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Food safety governance in South Africa: a policy network approach

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by

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Declaration

Candidate's declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:..... Date:.....

Name: Ntombizethu Simphiwe Mkhwanazi

Supervisors' declaration

We hereby declare that the preparation and presentation of the thesis were supervised following the guidelines on supervision of the thesis laid down by the University of Pretoria.

Principal Supervisor's Signature:..... Date:.....

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Publications and presentations

Throughout this study, I have disseminated the findings to various audiences on both national and international platforms. The purpose of these presentations was to foster discussion and gather diverse perspectives on the observations made during the study, to gather a broader range of opinions before finalizing the conclusions.

A presentation titled, *Food safety governance in South Africa: a policy network approach* was presented at the Department of Plant and Soil Science Seminar on 19 August 2022.

A presentation titled, *Mind the gap: How can food safety challenges be addressed in South Africa* was presented at the Centre for Advancement and Scholarship seminar on 25 June 2023.

A presentation titled, *Tackling Vulnerabilities in South Africa's Food Systems: The Need for Strong Governance* was presented at the AGRI4D conference in September from 26-28, 2023. The abstract can be viewed here: (link not yet available).

A blog, *Mkhwanazi, N., Muwanga, T, and Korsten L. 2023. The Crucial Role of Governance in Ensuring Food Safety* was published on the AgriLink website and can be accessed using this link: https://agrilinks.org/post/crucial-role-governance-ensuring-food-safety

Opinion Piece, Mkhwanazi, N., Adelle, C, and Korsten, L. 2023. A rotten state of food safety governance submitted to The Conversation Africa by 30 July 2023.

Research paper, *Mkhwanazi, N., Adelle, C, and Korsten, L. 2023. Food safety governance in South Africa* was submitted to the African Journal for Governance and Development on the 6th of July 2023.

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Abstract

This is a study in public policy focusing on food safety governance. Food safety refers to reducing the risk of individuals becoming sick from foodborne illness through managed handling, preparation, and storage of foods. The main aim of food safety is thus to prevent the food from getting contaminated and posing a risk to the consumer. While food safety governance refers to the policy themselves, the institutions and actors involved in forming, interpreting, implementing, and enforcing the food safety policies. Currently, South African food safety governance appears to be fragmented and ineffective. The study follows a case study approach to best understand food safety governance and identifies governance weaknesses in South Africa. This study hypothesis that food safety in South Africa is dominated by a narrow range of actors in government and industry and that a better outcome could be obtained if a broader range of stakeholders were involved.

The study adopts a policy networks approach, which was used in conjunction with the Kaleidoscope Model (KM) to better understand the underlying patterns of interactions between stakeholders. The KM identifies important factors influencing the policy cycle which can influence policy processes in each of the cases, network theory added a valuable layer of analysis by uncovering the complex relationships, dependencies, and interactions among these factors. It provided a more nuanced understanding of the policy ecosystem, facilitating better decision-making, strategic interventions, and policy implementation. The KM and the policy network are intriguing, yet it falls short of acknowledging the concept of power, thus, the political economy addresses this concept at the end of the study.

A qualitative research approach is adopted, using a mixed data collection methodology that took place in three phases document analysis, semi-structured interviews, and focus groups from the non-probability sampling. The third phase is a focus group discussion which aim to triangulate and validate the information collected through document analysis and semi-structured interviews. The focus group discussion was in the form of a stakeholder mapping workshop also aimed at filling in the gaps between the two phases. A thematic and content analysis was employed to respond to the research questions. To do this, audio files were transcribed, validated, and read from a holistic perspective to identify emergent themes. The initial coding framework was developed befo*re* and about research questions, transcripts reviews, and memos' insight. All coding was conducted using ATLAS.ti 9 software.

The first case study focuses on the agenda-setting and policy design stages of food safety policy, specifically on the compulsory specification for processed meat products. The second case study focuses on the adoption and implementation of food safety regulations in South Africa, with particular emphasis on the Regulation relating to Hygiene Requirements for Premises and Transportation. The third case study focuses on the implementation of Regulations relating to the Hazard Analysis Critical Control Point in the South African food industry.

This study shows how fragmented the government food safety actors are and the relationship between the government (and its agencies) and consumers. The food safety responsibilities are shared between three different government departments and food safety agencies. The role and responsibilities of these departments and agencies are specified and remain non-integrated. Hence, the power for influencing decisions is distributed across these departments. Food safety stakeholders in South Africa include government (and its agencies), the food industry, civil society, and research institutions each with a unique role to play in the governance of food safety. Amongst these stakeholders, the government, agencies, and the industry operate in a closed policy network and hold more power over other stakeholders to influence decisions related to policy issues. Stakeholders such as civil society and research institutions are hardly invited to the meetings, and their voices and opinions are considered not important when making policy decisions. This triggers several consequences such as limited representation, lack of transparency, industry bias, and neglected public interest all of which hinder the development and implementation of effective regulations.

The South African food safety policy network places the government at the top, with various levels of authority and decision-making power cascading down to provincial and local levels. The South African government is the custodian of the main responsibilities of food safety and therefore, takes on a hierarchical approach to decision-making. However, the Department of Health has decentralised itself by establishing enforcement at lower levels of government i.e., at municipal, metro, or provincial levels. To address the shortcomings of a closed range of actors in government and industry, South African food safety governance should consider opening the decision-making process to a wider group of stakeholders that have a real influence on decision-making. Although this research is beneficial, it is important to note that these networks are constantly changing. The government is constantly evolving and so are the stakeholders. As such, it is important to constantly monitor these networks to ensure that the government can develop meaningful collaborations.

As a contribution, this is the first comprehensive and organised evaluation conducted on food safety governance in South Africa, identifying areas of weakness that enable the presentation of holistic recommendations for improving the system. This research contributes to identifying both strong and weak relationships within the network. The study links the KM and policy network to ‘identify’ and ‘explain’ the weaknesses in food safety governance. The study investigates policy networks in a real-world context of food safety in South Africa. The research presented in this study adds valuable insights to the growing body of literature on discussions and exchanges related to food safety governance in South Africa and beyond.

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List of acronyms

ADSA:	Association for Dietetics in South Africa
ARC:	Agriculture Research Council
AU:	African Union
BUSA:	Business Unit South Africa
BSE:	Bovine Spongiform Encephalopathy
CAC:	Codex Alimentarius Commission
CEO:	Chief Executive Officer
COA:	Certificate of Acceptability
CoE-FS:	Centre of Excellence in Food Security
CGCSA:	Consumer Goods Council of South Africa
CPA:	Consumer Protection Act
CRMs:	Certified Reference Material
DAFF:	Department of Agriculture Forestry and Fisheries
DALRRD:	Department of Agriculture, Land Reform, and Rural Development
DEFF:	Department of Environment, Forestry, and Fisheries
DG:	Director General
DoH:	Department of Health
DTIC:	Department of Trade, Industry and Competition
DSD:	Department of Social Development
DSI:	Department of Science and Innovation
EHPs:	Environmental Health Practitioners
EU:	European Union
FAO:	Food and Agriculture Organization
FBOs:	Food Business Operators
FMD:	Foot and Mouth Disease
GAP:	Good Agriculture Practice
GATT:	General Agreement on Tariffs and Trade
GDP:	Gross Domestic Product
GHP:	Good Hygiene Practice

GMOs:	Genetics Modified Organisms
GMP:	Good Manufacturing Practice
HACCP:	Hazard Analysis and Critical Control Point
IFNuW:	Institute for Food, Nutrition, and Well-being
INFOSAN:	International Food Safety Authority Network
KM:	Kaleidoscope Model
LMIC:	Low-Middle Income Countries
MEC:	Member of the Executive Council
MISA:	Meat Industry of South Africa
NASA:	National Aeronautical Space Agency
NCC:	National Consumer Council
NGO:	Non-Governmental Organisation
NICD:	National Institute for Communicable Diseases
NMISA:	National Metrology Institute of South Africa
NRCS:	National Regulator for Compulsory Specifications
PFMA:	Public Finance Management Act
RMIF:	Red Meat Industry Forum
RTE:	Ready-To-Eat
SABS:	South African Bureau of Standards
SAAFoST:	South African Association for Food and Technology
SANAS:	South African National Accreditation System
SANS:	South African National Standards
SDGs:	Sustainable Development Goals
SMEs:	Small-Medium Enterprises
SPS:	Sanitary and Phytosanitary
TBT:	Technical Barriers to Trade
TR:	Technical Regulations
US:	United States
USDA:	United States Department of Agriculture
Vas:	Voluntary Actions

WHO:	World Health Organization
WTO:	World Trade Organization

Chapter One: Introduction

1.1 Introduction

Food safety is an important aspect of food security and food governance. The Food and Agriculture Organization (FAO) of the United Nations asserts that "if it is not safe, it is not food" (FAO, 2022), and agreeing to this assertion, the FAO Director-General Jose Graziano da Silva claims that "there is no food security without food safety" (FAO, 2019b) However, food safety is complicated as it is not only about preventing food-borne illnesses. It covers things like food labelling and additives, adulteration and contamination, food processing, nutrition, hygiene, and risks from microorganisms, chemicals, and physical harm (EuroSciCon, 2020; Roesel and Grace, 2015). In addition, there are many stakeholders involved in food safety. Hence, good collaboration and coordination (or governance) between all these various sectors and stakeholders are necessary to achieve food safety.

A growing demand for greater attention on food safety has been created by recent trends in global food production, processing, distribution, and preparation (Rehber, 2012). According to Reardon *et al*. (2014), food systems are changing because of urbanisation, dietary change, and economic development. As a result, consumers and other stakeholders must adapt their attitudes and practices for handling food (Grace, 2015). In addition, new laws must be passed as technology develops to safeguard an ever-growing supply of food products that must be safe for consumption (Fung *et al*., 2018). This calls for refocusing policymakers' attention on new areas, reallocating resources, and supporting food safety in the entire food system, including governance issues at all levels (Reardon *et al*., 2014).

International organisations, donors, regional institutions, and national governments are progressively driving a global transition toward more streamlined food safety regulation and alignment with global trends. For instance, Goal 3 of the Sustainable Development Goals (SDGs) emphasizes healthy living and the promotion of well-being for all people regardless of age, which is related to food safety both directly and indirectly (UNDP, 2015). Yet, food safety is an important concern for public health in and of itself (World Bank, 2022). Also, the recently revised Biennial Assessment of the Malabo Declaration by the African Union (AU) includes food safety indicators for the first time on the continental level (AU, 2019). The extent of participation to solve the issue at both a national and worldwide level is

demonstrated by all these activities and pledges, all of which have a positive impact on food safety governance.

South Africa's present food safety governance is ineffective. Several authors refer to the South African food safety policy and governance frameworks' fragmentation, lack of communication, coordination, and confidence (Mwamakamba *et al*., 2012; Grace, 2017; Morse *et al*., 2018; Delport, 2019; DAFF et al., 2013; EU-SA, 2019, Hunter-Adams *et al*., 2018). To provide more holistic and in-depth empirical evidence for policy discussion than previous studies which are more reactive to the listeriosis outbreak than focused studies on Food Safety and, eventually, the enhancement of food safety governance in South Africa. This study focuses on the governance of food safety in South Africa. South Africa experienced the largest listeriosis outbreak in 2017/18 which cost hundreds of lives and brought the legislative issues to the fore (read more about the listeriosis outbreak in chapter six). So, the objective of this study is to better understand why South Africa's food safety governance does not provide the level of consumer protection and safety assurance that is typically associated with a well-governed system.

The study falls under the Centre of Excellence in Food Security (CoE-FS) at the University of Pretoria. The Centre of Excellence in Food Security undertakes innovative research and critical inquiry to tackle the challenges of food security and nutrition in South Africa. This study is at the nexus of food safety and governance, which are two distinctive programmes under the centre of excellence. However, this study in particular falls more under the *Governance, Power, and Public Engagement in Food Systems Programme.* One of the programme's objectives is to strengthen a governance approach for food security at the local, provincial, and national levels through policy dialogue, public debate, and the co-production of knowledge.

1.1.1 Definition and scope of food safety

Food safety refers to all measures to ensure that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use (WHO, 2006). This definition entails a few important notions: one being the idea that the safety of food is determined by the production and preparation conditions, rather than the outcome of end product testing, it is therefore becoming a systems approach. Food safety as one component of food security

aims to prevent food from getting contaminated throughout the supply chain and reduce the risk to the consumer through standards (Chanda, 2013).

Producers must comply with national food safety regulations and voluntary standards are often required for market differentiation and trade. This applies to farmers, packhouses, processing and food manufacturing plants. In addition, food standards and laws for food control must also be compiled with and in all butcheries, retail, food preparation and serving facilities. Food safety is important, especially in the retail sector as it is the last link in the food chain before the food product reaches the consumer (EuroSciCon, 2020). Food regulation is to ensure that all food systems and channels are operating in a system that allows safe food, not to guarantee that all food is safe (Adeniyi, 2015). The public health sector suffers most directly from the costs and lost productivity and labour due to foodborne illness, which has the potential to be considered in both the short and long term. Food safety failures can also impose costs on producers, food manufacturers, and consumers (Jaffee *et al*., 2018).

Frewer *et al*. (2002) feel risk analysis is the best approach to curb the costs accumulating as a result of unsafe food consumption. Hence, Grace *et al*. (2010) points out that risk analysis is one thing that has been lacking. Risk analysis consists of three key elements namely, risk assessment, risk management, and risk communication, risk analysis will offer policymakers, the food industry, and consumers the information and evidence they require to make decisions that are efficient and transparent, resulting in better food safety results and improvements in public health (Frewer *et al*., 2002; Boatemaa *et al*., 2019). African governments have historically prioritised the availability of food instead of the safety of food (McDonnell, 2019). The above-mentioned food security definition emphasises 'safe and nutritious food' which is why some authors claim that food safety is the essential component of food security and therefore food security cannot be fully achieved without first having food safety (Unnevehr, 2003).

1.1.2 Synergies between food security and safety

Food safety and food security are inextricably linked (HLPE, 2017) The fundamental idea of food security has changed through time, but in general it now encompasses food supply and access, food safety and nutrition, and in some cases, the cultural acceptability of food (Adeniyi, 2015; Hossain and te Lintel, 2018). Food security is a flexible concept as reflected

in the many attempts to define the term for correct interpretation and more effective use in research and policy. The continuing evolution of food security as an operational concept in public policy has reflected the wider recognition of the complexities of the technical and policy issues involved (FAO, 2008). Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis (Peng *et al*., 2019). Initially, the main attention was directed towards addressing issues related to ensuring the availability and, to some extent, the stability of prices for essential food items at both the international and national levels (FAO, 2008; FAO, 2003). Therefore, the World Food Summit (WFS) defines food security as follows; Food security "exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (WFS, 1996). Household food security pertains to the implementation of this concept at the family level, where the primary focus is on individuals within households and their well-being regarding access to sufficient and nutritious food. This refined and more complex definition was adopted by the WFS in 1996 and is still a valid and most-used definition (WFS, 1996).

The global population is expected to reach at least 9 billion by the year 2050 (Godfray *et al*., 2010a; Bene *et al*., 2015), requiring increased production of food, and becoming fully sustainable in terms of access and distribution. This challenge is complicated by several overarching issues, including the increasing complexity of food supply chains, environmental constraints, and changing patterns of consumer choice and food consumption (King *et al*., 2017). Food safety must be an enabler and not an inhibitor of food security (King *et al*., 2017). One perspective is that food safety is receiving too much attention relative to its importance for food security (Unnevehr, 2003). According to this perspective, global attention to the issue emanates from the concerns of high-income consumers and producers in the developed world. It does not truly reflect the most compelling food safety issues like foodborne illness, outdated laws, labelling, and food fraud in developing countries (Unnevehr, 2003).

Food security still depends on increased food access and, from the above perspective, investing in food safety seems like a diversion of resources from rural development and agricultural production (Godfray *et al*., 2010b). Nevertheless, without concurrent enhancements in the nutritional value and safety of food, along with a decrease in food and waterborne diseases, the advancements in food availability will not adequately benefit a significant number of individuals who are at risk of malnutrition (Unnevehr, 2003). While

some argue that food safety is not of utmost importance, this perspective does not align with this research and the global figures of human loss of life and productivity. To address food safety in this context, developing countries must evaluate such investments within the overall scope of public health, nutrition, and food system policies.

1.2 Background to the study

The majority of studies on food safety focus on food-borne pathogens, disease outbreaks, and consumer knowledge and practices. Far fewer studies focus on to regulations and policies relating to food safety. However, regulation and policy-related studies can provide more insight into food safety compliance, challenges with governance and policy. Critical questions include: How are decisions made? Who gains from nutritious food? More crucially, food safety governance is also political and is about power balances and dominance. As a result, questions of governance require more attention in the literature and, according to McMahon (2013), more than the usual emphasis on the factors that influence the technologies that support food safety.

In 2017 and 2018, a major listeriosis outbreak occurred in South Africa (see Chapter Six). This crisis brought food safety to the fore. However, it was already well known that serious weaknesses exist in South African food safety governance. This included the insensitivity of safety standards (Wilson and Woroz, 2014; Hunter-Adams *et al*., 2018; Boatemaa *et al*., 2019), which hamper the effective adoption of a streamlined effectively regulated sector.

Food safety governance is not prioritised by the government as the private sector is left to self-regulate while the informal sector is excluded from any formal regulation. In general, it is fair to say at a national level the importance of food safety is not appreciated (Wilson and Woroz, 2014; Hunter-Adams *et al*., 2018; Boatemaa *et al*., 2019). Authors like Hunter-Adams *et al*. (2018), Boatemaa *et al*, (2019), and Ledger (2016) have paved the foundation for food safety governance studies in South Africa by highlighting the relative power of the state in shaping food safety governance; evaluating the issues of traceability and broader governance; exploring the regulations and structure of food safety governance in South Africa and identifying food safety practices in the food retail industry. Nevertheless, there are still no studies that fully examine food safety policy and the context in which it is developed, enacted, and put into practice. For instance, systematic information on actors and their roles within food safety governance is not complete. In particular, understanding of the role of the private sector, agencies, and academia.

Mali, Gabon, Ghana, and Kenya are among other African nations with fragmented food safety structures (Mwamakamba *et al*., 2012). Several nations have shifted focus to strengthen food safety governance in recent years by establishing coordination structures including inter-sectoral commissions and food safety task groups (Cheng *et al*., 2017). This study uses South Africa as a case study to better understand the flaws in the fractured governance for food safety. There are three reasons why South Africa was selected as the case study country. First, the listeriosis outbreak made it abundantly evident that the country's governance food safety requires improvement. Secondly, other African countries have recently improved their food safety governance systems and it is long overdue that South Africa does the same. Thirdly, there are no systematic studies of food safety governance in South Africa and this research project addresses that knowledge gap and identify weak areas for improvement.

1.2.1 Food safety governance in South Africa

Contrary to the European Union (EU), the United States (US), or Canada, South Africa does not have a comprehensive institutional structure that governs domestic food safety. Instead, three government departments at the national and provincial levels oversee South Africa's convoluted food safety system: the Department of Health (DoH), Department of Agriculture, Land Reform and Rural Development (DALRRD), and Department of Trade, Industry and Competition (Mukumba, 2011). South African food safety is also governed by multiple government agencies with various functions based on their overall mandate. These government agencies are characterised by fragmentation of legislation, structure, and functions (DAFF et al., 2013). None of these many food safety institutions have a sole mandate to address food safety concerns across sectors and levels of government. Instead, responsibilities are spread across the institutions, which all have their own core business but none of which focuses on food safety inclusively and holistically (DAFF et al., 2013) In addition, there is a lack of coordination between the institutions and unclear institutional jurisdictions (Mwamakamba *et al*., 2012).

Due to the fragmentation of structure, mistrust keeps rising and manifests in a lack of communication and sharing of resources and data amongst the departments and agencies (Mwamakamba *et al*., 2012). Furthermore, Hunter-Adams *et al*. (2018) point out that the issues related to food safety are not only the lack of regulation, and lack of capacity of the state, but also, a lack of policy discourses on food security in South Africa. Legislation,

which defines the responsibility, and working structure of the three government departments responsible for control over food safety policy is present, but DAFF et al. (2013) suggest it is not working.

1.2.2 Food industry structure

The structure of the food industry in South Africa is diverse and dynamic, reflecting the country's rich agricultural resources, cultural diversity, and economic activities (International Trade Administration, 2023). The industry encompasses various stages, from agricultural production to food processing, distribution, and retail. Moreover, the regulatory framework plays a crucial role in shaping and maintaining the integrity of the South African food industry, with a focus on ensuring food safety and quality.

Agriculture and Farming: South Africa boasts a robust agricultural sector that includes the cultivation of crops, livestock farming, and agribusiness. The country's diverse climate and fertile soils support the production of a wide range of crops, fruits, and livestock products (International Trade Administration, 2023).

Food Processing and Manufacturing: Food processing is a vital component of the food industry in South Africa. Numerous companies engage in the transformation of raw agricultural products into processed foods. This sector includes the production of staples like maize and wheat products, as well as the manufacturing of packaged foods and beverages (Reddy and Ngqinani, 2023).

Packaging and Distribution: The packaging and distribution of food products are integral to ensuring their accessibility to consumers. South Africa has a well-established network of packaging and distribution channels, involving logistics and transportation to move products efficiently from manufacturers to retailers (Mordor Intelligence, 2023).

Retail and Food Service: The retail sector in South Africa includes supermarkets, grocery stores, local markets, and food service establishments. Consumers can access a wide variety of food products through these channels, and the retail sector plays a crucial role in shaping consumer choices and preferences (Reddy and Ngqinani, 2023).

1.3 Statement of the research problem and rationale

Ochara (2016) defines a research problem "as any organisational situation where a gap exists between the actual existing situation and the desired state". In addition, a problem statement is a succinct and unambiguous articulation of the query or issue to locate a response or solution. Food safety has several facets, from production to administrative concerns. Food safety is primarily self-regulatory in the private sector, premised by the food industry on improving compliance and regulatory techniques (Havenga and Esser, 2008). Yet, both government and the food industry have a responsibility to ensure safe food.

In South Africa, the listeriosis outbreak, which was the biggest ever in the world in terms of the number of deaths exposed the weaknesses in food safety governance (Boatemaa *et al*., 2019). On the other hand, there is no independent food safety policy available detailing the operations, and plan of action for executing strategies related to food safety, rather, food safety is subsumed with food security in the Food and Nutrition Security Policy. Furthermore, South African food safety responsibilities are shared among three government departments and food safety agencies. Given the multiple actors involved the chances of other responsibilities falling down the cracks are high as well as duplicity of responsibility. Hence, this research looks at food safety issues through a governance lens in South Africa (Grace, 2017; Morse *et al*., 2018). Authors like Boatemaa *et al*. (2019) and Hunter-Adams *et al*. (2018) have pointed to weaknesses in the food safety governance as a contributing factor in the food safety challenges in South Africa [including fragmentation between multiple agencies (DAFF *et al*., 2013)]. Furthermore, there is no overarching food safety policy, rather there are individual food safety programmes, strategies, legislations, and a food control system that is plagued with challenges, making the holistic food safety governance fail. However, no one has yet systematically reviewed the food safety governance framework in South Africa to fully diagnose the weaknesses and make holistic recommendations to improve the system.

