification & Qualifications, General Schedule Qualification Standards, Food Inspection Series, 1863. Retrieved March 28, 2018, from <https://www.opm.gov/policy-data-oversight/classification-qualifications/general-schedule-qualification-standards/1800/food-inspection-series-1863/>
- United States Office of Personnel Management. (2018b). Food Inspector - Food Safety and Inspection Service. Retrieved February 21, 2017, from <https://www.usajobs.gov/GetJob/ViewDetails/384114000/>

- Unnevehr, L. (2015). Food safety in developing countries: Moving beyond exports. *Global Food Security*, 4, 24–29. <https://doi.org/10.1016/j.gfs.2014.12.001>
- Van Boxstael, S., Habib, I., Jacxsens, L., De Vocht, M., Baert, L., Van De Perre, E., ... Uyttendaele, M. (2013). Food safety issues in fresh produce: Bacterial pathogens, viruses and pesticide residues indicated as major concerns by stakeholders in the fresh produce chain. *Food Control*, 32(1), 190–197. <https://doi.org/10.1016/j.foodcont.2012.11.038>
- van der Meulen, B. M. J. (2010). The Global Arena of Food Law: Emerging Contours of a Meta-Framework. *Erasmus Law Review*, 3(4), 217–240. <https://doi.org/10.3868/s050-004-015-0003-8>
- van der Meulen, B. M. J. (2011a). Private Food Law: The Emergence of a Concept. In B. M. J. van der Meulen (Ed.), *Private Food Law: Governing Food Chains through Contract Law, Self-regulation, Private Standards, Audits and Certification Schemes* (pp. 29–50). Wageningen, NL: Wageningen Academic Publishers. <https://doi.org/10.3920/978-90-8686-730-1>
- van der Meulen, B. M. J. (2011b). The Anatomy of Private Food Law. In B. M. J. van der Meulen (Ed.), *Private Food Law: Governing Food Chains through Contract Law, Self-regulation, Private Standards, Audits and Certification Schemes* (pp. 75–111). Wageningen, NL: Wageningen Academic Publishers.
- Vandenbergh, M. (2007). The New Wal-Mart Effect: The Role of Private Contracting in Global Governance. *UCLA Law Review*, 54(4), 913–970. <https://doi.org/10.1525/sp.2007.54.1.23>.
- Verbruggen, P. (2013). Gorillas in the closet? Public and private actors in the enforcement of transnational private regulation. *Regulation and Governance*, 7(4), 512–532. <https://doi.org/10.1111/rego.12026>
- Verbruggen, P., & Havinga, T. (2014a). Food Safety Meta-Controls in the Netherlands. *Nijmegen Sociology of Law Working Papers Series*, 07, 1–28.
- Verbruggen, P., & Havinga, T. (2014b). The Rise of Transnational Private Meta-Regulators. *Osgoode Hall Law School Legal Studies Research Paper Series: Research Paper No. 71*, 10(16), 27.
- Verbruggen, P., & Havinga, T. (2017). Hybridization of food governance: An analytical framework. In P. Verbruggen & T. Havinga (Eds.), *Hybridization of Food Governance: Trends, Types and Results*. Cheltenham: Edward Elgar Publishing Limited.
- Virtanen, P., Laitinen, I., & Stenvall, J. (2016). Street-level bureaucrats as strategy shapers in social and health services delivery.pdf. *International Social Work*, 1–14. <https://doi.org/10.1177/0020872816660602>
- Vogel, D. (2008). Private Global Business Regulation. *Annual Review of Political Science*, 11, 261–82. <https://doi.org/10.1146/annurev.polisci.11.053106.141706>
- Vogel, D. (2010). The Private Regulation of Global Corporate Conduct. *Business & Society*, 49(1), 68–87.
- VQA Ontario. (2017). Ontario's Wine Authority. Retrieved June 20, 2017, from <http://www.vqaontario.ca/Home>