According to Moola (2015), the rationale is a set of reasons or logical basis that tease apart the facts, systems, and perceptions and that is needed to contribute to the relevant field of study. A range of research, internationally and nationally, has shown the continued growth of food safety challenges and issues (Ucar, 2016; Grace *et al*., 2015; Uyttendaele *et al*., 2016). The research findings produced in this study will be specific to South Africa but could still

apply to other Low- and Middle-Income Countries (LMICs) (Grace, 2015; Hoffmann *et al*., 2019) that have similar governance challenges.

Understanding food safety governance is important for South Africa and other developing countries because it enables analysis of potential strategies for improvement (Hoffman *et al*., 2019). Furthermore, COVID-19 is another relevant illustration of how we need to be prepared and proactive when it comes to risk management.

1.4 Aim and Objectives of the Study

Thomas and Hodges (2010) note that the term research aim usually refers to the main goal or overarching purpose of a research project. The research aim is a sentence that states the purpose and aim of a research project. This study aims to better understand food safety governance in South Africa and identify areas of weakness.

The research objectives are specific statements indicating the key issues to be focused on in a research project (Thomas and Hodges, 2010). The research questions and aim of the study were translated into the following objectives:

1. To map the key stakeholders and institutions in food safety governance in South Africa, and what are their roles in food safety governance.
2. To identify the main food safety policy strategies, policies, and programmes in place in South Africa.
3. To determine how these strategies, policies, and programmes are developed, implemented, and reviewed, and the role the various stakeholders and institutions have played in this.
4. To understand why apparent weaknesses are arising in food safety governance in South Africa.

This study hypothesis that food safety in South Africa is dominated by a narrow range of actors in government and industry and that a better outcome could be obtained if a broader range of stakeholders were involved.

1.5 Theoretical framework

To navigate through the policy processes involved in shaping food safety in South Africa, the study makes use of the kaleidoscope model (KM) and policy networks theory (see Chapter Two for the details of the theoretical framework). The network approach assumes that policy

is made in complex interaction processes between a large number of actors which takes place within networks of interdependent actors (Klijn and Koppenjan, 2000) and it is used in conjunction with the KM which pinpoints the breakdown in the food safety-related policies.

The KM is a policy cycle model that aims to help understand policy limitations and to identify opportunities to enhance the policy management process from agenda setting and policy development through to implementation, monitoring, evaluation, and policy review (Resnick *et al*., 2018). The KM and policy networks have different but complementary functions in helping to understand the underlying patterns within food safety governance observed in the empirical data.

1.6 Research design and methodology

This research makes use of secondary and primary data that was collected through an in-depth literature review, interviews, focus groups, and documentary analysis (also see Chapter Four for the details of the research methodology). The study adopted anti-foundationalist "constructionism" for an ontological perspective and critical realism epistemology. Critical realism suggests that there is a reality that exists independent of our thoughts and beliefs, but that our understanding of that reality is always mediated by our subjective experiences and cultural context (Cruickshank, 2003). This is in contrast to constructionism, which suggests that reality is entirely socially constructed (Sarantakos, 2005). While these two perspectives may seem to be at odds with each other, they can be complementary in some ways. For example, constructionism can help us understand how our social and cultural context shapes our perceptions and interpretations of reality, while critical realism can help us recognise the objective aspects of reality that exist beyond those interpretations.

The study is conducted in three phases. The first phase is document analysis, the second phase is semi-structured interviews, and the third phase consists of focus group discussion and stakeholder analysis. Multiple methods are appropriate when a research topic is broadly defined, the study is not carried out by assessing isolated factors but covers contextual or complex conditions, and it has to rely on multiple and not singular sources of evidence (Yin, 2018). Using a combination of focus group discussions and individual interviews adds rigour to the study by ensuring that multiple perspectives on the issue have been collected (Yin, 2011). Furthermore, the interviews triangulate information from both focus groups and documentary analysis. The justification for this design draws from the contextual nature of the specific phenomena of food safety governance weaknesses examined in this study based

on its respective context across different institutions, the nature of multiple sources, and methods of data collection to capture the subjective experiences, perceptions, and meanings thereof. The study made use of thematic analysis to analyse data through ATLAS ti software.

1.7 Structure of the thesis

This thesis is structured to reflect a core body of the study into the following sections:

Chapter One serves as the introduction to the study by providing a background to the research problem and research questions, as well as the significance of the study.

Chapter Two: provides the theoretical framework followed in this thesis to analyse the findings of this study. This chapter is divided into two parts, the first part, the framework is set out to discuss policy network theory, while the second part of the chapter discusses the policy cycle.

Chapter Three is a literature review of food safety governance. This chapter is divided into two parts, part one explores food safety governance and challenges in the global context while part two discusses food safety in the South African context.

Chapter Four: serves as a methodology chapter for this entire study. It provides details regarding the approach for collecting and analysing data using desk-based studies as well as interviews and focus group discussions with the actors in the food safety realm.

Chapter Five: outlines stakeholders in food safety governance and various roles in principle in assuring food safety from the farm to the plate in South Africa. It also discusses the legislation, guidelines, and programs related to food safety that are in place in the country.

Chapter Six: Adopt a case study approach looking at how stakeholders have shaped specific policies that were published following the 2017/18 listeriosis outbreak, namely the Compulsory Specification for Processed Meat Products, Regulations relating to Hygiene Requirements for Premises and Transportation, and the Regulations relating to the Hazard Analysis Critical Control Point.

Chapter Seven: Interprets and discusses the data presented in Chapters 5 and 6. It interprets the patterns in the empirical data through the lens of the theoretical framework presented in Chapter 2. The discussion also relates empirical findings to the literature in Chapter 3 and uses this further to point out where the results add to the literature.

Chapter Eight: provide a conclusion and recommendations on the food safety governance in South Africa. It also recommends further study opportunities identified during this study.

1.8 Summary

In this chapter, the thesis is introduced with an overview of the research background, its purpose, objectives, and the rationale behind it. The main goal of the study is to gain insights into the governance of food safety in South Africa and identify weaknesses in the existing governance system. Given the involvement of multiple actors, including different government departments and agencies, fragmentation and duplication of functions are anticipated to be prevalent in food safety governance. Consequently, these departments and agencies face various challenges such as a lack of coordination and confusion regarding their jurisdictions. To better comprehend food safety governance, the study adopts a policy networks approach along with the use of KM. The research methodology employed for this qualitative study includes document analysis, semi-structured interviews, and focus groups using non-probability sampling. Thematic and content analysis methods were utilized to address the research questions. The subsequent chapter will provide a theoretical framework that integrates the concepts of governance, a policy process model, and policy networks theory to guide the investigation.

Chapter Two: Theoretical Framework

2.1 Introduction

A theory, according to Kerlinger (1967), is "a set of interrelated constructs, definitions, and propositions that present a systematic view of phenomena by specifying relations among variables to explain and predict phenomena". A framework is "a particular set of rules, ideas or beliefs which you use to deal with problems or to decide what to do" (Collins Dictionary, 2020). According to Kerlinger (1967), a theory can be used to successfully make predictions and this predictive power of the theory can help guide researchers to ask appropriate research questions. On the other hand, a framework provides a structure within which the relationships between variables of a phenomenon are explained.

This research brings together the concept of governance, a policy process model, and policy networks theory as a framework to guide this investigation. Both policy networks and the kaleidoscope model (KM) have different functions. A model is a simplified representation of 'reality' that takes theoretical abstractions and transforms them into a format that is manageable and can be manipulated (Grandy, 2003). Dye (1984) suggests that models could be used, for directing inquiry into public policy; suggesting explanations for policy decisions; and simplifying and clarifying people's thinking about public policy. Found in the literature are several models that clarify the understanding between politics and public policy. Dye (2013) claims that the models are complementary rather than competitive and focus on different views of political life. This study focuses on the policy cycle model, known as the KM.

This chapter first sets out to discuss policy network theory, it provides definitions and modes of governance namely, hierarchy, markets, and networks. In particular, it focuses more on the policy network that distinguishes between two schools namely, interest intermediation school and governance school. This distinction is used to account for the fact that policy networks are ambiguous and relevant to public policymaking which involves various actors and self-regulating, therefore, requires network management. The concept of network management is then discussed. The chapter also set out to discuss the policy cycle, explaining where actors within the policy networks seek to influence policymaking, and thereafter discuss the pros and cons of the policy cycle model. Particularly, the study makes use of the KM. To

operationalise both concepts, the policy network theory and the KM are used in conjunction to break down the policy cycle and identify areas of weakness and gaps in the policy. Network theory recognises that governance involves not only formal institutions but also informal relationships and networks that shape policy outcomes. Effective governance and a well-structured policy process are essential for ensuring transparency, accountability, and the delivery of desired outcomes for the betterment of society.

2.2 Governance and the policy process

There are various definitions of the term governance (Pierre 2000; Flinders 2002; Jordan *et al* 2005). Some tend to confuse the practical phenomenon with theories about how this phenomenon works and can be understood (Peters and Pierre, 2001). Regardless of the various definitions and confusion caused, there are still common aspects that come up.

Flinders (2002) notes that governance and government are not synonyms. The two terms may be related to one another, but they are different. Governance describes the patterns that emerge from the governing activities of social, political, and administrative state actors with the inclusion of non-state actors (Kooiman, 1993). While government centres on the institutions and actions of the state and is governed by top-down hierarchical control through regulations (Lemos and Agrawal, 2006). Peters and Pierre (2001) note that in the process of governance, the role of government is steering and not rowing. Hence, the government should look into building partnerships to promote positive outcomes. Furthermore, the concept of governance presents the blurring of boundaries between public and private actors (Kooiman, 1999).

Governance is utilised in the context of public policy administration, through multi-stakeholder cooperation and involvement, which is one of the characteristics of governance. Hence, a policy process "is a complex process in which there are many actors: elected politicians; political party leaders; pressure groups; civil servants; publicly employed professionals; judges; non-governmental organisations; international agencies; academic experts; journals, and even sometimes citizens who perceive themselves as the passive recipients of policy" (Simon *et al*., 2018).

The making of public policy has been defined as the process by which the government translates its political visions into programmes and actions to deliver outcomes (Ferris, 2015). In 1963, Cunningham stated that policy is rather like the elephant- you recognise it when you see it but cannot easily define it. Certainly, the first part of some text on public policy will

typically be occupied with definitional arguments (Birkland, 2019). The term policy has no standard usage and is riddled with ambiguity. The term policy is an elusive one, it is used in many different ways to refer to a highly diverse set of phenomena. According to Klijn and Koppenjan (2000), the policy is a result of complex interactive processes between a large number of actors that takes place within networks of actors. These actors are mutually interdependent so policy can only be realised based on cooperation. In this way, policy network theory is seen as a framework for the explanation, evaluation, and improvement of public policy and public management (Koma, 2013). Barthwal and Sah (2008) define policy as a set of decisions taken by a political actor or group concerning the selection of goals and the methods of attaining them, and these decisions should be within the power of the policymaker to achieve. While Fox and Meyer (1995), defined policy "as a guide to action, or a statement of goals that should be followed in an institution to deal with a particular problem or phenomenon". This definition contains elements reminiscent of Dye's well-known concise definition of policy as "Whatever government chooses to do or not to do" (2013). Therefore, public policy is a declaration of intent to do something or to have it done by a specified institution or functionaries as prescribed (Cloete, 2009, p. 126). From the various definitions of public policy, a few common key attributes can be derived namely:

- Public policy is made in response to a problem and is worthy of governmental response.
- Public policy is made in the "public interest". The term is enclosed in quotation marks because not everyone will agree on the public interest.
- The policy is interpreted and implemented by public and private actors who have different motivations, and therefore, will bring different interpretations of problems and solutions.
- Public policy is orientated towards a goal or desired state, such as reducing the incidence or severity of a problem.
- The policy is ultimately made by the government (Howlett *et al*., 2009)

According to Anderson and Neary (1994), there is, however, not a single process by which policies are made. In short, the public policy process blueprint does not exist. There are different stages in the public policymaking process, all of which are suggested by different authors and theorists. However, the absence of a blueprint does not mean that there is no process in public policymaking.

2.3 Policy networks

2.3.1 Modes of governance

Several governance modes have been established, they are collated into three "ideal modes" of governance: hierarchical, market, and network governance (Hegger *et al*, 2020; Meuleman, 2008). Before the establishment of the concept of policy networks, social coordination was considered to take place in two distinct forms: hierarchies and markets (Thompson, 2003). Market governance was the second ideal mode that was established. Ruys *et al*. (2007) argue that market governance is the "original state of affairs" and call hierarchical governance the opposite of vertical integration (Ruys *et al*., 2007). However, Powell (2003) argues that networks form a separate type of social coordination. All three governance theories are explored, however, for the sake of this study, the focus is on networks. The reason for this is that networks are non-hierarchical, and they allow the coordination of various actors from across different sectors which this study is all about.

Hierarchy

This model is a top-down approach and is characterised by a powerful, hierarchical state where a political elite device policy is then implemented through a strict, sequential, and stable chain of command (Donovan, 2007). A hierarchical structure has clear departmental boundaries, clean lines of authority, detailed report mechanisms, and formal decision-making procedures (Powell, 2003). A key feature of hierarchy is that it operates by a set of rules and its technique is to "govern" using of exercising power and authority over subordinates (Thompson, 1991). The hierarchical structure is beneficial in handling regular tasks by enabling clear communication and the issuance of specific instructions. However, its effectiveness diminishes when dealing with nonroutine tasks, as lower-level members lack the necessary expertise to generate fresh ideas and lack motivation to share innovative concepts with higher-level members (Adler, 2001).

This bureaucratic strategy creates a work environment that is notably stable and dependable, influencing the level of commitment among partners as well as the resolution of conflicts. Despite its advantages, it also has major drawbacks. At least for short-term decisions, this type of governance is limited in its ability to select partners. Establishing or concluding commitments requires a certain amount of time (Niehaves and Plattfaut, 2011).

Entwistle *et al*. (2007) claim that the core of hierarchies is coordination through the allocation of decision-makers, which promises systematic planning and controlled implementation based on five conditions of perfect administration: a unitary administrative system with uniform rules and objectives, perfect obedience or perfect control, perfect information and communication, and the absence of time pressure. Essential for a hierarchical form of governance is that communication between two agents flows in only one direction (Salancik, 1995).

Over the course of time, there has been a transformation in government policy, progressing from a hierarchical approach to embracing market principles, and eventually transitioning towards network governance. However, it is important to acknowledge that the actual situation is considerably intricate and multifaceted (Cousin, 2019). Nevertheless, the market-oriented structure existed alongside hierarchical governance as the state took on the dual role of facilitating market activities and enforcing regulations (Ball, 2011).

Markets

The term 'market' is a metaphor, which refers to market mechanisms and market thinking, not to be confused with the economic market. The market form, as distinct from the actual functioning of most real markets, relies on the price mechanism to coordinate competing suppliers and anonymous buyers. With standard goods and strong property rights, marginal pricing promises to optimise production and allocation jointly. Powell (2003) described the market as a "spontaneous coordination mechanism that imparts rationality and consistency to the self-interest action of individuals and firms". "Market governance" is a governance mode, whereas "governance of the market" would mean governance of players active in the private market. Market governance is a way of thinking and acting that is used in both the public and private sectors and in hybrid organisations. This mode of governance believes that incorporating efficiency principles, procedures and measures from the private sector, and market mechanisms leads to better performance of public administration (Hernes, 2005). Market governance is characterised by a high degree of incentive intensity, and the absence of administrative controls, and is especially good at autonomous adaptation while it scores last in terms of cooperative adaptation (Reimers *et al*., 2019).

Networks

According to Borzel (1997), "networks are a patterned relationship between state and society linking the public and private sector in policy in a set of relatively stable relationships".

Kickert *et al*. (1997) concurred that these connections are not structured hierarchically, but rather interconnected, and involve various actors who share common policy interests and exchange resources. The objective is to pursue policy through cooperation and collaboration (Ngcamphalala and Amber, 2016). Policy networks are therefore not just about distributed intelligence but also about distributed human, social, physical, financial, and political capital/resources that can be utilised collaboratively to pursue substantive policy goals (Borzel, 1997).

The interplay between government, industry, and civil society, and the increasingly blurred roles of public and private actors in policymaking have come into focus as a result of the downsizing of government, offsetting of responsibilities (Kooiman, 1993), and the shift away from a hierarchical traditional form of governance to more networks forms of governance (Koma, 2013). Networks can be interpreted as a particular type of governance, characterised by institutionalised methods of coordination where collectively binding decisions are made and put into effect (Scharpf 1997; Borzel, 2007; Borzel and Laureote, 2009; Borzel and Hackenesch, 2013). They involve non-hierarchical modes of coordination established by joint resource dependencies and/or informal norms of evenness among the actors involved. Given their non-hierarchical character, networks may be observed as superior to hierarchy and markets concerning both efficiency and legitimacy in present societies characterised by societal differentiation, sectionalisation, and policy advancement that precede political overburden and "governance under distress" (Jordan and Richardson, 1983). However, to consider networks as a form of governance, the role of public actors needs to change from authoritative decision-makers to partners of and mediators between private actors (Borzel and Laureote, 2009).

2.3.2 Policy networks analysis

There are two schools of thoughts about policy networks. The interest intermediation school and governance school. The interest intermediation school is largely Anglo-Saxon based and posits that networks have several characteristics such as shared values and norms, resource sharing, and loyalty (Borzel, 1997). On the other hand, the governance school is mostly based on German public policy literature, and it perceives networks as a coordination strategy. Described below are views of policy networks, followed by a suggestive approach that brings these concepts of policy networks together (Borzel, 1997).

Interest Intermediation school

The interest intermediation school of thought scrutinises the relations between government institutions and societal interests. This approach postulates that policy networks may be applied generically to a variety of policy-specific subsystems across international, national, and sub-national contexts. From this perspective, policy networks at various levels of the government (e.g., national, sub-national, local) mediate and shape interest group interactions, which include governmental and nongovernmental actors, with important consequences for power distribution in the policy subsystems of liberal democracies (Rhodes, 1992). Through these implementation processes, policy outputs, and views, networks are portrayed as assets of interdependent organisations which have to exchange resources to realise their goals (Marsh and Rhodes, 2002). Hence, policy networks are not limited to a simple model of government based on firmly defined institutional boundaries and observable power relations. Altogether, the literature suggests that particular network structures have important consequences for policymaking behaviour and decisions and outcomes. The idea of policy networks as interest intermediation channels to typologies (Bevir and Richards, 2009). These typologies differ from each other according to the dimensions along which the different types of networks are distinguished (Borzel, 1997). However, they share a common understanding of policy networks as power dependency relationships between the government and interested groups.

In his work, Rhodes argued that policy networks could be seen along a continuum based on these dimensions with highly dense, exclusive “policy communities” on one end of the spectrum and diffuse, porous “issue networks” at the other end (Rhodes, 1997; Rhodes and Marsh, 2002). On the latter, the policy community is reserved for a more disaggregated system involving those actors and potential actors who share a common interest in industrial policy and who interact with one another, and exchange resources to balance and optimize their mutual relationship (Wilks and Wrights, 2016). A policy community has the following characteristics (Rhodes and Marsh, 2002):

- A limited number of participants with some groups consciously excluded.
- Frequent and high-quality interaction between all members of the community on all matters related to policy issues.
- Consistency in values, membership, and policy outcomes, which persist over time.

- Consensus, with the ideology, values, and broad policy preferences shared by all participants.
- Exchange relationships based on all members of the policy community controlling some resources; and
- Power more often than not understood as a positive-sum game.

In contrast, issue networks involve only policy consultation, characterised by:

- Many participants.
- Fluctuating interaction and access for the various members.
- The absence of consensus and the presence of conflict.
- Interaction based on consultation rather than negotiation or bargaining; and
- An unequal power relationship in which many participants may have few resources, little or no access, and power is seen as a zero-sum game.

This school has been criticised for using policy networks as a metaphor, rather than an explanation. Second, the school is limited to typology to mention random relationships (Dowding, 1995). He further posits that the analysis lacks games and bargaining and is bemused by the difference between the micro- (or individual), meso- (or network), and macro- (or state) levels of analysis (Dowding, 1995). However, the proponents of this school refute these criticisms. Knoke (2011) protests that networks are not defined by the individuals who occupy them but by the position and roles that actors perform which are crucial, and the relationships between these roles. Marsh and Smith (2000) concur that network structures shape the preferences of actors.

Moreover, often networks deal with heterogeneity, with actors who have different interests and resources which thereof influence interdependency amongst the actors pulling together in a network thus mediating their interests and exchanging resources (Borzel, 1997).

Governance school

In contrast to the interest intermediation school of thought, the governance school interprets policy networks as a specific form of governance (Kooiman, 1993), as a "mechanism to mobilize political resources in situations where these resources are widely dispersed between public and private actors" (Borzel, 1998). In this school, policy networks are only an analytical model, a framework of interpretation, in which different actors are located and linked in their interactions in a policy sector and in which the results of this interaction are

analysed. In short, the unit of analysis shift from the individual actor to the set of interrelationships that constitute inter-organisational networks (Borzel, 1998).

The school assumes that "territorially and functionally disaggregated" modern government systems have fundamentally changed the nature of policymaking (Hanf and O'Toole, 1992). Policy subsystems in this spirit rely on the horizontal, self-organising coordination between a wide variety of public and private actors that may also straddle multiple institutional venues (Borzel, 1998; Adam and Kriesi, 2011). Under the conditions of environmental uncertainty and increasing international, sectoral, and functional overlap of the societal subsystem, policy networks as a mode of governance offer a crucial advantage over the two forms of governance, hierarchy, and market. However, unlike hierarchy and markets, policy networks do not necessarily have dysfunctional consequences. Furthermore, this school claims that increasing governance becomes only feasible within the policy network in some instances (Borzel, 1998; Kenis and Schneider, 1991; Scharpf, 1997; Mayntz, 1993).

Synthesising two schools

It has been shown above that both schools are related but differ in approaches. In contrast to the interest intermediation school of thought, the governance school interprets policy networks as a specific form of governance, as a "mechanism to mobilise political resources in situations where these resources are widely dispersed between public and private actors" (Borzel, 1997, p. 4). Thus, the governance school sees policy networks as more useful to steer policy areas with a wide range of stakeholders. Policy subsystems in this spirit rely on the horizontal, self-organising coordination between a wide variety of public and private actors that may also straddle multiple institutional venues (Borzel, 1997; Adam and Kriesi, 2011).

The interest intermediation school, on the other hand, sees policy networks as more closed and can lead to a lack of coordination (especially on issues like food safety that cuts across a range of stakeholders). This school echoes vertical coordination, its narrow and offers special privileges to a selected group of business stakeholders and not for the public good (Borzel 1998). Hence, Peters (1998) argues that a high level of vertical coordination may inhibit horizontal coordination across sectors. According to Hogl and Nordbeck (2012), vertical coordination refers to the links between the same tier of government, while horizontal coordination refers to the integration across different sectors and departments. Governance networks echo horizontal coordination, concepts of network governance view policy networks as a necessary solution to collective action problems where political resources are

shared across a loose coordination of private and public actors (Borzel, 1998). If done prudently, reconciling the two schools can strengthen horizontal coordination thereby strengthening the culture of the network which is collaboration to collectively achieve a specific objective despite different individual interests.

Importantly, the distinction between these two interpretations of policy networks is not always clear, and in any case, they are not mutually exclusive (Adam and Kriesi, 20011; Borzel, 1998). We argue that both points of view can be utilised in harmony to better understand different dimensions of policy networks and to overcome theoretical confusion.

2.3.3 Network management

Klijn (2008) claims that it is only through joint efforts (policy networks) that policy problems in modern society can be solved. These policy networks are also faced with challenges (Kickert *et al*., 1997). According to Kickert *et al*. (1997), as the number of actors engaged in a partnership increases, the process of reaching a consensus becomes more challenging. They further mention that reaching an agreement may be rendered impossible when actors have different interests.

Networks also encounter a challenge regarding leadership. When all actors are considered truly equal, it becomes challenging to effectively coordinate the network. The effectiveness of network management is primarily contingent upon the caliber of leadership and the level of commitment influenced by the representative of the participating organizations (Kickert *et al*., 1997). Based on the preceding discussion, it can be contended that in order for networks to achieve the anticipated synergy in public service, it is essential to address these challenges.

According to the interest intermediation school of policy networks, they are self-regulating within a certain framework (Roiseland, 2007). However, according to the governance school of networks, networks cannot self-steer because they are so horizontal and broad. Meaning that, when multisectoral parties are blended, they may fail because the extensive array of values, norms, power, trust, and experience might clash and produce undesirable conflict and tension therefore, network management is needed (Klijn and Edelenbos, 2007). Kickert *et al*., (1997) note that “network management aims at initiating and facilitating interaction process between actors, creating, and changing network arrangement for better coordination”. This approach involves guiding and encouraging collaboration to foster collective efforts in problem-solving or the creation of policies. To such an extent, it is recognised that policy

networks consist of inter-organisational or cross-sector connections established with the purpose of accomplishing a shared objective. Consequently, policy networks unite separate organisations and mobilise their resources and efforts towards that shared goal. As a result of these collaborated efforts, a common goal is achieved which could have not been possible for individual organisations (Agranoff, 2007). However, effectively managing these diverse resources and efforts is essential for accomplishing this shared goal.

According to Kettl *et al*. (1996), the management of policy networks differs from the conventional hierarchical command and control management, and it is not an extra duty imposed on public managers in their daily routine. Conversely, Kettl *et al*. (1996) argue that managing networks is not an additional task for public managers, but rather an integral aspect of public management itself. He argues that "the core task is to build critical linkages while simultaneously managing the internal functions of their agencies". Kettl *et al*. (1996) implies that networks are widespread in both public and private sectors, suggesting that their management is just as essential to the field as what is commonly referred to as traditional public management.

Although coordination and facilitation are necessary for managing networks, traditional command and control approaches are not suitable. This is because managers in networks rarely possess authority over the entire network; instead, each organization maintains its own authority and management within a collaborative endeavour (Agranoff and McGuire, 2003). Given that a network can be perceived as a non-hierarchical arrangement that incorporates the utilization of power and knowledge (Brinkerhoff and Brinkerhoff, 2001), it becomes evident that power imbalances do exist in practice within networks. The manager of the network is responsible for addressing these power imbalances, ensuring that individuals with less power are not disregarded or overshadowed by those who possess more resources and influence. This implies that influential individuals do not consistently have their preferences prioritised at the expense of the broader objective of the network (Agranoff, 2007).

2.4 Policy cycle and the kaleidoscope model

2.4.1 The policy cycle model and its pros and cons

The policy cycle is a precursor to the KM that is used in this research. The policy cycle model comes from the idea of organising and ordering the complexity of policymaking. It is a heuristic tool through which different stages of the ongoing and never-ending dynamics of policy processes can be segmented and then analysed (Capano and Priton, 2020). It is used to

simplify the complexity of policymaking. The policy cycle entails agenda-setting, policy design, policy adoption, policy implementation, and policy evaluation. Actors involved in the policy process play an important role in developing and implementing policy. Thus, their involvement in the policy process is of utmost importance and takes on various forms and at various stages of the policy cycle (Mthethwa, 2014). Figure 2.1 shows a generic diagram of a policy cycle.

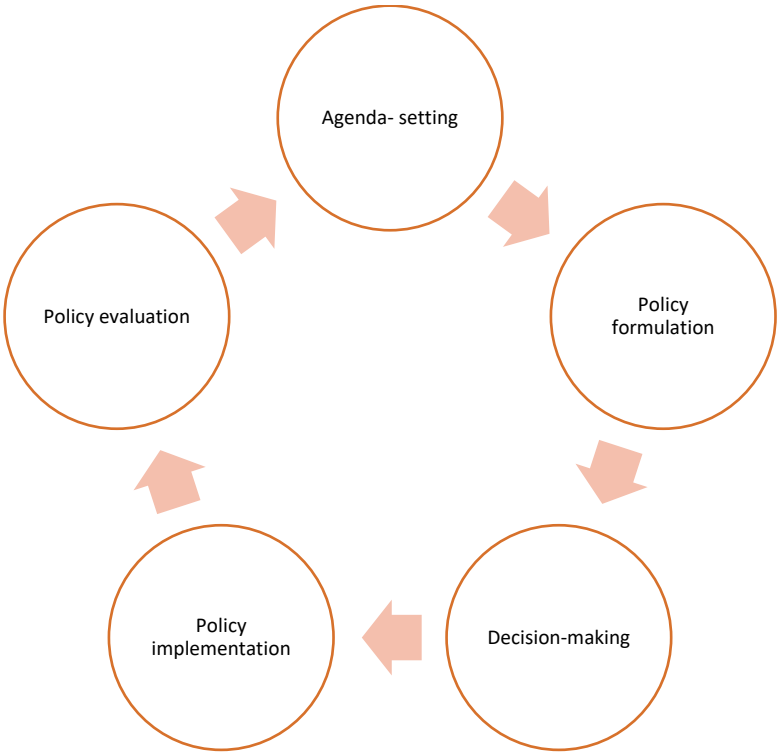

Figure 2.1: Generic diagram of a policy cycle
Source: Howlett and Giest (2015).

The policy cycle model is a useful heuristic because dividing the policy process into a set of stages provides aid in understanding the process and explains the continuing role of state and local governments in policy innovation (Jenkins-Smith and Sabatier, 1993). Furthermore, the model reveals that endeavours related to addressing issues, formulating policy options, and navigating political dynamics occur concurrently and may or may not be interconnected, as noted by Lipson in 2007. On the other hand, the model presents major weaknesses. For example, it can give a false impression of linearity, with each stage in the cycle occurring in a

precise, predetermined manner, which is far from fact (Savard, 2012). According to Howlett and Ramesh (2003), another of the model's disadvantages lies in its inability to explain what causes policies to advance from one stage to another. Neither does it help predict when a policy window may open, and policy gets made (Lipson, 2007). Despite the weaknesses, this study will still make use of the policy cycle model. To mitigate these weaknesses, the study will make use of the extended version of the policy cycle model known as the KM to help identify factors necessary for policy to move from one stage to another successfully.

2.4.2 Policy cycle stages

Lasswell (1956) initially proposed the simple, rough idea of dividing the flow of policymaking into stages. These stages can also be viewed as arenas from which different actors play different roles while pursuing their own goals (Capano and Pritoni, 2020). All five stages of the policy cycle are discussed below.

Agenda setting

Agenda-setting is defined by Baumgartner *et al*. (1993) as a process by which issues gain greater mass and elite attention- it is about the policy process broadly and about the politics of policy subsystems in particular. Central to understanding agenda-setting is the meaning of the term agenda. Agenda exists at all government levels. Agenda is a gathering of problems, understanding of causes, symbols, solutions, and other elements of the public problem that comes to the attention of members of the public and their government officials (Birkland, 1997). Authors like Berger (2001), and Cloete and Meyer (2006) concur that agenda-setting encompasses the act of creating a catalogue of issues and establishing the order of priority for taking action. It includes a chain of beliefs about the existence and magnitude of problems and how they should be addressed by the government, the private sector, non-profit organisations, or through joint action by some or all of these institutions (Birkland, 1997). The issues that are considered on the policy agenda either have high intensity, where several people are affected, or it has been an issue for some time. During this stage, a decision regarding who will deal with the problem - when and in what form - has to be made.

Policy design

Howlett (2014) asserts that to understand policy design, first, one needs to understand what is it that is being designed. He further mentioned that policy designers create policy alternatives. These alternative options speculate how government action can be brought to

bear on some identified problems. These alternatives are composed of different sets or combinations of the policy elements described above: policy goals, objectives, and aims, as well as policy means, tools, and their "setting" (Howlett, 2014). Placing more emphasis on policy design aids in ensuring that the proposed actions are practical and feasible methods of attaining the policy objectives, as emphasised (Hallsworth, 2011). Moreover, policy design is essential to calculate the costs involved in the implementation of the new policy, including the problems that needed to be addressed.

Policy adoption

Adoption is the stage during which decisions are made at the governmental level, resulting in a decision that favours one or more approaches to addressing a given problem (Benoit, 2013). According to Fox *et al*. (2006), the process of making public policy decisions involves the identification and anticipation of opportunities. Therefore, the capacity to recognize and define public problems is an essential initial phase in initiating the required decisions on public policy. On the other hand, it can be noted that the adoption of a policy option is determined by several factors (Anderson, 2003). Hayes (2002) claims that considerations about public opinion also affect policy choices as well as decision rules, values, and perception of deference. Generally, however, policy adoption is dominated by bargaining and compromise.

Policy implementation

At this stage, the policy's implementation parameters are established, which can directly affect the eventual outcome of the policy (Beniot, 2013). The implementation is a process of putting a public policy into effect. As stated by Fox et al. (2006), policy implementation involves the conversion of public policy plans into feasible and executable strategies. The objective is to fulfil predetermined public policy goals by effectively utilising the resources that are available. This is when a decision is carried out through the application of government directives and is confronted with reality (Mégie, 2004 as quoted in Savard, 2012).

Policy evaluation

This is the stage during which a policy is evaluated, to verify whether its implementation and its effects are aligned with the objectives that were explicitly or implicitly set out (Gerston, 2004). This evaluation can be carried out by the government apparatus, by consultants, or by

civil society (Ramesh, 2003). Policy evaluation provides a feedback loop, which enables decision-makers to draw lessons from each particular policy in operation. This feedback loop identifies new problems and sets in motion the policymaking process once again, creating an endless policy cycle (Sanderson, 2002).

2.4.3 Kingdon's policy model

The Kingdon policy model directs attention to the convergence of three distinct streams—problem, policy, and politics—within specific policy windows. These streams are delineated in a threefold manner: firstly, the problem stream addresses societal policy issues that potentially demand attention; secondly, the policy stream involves a myriad of potential solutions originating from communities of policymakers, experts, and lobbying groups; and thirdly, the politics stream encompasses factors such as changes in government, legislative turnover, and fluctuations in public opinion (Howlett et al., 2014). Within this model, Kingdon highlights the significance of policy entrepreneurs as pivotal actors who navigate these windows of opportunity, championing their preferred solutions. Emphasizing the critical role of timing, the model posits that policy changes are more likely to transpire when these streams align. Kingdon's framework not only offers valuable insights into agenda-setting but also elucidates the factors that contribute to the adoption of specific policies (Atupem, 2017).

2.4.4 Sabatier's policy model

The Sabatier policy model, rooted in the advocacy coalition framework, extends our understanding of policy change by emphasizing the role of belief systems and coalitions (Sabatier, 1988). According to Sabatier, policies emerge from the interactions of competing coalitions with distinct policy preferences. The model highlights the importance of policy subsystems—networks of actors, including government officials, interest groups, and experts—whose interactions shape policy outcomes (Sabatier, 1987). The concept of policy-oriented learning is central to Sabatier's model, as it posits that coalitions adapt and learn over time, influencing policy change. This model is particularly useful for analysing policy processes where diverse actors with differing beliefs and values contribute to the policymaking environment (Sabatier and Jenkins-Smith, 1993).

2.4.5 Kaleidoscope model-understanding the policy cycle.

The KM is a more detailed version of the policy cycle model that takes us beyond the policy cycle model to include influencing factors in each of the policy stages that can bring about policy change. To navigate through policy processes and add additional details the study will make use of the KM which is a process type of policy model. The KM which is shown in Figure 2.2 below can be used to help explain policy change by setting key determinants and contextual conditions (in each stage of the policy cycle) for policy change. It focuses on five areas of the policy process: agenda-setting, design, adoption, implementation, and monitoring and evaluation as well as 16 key determinants (Resnick *et al*., 2018). The model can be used for any policy and in this study, the model will be applied to food safety.

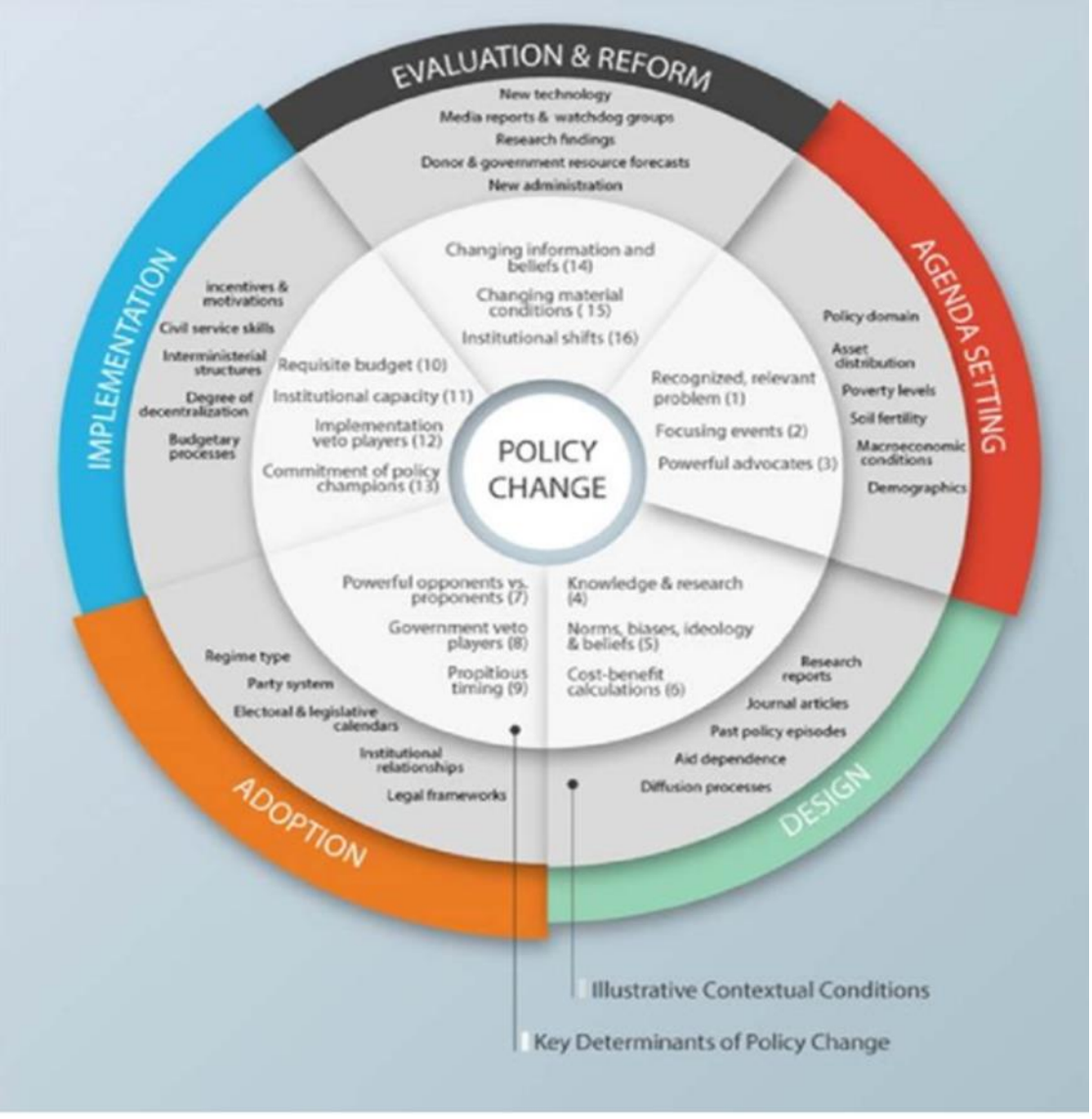

Figure 2.2: The kaleidoscope model for policy change

Source: Resnick *et al*., (2018)

The inner circle of the KM highlights the core set of 16 variables, and they hold power over the change in a particular policy domain. They are known as a key determinant of the policy change and they are categorised according to five stages of the policy process: agenda-setting, design, adoption, implementation, and evaluation and reform. These policy process stages help distinguish which key determinant have the most influence at different stages. The contextual conditions delineated in the outer circle illustrate the factors relevant to influencing the inner circle and vary depending on the policy problem. These contextual conditions are not used in this research but instead on the key determinants that are influenced by these conditions.

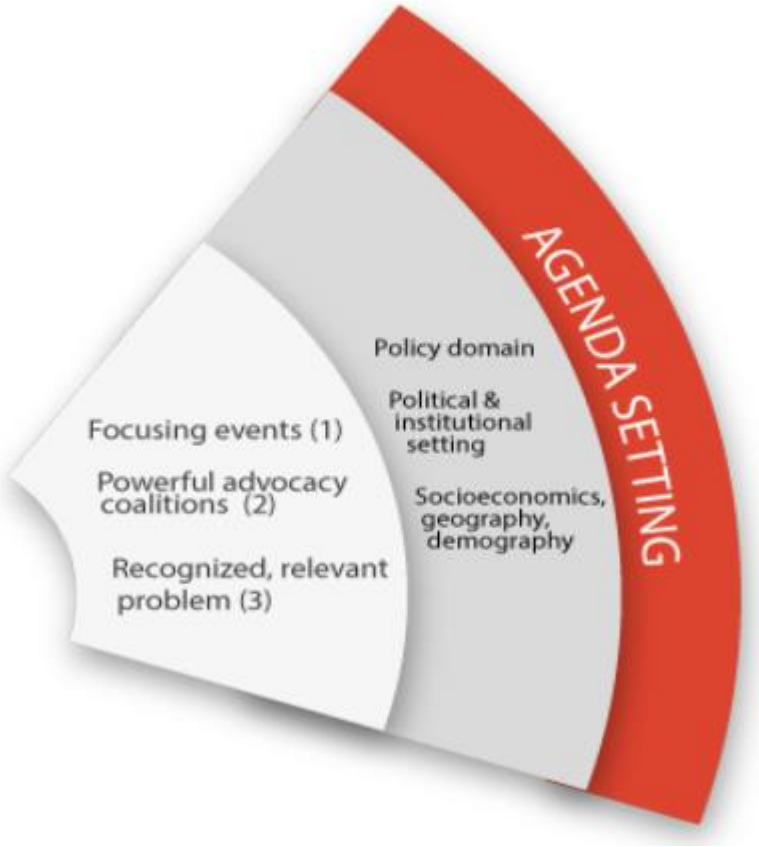

Figure 2.3: Agenda setting stage of the kaleidoscope model.

Three variables form a part of agenda-setting. First, policy needs to address a *recognised, relevant problem.* The problem is claimed to be of priority and requires immediate attention by the government and/or actors. The second variable is the occurrence of a *focusing event,* unpredictable events are referred to as *focusing events* and they are always important since they are the sole trigger of attention to a problem. The policy literature from Kingdom, (1984) referred to such events as a "window of opportunity". This window is the possibility

of policy change. Birkland (1997) argues that the opening of the window does not guarantee that policy change will happen. However, that trigger can be a change in our understanding of the problem, a change in the political stream that is favourable to policy change, a change in our understanding of the tractability of the problem given the current solution, or a focusing event that draws attention to a problem. The last variable is *powerful advocates*, notably the country simultaneously faces multi problems, which require attention from various institutions. The powerful advocates are role players that play a key role in pushing for action for this particular policy change (Resnick *et al*., 2018). According to Chand (2011), the influences serve as needs determinants through which a public policy agenda is set. Therefore, for issues to be prioritised and incorporated into the public policy agenda, they seemingly should appeal to some of the above factors, which generally influence public policy agenda-setting.

Figure 2.4: Policy Design stage of the kaleidoscope model

During the policy design, the menu of the solution to address the policy issue is presented by the advocates, this area is characterised by three variables that clarify how policies are designed. First, is *knowledge and research*, credible and legitimate research and knowledge

provided by researchers, donors, policy entrepreneurs, and technocrats (Haas, 1992) as evidence of what features of policy design will help to achieve particular goals (Resnick *et al*., 2018). The second variable is *norms, biases, ideology, and beliefs,* policy design is informed by beliefs about human nature and shaped by norms and socialisation (Sabatier and Smith, 1993). Furthermore, the ideologies of steering actors about the role of the state can shape which policy designs are feasible (Resnick *et al.*, 2018). The last variable is *cost benefits*, which include political goals such as winning votes, or more traditional financial concerns about affordability.

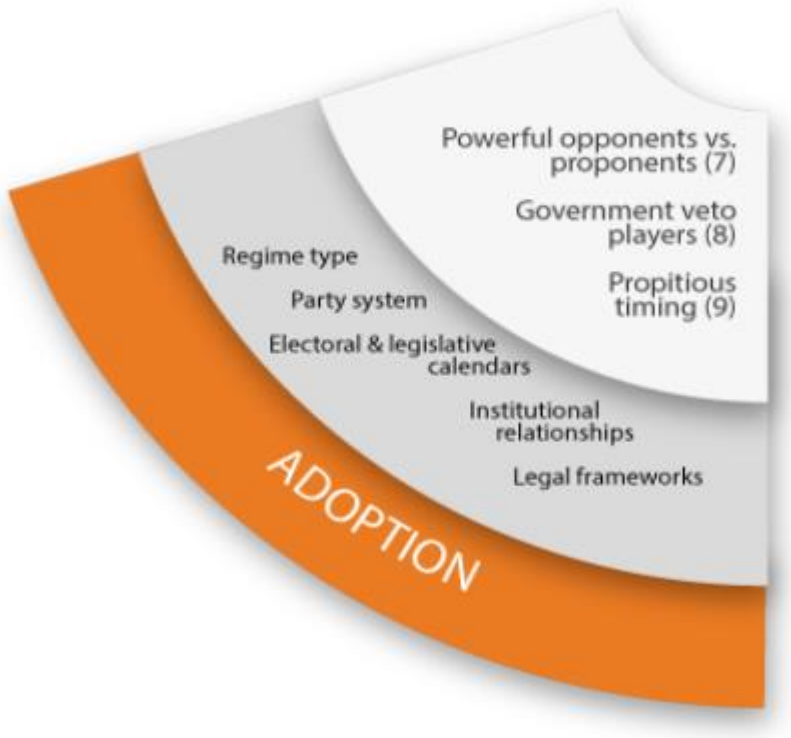

Figure 2.5: Policy adoption stage of the kaleidoscope model

Setting policy agenda and designing the policy does not guarantee that the policy will be adopted (Pierson, 2011). One determinant here is *powerful opponents versus proponents*, they may not surface early during the agenda-setting but rather after the policy design is sealed and the prospective 'winners' and 'losers' of a policy reform become clearer (Resnick *et al*., 2018). Proponents can be anyone lobbying for the policy while opponents are those against the policy. The second determinant is *government veto players*, veto players are individuals or collective actors whose agreement is necessary for a change of the *status quo* (Tsebelis, 2002). Veto players are identified by the country's Constitution, legal framework, and

political system. Lastly, *propitious timing*, when and how quickly the adoption occurs is shaped by the nature of the policy or the type of approval it seeks (Resnick *et al*., 2018).