- Waeraas, A. (2010). Communicating Identity: The Use of Core Value Statements in Regulatory Institutions. *Administration & Society*, 42(5), 526–549. <https://doi.org/10.1177/0095399710377435>
- Walker, C. (2014). Organizational Learning: The Role of Third Party Auditors in Building Compliance and Enforcement Capability. *International Journal of Auditing*, 18, 213–222. <https://doi.org/10.1111/ijau.12026>
- Waller, C. E. (2013). Role of the Sanitary Inspector in the Public Health Program. *American Journal of Public Health and the Nations Health*, 25(3), 323–327.
- Walmart Inc. (2008). Wal-Mart Becomes First Nationwide U.S. Grocer To Adopt Global Food Safety Initiative Standards. Retrieved September 6, 2016, from http://corporate.walmart.com/_news_/news-archive/2008/02/04/wal-mart-becomes-first-nationwide-us-grocer-to-adopt-global-food-safety-initiative-standards
- Weatherill, S. (2009). *Report of the Independent Investigator into the 2008 Listeriosis Outbreak*.
- Webb, K. (2004a). Chapter 14 Voluntary Codes: Where To From Here ? In K. Webb (Ed.), *Voluntary codes: private governance, the public interest and innovation* (pp. 379–402). Ottawa, ON: Carleton Research Unit for Innovation, Science and Environment.
- Webb, K. (2004b). Understanding the Voluntary Codes Phenomenon. In *Voluntary codes: Private governance, the public ...* (pp. 3–32).
- Webb, K. (2005). Sustainable Governance in the Twenty First Century: Moving Beyond Instrument Choice. In P. Eliadis, M. Hill, & M. Howlett (Eds.), *Designing Government: From Instruments to Governance* (p. 242). Montreal: McGill Queens University Press.
- Webb, K. (2012). Political risk insurance, CSR and the mining sector. *International Journal of Law and Management*, 54(5), 394–415. <https://doi.org/10.1108/17542431211264287>
- Webb, K., Cruz, R., & Walsh, P. R. (2017). A comparative review of the role of markets and institutions in sustaining innovation in cleantech: A critical mass approach. *International Journal of Innovation and Sustainable Development*, 11(2–3), 149–169. <https://doi.org/10.1504/IJISD.2017.083307>
- Webb, K., & Morrison, A. (2004). The Law and Voluntary Codes: Examining the “Tangled Web.” In K. Webb (Ed.), *Voluntary codes: Private governance, the public ...* (pp. 97–174). Carleton: Voluntary codes: private governance, the public interest and innovation.
- Weible, C. M. (2008). Expert-Based Information and Policy Subsystems: A Review and Synthesis. *Policy Studies Journal*, 36(4), 615–635. <https://doi.org/10.1111/j.1541-0072.2008.00287.x>
- Weiss, T. G. (2013). *Global Governance: What? Why? Whither?* Malden, MA: Polity Press.
- Wellik, R. (2012). Global Food Safety Initiative Improves Organizational Culture, Efficiency in Food Industry. Retrieved August 22, 2017, from <http://www.foodqualityandsafety.com/article/global-food-safety-initiative-improves-organizational-culture-efficiency-in-food-industry/?singlepage=1>
- Wengle, S. (2016). When experimentalist governance meets science-based regulations; the case of food safety regulations. *Regulation and Governance*, 10(3), 262–283.

<https://doi.org/10.1111/rego.12067>

- Wilcock, A., Ball, B., & Fajumo, A. (2011). Effective implementation of food safety initiatives: Managers', food safety coordinators' and production workers' perspectives. *Food Control*, 22(1), 27–33. <https://doi.org/10.1016/j.foodcont.2010.06.005>
- Wilson, A. M., Meyer, S. B., Webb, T., Henderson, J., Coveney, J., Ward, M. P. R., ... Coveney, J. (2015). How food regulators communicate with consumers about food safety. *British Food Journal*, 117(8), 2129–2142. <https://doi.org/http://dx.doi.org/10.1108/BFJ-12-2014-0419>
- Wilson, W. (1887). The Study of Administration. *Political Science Quarterly*, 2(2), 197–222.
- Wisconsin Department of Safety and Professional Services. (2017). Registered Sanitarian. Retrieved February 21, 2017, from <http://dsps.wi.gov/Default.aspx?Page=fb3f6922-f6b8-4241-bdf9-56563a1bede8>
- World Health Organization. (2014). *Strategic Plan for Food Safety. Organização Mundial da Saúde*.
- World Health Organization. (2015a). Public Health. Retrieved August 24, 2015, from <http://www.who.int/trade/glossary/story076/en/>
- World Health Organization. (2015b). *WHO estimates of the global burden of diseases. World Health Organization*. <https://doi.org/10.1016/j.fm.2014.07.009>
- World Health Organization. (2017a). Food safety Fact sheet N°399. Retrieved May 31, 2017, from <http://www.who.int/mediacentre/factsheets/fs399/en/>
- World Health Organization. (2017b). Metrics: Disability-Adjusted Life Year (DALY). Retrieved May 31, 2017, from http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/
- World Health Organization. (2018). International food standards (Codex Alimentarius). Retrieved May 18, 2018, from http://www.who.int/foodsafety/areas_work/food-standard/en/
- Yapp, C., & Fairman, R. (2005). Assessing compliance with food safety legislation in small businesses. *British Food Journal*, 107(3), 150–161. <https://doi.org/10.1108/00070700510586470>
- Yapp, C., & Fairman, R. (2006). Factors affecting food safety compliance within small and medium-sized enterprises: implications for regulatory and enforcement strategies. *Food Control*, 17(1), 42–51. <https://doi.org/10.1016/j.foodcont.2004.08.007>
- Zoom Video Communications, I. (2018). Zoom. Retrieved January 10, 2018, from www.zoom.us
- Zumbansen, P. (2012). Transnational Private Regulatory Governance: Ambiguities of Public Authority. *Osgoode CLPE Research Paper No. 45/2012.*, 76.