Figure 2.6: Policy implementation stage of the kaleidoscope model

Policy Implementation is the carrying out of an underlying policy decision, usually incorporated in a statute but which can also take the form of critical executive orders or court decisions (Khan and Khandaker, 2016). Implementation in basic terms means an excursion, accomplishing, fulfilling, and producing a given task (Paudel, 2009). The key factor to implementation is the availability of the *requisite budget*. The delay in the release of and lack of budget may result in implementation delay or total failure (Matland, 1995). The second critical requirement for implementation is *institutional capacity*. Institutional capacity is not only limited to the education, skills, and infrastructure of the official responsible for implementing the policy but also administrative capacity is required. The *commitment of policy champions* preserves momentum when everyone else had given up. Champions help provide legitimacy and support to implementing agencies (Resnick *et al.*, 2018) champions can also be the implementers if need be.

Figure 2.7: Policy evaluation and reform stage of the kaleidoscope model

This part of the model has three variables which include *changing information and beliefs,* should the original policy goals change entirely due to ineffectiveness or paradigm shifts the policy is subjected to refinements. As the policies are subjected to change as per the first variable, they are also subject to *changing material conditions,* which can be financial resources and *institutional shifts,* such changes include the reshuffling of committees, and the replacement of the entire veto players (Resnick *et al*., 2018).

The metaphor of a kaleidoscope captures the idea that policy issues can be viewed from multiple perspectives, and shifts in the political landscape can lead to sudden and unpredictable changes in policy direction. Unlike the Kingdon and Sabatier models, the Kaleidoscope model recognizes the inherent unpredictability and complexity of policy change, providing a more realistic portrayal of the policymaking process. It recognizes that policy change is not always a linear or predictable process, and its focus on punctuated equilibrium reflects the reality that policies can remain stable for long periods before experiencing sudden, transformative shifts. This adaptability makes the Kaleidoscope model better suited to capture the intricate dynamics of policymaking in a constantly evolving political environment.

2.4.6 An example of the application of the kaleidoscope model in Zambia

The KM has been used by Scholars like Resnick in Zambia, who evaluated eight policy reform episodes related to agricultural input subsidies and vitamin A fortification. He used empirical application and hypothesis. He established hypothesises for each of the 16 variables and measures to test them against. As an example, he hypothesized that when there is credible evidence of a policy problem recognised by a concerned constituency, it leads to increased public attention in finding a policy solution. To measure this, he identified the concerned constituency and the evidence used to assess the problem and measured its significance.

The aim was to identify factors that shape the effectiveness of policy implementation and to determine what drives policy reforms after long periods of policy inertia. His study affected the research communities and international donors, given the importance of policy in shaping development outcomes and the growing need to achieve development impact with scarce resources. His study relates to this study, as they both draw evidence and experience from key informants to make holistic recommendations for analysing and improving policy processes in developing countries.

2.4.7 The application of policy networks and the kaleidoscope model in the South African food safety case

This section explains how the theoretical framework described above is operationalised in this research. Two concepts were discussed above namely policy networks and the KM, for the sake of this study these two concepts are used in conjunction to tease apart and identify the weaknesses in food safety governance.

South African food safety is controlled by three different government departments with several agencies involved. South Africa's food safety governance is described by scholars as fragmented, manifesting in (broken communication, mistrust, and a lack of coordination). Taking from the concept of policy networks set out above and specifically the literature on the two schools of networks, this study hypothesises that food safety in South Africa is dominated by a narrow interest mediation network involving mainly government actors and industry and that a better governance outcome could be obtained if the network developed into a governance network so that it included more stakeholders that were actively managed (i.e., that greater network management is needed). Interest mediation networks can actually impede policy coordination to suit the interests of the dominant stakeholders whereas

governance networks are more inclusive and can help stakeholders collectively steer towards agreed policy outcomes.

The theory suggests that if there is a wide range of stakeholders involved network management is needed for better coordination. The KM is then used to pinpoint network activity at various stages of the policy cycle to better identify where network activity is influencing food safety governance and also where the opportunities for improved network management are.

The KM provides an ideal picture of what the policymaking process should look like, so it is used to tease apart the different micro-processes and factors affecting food safety policy formulation and implementation in South Africa to see what is missing or what is not working in the policy process. From various stages of the policy cycle, we use the 16 key determinants to try and identify important processes happening within the network and how these processes are influencing the policy process in questions. To give a practical example:

In the South African food retail sector, there were reports of food safety concerns that could have detrimental effects on public health. Examples of such issues included the presence of foodborne pathogens, elevated levels of pesticide residues, mycotoxins, and antimicrobial-resistant pathogens in food products available for sale. Consequently, before the occurrence of the listeriosis outbreak, researchers and the media identified a legislative problem concerning the regulation of ready-to-eat meat products. The focus shifted to this issue after the listeriosis outbreak, which brought attention to legislative concerns. However, the development of regulations was halted by influential opponents, namely the industry, who were reluctant to pay the required levies. The regulation was eventually published with the negotiation on the levies still in progress.

2.8 Summary

The literature above illustrates that policy networks are a mode of governance, originating from the traditional bureaucratic forms of governance. Unlike the traditional bureaucratic forms of governance, however, policy networks are non-hierarchal. Within the policy network literature there is a controversy between the two schools, interest mediation networks can inhibit coordination while governance networks can provide a mechanism for policy coordination. However, governance networks are not necessarily self-steering (as interest mediation networks are thought to be) and so government actors may need to make efforts to create and support these networks.

In conjunction to the policy network, the KM model is used to identifies important factors influencing the policy cycle. The inner circle of the KM highlights a core set of 16 determinants, that influence change in a particular policy problem, and they are categorised according to five stages of the policy process: agenda setting, design, adoption, implementation, and evaluation and reform. In the upcoming chapter, the literature on food safety governance will be reviewed.

Chapter Three: Literature Review

3.1 Introduction

The effective governance of food safety presents a formidable series of challenges (Dreyer and Renn, 2009), for any country and not just South Africa. This chapter outlines and explores some of these challenges as well as some of the ideas presented in the literature on how to address them.

This chapter is divided into two parts; part one (section 3.2) explores food safety governance and challenges in the global context, and part two (section 3.11) explores food safety governance challenges specifically in South Africa. The first part of the chapter starts by explaining food safety governance as it mainly involves business and government actors who regulate the sector together in a close relationship and also assert challenges in food safety governance. These challenges range from inconsistencies in food safety standards, inadequacies in national food safety policies, and inefficiencies in food safety arrangements to the lack of coordination which is supposed to give direction to actors and institutions. Inefficiencies and ineffectiveness of public regulation in the face of global problems have led to a heavy reliance on the use of a technical governance instrument known as "standards" (Lin, 2014). These standards are either jointly agreed with business (private) and government (public) or designed entirely by the business. These standards are designed by various experts across the world and are adopted by national governments across the world. Countries then design their public standards mimicking voluntary international private standards such as Global. G.A.P. Thus, international actors and the roles they play in food safety governance are explored. Part two of this chapter discusses food safety challenges in South Africa. It begins by providing an introduction and background information on the government's governance structures in the country. Subsequently, the focus narrows down to specifically address the status of food safety governance, shedding light on the various stakeholders involved and their respective roles in ensuring food safety. By delving into the structure of food safety governance, this section aims to offer insights into the current state of affairs. Furthermore, it highlights the challenges encountered in ensuring food safety, as well as the relevant legislation governing this domain.

Part 1: Food safety governance in a global context

3.2 The food safety governance

3.2.1 Global context

The term governance is not new and has been briefly introduced in chapter two of this study. Hyden and Bratton (1992) identified governance and its use both in political and intellectual discussions, referring to the task of managing a government or any other entity or organisation. So much so, government and governance are often used as synonyms which they are not, they have different meanings (see Chapter Two). The term has been engaged in both political and academic discussions for a long time. It means different things to different people. In light of this, Chait (1996) perceives governance as a collective effort through smooth and suitable processes, to take actions that advance a shared purpose consistent with a country's mission. This definition entails structural arrangements, decision-making processes, and implementation capacity. Rhodes (1997) noted that governance provides the institutional framework within which the civic-public realm is managed. McCarney *et al*. (1995) see governance as the relationship between civil society and the state, between rulers and the ruled, and the government and the governed. This definition emphasises the relationship between government officials and the public. For this study, governance describes the patterns that emerge from the governing activities of social, political, and administrative state actors with the inclusion of non-state actors (Kooiman, 1993).

Nonetheless, there can be difficulties in cooperating between state actors and non-state actors as well as governance levels. Due to the number of actors involved, these actors can undervalue trust at times (Martinez *et al*., 2007). Thus, Fearne and Martinez (2005) assert that the lack of trust between actors in the food supply chain can delay cooperation. However, the food control system serves as a regulatory structure that addresses the distrust, information disclosure, and exchange as well as delegation of responsibilities among the food safety actors.

These actors follow rules which are documented in various ways, including in policy. A food safety policy should detail operational requirements for all the elements of food safety activities (Ansell *et al*., 2006; Redman, 2007; Cafaggi, 2012). It must provide concrete answers to questions about all different stages of a policy circle as well as to all steps along the food production continuum of when, where, what, how, and by whom. That is, the policy

is established on a foundation of a comprehensive understanding of the current situation and defining what the public needs are to address those needs appropriately (Thomann, 2018).

Similar to governance, the government of food safety encompasses a focus on the rules, standards, and regulations established by the government that govern and impact various aspects of food safety behaviour and practices. However, food safety governance is more than just top-down regulation and standards. It is multilevel and complex, involving multiple stakeholders, with interrelated responsibilities. Ogus (2004) explains that food safety governance thrives on laws and social regulation and seeks to direct or encourage behaviour that is believed would not occur without such intervention. Food laws are a set of legal regulations and statutes that govern the production, processing, distribution, and sale of food products. These laws aim to ensure food safety, protect public health, prevent fraud and deception, promote fair trade practices, and regulate the labelling and advertising of food items (FAO, 2010) this can be in a form of a policy or regulation. Policy is a broader set of principles, guidelines, or intentions that guide decision-making and action within an organization or government. Policies provide a framework for making consistent and informed choices and typically outline desired outcomes or objectives. A regulation is a rule or directive issued by a government or regulatory authority that has the force of law. It is a specific requirement that must be followed by individuals, organisations, or industries to ensure compliance with food safety standards or achieve specific objectives. The goal of food safety regulation is to protect and promote public health; protect consumers from products that are spoilt, fraudulent, or otherwise unfit for consumption; and provide consumers with relevant and accurate information so that consumers can make informed choices about safety and nutrition (FAO, 2003). Thus, food safety regulations are applied through food safety control systems.

On the other hand, standards explain the expectations about the way things are supposed to be—they define desirable behaviours in food safety. According to Busch (2000), there is a firm belief that standards are inadequate tools for organizing markets and minimizing transaction costs, but rather "reflect much more fundamental social/technical relations that are essential to the establishment and regulation of social and ethical behaviour in capitalist markets". Put simply, standards serve as a mechanism to establish and maintain power dynamics. Standards can be seen as shaping the identities and behaviors of individuals across various domains such as fields, supermarkets, kitchens, and tables, orchestrating a relatively consistent pattern of actions (Baur *et al*., 2016).

Despite the complexity and diversity of food safety governance, food safety governance is a debatable landscape (Henson and Humphrey, 2010). Although the research literature often attests to the distinction between public and private food governance, food safety governance cannot be contained by the distinction between public and private governance. Even public food safety governance seldom meets the broader social and ecological concerns mentioned above that a broad concern with food, health, and safety needs to address. Therefore, food safety governance should encompass various components such as strategic direction, organisational structure and accountability, policies and standards, risk and issues management, culture, and behaviours (GFSI, 2018). Food safety governance involves reconciling interests, values, and perspectives of actors from different sectors and policy areas including international trade, environmental problems, agricultural policies, human rights, and health problems (Diaz-Mendez and Lozano-Cabedo, 2020).

3.2.2 Stakeholder participation in food safety governance

One of the defining features of the governance term refers to the interaction between state actors and non-state actors in public problem-solving. So much so, food safety governance is a multi-actor process; it involves different actors from different sectors and different governance levels (Jeffery, 2009), working together towards achieving a particular objective. Thus, food safety governance denotes that management of food safety is not restricted to public food safety authority alone management (Vukasovic *et al*., 2018).

According to Fearne and Martinez (2005), the connection between participation and trust is complex, as increased participation can potentially erode public trust if implemented in unsuitable situations. Therefore, the level of trust in food safety authorities holds significant importance. Additionally, the United Nations (2015) asserts that the governance process should be attuned to relevant knowledge, encompassing systematic, practical, and experiential expertise. They suggest that exchanging knowledge on food safety and management approaches can potentially enhance the quality of final decisions.

3.2.3 Stakeholders and their roles in food safety governance

The growth of an organisation's food safety culture can be measured by the extent to which all stakeholders acknowledge shared food safety goals and assume accountability for their active role in maintaining food safety standards (GFSI, 2018). Food safety culture refers to the manner in which individuals within an organization address and perceive food safety. It

encompasses the thoughts and opinions of employees in a company or organization regarding food safety, as well as the habitual practices and behaviors they consistently exhibit in relation to food safety. The stakeholder can include field workers, farmers, retailers, government departments, agencies, research institutions, and even international organisations. "Stakeholders" in this research refers to everyone across all aspects of the supply chain, both within and outside of the country, who supply, support, or otherwise influence food safety. The following section focuses on the key stakeholders involved in global food safety governance.

Figure 3.1: Food safety governance stakeholders in general

Source: Author's compilation from desktop review.

Academic/universities and research institutes

Academic and research institutes are responsible for research and will provide a scientific basis for policy development and programme design in addition to developing relevant training programmes for capacity building, and manpower development (Mutimba *et al*., 2010). Academic institutions serve as information 'bridges' between their societies and repositories of food safety knowledge, thereby, accelerating the flow of new ideas to a system of progressively more connected food safety organisations (Mutimba *et al*., 2010). Research institutes further conduct research on the extent of food safety problems and on technical

aspects of food safety systems to provide information for governments and consumer advocacy groups. Madukwe (2008) further state that universities produce graduates who are critical thinkers, multi-disciplinary problem solvers, and team players who are also 'work-ready'. On the other hand, Kibwika *et al*. (2009) argue that the universities skilfully identify competence gaps for professionals, farmers, policymakers, and other food safety stakeholders through collaborative learning for change.

Non-governmental organisation

Non-government organisations (NGOs) play a crucial role in uniting individuals with similar interests to address specific food safety concerns and offer impartial contributions to the formulation of standards. Groups of different people from different industries including and not limited to environmental health professionals, and food industry leaders are often critical to this cohort. These organisations can work together to address food safety challenges by actively engaging in collaborative efforts through their involvement in NGOs (Clark, 2013).

Food business operators

Food supply chain actors include primary producers, manufacturers, retailers, catering, and food services from the food business operators (FBOs) groups. They have primary responsibility for food safety and must comply with the law and develop appropriate systems to do so (Dudeja and Singh, 2017). Every FBO along the food chain is expected to ensure that food safety standards are effectively implemented. The FBOs have a responsibility to put on the market products that will not harm consumers (Motarjemi and Lelieveld, 2014; Smigic *et al*., 2016; Tomasevic, 2013; Tomasevic *et al*., 2017; Henderikx, 2017). In ensuring the food safety of the product, they comply with appropriate criteria, like prerequisite steps such as facility hygiene, microbiological standards, specific processing steps, adequate labelling, etc. (Karabasil *et al*., 2017). The FBOs have to implement the regulatory requirements compliant with basic good agricultural practices, good manufacturing practices or other codes of practices, and Hazard Analysis Critical Control Point (HACCP) in ensuring food safety compliance.

International food safety institutions

The Food and Agriculture Organization of the United Nations

The Food and Agriculture Organization (FAO) is the primary United Nations agency that concentrates on every aspect of food quality and safety throughout various stages of food production, including harvest, postharvest handling, storage, transportation, processing, and

distribution (FAO, 2019a). The implementation of FAO is based on the enabling policy and regulatory environment at both international and national levels, this includes the development and implementation of food control systems and programs at both national and local levels, covering the entire food chain (FAO, 2003).The FAO adopted this approach to the food chain intending to prevent national and global food crises, by improving practices and increasing transparency in the food chain (CFS, 2017). At the request of the members of states, The FAO developed the Emergency Prevention System for Food Safety (EMPRES Food Safety) with the objective of implementing actions to reduce the negative impacts of food safety emergencies on worldwide food security and public health (FAO, 2010). EMPRES Food Safety serves as a complement to and reinforces FAO's existing efforts in the areas of food safety, animal health, and plant health emergencies (FAO, no date (a)).

The World Health Organization

When the World Health Organization (WHO) application was first developed in 1969, its scope was restricted to three primary disease outbreaks: cholera, plague, and yellow fever (Fidler, 2005; Fischer et al., 2011). However, after revision of its scope, it expanded to include all diseases including foodborne-related and waterborne diseases, zoonoses, and new and emerging risks. WHO plays an active role in food safety to reduce the burden of foodborne illness by advising and assisting Member States to reduce exposure to unacceptable levels of chemicals or microorganisms in the food system (Ruger and Yach, 2009). Also, the WHO's central role includes international standard setting and the facilitation of risk assessments.

The collaboration between the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) resulted in the establishment of the International Food Safety Authorities Network (INFOSAN). INFOSAN serves as a platform for facilitating the exchange of food safety information between countries, addressing both routine and emerging food safety issues (FAO/WHO, 2011; Savelli *et al*., 2019). In times of emergencies, INFOSAN Emergency ensures rapid access to information pertaining to food safety crises (FAO/WHO, no date).

The World Trade Organization

The World Trade Organization (WTO) is the only international body that regulates the conduct of international trade in goods and services (WTO, 2011). Preceding the formal establishment of the WTO, international trade was administered between nations through the

General Agreement on Tariffs and Trade (GATT), 1947 using the multilateral trading system. Moreover, to protect human, animal, and plant life, the WTO encourages nations to prioritise the welfare of their citizens, as the absence of adequate trade regulations can potentially expose them to vulnerabilities (WTO, 2018). As such, the WTO's Technical Barriers to Trade Agreement (TBT Agreement) and Sanitary and Phytosanitary Agreement (SPS Agreement) are significant in the international food safety law discourse, as instruments for safeguarding life (WTO, 2018). The TBT agreement "establishes rules and procedures regarding the development, adoption, and application of voluntary product standards, mandatory technical regulations, and the procedures used to determine whether a particular product meets such standards or regulations" (WTO, 2018).

The World Animal Health Organization

Established in 1920, the World Organisation for Animal Health, also known as the OIE, was formed with the objective of creating global standards for animal health and welfare while combating the dissemination of diseases. Its mandate is "to improve the health and the welfare of animals all over the world regardless of the cultural practices or the economic situations in member countries" (AU, 2014 p. 2). Nevertheless, its scope does encompass food safety concerns, primarily aiming to eliminate potential risks such as pathogens like Bovine Spongiform Encephalopathy (BSE) or Foot and Mouth Disease (FMD) before animals are slaughtered or during the processing of meat, milk, and egg products. This is to ensure that human health and food safety is not threatened (AU, 2014).

Codex Alimentarius Commission

The Codex Alimentarius Commission (CAC) is an intergovernmental entity responsible for executing the Joint FAO/WHO Food Standards Programme, established through resolutions at an FAO Conference in 1961 and a World Health Assembly in 1963. The primary objective of the Codex is to facilitate and guide the formulation of food standards at an international level, including frameworks, guidelines, and related documents like codes of practice fall within the purview of the Joint FAO/WHO food standards programme (FAO/WHO, 2015). This programme's main goals are to:

a) protecting the health of the consumers and ensuring fair practices in the food trade;
b) promoting coordination of all food standards work undertaken by international governmental and non-governmental organisations.

c) determining priorities and initiating and guiding the preparation of draft standards through and with the aid of appropriate organisations.
d) finalizing standards elaborated under (c) above and publishing them in a Codex Alimentarius either as regional or worldwide standards, together with international standards already finalized by other bodies under (b) above, wherever this is practicable; and
e) amending published standards, as appropriate, in light of developments. (FAO/WHO, 2015 p. 4).

The standards established by the Codex serve as the worldwide reference for food safety and are generally considered indisputable in the dispute settlement system of the WTO, unless new scientific evidence arises indicating a potential risk (CAC, 2021). Codex is not legally binding but is a guideline for governments as signatories to the UN and WHO to adopt local regulations. Standards are developed by technical expert committees and are negotiated and agreed upon among government representatives which can then be adopted in national legislation (FAO/WHO, 2018).

Government and regulatory bodies

Global food safety stakeholders such as the FAO, WHO, WTO, and CAC provide guidance, standards, and expertise that influence and shape the practices of national food safety stakeholders in South Africa. The collaboration and adoption of international standards ensure harmonization, promote public health, and facilitate fair trade in the global food market.

National governments develop policies and legislation for food safety. Government and regulatory bodies have a key role in food safety from primary production until consumption (Motarjemi and Lelieveld, 2014; Bostrom *et al*., 2015). This sector has to adopt and enforce legislation, with food safety and public health issue as a priority. Also, the government is responsible for communication with the consumers (Karabasil *et al*., 2017).

National governments have a specific role to play in ensuring that consumers' health and consumers' interests are paramount (Omojokun, 2013). At the national level food safety control has traditionally been the responsibility of several central government organisations (Omojokun, 2013), such as the ministries or departments of agriculture, health, trade, or commerce. At the local level, such responsibilities are delegated to local authorities, municipalities, or local governments. Mechanisms for collaboration and cooperation between

the various national government organisations have often been weak or absent (Reilly *et al*., 2010).

Consumers

Gardner (1993), and Redmond and Griffith (2010), claim that consumers have a right to expect that the foods they purchase and consume will be safe and of high quality. They have a right to voice their opinions about the food control procedures, standards, and activities that governments and industry use to ascertain that the food supply has these characteristics. On the other hand, Janjic *et al*. (2017) argues that, as much as the consumer have all these rights, they also have a responsibility to follow food safety recommendations. The authors further assert that consumers need to ensure the safe transport, handling, and preparation of the food they buy, avoid unnecessary health risks, and complete the safe journey that responsible retailers have begun (Janjic *et al*., 2017).

3.3 Food control

National governance is critical for ensuring that we all can eat safe and nutritious food (FAO, 2019b). Primarily ensuring the selling and buying of safe food is the fundamental responsibility of the food industry, however, sometimes maintaining the safe food supply is regarded as a government responsibility (Unnevehr and Hirschhorn, 2001). It is for this reason, that consumers often blame the government when there is a failure in food safety (Mutukumira and Jukes, 2003). In response to this, governments are transitioning the food control system into governance mechanisms that involve all stakeholders to foster agriculture, the production of safe and nutritious food, and access to global trade (FAO, 2019a). The legislation mandating regulatory control is referred to as food control. The FAO/WHO defines food control as a mandatory regulatory activity of enforcement by national or local authorities to provide consumer protection and ensure that all foods during production, handling, storage, processing, and distribution are safe, wholesome, and fit for human consumption; conform to safety and quality requirements; and are honestly and accurately labelled as prescribed by law (FAO/WHO, 2003, p.3). The principal responsibility of food control is to enforce the food law (s) protecting the consumer against unsafe, impure, and fraudulently presented food by prohibiting the sale of food not of the nature, substance, or quality demanded by the purchaser. Food law Includes “acts, laws, regulations, and other instruments with legally binding force issued by public authorities, related to food in general, and to food safety in particular, and covering the protection of public health, the protection of

consumers, and conditions of fair trading. It covers any stage of production, processing, and distribution of food, and also of feed produced for, or fed to, food-producing animals" (FAO/WHO, 2018). And for these to be achieved, government departments, agencies, and authorities need to take responsibility and actively participate in achieving the goal (Jia and Jukes, 2013). The food control system is therefore, defined as "the integration of a mandatory approach with preventive and educational strategies that protect the whole food chain" (FAO/WHO, 2003). Effective national food control systems are not only necessary to maintain the safety of food to protect consumers but also to ensure the safety and quality of exported and imported food (FAO/WHO, 2015). Both the food control and food control systems definitions explain explicitly what the two terms consist of and what they intend to successfully attain. It is consisting of compulsory laws, and regulations, which detail the basis for functions related to the enforcement of these laws.

Considering the definition of food control and food control systems, food control systems are intended to address the specific needs and priorities of countries. Therefore, the national food control systems may differ from country to country, key components that make the system effective must be present and these include food legislation and regulations, policy and institutional frameworks, food inspection, and monitoring, food laboratory services, involvement of all stakeholders and dissemination of information to them (Omojokun, 2013).

3.3.1 Food control systems

Given the wide scope of food control systems, there are at least three types of organisational arrangements that may be appropriate at the national level. These are single-agency systems, multiple-agency systems, and integrated systems.

Multiple agencies

The multiple-agency system is a creation of multiple agencies with responsibilities for food control; the role of food safety is sector or commodity specific. Typically, under such arrangements, the food control responsibilities are shared between Government Ministries such as Health, Agriculture, Commerce, Environment, Trade and Industry, and Tourism, and the roles and responsibilities of each of these agencies are specified but quite different (FAO/WHO, 2003). However, this leads to problems such as duplication of regulatory activity, increased bureaucracy (Oloo *et al*., 2018), and fragmentation between the institutions in food policy and food safety governance. For example, the regulation and

surveillance of meat and meat products may be separate from food control undertaken by the Ministry of Health. Meat inspection is often done by the Ministry of Agriculture or primary industry personnel who undertake all veterinary activities, and the data generated may not be linked to public health and food safety monitoring programmes. Furthermore, notwithstanding the normative of the multiple agencies, this model is deemed to have serious drawbacks:

- Lack of overall coordination at the national level.
- Frequent confusion over jurisdiction and resultant inefficiencies in performance.
- Differences in levels of expertise and resources and hence uneven implementation.
- The conflict between public health objectives and the facilitation of trade and industry development.
- Limited capacity for appropriate scientific inputs in decision-making processes.
- Lack of coherence leading to over-regulation or time gaps in adequate regulatory activity; and
- Reductions in the confidence of domestic consumers and foreign buyers in the credibility of the system (FAO/WHO, 2003).

Nonetheless, Taylor and Rostron (2011) claim that this system can be strengthened through sharing of responsibility-development of a national food safety policy strategy that clearly defines the responsibilities and tasks of different agencies as well as the considered cooperation and collaboration among stakeholders. In cases where it is not possible to have a single or integrated agency due to certain historical and political reasons. It is recommended that duplication of roles be avoided by clearly identifying roles for each agency. In addition, there needs to be proper identification of segments of the food chain which require special attention and need additional resources for strengthening (FAO/WHO, 2003; Kariuki, 2020).

Single agency

The single agency model depends on one organisation which is assigned all the functions of controlling food safety (Oloo *et al*., 2018). The consolidation of all responsibility for protecting public health and food safety into a single control agency with clearly defined terms of reference has considerable merit (FAO/WHO, 2003). Although it is not possible to recommend a single organisational structure that will universally meet the requirements and resources of every country's socioeconomic and political environment. This model can

respond quickly to emerging challenges and the demands of the domestic and international marketplaces; improved cost efficiency and more effective use of resources and expertise (Kariuki, no date), but more importantly, it prioritises food safety issues.

Integrated agency

For the integrated food control systems, agencies are assigned jurisdiction based on aspects of food safety that cut across all the sectors (Oloo *et al*., 2018), and have several levels of operation such as:

Level 1: Formulation of policy, risk assessment and management, and development of standards and regulations.
Level 2: Coordination of food control activity, monitoring, and auditing.
Level 3: Inspection, and enforcement.
Level 4: Education and training.

These levels are also the same referred to as the components of the National Food Control System, though there is not a compulsory specified criterion for any country to have exactly these components for their National Food Control System. It is, however, the most common one in most of the African countries' National Food Control Systems (Mutukumira and Jukes, 2003). Each level can be a representation of a food safety institution and one institution may cover more than one level.

This model by all means is sought to be a suitable model, determined to desire effective collaboration between institutions involved in food policy and food safety governance. The model consists of many drawbacks same to the multi-agency. Further, the lines are blurry when it comes to the principles of transparency, inclusiveness, integrity, clarity of roles, and accountability, to which success is measured (Oloo *et al*., 2018).

3.4 Food safety culture

Food safety is defined by the USDA (2019) refers to “the conditions and practices that preserve the quality of food to prevent contamination and food-borne illnesses” (food safety is discussed in detail in chapter one). Culture on its own has many elements including norms, tradition, history, shared values, expectations, and accepted behaviours (Ades *et al*., 2014). Nonetheless, the term food safety culture is still underdeveloped and has no common

definition (Neal *et al*., 2012). However, Yiannas (2008) consider it as “how members in an organisation handle food safety and what the employees in a company or organisation think about it. It’s the food safety behaviours that they routinely practice and demonstrate.” Furthermore, the concept of food safety culture can be described as a culture in which safety is acknowledged and embraced as the foremost priority for both customers and businesses (Griffith *et al*., 2010). To fully grasp the notion of food safety culture, it's best to first understand safety culture and organisational culture. Safety culture is "the safety culture of an organisation is the product of the individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style of proficiency of an organisation’s health and safety programs” (The Health and Safety Commission, 1993, as quoted in Yiannas, 2008). While organisational culture is shared perceptions among members of an organisation regarding policies, procedures, and practices (Tsai, 2011; Zohar, 2002).

Safety culture in an organisation includes shared perceptions of the importance of food safety, communications founded on mutual trust, and confidence in the efficacy of preventive measures (Yiannas, 2008). A food safety culture is built on shared values that all stakeholders in the supply chain should follow to provide safe food. To effectively do so, food assurance schemes developed food safety standards to encourage food safety that reflects strong food safety governance.

3.5 Food safety assurance

Food safety assurance is important to sustaining a safe and healthy food supply (Bai *et al*., 2007). The impact of a foodborne illness can be frustrating for both the victims and the producer. Ensuring food safety involves a complex sequence of tasks that requires careful pre-planning, hazard identification, identification of critical control points, and the formulation of an action plan to address any abnormalities that may arise during the food manufacturing process (Batt, 2016). HACCP is a method used to enhance food safety. It forms an integral part of a comprehensive Food Safety and Quality Assurance plan, which examines the entire food production process, establishes specifications, monitors operations, and proactively prevents food safety issues from arising (Batt, 2016; Bai *et al*., 2007).

Safety and quality are two separate terms that are intricately linked to food safety assurance. Beulens *et al*. (2005) assert that food quality is affiliated with a proactive policy and the design of requirements to maintain a safe food supply. As such to preserve the production and supply of safe food, various food safety assurance systems were developed, see Figure 3.1.

There are obligatory/mandatory and voluntary standards, with the obligatory standards developed to assure food safety. There is no universal definition for standards, different industries use different definitions as it fits the context. According to the ISO/IEC (2004), a standard is: “A document established by consensus and approved by a recognised body, that provides for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievements of the optimum degree of order in a given context.” While TBT Agreement defines standards as a “Document approved by a recognised body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking, or labelling requirements as they apply to a product, process, or production method" (UN, 2007, p 8).

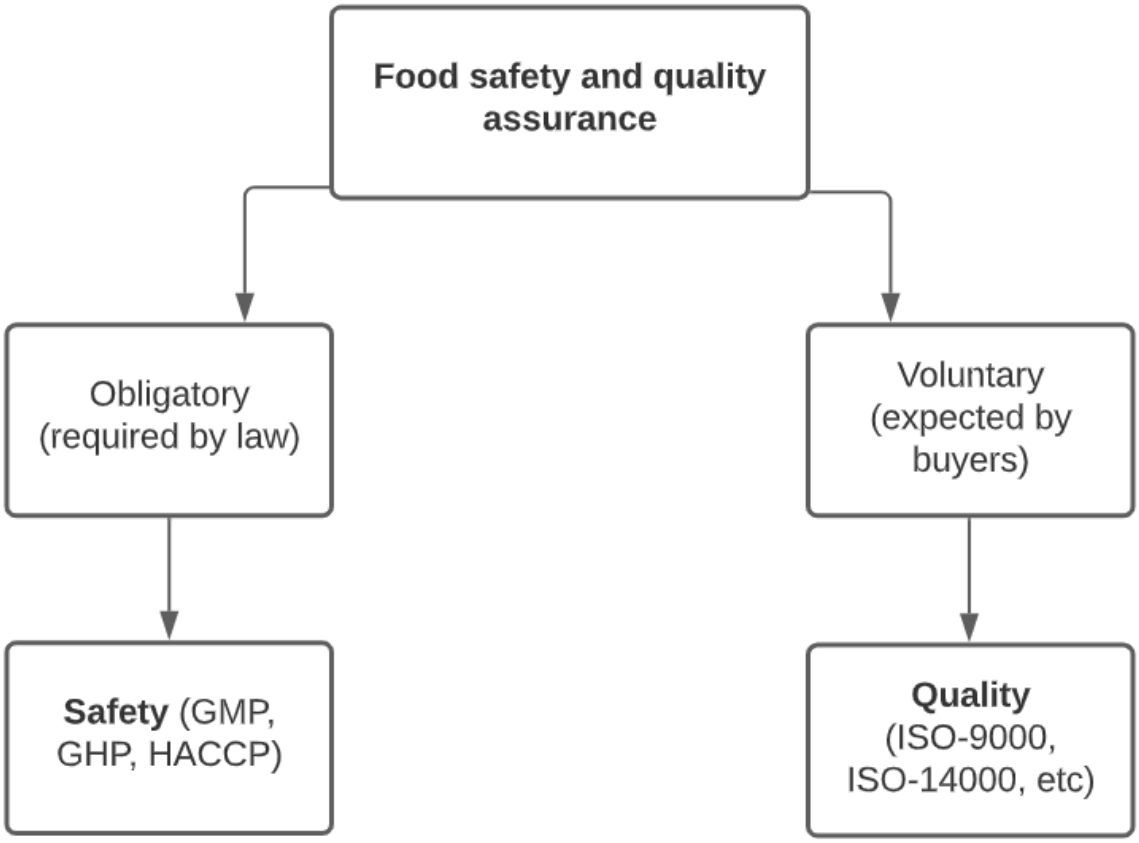

Figure 3.2: Food safety vs quality assurance diagram.

Source: Skora and Strata (2016).

Standards are not regulations; standards are knowledge and represent an agreed way of addressing a current or potential issue. Then again, there is a difference between mandatory

(technical regulations) and voluntary standards as well as public and private standards. ISO suggested that mandatory standards be referred to as technical regulation which is a "Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking, or labelling requirements as they apply to a product, process, or production method." (WTO, 2003). on another hand, voluntary standards are standards in which compliance is not mandatory.

Voluntary standards are enacted to protect consumers' health by assuring a safe supply of commodities, eliminating fraudulent practices, and raising awareness of government-led oversight within a priority sector for export promotion (Aruoma, 2006). These standards are written and administered by government agencies, including training, and certified farmers. Including its national standard for production-level Good Agricultural Practice (GAP), with food safety.

Further, national standards vary across countries, the inconsistencies create confusion among buyers who may choose to rely on internationally accepted standards (Du, 2018). To avoid this, a government may establish a national voluntary standard that aligns with an internationally accepted private standard, such as Global G.A.P or ISO. In this way, it reduces redundancy and advances export promotion objectives. Nonetheless, for the sake of this study, the focus will be on food safety (obligatory) rather than food quality (voluntary) standards.

3.5.1 Safety assurance systems

The safety assurance systems include Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), and HACCP. The GHP entails a set of guidelines detailing activities to be tackled and hygienic conditions to be accomplished and monitored at all steps of the food chain to assure food safety (Sikora and Strate, 2016). This includes food contact surfaces, pest control, waste disposal, water quality, toilet and hand wash facilities, and prevention of cross-contamination (FAO, no date (b)). Similarly, GMP is a set of guidelines indicating activities to be initiated and conditions to be satisfied in food manufacturing processes to assure that the food produced meets the standards of food safety (Sikora and Strata, 2016). This includes calibration of equipment, traceability and recall, lighting and ventilation,

specifications, supplier control, manufacture and process control, operations control, and storage conditions (FAO, no date (b)). Both GHP and GMP are requirements for implementing HACCP and are often referred to as “prerequisite programmes”. Of the three, HACCP is a more comprehensive category and aligns with FAO/WHO Codex Alimentarius (CAC, 2011).

HACCP is a systematic approach that identifies, evaluates, and controls hazards that are significant for food safety (CAC, 1997). There are 12 stages to the implementation of HACCP (Table 3.1).

Table 3. 1**:** The 12 stages of HACCP implementation

5 preliminary steps
Assemble HACCP team
Describe the product and its distribution
Identify intended use
Construct flow diagram
Onsite confirmation of flow diagram
7 principles of HACCP
Conduct a hazard analysis
Determine the Critical Control Points (CCPs)
Establish critical limits
Establish a system to monitor control of the CCPs
Establish corrective actions
Establish verification procedures
Establish record-keeping and documentation procedures

Source: CAC (1997)

3.5.2 Certification

Holding a certificate confirming the quality of a company’s products is not a legal requirement. A food company that realizes the fact that holding a certificate would not influence its sales would not decide to continue after 3 years would give up certification whilst maintaining the system (Sikora and Strata, 2016). This shows that corporations' interest is dominant. Corporations have immense power in structuring consumer perceptions of food quality and health, from input into apparently neutral dietary-based guidelines to

advertising (Greenberg, 2016). Corporations have much power over the government. Ledger (2016) argues that the government is tipping the power scale in favour of the small group. She further argues that 'there are so many ways in which the state is putting in place policies and programmes that are benefiting big business in the food sector, to the significant detriment of the rest of us' (Ledger, 2068).

3.6 Challenges in food safety governance

The expansion of global food supply chains, the consolidation of economic influence among food retailers, and the emergence of consumer anxieties regarding animal welfare, dietary choices, the environment, and fair trade have coincided with a series of food crises on a global scale (Verbruggen, 2016). Verbruggen further argues that these crises have exposed significant vulnerabilities in the established design and enforcement of food safety regulations in numerous countries. Consequently, these developments have not only heightened consumer consciousness and concerns regarding food safety but also deepened scepticism towards government oversight and amplified reputational risks for food suppliers associated with their brands (Lin, 2014).

In light of these food crises, many countries revised their food laws and restructured their regulatory systems by enhancing border inspection and implementing import restrictions, and integrating food chain controls (Alrobaish *et al*., 2020). For example, in China, the previous Food Hygiene Act was replaced by the new Food Safety Law in 2009 (Lui *et al*., 2019). However, national food law systems continue to face numerous challenges, including issues with the current public infrastructure, also, technical, and financial competencies are often short in ensuring food safety, especially in developing countries (Oloo, 2018). Similarly, in other countries, the presence of overlapping jurisdictions among various agencies can lead to inefficiencies in managing routine food safety surveillance activities and addressing foodborne hazard crises. Moreover, a lack of collaboration between agencies, as well as between local and central levels of government, along with fragmented regulations across different sectors pertaining to food safety, exacerbates the situation (Thomann, 2018).

Other major challenges centre around but are not limited to, inconsistencies, inefficiencies, outdated laws, and fragmentation in the regulation and structure of food safety governance. These challenges are discussed below and how they influence food safety.

3.6.1 Inconsistencies in Standards, Regulations, and Certification

Inconsistencies of standards and regulations exist worldwide and are highly influenced by trade agreements, customer willingness to pay, and government priorities. Trade is one of the regular arguments used either for, or against, food safety standards, controls, and regulations (Unnevehr, 2003). Inconsistencies in standards and regulations, within and across countries, arise from the pressure to meet global trade standards. These global standards somehow tend to favour established exporters and for developing countries lead to reduced access to export markets (Unnevehr and Ronchi, 2014). These inconsistencies include several organisations with overlapping commissions, standards not based on country or value-chain context, conflicting standards or regulations often based on developed nation mandates, fragmented and/or missing legislation, food safety standards and controls for export market food production that differ from domestic (Grace, 2015). These inconsistencies can increase the burden of compliance and add to confusion among value-chain actors (Graffham *et al*., 2007).

3.6.2 Inefficiencies

Current food safety arrangements, and agriculture value chains, in low- and middle-income countries are largely inefficient (Grace, 2015). Overlap, misconceptions, inadequate or misplaced controls, and lack of data for informed decision-making (Jaffee *et al*., 2018), etc. all lead to many food sectors around the world failing to achieve maximum productivity, and ultimately wasting or misusing resources. This inefficiency is costly to individuals, the food and agriculture sector, and to governments. Although accurate estimates of the cost of foodborne disease are not readily available on a global scale, it is assumed that the economic impact of foodborne disease is high (Scharff, 2012, Hoffmann *et al*., 2015; Grace, 2017). The costs can be associated with medical care, productivity losses, employment loss, and mortality (Scharff, 2012). Included in these costs are supposed to be costs associated with poor governance, failure to meet trade standards, food waste, or loss associated (De Lange and Nahman, 2015).

3.6.3 National food safety policy

Coherent national food safety policies are the foundation for effective food safety arrangements. In general, in most African countries food safety concerns are not adequately addressed in national governmental policies (FAO, 2003). Thus, it is difficult to adopt a

coordinated and sustainable approach to the holistic management of food safety. Further, major public health and economic implications of food safety are not appreciated (Kaferstein, 2005). Hence, food safety remains a low priority in national policymaking. To remedy this, the government needs to understand the public health and economic benefits of improving food safety governance (McMahon, 2013), and in consultation with all stakeholders, design comprehensive national food safety policies.

Existing legislation in many countries is outdated, and incomplete and fails to suitably address current and emerging food safety issues. In some countries, food legislation was formulated decades ago and has not been updated since, to include current food safety principles and trade agreements that are being developed by Codex (FAO, 2003). In some cases, enforcement of food legislation is also a problem. Not only does it result in inadequate consumer protection against fraudulent practices and contaminated food products it also, influences the importation and domestic production of substandard food items. Moreover, Nago (2005), Tomlins and Johnson (2009), explain that the informal sector, which is often a significant producer and distributor of fresh and processed food products (including street foods) for direct consumption, is often outside the scope of official control systems and remains the least controlled, except by municipal environmental hygiene authorities.

3.6.4 Lack of coordination and cooperation among government at the national level

Assuring food safety in a country requires a high degree of communication, coordination, and cooperation within and across government departments. Governance of food safety is a multisectoral affair, often involving different government departments, agencies, and other stakeholders (FAO, 2003). In the absence of a comprehensive national food safety policy with strategic and action plans, these institutions tend to operate following their aspirations of food safety (Wallace *et al*., 2018). Thus, without a clear responsibility for these institutions, the scarce resources available in the countries often dissolve through the duplication of activities. Accordingly, a well-established, and sustainable coordination mechanism with well-defined responsibilities for each institution is important. However, very few countries currently have effectively functioning coordination mechanisms (WHO, 2015).

3.7 The Importance of Evaluation and Management

Patton (2014) defines Evaluation as a process that critically examines a program. It involves collecting and analysing information about a program's activities, characteristics, and outcomes. Its purpose is to make judgments about a program, to improve its effectiveness,

and/or to inform programming decisions. For a valid and accurate result, evaluation needs to be done in two stages during the development and implementation to navigate direction on how to best achieve desired goals. Whilst the second stage is to be done once the program is well established to determine the degree to which the program is acquiring its goals; and to judge whether or not the intervention is required. Better yet, within the two stages of evaluation are four different types of evaluation namely needs assessment, process or implementation evaluation, outcome evaluation, and impact evaluation. The type of evaluation to be conducted depends on the context of your program, either way, evaluation is crucial for the success of the program (Pancer and Westhues, 1989; Norland, 2004; Rossi *et al*., 2018). Hence, the main purpose of the evaluation stage is to judge the tolerability or acceptability of a given threat and, if deemed necessary, to initiate a management process. The purpose of the management is closely related to the evaluation stage. It is to provide necessary possible intervention measures as per the acceptability of stakeholders. According to Mortmore (2001), the success of food safety management is often a result of the culture within the people who implement and operate it. This includes their technical expertise, attitude, ethical approach, training, and not forgetting their approach to food safety management and management style (Jackson, 2011).

3.8 Summary

It has been noted from the literature above that there are different definitions of governance, and that government is different from government. Thus, governance involves administrative state actors with the inclusion of non-state actors. Such as, stakeholder participation in food safety governance was discussed specifically, their roles in food safety governance. The food control system serves as a regulatory structure to address among other aspects, information disclosure and exchange, and delegation of responsibilities. In addition to that, standards that are put in place to ensure food safety throughout the food supply chain are defined and introduced. Inconsistencies in standards are one of the challenges faced in the governance of food safety. Other challenges discussed included fragmentation in the regulation and structure of food safety governance and outdated, incomplete legislation. Thus, the evaluation and management of food safety governance are of significant importance.

Part 2: Food safety governance in South Africa

3. 9 Introduction

As the previous part explored food safety governance and the challenges it faced globally. This part focuses specifically on South Africa. After introducing and explaining the background of government governance in South Africa, the section zooms in to explain the status of food safety governance and discusses the stakeholders and the different roles they play in food safety governance. After looking into the structure, to understand partly the status of food safety governance, the challenges in the food safety governance as well as the legislation are outlined.

3.10 Background of government governance in South Africa

The post-apartheid era in South Africa saw the birth of a new constitution the values of which were founded on the humane principles of democracy and the respect for human rights and fundamental freedom (Tambe-Endoh, 2015). The constitution triggered the repealing and replacement of unjust laws that were enacted by the apartheid government and were inconsistent with the principles of natural justice and a good conscience (Fick and Agherdien, 2005).

Since the dawn of our democratic era, from a policy perspective, South African policymaking had evolved. During the first five years post-1994, the first Administration focused mainly on policy, legislative and institutional reforms to address the injustices of the apartheid regime and on building a non-racial, inclusive democratic society (Republic of South Africa, 2020). The policymakers in SA before 1994 developed policies that delivered the needs of the politicians, steered by the decisions of the political ruling party at the time (Roux, 2002). These policies were developed to maintain the imbalance and to protect the government of the day. After 1994, things changed, and some new political actors influenced the new policymaking process. The changes that were made accommodated processes that allowed the participation of other stakeholders and society to influence policies that affected their lives (Nzimakwe, 2013). According to Venter and Landsberg (2006), the new policy development arena demanded change in the political decision-making process and the rearrangement of the policymaking process to the priorities and goals set forth by the government. Thus, the new policymaking processes aligned with the Constitution of the Republic of South Africa, 1996. These changes continue to impact the role and practice of

different industries including the agriculture and food industry, and thus the wider South African food governance (Delport, 2019).

Food safety governance is structured differently in different countries. Countries also respond differently to food safety concerns concerning regulations (Martinez *et al*., 2007). Food safety is also enforced differently in different countries with strategies of enforcement ranging from direct command, and control, to co-regulation, and market self-regulation (Kirezieva *et al*., 2015). Nevertheless, food safety concerns have transcended national boundaries and become a shared challenge confronted by governments worldwide (Lepeintre and Sun, 2018). Furthermore, in recent times, food safety governance has garnered significant attention in global public policy discussions. For example, in 2003, FAO and WHO jointly published "Assuring Food Safety and Quality: Guidelines for Strengthening National Food Control Systems", this document outlines the principles, fundamental guidelines, strategies, and actions that the government adopts and implements in order to govern and ensure food safety. The publication of these guidelines encourages competence among food safety authorities of individual countries, the complete establishment of food control systems, and to the selection of the best legislative, structural, and implementation solutions for food control systems particularly in developing countries (Lepeintre and Sun, 2018). So much so, South Africa's food safety governance does not function in isolation, even though it has its structure it complies with international institutional regulations and standards- for the sake of market and trade relations. In the same manner, it develops, enforces, and maintains its food safety governance arrangement.

3.11 An Overview of food safety governance in South Africa

The food safety governance structure is fragmented in South Africa (Boatemaa *et al*., 2019). There are three government departments namely the Department of Agriculture Land Reform and Rural Development (DALRRD), the Department of Health (DoH), and the Department of Trade, Industry and Competition (DTIC). These government departments are charged with different food safety responsibilities (DAFF *et al*., 2013). The responsibilities include imports and export, inspection, education and training, laboratories as well as development and enforcement of food safety standards (DAFF *et al*., 2013).

In the case of food safety standards, in South Africa, standards are adopted through the South African Bureau of Standards (SABS) which falls under DTIC. These standards are voluntary and must be adopted in regulations, regrettably, this is not happening as it is supposed to.

Ideally, all government departments involved with food safety have food standards responsibilities. DALRRD and DTIC are responsible for the implementation of food standards, while DALRRD and DoH are responsible for financial assistance. The biggest issue is the fact that there is no particular department or committee that is tasked with overseeing the adoption and enforcement of standards in regulations (Mokoatle et al., 2016).

It seems not all government departments involved in food safety understand their roles in the food safety standards landscape (Bignami *et al*., 2013). The issues in the internal food safety structure play a part in the lack of food safety policy and proper standard enforcement. Thus, this is a common case across Africa, that food safety laws and regulations are unfocused and generic and lacked clear mandates for action (Mutukumbira and Jukes, 2003). mandatory food safety rules largely neglect informal markets, which provide food to a large proportion of consumers (Roesel and Grace, 2014).

Generally, lower-income consumers who either have limited to no awareness of food safety concerns and have less purchasing power to afford formal markets are catered for by the informal markets (Grace, 2017). Farmers supplying informal market channels are also less willing and/or able to absorb the significant cost required to comply with private voluntary standards in lower-value channels, even if informal retailers expected them to do so. Private standards will continue to play an increasingly important role in food safety and trade. However, enforcement of mandatory food safety regulations by public sector institutions will remain necessary (Mokoatle *et al*., 2016; Oloo *et al*., 2018).

In a world of accelerating change, the playing field is also changing. This includes significant demographic and economic changes that are resulting in major shifts in dietary and food purchasing patterns, and a fundamental and rapid process of restructuring domestic agri-food systems (Jaffee *et al*, 2018). As such, it is important to ensure that food is constantly safe. As the food safety environment is facing an unusual influx of pressures from socio-economic, environmental, changing food system and political fronts (FAO, 2019a), a shift towards a more proactive and robust food safety governance is required to ensure a viable, sufficient, and nutritious supply of safe food. On the other hand, the food sector needs to ensure that everyone in the supply chain has adopted a food safety culture.

Although there is limited evidence on the costs of food safety incidents, developing countries tend to focus more on preventive measures whilst neglecting the importance of the food

safety management system (Vashisht, 2018). A study by Jaffee *et al*. (2018) found that developing countries like South Africa often devote all their resources to reactive and defensive measures, which normally occur after a serious outbreak or the imposition of a trade ban. Jaffee continues to point out that reactive measures are expensive in terms of the reputation of the affected industry and finances. The food safety governance structure in South Africa is fragmented impeding the development and application of progressive, preventive approaches to food safety risk management (Jaffee *et al*., 2018).

Concerning the preventive approach, after the Listeria outbreak, the DoH was the appointed department amongst the three leading role players to take control of surveillance (DoH, 2018a). In 2018, the Department of Health and the National Institute for Communicable Disease (NICD) with support from the World Health Organisation (WHO) created an Emergency Response Plan to address the challenges raised by the listeriosis outbreak and to strengthen systems to prevent further outbreaks (DoH, 2018a). Since then, approximately 900 environmental health practitioners have been re-trained in factory inspections, food safety systems, and testing of factories for listeria in every health district across South Africa (DoH, 2018a). Furthermore, a nationwide training program was implemented across different provinces to educate Environmental Health Practitioners about the regulations and practices of Hazard Analysis and Critical Control Points (HACCP) (NICD, 2018).

A report published by the National Institute of Communicable Diseases at the end of July 2018 cites three essential revised legislations were published:

- Regulations governing "General Hygiene Requirements for Food Premises, the Transport of Food and Related Matters" - 22nd June 2018.
- An amendment to the Regulations about "the application of the Hazard Analysis and Critical Control System (HACCP)" - 14th June 2018
- A draft of the revised "Regulations governing microbiological standards for foodstuffs and related matters"(NICD, 2018).

In addition to legislative changes, the Government claim to have stepped up its inspection and testing regime to ensure that the listeriosis outbreak does not happen again or any other similar sickness resulting from food contamination. In their National Public Health Emergency Response Plan, the Department of Health concludes that "the response plan is an

investment in the immediate and longer-term health and well-being of all South Africans" (DoH, 2018a).

There are also examples of changes that do not necessarily have a legal character but are adopted in the form of declarations, guidance documents, or communications. Another aspect is risk assessment. Unlike surveillance, risk assessment is a task given to all three-government departments. At the same time, international actors also have an input in this process of risk assessment (SA-EU, 2019). In this way, there is an existing channel for sharing and transfer of emerging new scientific evidence and technological developments at an international level (SA-EU, 2019). Above all, it addresses any unforeseen difficulties that may arise and ensures that the overall framework is robust to changes in any circumstance. Besides, this will permit better efficacy and efficiency, not only for risk assessment but for the greater food safety space. As such it is, the scope of the recent and current process of adapting and improving the arrangements for food safety (SA-EU, 2019) governance within South Africa to respond to the global contexts in which they are situated. The process of improving food safety governance is still developing and however, requires much more attention concerning institutional challenges and possibilities for innovation. Considering the sensitivity and delicacy of the food safety governance structure.

3.11.1 Participating stakeholders in food safety governance in South Africa

An important step in the national food safety governance is to identify who is either affected by or has a vested interest in food safety. This is essential to include all stakeholders to build a broad-based commitment and make the result as effective and achievable as possible. Although stakeholders generally include government ministries, agencies, retailers, manufacturers, research institutions, and food producers. (Hermans, 2006). In South Africa's food safety governance government consider government departments, food safety agencies, and consumer goods council stakeholders:

Government departments: Government departments which are the regulatory structure include three departments namely, DALRRD, DTIC, and DoH. These departments are responsible for CAC, surveillance, training, and education in food safety, laboratory testing services, inspection, science-based risk assessments, national food safety policy, food legislation, and national food standard development platform (Oloo *et al*., 2018).

Food safety regulators: The food safety regulators are there to develop, promote, and maintain South African National Standards. They are also ensuring compliance by

monitoring and enforcement of compulsory specifications in the food industry including disinfectants.

Consumer Goods Council of South Africa: This council represent retails and manufacturing member companies. This council enables organisations to identify, capture and share information swiftly. They also advocate for and advise organisations in the retail and manufacturing sectors at every stage of the value chain (CGCSA, 2016).

3.11.2 Food safety related policies in South Africa

There is no over-arching food safety policy in South Africa, only a food security and nutrition policy in which food safety is addressed in certain sections. There are, however, programmes, strategies, rules, and regulations that guide food safety activities instead. Various laws and regulations have been promulgated over the years to ensure the safety and wholesomeness of the nation's food supply. Such legislations include the following (RASA, 2019):

- Agricultural Product Standard Act, 1990 (Act No. 119 of 1990)
- Fertilizers, Farm Feeds, Agricultural Remedies, and Stock Remedies Act. 1947 (Act No. 36 of 1984)
- Animal Diseases Act, 1984 (Act No. 35 of 1984)
- Animal Identification Act, 2000 (Act No. 6 of 2002)
- Animal Improvement Act, 1998 (Act No. 62 of 1998)
- Animal Protection Act, 1962 (Act No. 71 of 1962)
- Performing Animal Protection Act, 1935 (Act No. 24 of 1935)
- Meat Safety Act, 2000 (Act No. 40 of 2000)
- Veterinary and Para-Veterinary Professions Act, 1982 (Act No. 19 of 1982)
- Liquor Products Act, 1989 (Act No. 60 of 1989)
- The Foodstuffs, Cosmetics, and Disinfectants Act 1972 (Act No. 54 of 1972)
- The Health Act of 1977 (Act No. 63 of 1977).
- The International Health Regulations Act 1974 (Act No. 28 of 1974)
- The Medicines and Related Substances Act, of 1965 (Act No.101 of 1965)

The lack of a strong policy reflects the inability of the state to respond to a national strategic imperative and address what is required by industry and guide a safe food system for the country (Thomann, 2018).

3.11.3 Challenges in food safety governance in South Africa

Food safety governance in South Africa represents a highly dynamic governance field, subjecting pressure on the government to address food safety issues. As a result, this pressure has resulted in the loss of trust by the public in both food and those responsible for food safety, following past food-related scares, most notoriously the 2018/2019 Listeria outbreak

(Boatemaa *et al*., 2018). Notwithstanding, transparency, and accountability are still not widely adopted amongst government departments. Further, the lack of collaboration and integration of food safety required activities remains a key obstacle. In short, the government is not managing the process and not providing the people of the country with accurate information based on scientific evidence including the justification of the regulatory process (DAFF *et al*., 2013).

Partial handling of scientific information as part of the evidence in decision-making is one of the shortcomings in South Africa's food safety governance. It seems reasonable to assume that the growing attention to and communication about scientific uncertainties is at least in some part a response (Vipham *et al*., 2018) to South Africa's important experience in terms of 'lesson learned' from past food-related scares. Scientific uncertainties are an important subject of assessment, a component of transparency and public communication, and a matter of accountability in their own right.

Thus, while many policymakers and other stakeholders in developing countries recognise that there are gaps and shortcomings in governance structures, the socioeconomic impacts of these weaknesses and the size of the benefits of remedial or forward-looking investments are less well understood (Jaffee *et al*., 2018). This leads to the notion that national interests in agriculture and industry take precedence at the expense of public health protection (Vos and Wendler, 2006).

3.12 Summary and conclusion

The term "governance" has a longstanding presence in both political and academic discussions, as briefly highlighted in chapter two of this study. However, its meaning can vary among individuals. Challenges arise in establishing cooperation between state and non-state actors, as well as across different levels of governance. Trust can be undervalued among the numerous actors involved, leading to delays in collaborative efforts within the food supply chain. To address these issues, the food control system serves as a regulatory structure, aiming to mitigate distrust, facilitate information disclosure and exchange, and delegate responsibilities among food safety actors. Similar to governance in general, food safety governance encompasses rules, standards, and regulations established by the state to govern and influence food safety practices. However, it extends beyond mere top-down regulation and standards, as it involves a complex, multilevel structure with multiple stakeholders and interrelated responsibilities. Various stakeholders play a crucial role in the

realm of food safety, including field workers, farmers, retailers, government departments, agencies, research institutions, and even international organizations.

The globalisation of food supply chains, coupled with the concentration of economic power among food retailers, has coincided with the emergence of consumer concerns regarding animal welfare, dietary habits, the environment, and fair trade. These concerns have been further exacerbated by a series of global food crises. The literature highlights that these crises have revealed significant weaknesses in the existing design and enforcement of food safety legislation in numerous countries. Consequently, these developments have not only increased consumer awareness and apprehension regarding food safety but have also eroded trust in government oversight, resulting in significant reputational costs for food suppliers with established brands.

In response to these food crises, many countries have taken steps to revise their food laws and restructure their regulatory systems. These measures involve bolstering border inspections, implementing import restrictions, and integrating controls throughout the food chain. Such reforms aim to enhance food safety and restore public confidence in the quality and integrity of food products.

In South Africa, the structure of food safety governance is characterized by fragmentation and the absence of a comprehensive food safety policy. There appears to be a lack of understanding among government departments regarding their respective roles in ensuring food safety standards. These internal issues within the food safety structure contribute to the absence of a well-defined food safety policy and effective enforcement of standards. This situation is not unique to South Africa, as it is a common challenge across many African countries where food safety laws and regulations tend to be vague and lack clear mandates for action. Additionally, the focus of mandatory food safety rules often neglects informal markets, which serve a significant portion of the population as a source of food. The next chapter explains the processes followed and the methods used in conducting the research.

Chapter Four: Study Design and Methodology

4.1 Introduction

This chapter explains the processes followed and the methods used in conducting the research. It begins with the philosophical assumptions of the study, the research design, and the scope and boundaries of the study. In addition, the sampling strategy, methods, and techniques that were used to collect data are described. This is followed by thematic data analysis, and an outline of academic rigour. It finally ends by outlining the ethical consideration followed for this study.

4.2 Epistemology and ontology

The research approach was framed by perceptions about how knowledge exist and created. Diverse ontological and epistemological assumptions give rise to various methodologies that produce different research designs and choices of data collection tools (Sarantakos, 2005; Hesse-Biber and Leavy, 2010).

Ontology is defined by (Crotty, 1998. p10) as "the study of being". It is concerned with "what kind of world we are investigating, with the nature of existence, with the structure of reality as such". While epistemology is 'a way of understanding and explaining how we know what we know', (Crotty, 1998. p3). Epistemology asks how we can know about the existence of what exists. This study approach adopts constructive realism for an ontological perspective and critical realism for an epistemological perspective.

According to Tcycarev *et al*. (2019), "constructive realism" distinguishes the notions of "actual reality" and "factual reality". Actual reality refers to the objective reality that exists independently of any individual's perception, while factual reality pertains to the reality that is constructed or interpreted by a human being. This ontology does not deny the existence of reality exist. In this research, the researcher used a qualitative case study approach to examine these differing realities, shaped by different contexts and experiences, to better understand food safety governance.

Positivist epistemology asserts that the world exists autonomously from our understanding of it. Positivists contend that knowledge can and must be developed objectively, without the values of the researchers or participants influencing its development (Park *et al*., 2020). In

contrast, interpretist epistemology opposes the impression that the world exists independently of our knowledge. Instead, it contends that there is no objective truth, that the world is socially constructed, and the role of the social scientist is to study those social constructions (Marsh and Furlong, 2002).

Critical realism believes that research is about gaining knowledge of a reality that exists independently of our representations of it (Cruickshank, 2003). Cruickshank (2003) continues to posit that critical realism is critical in a political as well as methodological sense. Realists believe that there are deep structural relationships between social phenomena that cannot be directly observed but are crucial for any explanation of behaviour (Marsh and Furlong, 2002). Cruickshank (2003) adds that realists believe that the task of research is to enable the move from facts to value. That is, the research is used to provide facts about hardship and exploitation and from such facts, normative and political arguments may be developed against the *status quo*.

The constructionism ontology and critical realism epistemology positions underlie the research methodology that will help to develop a new sociological understanding of food safety governance. Data is collected through various data collection methods including an in-depth case study approach which allows the documentation of a deeper and fuller data set. Theoretically, the data will help generate contextual understandings that can be applied to other similar contexts. Thus, Cruickshank (2003), argues for a mixture of methods and that theory and methods are sought to be linked, for theory to guide the research (Cruickshank, 2003).

Each element of epistemology has its strengths and weaknesses. However, Depoy and Gitlin (1998) contend, it is becoming increasingly necessary to triangulate both ideologies and their attendant methods. An approach of this nature provides strength that offsets the weaknesses of both quantitative and qualitative research. While some research scholars argue that quantitative data is weak in understanding the context (Marsh and Furlong, 2002), qualitative data makes up for these weaknesses (Creswell and Clark, 2011). On the other hand, while qualitative data is seen as deficient because of the personal interpretation made by the researcher and the difficulty in generalizing the findings to a large group because of the limited number of participants studied, qualitative data is argued, does not have these weaknesses (Creswell *et al.*, 2006). Hence, this study leans on the qualitative approach. Marsh and Furlong (2002), also encourage the use of qualitative methods (document analysis,

focus groups, interviews, and case studies). An approach of this nature offers diverse advantages of better understanding the phenomenon, complementing their respective strength, and smoothing out each other ‘s shortfalls. Furthermore, this study adopts a realist position to better understand the experiences and knowledge of the food safety governance stakeholders that could not be directly observed but are important to understand the behaviours of stakeholders in the policy networks, which might explain the weaknesses and gaps in the food safety governance.

4.3 Research design

A research design encompasses a comprehensive approach that integrates and establishes the framework for obtaining the necessary data, determining the methods to be employed for data collection and analysis, and how all of these elements will contribute to addressing the research question at hand (Boru, 2018). This is qualitative research, with mixed data collection methodology containing document analysis and semi-structured interviews and focus groups from the non-probability sampling.

Table 4. 1: Summary of the phases and the tools used to collect data.

Phase	**Target group/documents**	**Tool**
Phase 1	Policies, strategies, programmes	Documentary analysis
Phase 2	Stakeholders	Semi-structured interviews and case study
Phase 3	Stakeholders	Focus group discussion.

The study was conducted in three phases as shown in table 4.1 above. The purpose of the first phase was to review policies, strategies, and legislation related to food safety using a desk-based approach. These documents helped the researcher to understand the background and policy landscape of food safety governance as well as for stakeholder mapping, to identify stakeholders involved in food safety governance. The second phase was semi-structured interviews with the key informants. Key informant interviews involved interviewing a selected group of individuals who provided needed information, ideas, and insights on a particular subject (Kumar, 1989). Even better when using semi-structured interviews as they

allowed the respondent the freedom to share their views openly and are less predictive (Dejonckheere and Vaughn, 2019).

The second phase also consists of a case study. A case study is a process of conducting a systematic, critical inquiry into a phenomenon of choice and generating understanding to contribute to cumulative public knowledge of the topic (Simon, 2009). Idowu (2016), concurs that a case study research strategy reveals specific insights from specific circumstances, and it involves gaining an understanding of a phenomenon through the study of detailed activity within a particular real-life context. Furthermore, according to Denscombe (2008), the "case" that forms the basis of the investigation is normally something that already exists. Case study research is consistently described as a versatile form of qualitative inquiry most suitable for a comprehensive, holistic, and in-depth investigation of a complex issue (phenomena, event, situation, organisation, program individual, or group) in context, where the boundary between the context and issue is unclear and contains many variables (Creswell, 2014; Fryberg, 2011; Merriam, 2009; Simons, 2009; Stake, 2006; Yin, 2014 as quoted in Harrison *et al*., 2017).

The third phase was a focus group discussion which aimed to triangulate and validate the information collected using the methods used in phases 1 and 2. The focus group discussion also aimed at filling in the gaps between the two phases.

4.4 Case study design

Following the confirmation of the case study strategy, the design of the case study includes the selection of cases, selection criteria, and a brief explanation of the case studies; these aspects are discussed below.

4.4.1 Case study selection

According to Yin (1984), a selection of cases should not be random nor be based on a statistical sampling from a large population. Instead, its selection of cases should be directed by theoretical reasons. Seawright and Gerring (2008), agree and say that randomized case selection procedures sometimes produce a sample that is substantially unrepresentative of the population. Thus, some form of purposive case selection seems strong.

Each case study is unique and used to answer different questions. Hence, it is important to indicate the type of case study to be utilized. Yin (1984), and Zainal (2007) mention three types of case studies exploratory, descriptive, and explanatory case study. Exploratory case

studies are used when there is no single set of outcomes, and they answer ‘how’ and ‘what’ questions (Yin, 2014). Descriptive case studies depict the natural occurrences and phenomena observed within the relevant data. As exploratory case studies it answers ‘how’ and ‘what’ questions (Zainal, 2007). In contrast, explanatory case studies are utilized to examine assumed causal links that are too complex for surveys or experimentation (Yin, 2014). Furthermore, explanatory cases are also used for pattern-matching to investigate certain phenomena in very complex and multivariate cases (Zainal, 2007). They answer “why” and “how” questions. The explanatory case study approach is adopted in this study. This approach is adopted because of the main research question, “Why is South Africa’s food safety governance failing”, South Africa's food safety governance is fragmented and controlled by three government departments. Therefore, several weaknesses arise.

Case study research can be based on single or multiple cases. For a single case study, the case must be a “critical case” exploring a well-formulated theory or can be an “extreme case” or a “unique case” (Yin, 2003). it is important to note that the rationale for a single case study cannot be satisfied with a multiple case study (Yin, 2003). As such, this study employed multiple case designs and according to Yin (2014), it provides a better basis for theory building because having multiple cases allows for a comparison of those cases, which can lead to a stronger theory. The cases are using theory to interpret the (invisible) links and explanations of empirical (visible) patterns found in the empirical data. The three cases focus on different food safety-related policies which went through a change following the Listeria crisis. Each case was chosen to illustrate policy (network) dynamics in different phases of the policy cycle.

Table 4.2: describes the three cases and the reasons for their selection.

Case study	**Justification**	**Description**	**Main actors**
Compulsory Specification for processed meat products	Published for the first time after the Listeriosis outbreak. The Standards were published on 8 August 2019. Its focuses on three Kaleidoscope Model stages: agenda-setting,	Before 2018 the product characteristics and their related processes and production methods were not monitored for compliance since they were not mandatory. However, since the Listeria outbreak, the specifications are now compulsory meaning compliance is mandatory.	Government (DALRRD, DoH, NRCS) Industry

	policy design, and policy adoption		
Hygiene Regulation R638 of 2018	Amended after the Listeriosis outbreak. The regulation amendment was published on 14 June 2018. Its focuses on two Kaleidoscope Model stages: adoption and implementation stages	The government failed to establish effective guidelines regarding the handling, transportation, and storage of ready-to-eat meat, which would adequately regulate the growth of the bacterium believed to be responsible for causing foodborne illnesses, (Hunter-Adams *et al*., 2018). Hence, the revised regulation provides specific instructions about cleaning and sanitizing equipment and the surface.	Government (DoH, Environmental Health Practitioners (EHPs) Food industry
HACCP Regulation R607 of 2018	Amended after the Listeriosis outbreak. The regulation amendment was published on 14 June 2018. Its focuses on one Kaleidoscope Model stage: implementation stage	The regulations were in place before the Listeria outbreak but not well enforced. As a result, the processed meat industry successfully hindered the adoption of evidence-based regulatory standards that were formulated in 2014, which resulted in less pressure on the private sector to apply stringent standards (Ensor, 2018 as quoted in Hunter-Adams *et al*., 2018). Therefore, during the outbreak regulation related to the hazard analysis and critical control point system (HACCP system) was revised now requires all producers of ready-to-eat processed meat to have a HACCP certificate issued by a SANAS-accredited certifying body right after the inspection has been conducted.	Government (DoH, EHPs) Food industry

The first case study investigates how the compulsory specification for processed meat products made it on the policy agenda and how the regulations were designed. The South African compulsory specification for processed meat products outlines the regulations and standards that must be met by processed meat producers in the country. The specification includes requirements for hygiene, labelling, and food safety to ensure the health and safety of consumers. The development of the specification faced challenges, including resistance from industry players who saw it as an added burden and concerns over its implementation and enforcement. However, the implementation of the specification was fast-tracked after the largest outbreak of Listeriosis in South Africa in 2017/2018. The outbreak was traced back to contaminated processed meat products, leading to the death of over 200 people and sickening thousands more (NICD, 2018). The listeriosis outbreak highlighted the critical importance of ensuring food safety and the need for stricter regulation of processed meat products. The compulsory specification for processed meat products was seen as a crucial step towards preventing such outbreaks from occurring in the future and protecting public health.

The second case study examines how the regulations governing general hygiene requirements for food premises, the transport of food, and related matters were adopted and implemented. These regulations are outlined in the South African Foodstuffs, Cosmetics, and Disinfectants Act and its accompanying regulations (DoH, 2018b). The listeriosis outbreak highlighted the critical importance of ensuring food safety and the need for stricter regulation of food production processes and transportation. The regulations governing general hygiene requirements for food premises, the transport of food, and related matters were seen as crucial steps towards preventing such outbreaks from occurring in the future and protecting public health.

The third case study reviews the implementation of the regulations relating to the application of the hazard analysis and critical control points system (HACCP systems). These regulations are outlined in the South African Foodstuffs, Cosmetics, and Disinfectants Act and its accompanying regulations (DoH, 2018b). The Hazard Analysis and Critical Control Point (HACCP) system is a food safety management system used to identify and prevent potential food safety hazards (DoH, 2018b).

The South African regulations relating to the application of the HACCP system are important measures to ensure food safety and prevent future outbreaks of diseases like Listeriosis.

However, their effectiveness will depend on the proper implementation and enforcement of the regulations and standards.

4.5 Sampling strategy

According to Kumar (2019), sampling is the process of selecting a few from a bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation, or outcome regarding the bigger group. This study employed non-probability sampling. The researcher used purposive sampling to ensure that representatives from all food safety institutions, and other relevant stakeholders partake in the study. Purposive sampling is the deliberate choice of an informant due to the qualities the informant possesses (Tongco, 2007). The interviewees were purposively identified through stakeholder mapping. The key informants who were purposively selected for interviews and focus groups were mostly the individuals who influence making decisions concerning food safety.

4.5.1 Types of data sources

The study employed both primary and secondary sources of data. The integration of these two sources provided the researcher the opportunity to learn about the phenomenon directly through first-hand information which was of importance to the study. The primary data constituted the personal experiences of food safety officials, operators, and enforcers, from the government and various agencies. It also comprised information from government food safety policy-related documents. These documents were reviewed to have a broader understanding of the research being conducted before engaging with the stakeholders. The secondary data constituted the reports from academics, articles, press releases from the industry, and associations.

4.5.2 Stakeholder selection and recruitment

This selection plan represents a purposive selection strategy identifying particular stakeholders and representatives because they may best inform an understanding of the issues under study (Creswell, 2014). In this case, each interviewee is the only person in a certain position or with certain experiences and so the only choice.

Eligible stakeholder groups were defined as government departments, research institutions, food safety regulators, industry, and related groups that focused on food safety governance. Eligible groups were also required to be highly visible and active organisations that engaged in partnerships to advance their goals. The participants have knowledge and awareness

regarding key components of the issue under study, including food safety, food safety-related laws and regulations, weaknesses, and gaps in the food safety governance, as well as the attempted actions taken to address these.

Within eligible organisations, individuals recruited to participate range from directors to project managers, and coordinators. Stakeholder representatives were also individuals that had been active in their organisation for an extended period. These criteria are intended to increase the likelihood that participants may provide rich information regarding strategies—including identification of potential challenges and opportunities— associated with food safety (Curtis *et al*., 2000).

To identify and recruit potential participants, I listed possible participants from the list of stakeholders identified during stakeholder mapping. Their contact information was obtained from the mailing list of food safety seminars, and workshops, and through institutions' websites. Potential participants were contacted through email and invited to participate in interviews. Participants were contacted no more than three times, including initial recruitment, and a follow-up email after two weeks of no response. Participants who showed interest were given a call to explain further the purpose of the study and to establish their availability, thereafter, they were sent a consent form to sign.

4.6 Data collection methods

The study made use of a qualitative approach. The method is applied for data collection, data analysis, and interpretation of the evidence (Hammerberg *et al*., 2015). Heyink and Tymstra (1993) highlight that the "qualitative approach is about determining what things "exists" rather than to determine how many such things exist" and the approach is also suitable for analysing information. Furthermore, the qualitative approach allows the use of different methods which bring vigour to the research and provide multiple perspectives on the issue. Qualitative methods, such as interviews, are believed to provide a "deeper" understanding of social phenomena than would be obtained from purely quantitative methods, such as questionnaires (Sutton and Austin, 2015). The focus groups with the key informants helped cross-validate findings from the desk review. Semi-structured interviews also helped confirm who are the advocates and champions for food safety policy (Gill *et al*., 2008).

Participants for both focus group discussions and individual interviews were identified with the assistance of stakeholder mapping. Using a combination of focus group discussions and

individual interviews added rigor to the study by ensuring that multiple perspectives on the issue have been collected.

4.6.1 Documentary analysis

Prior (2008) and Coffey (2013) argue that documents are literary, textual, or visual devices that enable information to be shared and 'stories' to be presented. Thus, all documents are, in that sense, artefacts that are created for a particular purpose, crafted according to social convention to serve a function of sorts.

Therefore, documentary analysis is explained by Andrade *et al*. (2018) as a procedure that entails the identification, verification, and consideration of documents that are related to the object investigated. Bowen (2009) describes document analysis as a systematic procedure of evaluating or reviewing documents both printed and electronic material. Documents can be analysed in terms of thematic content, to reveal patterns, sequences, and absences (Coffey, 2013). Andrade *et al*. (2018) continue to mention that documentary analysis is, simultaneously, a technique for collecting and analysing data. Firstly, it is used to complement other means of collecting and analysing data, with a notion to triangulate data (Bowen, 2009). As a research method, it serves as a basis for an investigation of the study.

There is a lot to be learned from documents about a social setting or an individual life. Coffey (2013) mention that we approach the analysis of document for what they are used to accomplish. In so doing, “we pay attention to the knowledge that documents ‘contain’ about the setting, but also examining their role and place in settings, cultural values attached to them, their distinctive types, and forms” (Coffey, 2013, p.5).

4.6.1.1 Document selection, scope, and boundaries

Like the selection of potential participants for focus groups and interviews. Document selection follows a purposive selection strategy identifying food safety government documents. The researcher, particularly through this study, wanted to understand South Africa's food safety laws, stakeholders involved in food safety governance, what roles they play in food safety governance, food safety-related policies development, and implementation, food safety-related issues, food safety regulatory challenges and food safety policy situation. The scope of research is national policy. Although the focus is on the

national level of government, references are made to the provincial and local levels to give clear statements where necessary.

Publicly available government documents including reports, strategies frameworks, action plans, policies, and acts related to food safety. These documents are the only thing close to a single finalised food safety policy which we do not have in South Africa. The use of these documents represented a feasible approach for examining the rules established to administer the law and clarification of expectations for consumers, the government, and the food industry. The document analysed is more than 20 years back and until 2020 to give a sense of when the food safety governance problems were first recognized, their concentration, and proposed solutions at the time. Some of the documents are dated back from the 1970s originally, however, they have been reviewed and revised in less than 10 years. The government documents reviewed included, but were not limited to, the following:

Table 4. 2: Food safety policy-related documents reviewed.

Document	**Year of publication**
National Policy on Food and Nutrition Security	2013
Foodstuff, Cosmetics, and Disinfectant Act 54	2009
The Health Act 63	1977
International health regulation Act	1974
Agricultural product standard Act 119	1990
Fertilizers, farm feeds, agricultural remedies, and stock Remedies Act 36	1984
Meat Safety Act 40	2000
Counterfeit Goods Act 37	1997
Consumer Protection Act 68	2008
Legal Metrology Act 9	2014
Measurement Units and measurement standards Act 18	2006
The national regulator for compulsory specification Act 5	2008
Standard Act 8	2008
The South Africa Policy Guidelines on National Food Safety Alerts and Official Product Recalls	2004

These documents fulfil part of the food safety policy mandate to outline standards for the safety of food. Describe actions to be taken, stakeholders assigned for particular tasks, and implementation strategies for ensuring food safety and achieving food safety governance goals.

Other documents analysed were pertaining listeriosis outbreak (tiger brand and informal sector) such as news articles, briefing documents, reports, press releases from the industry, non-governmental organisations (NGOs), and academic reports. These documents were analysed for case study purposes. This was done to understand the food safety issues that were raised during the outbreak. Weaknesses and gaps that were identified, policy action proposed at the time and evaluation outcome, and the food safety situation now two years after the listeriosis outbreak.

4.6.2 Focus group

A focus group is a limited-sized and organised gathering comprising carefully chosen participants, usually led by a facilitator. Focus groups are set up to explore specific topics and individuals 'views and experiences, through group interaction (Litosseliti, 2003). Casey and Krueger (1994, p.6) describe a focus group as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment". Unlike individual interviews which focus on individual beliefs and attitudes, focus groups aim to collect diverse perspectives and attitudes, often necessitating intricate negotiation of the ongoing interactive dynamics among participants (Casey and Krueger, 1994; Litosseliti, 2003). Doody *et al*., (2013) suggest that the size of the focus group should be determined by the topic. Focus groups are a common method used by the Centre of Excellence (CoE) governance program that this research is a part of. The purpose of the focus group in this research triangulates and fill in the gaps from documentary analysis and semi-structured interviews as well as to net map stakeholders involved in food safety governance. The focus group took place in the form of an interactive workshop with 29 stakeholders across different sectors who are interested, working, and actively involved in food safety governance. Due to several reasons including the distance between the stakeholders identified, lack of financial resources to find the travel logistics for the workshop, and also the pandemic, physical focus group discussion was not possible, hence, the researcher resorted to online interactions, and the focus group discussion was audio recorded.

The online interactive workshop titled "Food imbizo: Mapping food safety stakeholders in South Africa" took place on the Zoom platform on the 08th of November 2022 (see the programme in the appendices). The workshop was two and a half hours long. The participants joined online from different locations including Pretoria, Johannesburg (Gauteng); Cape Town, Khayelitsha (Western Cape); London (United Kingdom); and Italy. The workshop had

one main facilitator and three sessions. Session 1, named "Reflecting on the past: challenges of governance of food safety in South Africa" consisted of two presentations by representatives from the informal sector and civil society. Session 2, named "Finding Pathways towards better food safety governance" consisted of panelists representing both government and the processed food industry. The third session was mainly a stakeholder mapping activity. The technical briefs were sent to the speakers and facilitators a week before the workshop took place. The technical briefs detailed the unique responsibilities of each speaker according to the role they were requested to play in the workshop.

The group of 29 was split into three breakaway rooms and each room consisted of representatives from different sectors. Each group had one facilitator whose role was to try and guide the conversation so that all the questions are roughly answered (and recorded) in the time available and that everyone gets a chance to speak. One volunteer was also utilized to operate the whiteboard if certain groups where participants were unable to. Before the group split, the researcher demonstrated how to use an online whiteboard following the questions given. The groups were given 40 minutes to complete the mapping exercise when groups everyone moved back to the meeting room where groups gave feedback.

Net mapping

According to Schiffer (2007, p3), Net-Map "is an interview-based mapping tool that helps people understand, visualize, discuss, and improve situations in which many different actors influence outcomes. By creating Influence Network Maps, individuals and groups can clarify their view of a situation, foster discussion, and develop a strategic approach to their networking activities".

This study employed social network analysis. Social network analysis is a broad field of research that focuses on the structures of interactions and analyses its empirical as well as theoretical angles (Schiffer and Waale, 2008). Social network analysis tries to understand social and political situations by focusing on their structure, both formal and informal (Schiffer and Waale, 2008). Carrington and Scott (2011, p.5 as quoted in Knoke and Yang, 2019) referred to social network analysis as a 'paradigm' rather than a theory or a method; that is, a way of conceptualising and analysing social life. Knoke and Yang (2019, p.4), believe the network paradigm has roots in and thrives on the integration of three elements: theories, methodologies, and application. "For theories, network analysis demands a serious commitment that prioritizes actor interdependence and connectivity, emphasizing structured

relations among social entities. For methodologies, network analysis believes in collaboration across diverse disciplines to create innovative procedures. For application, people increasingly use their networking skills to navigate along complex inter-organisational pathways to acquire desired goods and services". Social network analysis was used for this study to determine the network of stakeholders, roles, and their influence on the decision concerning food safety governance. For the sake of this study, we made a social network visualisation along with the power-mapping tool.

A power-mapping tool is a tool that collects data about the perceived power of different stakeholders within a policy field (Schiffer and Waale, 2008). The Power Mapping Tool allows for the structured analysis of the perceived power of actors in a social situation (Schiffer, 2007). "measuring' power can only be done indirectly, by using indicators. In many approaches, the researcher decides on the indicator such as a percentage of budget allocated, and length of contribution to a decision-making process (Schiffer, 2007).

The groups did the stakeholder mapping by working on an interactive whiteboard guided by the questions listed below.

1) Identify stakeholders (institutions, organisations, and associations) in South Africa who are involved in food safety governance.
2) Categorize the stakeholders into different groups (e.g., government, civil society, industry, etc).
3) Draw a line (s) showing relationships among the stakeholders and mention the kind of relationship they have.
4) Draw a dot next to each stakeholder that you think has the most influence in food safety governance (max 3 dots (votes) per person).

On the whiteboard, the participants were asked to stick small pieces of paper with all food safety stakeholders according to different groups. The groups included government, industry, civil society, and research institutions. Thereafter, to determine their roles, we used coloured arrows with each colour representing a different role. The arrows represented, yellow for research, blue for support, advice, or guidance, green for information, and purple for funding. And for mutual exchange, the arrow had two heads. Finally, to we used a power-mapping tool to determine the 'power' or 'influence' each stakeholder had in food safety governance. To do this, we used dots, each participant got three dots and they got to put them next to the stakeholder they perceive as influential. The more influence the stakeholder is considered to be by the participants, the more dots it had.

4.6.3 Semi-structured interviews

Rashidi *et al*. (2014) define structured interviews as face-to-face interaction to systematically gather valuable information about a specific topic. The semi-structured interview allowed informants the freedom to express their views on their terms (Cohen and Crabtree 2006), particularly this study interviewed stakeholders from different institutions. Structured individual interviews were conducted to meet with stakeholders identified through stakeholder mapping to gather more specific information and the opportunity to delve more deeply into particular perspectives, and also to give participants who want to share information confidentially an opportunity to do so.

Semi-structured interviews were appropriate for this study because they ensured 'the validity', 'reliability', 'fairness', and 'practicality' of the information gathered. These interviews helped fill in the gap of information that was not present in both documents reviewed. The interviews also helped triangulate information from both the documentary analysis and the focus group.

The data collection through semi-structured interviews was conducted from April 2022 – January 2023. A total of 16 semi-structured interviews were conducted. The participants were given the option to choose if they preferred an in-person or virtual interview. Of 16 interviews executed, only one was in a personal capacity and took place at a place convenient to the interviewee for around one hour and they were audio recorded. While 15 Interviews took place online via the Zoom platform and the meetings were recorded.

At the beginning of the interviews, the purpose and the focus of the research were explained to the participants. The interviews were guided by 3 specific interview guides (as the regulations in question) each according to the specific policy cycle stage. The first interview guide focused on the questions related to the agenda and design stages of the compulsory specification for processed meat products. The second interview guide focused on questions related to the implementation of the regulations related to the basic requirements for hygiene on-premises and transportation. The last interview guide also focused on questions related to the implementation stages of the regulations related to the hazard analysis critical control point systems. Notes were taken during all the interviews. In addition, all the interviews were recorded and transcribed.

4.7 Data analysis

Data analysis according to Flick (2013) is the classification and interpretation of linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning-making in the material and what is represented in it. Moreover, the main aim is often to arrive at generalizable statements by comparing various materials or various texts or several cases (Flick, 2013). The study made use of thematic analysis to analyse data collected from documentary analysis, focus groups, and semi-structured interviews. According to Boyatzis (1998: p. 4), thematic analysis is "a process for encoding qualitative information", where "a theme is a pattern found in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon". The codes used when analysing the data through ATLAS ti software include but are not limited to responsibilities, levies, development, compliance, stakeholder and challenges. The use of thematic analysis allowed for the explicit summary of key themes and features within the larger data set and enable the production of a "clear" and "organised" report (King, 2004; Nowell *et al*., 2017).

Audio files were transcribed, validated, and read from a holistic perspective to identify emergent themes. The initial coding framework was developed before and about research questions, transcripts reviews, and memos' insight. Using an iterative process, the coding framework was systematically applied to transcripts and refined to capture categories that emerged inductively from the data. All coding was conducted using ATLAS.ti 9 software. The preparatory version of the codebook was applied to an initial read of the full text. This was done to identify specific sections of text related to the study objectives (Muhr, 1994) and the kaleidoscope model. During this process, the researcher paid attention to additional concepts that emerged as relevant to the research agenda but were not yet present in the pre-set coding categories (i.e., additional inductive codes and categories). The included sections of text were reviewed in detail. During this process, the researcher noted where and how patterns occurred which allowed new insights to emerge. Therefore, the codebook evolved as an iterative process of reading and coding documents continued, which included refining existing codes and adding new and emergent coding categories (Green & Thorogood, 2014). Following the update and revision process, the final coding framework was discussed and agreed upon with my supervisors. Once the codebook was finalised, codes were applied to the extracted text.

Thereafter, the text for each category was reviewed and brief memos were developed to organise data patterns and emerging interpretations of what the content was about (Kondracki *et al*., 2002). From these memos, themes were constructed based on the underlying meanings, assumptions, and potential implications of the study aims and literature.

4.8 Data triangulation and validity

Triangulation is a method used by qualitative researchers to check and establish validity in their studies. Data triangulation involves the use of different sources of data/information (Guion, 2011). Kaplan and Maxwell (2005) posit that the triangulation of sources and methods provides a more complete understanding of the broader phenomenon under study in this dissertation. For this study, three methods were used to achieve the "validation", "accuracy", and "consistency" of the data collected. Thus, triangulation increased the validity of the research by comparing diverse data to provide a holistic understanding of the above-listed methods (Olsen, 2004; Bricki and Green, 2007; Hussein, 2009; Turner and Turner, 2009).

Zikmund *et al*, (2013) define validity as the "ability of a scale to measuring instrument to measure what it is intended to measure" (Pg. 302). This suggests that the researchers need to make use of various sources of information to validate conclusions (Stemler, 2001). This was achieved by reviewing the transcripts from the focus group and interviews to ensure that transcript and the recordings align and that quotations in the recordings are as they appear in the transcript. Furthermore, data from all three data collection methods were compared to the final themes and findings.

4.8.1 Limitations and delimitations

Limitations are shortcomings that restrict the study methodology and conclusions, and they cannot be controlled by the researcher and aim to identify the weaknesses of the study, while delimitations are the choices made by the researcher to influence the methodology and conclusion of the study which narrow the scope of the study (Simon and Goes, 2011). The study focuses on the South African context looking only at the national level and might not necessarily be transferable to other countries. Additionally, it cited research that looks at food safety policy but focuses on the local and provincial levels to avoid duplication of information. However, countries with similar contexts may be able to apply the Kaleidoscope

model and draw examples from findings generated through this research and experiences from other cited countries (Eisenhardt and Graebner, 2007).

Another limitation was finding key informants who were prepared to talk. The aim was to interview key informants from different institutions working in food safety but turned out to be rather difficult. Emails were sent to several different possible interviewees from different institutions, but some responded and agreed to an interview and change their minds at the last minute with and without notification. At least two-three follow-up emails we sent each after three weeks of no response. In some cases, the researcher received responses saying they can't partake in the study because they are extremely busy. Additionally, the possible interviewees from the Department of Health were hesitant to participate and clarified that they could partake in the study only if the researcher obtained permission to do so from the Director General (DG). After three years of going forth and back trying to get permission to conduct the interviews, permission was finally granted in January 2023 but allowed the researcher to interview only one person. The researcher reached out to the person suggested but struggle to connect. In general, a very low response rate was achieved.

4.9 Ethical considerations

According to Fleming and Zegwaard (2018), Research involving human participants should be based on a fundamental moral commitment to the individuals concerned and to advancing human welfare, knowledge, and understanding. Several guiding moral principles govern the ethical review of research proposals. These principles aim to protect the well-being and rights of research participants/volunteers. Hence, Kumar (2019) defines ethics as "by principles of conduct that are considered correct, especially those of a given profession or group" A full ethical application (HUM037/0620) was submitted to the Faculty of Humanities Ethics Committee at the University of Pretoria for consideration, along with the research proposal. Casley *et al*. (1981) stressed that informed consent should be obtained from the participants before an interview or focus group.

Information about the research aim and objectives was sent to the intended interviewees when requesting permission to conduct interviews. At the beginning of the interviews the participants were also made known of the purpose and the focus of the research once again and written informed consent was obtained before the interview take place. In addition, the participants were told that their participation is voluntary and that if they decide not to participate, they won't be affected in any way. If they decide to participate but change their

minds later, they can still withdraw their participation up to the point of the publication of the thesis and or scientific reports and articles in journals.

4.9.1 Privacy, anonymity, and confidentiality

Privacy: According to Sarantakos (2012) researchers should delve into the private affairs of the subjects. During the interviews, personal and sensitive questions were avoided especially when the participant did not feel comfortable revealing that particular information.

Anonymity: When anonymity is promised, the name of the respondent does not appear on the research instrument or the data (Sarantakos, 2012). As such, all participants remained anonymous, and the data for each participant was stored using a pseudonym to be identified by the researcher and the supervisors only. This means interview recordings, transcripts, data analysis, and the findings bear no names, instead, pseudonyms are utilized.

Confidentiality: refers to "information about the person that has been revealed to the researcher" (Sieber, 2001). Hence, safeguarding this information is an essential component of the trust and respect that characterises the relationship between the researcher and the participant (Sieber, 2001). To ensure confidentiality, the data collected through interviews and focus group discussions was transferred from the recorders to the cloud which is password protected only the researcher and the supervisors have access to the data.

4.10 Summary

The methodology is one of the factors that sets apart one study from another, while an inimitable methodology, it was able to elucidate a theory that was close to what participants felt they had experienced. In this chapter, the research methodology employed in this study was introduced.

This qualitative research adopted a mixed data collection methodology that took place in three phases: document analysis, semi-structured interviews, and focus groups from non-probability sampling. The third phase was a focus group discussion which aimed to triangulate and validate the information collected through document analysis and semi-structured interviews. The focus group discussion took the form of a stakeholder mapping workshop and also aimed to fill in the gaps between the two phases. A thematic and content analysis was employed to respond to the research questions. To do this, audio files were transcribed, validated, and read from a holistic perspective to identify emergent themes. The initial coding framework was developed before and about research questions, transcript

reviews, and memos' insight. All coding was conducted using ATLAS.ti 9 software. The following chapters analyse and discuss the findings of the study.

Chapter Five: Food Safety Stakeholders and Legislation

5.1 introduction

As discussed in Chapter Three, food safety is complex and is governed by different stakeholders across different sectors of the economy, society, and government. Particularly, government departments, food safety regulators, food businesses, research institutes, consumer associations, and non-governmental organisations (NGOs) are crucial in ensuring safe food for the citizenry. These stakeholders have unique roles and functions that influence the development and implementation of food safety governance in the country.

This chapter consists of two primary parts. Part 1 (sections 5.2-5.2.8) focuses on the analysis conducted to unravel the roles of various stakeholders in ensuring food safety, spanning from the farm to the table. Part 2 (sections 5.3-5.3.7) focuses on the policies, legislation, guidelines, and programmes about food safety in South Africa are presented to establish the context for exploring practical examples of policy development, implementation, and review in chapter six.

5.2 Stakeholders and their roles in food safety governance in South Africa

The South African food safety and food control system are regulated and enforced by three government departments (see Figure 5.1). The Department of Health (DoH), Department of Agriculture, Land Reform and Development (DALRRD), and Department of Trade, Industry, and Competition (DTIC) as well as food agencies. At the local level, Municipal, Metropolitan, and District Assemblies also support the regulatory and enforcement work of the three major institutions. The government assumes the responsibility for policy development, industry regulation, and enforcement, among other crucial tasks. On the other hand, the business sector takes on the role of implementing regulations and providing funding for certain community or research projects. Civil society advocates for the production and selling of safe food. While the research institutes do research that is used as scientific evidence for decision-making.

In South Africa, the food safety governance has a three-tier system. The constitution level is an umbrella for the three-tier system. The constitution of the Republic of South Africa, 1996

outlines in chapters 5 to 7 the division of powers between the three spheres of government in South Africa, which include the national, provincial, and local levels. The first tier describes the operations and control of food safety at the national level and lastly, the second tier explains the control of food safety at the provincial while the third tier outlines the implementation and enforcement at the municipality level.

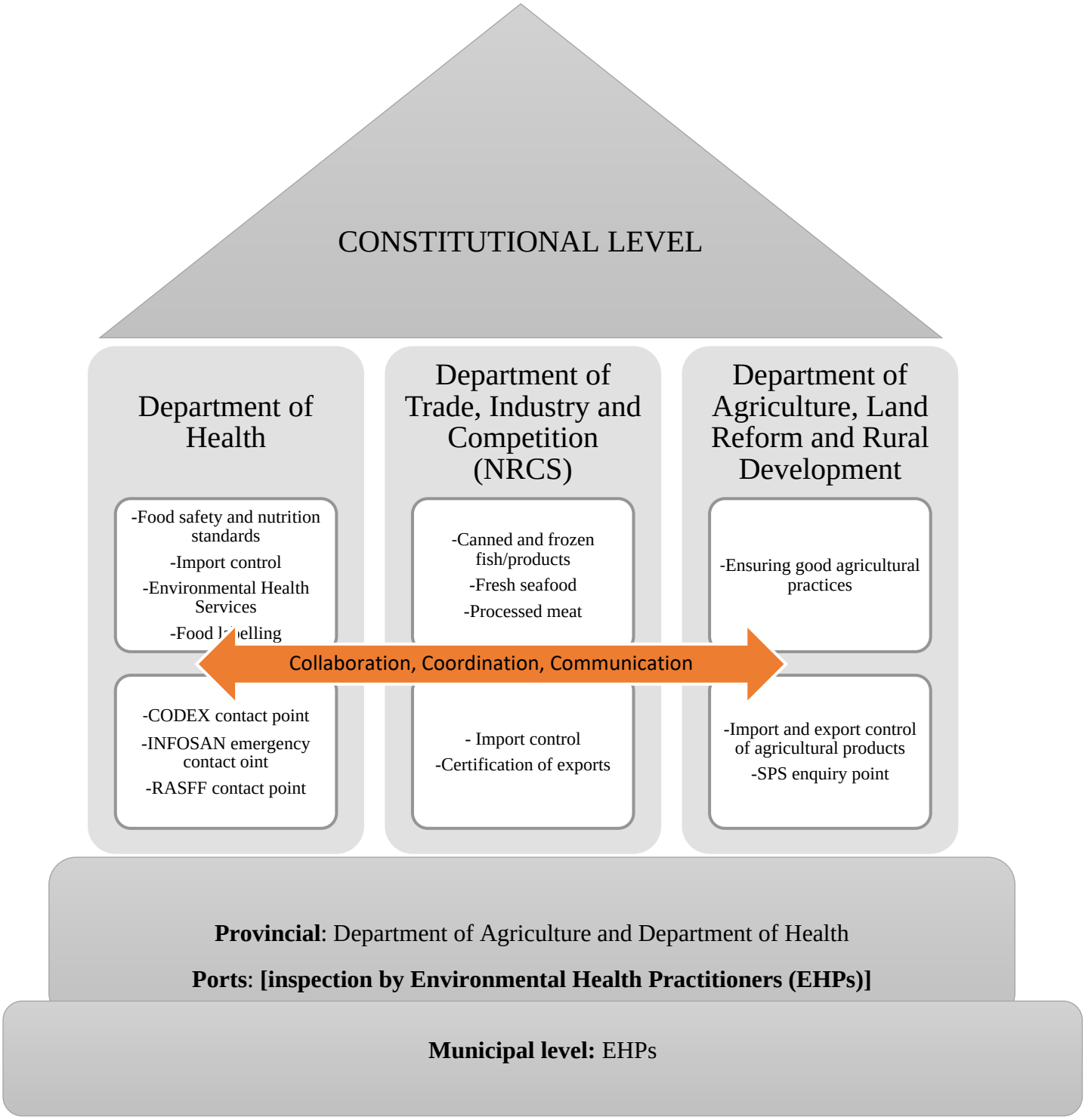

Figure 5.1: South Africa Food safety departments

Source: Author's compilation

The national government is responsible for setting and implementing national policies and laws, as well as ensuring that these policies and laws are conducted by the other two spheres of government. The national government is funded by taxes collected from citizens and businesses, as well as grants from international organizations (National Treasury, 2001 and 2022).

On the other hand, the provincial government is responsible for implementing national policies and laws within its authority and providing essential services such as health care, education, and transportation (National Treasury, 2001 and 2022). The provincial government is funded by the national government through a formula-based grant system (National Treasury, 2022).

Local government is responsible for providing essential services such as water and sanitation, waste management, and housing to the communities within its district ((National Treasury, 2001) and enforcing the laws set by the national and provincial governments within its area.

Table 5.1 outline stakeholder groups and representatives to provide a clear understanding of South African food safety governance.

Table 5. 1**:** Food safety Stakeholders and their roles

Stakeholder groups	**Stakeholder representatives**	**Roles**
Government	Department of Health Department of Agriculture, Land Reform, and Rural Development Department of Trade, Industry, and Competition South Africa Bureau of Standards National Metrology Institute of South Africa South African National of Authority Specifications National Regulator for Compulsory Specifications Agricultural Research Council National Consumer Council	Developing policies, regulating the industry, and enforcing the policies
Industry (retailer and manufacturers)	Retailers (e.g., Spar, Woolworths, etc Manufacturers (e.g., Tiger brands,	Implementing the regulations, and funding certain community or

	RCL Foods, etc) Association for Dietetics in South Africa Consumer Goods Council of South Africa South African Association for Food Science and Technology Business Unity South Africa Red Meat Industry Forum Private laboratories	research projects.
Civil society	Hahns and Hahns Attorneys Media (Food focus media, daily maverick, News24, etc) Informal Economy Development Forum Association for Dietetics in South Africa South African Association for Food Science and Technology	Advocating for the production and selling of safe food
Research institutions	University of Pretoria (Department of Plant and Soil Sciences) The University of Stellenbosch (Department of Food Sciences University of Free State (Department of Microbiology and Biochemistry) Academy of Science of South Africa	Conducting research in various aspects related to food safety

Note: The universities undertaking research related to food safety are not limited to the list mentioned above in the table. The universities mentioned in the table are at the forefront of topics related to food safety.

Source: Author's compilation

5.2.1 National government stakeholders

As mentioned in section 5.2 three government institutions are responsible for food safety in South Africa. Namely the DoH, DALRRD, and DTIC, and in some instances, these ministries also appoint independent agencies to undertake specific regulatory functions (Sikuka, 2020).

Department of Health

The DoH operates under the National Health Act (2003), which stipulates that the department provides a framework for a structured and uniform health system for South Africa (DoH, 2023). The act sets out the responsibilities in the provision of health services on the national,

provincial, and local governments. The DoH is responsible for the health sector in South Africa and is the principal food control regulatory body (DoH, 2020). Furthermore, DoH is primarily responsible for establishing good food manufacturing practices and other production standards such as packaging and labelling requirements and hazard analysis critical control point (HACCP) programmes. However, the documentary evidence for HACCP certification is produced by the certifying body accredited by SANAS (SANAS, 2020).

The DoH is responsible for the analysis and approval of the maximum residue limits (MRLs) for pesticides and the chemicals and metals that may be present in foodstuffs (DoH, 2023). The Department of Health (DoH) has the primary responsibility of overseeing the general coordination, establishment of norms and standards, international collaboration and communication, as well as providing assistance to provinces and local authorities (DoH, 2020). As shown in Table 5.2 the Food Control directorate within the department is also responsible for ensuring the safety of food in South Africa (DoH, 2023; Sikuka, 2020).

Table 5. 2: Responsibilities of the Department of Health food control division

Division	**Responsibilities**
Food Control	Develop food legislation and regulations related to food safety, food labelling, and advertisement.
	Audit and support Port Health Services, and Municipal Health Services.
	Evaluate risk assessments related to agricultural chemicals and food produced through biotechnology for DALRRD.
	Function as South Africa's National Contact Point for the International Food Safety Authorities Network (INFOSAN); the European Union Rapid Alert System for Food and Feed (RASFF), and the joint FAO/WHO Codex Alimentarius Commission (CAC).

Source: Sikuka (2020)

The DoH along with DALRRD and NRCS are responsible for Port Health Service through provincial health authorities. This encompasses tasks like the regulation and management of imported food items. Local authorities and municipalities are also required to render health services as per the National Health Act 2003.

In the 2022/23 financial year, currently in parliamentary processes. DoH conducts advocacy and awareness sessions through various channels, addressing risk factors like obesity and tobacco use. The obesity prevention and control strategy was updated and approved by the National Health Council, with webinars held to raise awareness about obesity and its control approaches (DoH, 2023).

In the 2021/22 financial year, it administered the Foodstuffs component of the Foodstuffs, Cosmetics and Disinfectants Act, ensuring food safety. Working documents were developed for stakeholder consultation on additives and pesticide residue levels. A seminar sought feedback on research for a proposed front-of-pack labelling system. Campaigns included National Nutrition Week, emphasizing "eat more vegetables and fruit every day" to reduce NCD risk factors. Provinces participated through infographics, social media, interviews, and talks at various locations. The sub-programme also hosted a World Obesity Day webinar in collaboration with other departments and NGOs to promote healthier choices (DoH, 2022).

Department of Agriculture, Land Reform, and Rural Development

The Department of Agriculture, Land Reform and Development (DALRRD) is responsible for overseeing and supporting South Africa's agricultural sector, as well as, ensuring access to sufficient, safe, and nutritious food by the country's population. DALRRD gives guidance for the usage of pesticides (DAFF, 2020). Furthermore, the DALRRD is South Africa’s sanitary and phytosanitary (SPS) contact point, which means it distributes SPS notifications to interested stakeholders within South Africa, requests further details on other countries’ SPS notifications received, and coordinates South African comments on other World Health Organization (WTO) Member countries’ SPS notifications (DAFF, 2015).

DALRRD is the “national body responsible for the monitoring and enforcement of certain aspects of food safety such as food safety and quality assurance, plant health, plant production, animal health, genetic resources, inspection services, and agriculture input control” (DAFF, 2018). Table 5.3 shows the unique set of responsibilities for each aspect (Sikuka, 2020).

Table 5. 3: Department of Agriculture, Land Reform, and Rural Development divisions and their responsibilities

Division	Responsibilities
Food safety and quality assurance	Regulate the quality, standards, and food safety of agricultural products and food producers. Regulate the import, export, and certifications of alcoholic products. Appoint and oversee the following agencies: -The Perishable Products Export Control Board (PPECB): to conduct inspections, certification, and chain management for producers and exporters of perishable food products. -South African Meat Industry Company: classification and marking of meat intended for sale in South Africa. -Product Control for Agriculture (PROKON): for potatoes intended for sale on the local market.
Plant health	Regulation and enforcement of phytosanitary measures. Registration and approval of facilities (Production Units (PUC), Pack houses (PHC) and Inspection Points) to enable the Agricultural Products Inspection Services (APIS) and PPECB to conduct inspections. Serve as the National Plant Protection Contact Point (NPPCP).
Plant production	Develop and promote national policies, norms, standards, and guidelines to support the sustainable production of grain crops, fruit, vegetable, industrial crops, ornamental crops and indigenous crops. Regulate plant varieties and propagating material. Regulate the importation of listed and unlisted varieties. Registration of premises for seeds, nurseries, and laboratories for seed testing and production.
Animal Health	-Promote awareness of, prevent, and control animal diseases. -Formulate policy and reduce risks in the import and export of animals and animal products. -Render epidemiological services for early warning and monitoring of animal diseases
Genetic resources	-Develop and implement policies, legislations, strategies, and standards on the management of genetic resources for food and agriculture. -Regulate and promote the availability of propagating material of genetic resources for food and agriculture.
Inspection services	-Render risk management inspection/auditing services at official ports of entry points. -Provide national plant quarantine and diagnostic services. -Render animal quarantine and inspection services.
Agriculture input control	Regulates the manufacturing, distribution, importation, sale, use, and advertisement of fertilizers, animal feeds, pesticides, and stock remedies as well as the operation of sterilizing plants and pest control operators.

Source: Sikuka (2020)

In financial year 2020/21 DALRRD established a program with is to oversee a range of areas including livestock production, game farming, animal and plant health, as well as natural resources and disaster management. It consists of subprograms focused on Plant Production and Health, Animal Production and Health, Inspection and Quarantine Services, and Natural Resources and Disaster Management. These subprograms aim to develop policies and standards, promote livestock production and health, ensure compliance with food safety regulations, and facilitate the sustainable use of natural resources while coordinating disaster management efforts. The program contributes to institutional outcomes such as increased agricultural sector production and enhanced biosecurity with effective disaster risk reduction. Despite challenges posed by COVID-19 restrictions, the program successfully fulfilled its mandate, conducting surveillance on pests and animal diseases to bolster biosecurity and disaster risk reduction. However, engagement with farmers, including assessments, briefing sessions, and mobilization efforts, faced setbacks due to pandemic restrictions, resulting in unmet targets (DALRRD, 2021).

Department of Trade, Industry, and Competition

The DTIC is responsible for commercial policy and industrial policy. Some government department appoints agencies to undertake some of the responsibilities, the DTIC appointed four subordinate agencies and their activities directly affects the food industry activities (Sikuka, 2020).

The agencies that fall under the authority of the DTIC are, (i) the South African Bureau of Standards (SABS), (ii) the National Regulator for Compulsory Specifications (NRCS), (iii) the South African National Accreditation System (SANAS) and (iv) the National Metrology Institute of South Africa (NMISA). Together the DTIC and the agencies involved in promoting consumer protection, promoting, and regulating international trade, Empowerment, implementing commercial law (including companies' law and intellectual property law), and economic development, Black Economic (DTIC, 2021). These agencies are classified as Schedule 3A public entities in terms of the Public Finance Management Act (PFMA) (Act No. 29 of 1999).

In the financial year 2022/23 DTIC published a number of opinion pieces sharing knowledge and experiences in different topics including on ‘Africa agricultural intra-trade to advance food security and Industrial development’, ‘Black Industrialists Programme’ and ‘Evaluating the poultry feed industry and alternatives for the future’. In 2022, they also had a briefing with the food and beverages sectors on the possibilities and challenges to sugar beneficiation (DTIC, 2023).

5.2.2 Provincial and local government

Of the three-government department in South Africa responsible for food safety, only two operate at the provincial level. That is the DoH and the DALRRD. The provincial government is to coordinate food safety efforts and ensure that adequate resources are allocated for food safety purposes for the local government (The Food Safety Network, 2020). The guidelines further note in case the local authority is not able to render the specific service required, the provincial health authority becomes responsible. The responsibility of the provincial Health Departments related to food safety control is to:

- Support, monitor, and evaluate district (local) level services.
- Provide certain specialist provincial-level services, such as Port Health Services
- Co-ordinate health services within each province
- Formulate norms and standards for district health services.
- Formulate protocols and strategies, such as these guidelines, for health programmes (The Food Safety Network, 2020)

At the local level, the responsibility for food safety is primarily the responsibility of the Environmental Health Practitioners (EHPs), who are responsible for conducting food safety inspections; ensuring that food establishments comply with relevant food safety regulations and guidelines and investigating and taking remedial action of all food safety complaints received. This may include conducting regular inspections of food establishments, as well as responding to foodborne illness outbreaks and other food safety emergencies (DoH, 2004a).

5.2.3 Agencies

In South Africa, four key agencies work together to ensure the country’s food supply is safe and meets the necessary standards. These agencies are the NRCS, SABS, SANAS, and

NMISA. They all fall under the DTIC mandate; however, they regenerate their revenue through levies and other service fees they charge.

***South Africa Bureau of Standards*:**

The SABS is a national standardisation institution in South Africa operating under the DTIC, which has its statute and is subject to the national government's policy mandate. The institution was derived from the Standards Act (Act No. 24 of 1945) and continues to exist under the Standards Act (Act No. 8 of 2008). The SABS is the national point of entry for the WTO Technical Barriers to Trade (TBT) system (SABS, 2020).

The SABS has an important mandate to develop, promote and maintain South African National food safety Standards, local content verification services, laboratory services, testing, training, and certification of food and food products (SABS, 2020). SABS under the authority of DTIC are to ensure proper implementation of food safety standards.

***National Metrology Institute of South Africa*:**

NMISA was established under the Measurement Units and Measurement Standards Act 18 of 2006 (The Measurement Act) (NMISA, 2019). NMISA is mandated to provide not only the physical measurement standards but to develop and manufacture Certified Reference Materials (CRMs) for testing and manufacturing (NMISA, 2019). Certified reference material is a particular form of measurement standard used to check the quality and metrological traceability of products and is widely used in the calibration of laboratory apparatus (Karambelkar, 2018). NMISA not only provides physical measurement standards but also develops and manufactures calibration solution conformity assessment services and certified reference material for food safety testing (NMISA, 2019). According to the annual report by NMISA "their products and services are the tools that chemical and food laboratories use to ensure the quality of the measurements they deliver in support of food safety" (NMSA, 2019).

***South African National of Authority Specifications*:**

SANAS is the sole national accreditation body established under the Accreditation for Conformity Assessment, Calibration, and Good Laboratory Practice Act, 2006 (Act No. 19 of 2006). The institution has the mandate to provide an internationally recognised and effective accreditation and monitoring system of conformity assessment bodies for the Republic of South Africa (SANAS, 2020). SANAS accredit bodies that confirm the quality and safety of

various products including food and food products and produce documentation as evidence, for instance, a HACCP certificate. HACCP "is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement, and handling, to manufacturing, distribution, and consumption of the finished product" (Food and Drug Administration, 2018).

***National Regulator for Compulsory Specifications*:**

The National Regulator for Compulsory Specifications (NRCS) promotes public health and safety, environmental protection, and fair trade through the administration, maintenance, and enforcement of Compulsory Specifications (CSs) and Technical Regulations (TRs) (NRCS, 2019). The NCRS took over the role previously held by the SABS, which is to enforce and set standard specifications for both locally produced and imported seafood and canned fish products (Siphugu, 2011). The Food and Associated Industries division of NRCS regulates frozen and canned fish and fishery products smoked snoek, and canned meat. The division conducts surveillance inspections on locally produced and imported products (Siphugu, 2011). Both local and imported goods are monitored, and samples of food products are taken in accredited surveillance facilities and submitted for testing in accredited testing laboratories. Part of the physical inspections is to check the label and labelling of the products as well as the composition of products in some instances (NRCS, 2019).

***National Consumer Council*:**

The National Consumer Council (NCC) was founded in accordance with Section 85 of the Consumer Protection Act No. 68 of 2008 (CPA), operating under the authority of the DTIC across the entirety of South Africa. The NCC is tasked to:

i. "Conduct investigations against suppliers allegedly and.

ii. Promote the resolution of disputes between consumers and suppliers; and to

iii. Promote compliance with the CPA through advocacy, education, and awareness."

5.2.4 Private sector

In the context of food safety, the private sector entails all food producers, processors, distributors, and retailers (Henson and Hooker, 2001). As their food safety objective, the private sector is to ensure that they produce and distribute food products that are safe for consumption and to maintain the trust of consumers in their products (Gardner, 1993). Thus,

the food safety responsibility of the private sector includes implementing good manufacturing practices, conducting regular food safety audits, and ensuring that their food products meet relevant food safety standards as well as implementing food safety standards and ensuring that their food products are safe for consumption (Gardner, 1993).

***Retail*:**

In South Africa, we have incredibly concentrated food systems and food supply chains (Ho, 2021b; Ledger, 2016). The South African food retail market is highly concentrated with the top companies namely Spar, Shoprite, Woolworths, checkers, and Pick n Pay which falls under the formal sector. There is also a huge informal food sector discussed on the section below.

These formal retailers operate under different companies such as Woolworth holding group, Shoprite holding group, and Walmart (Woolworth Holding Group, 2022; Shoprite Holding Group, 2022). The above-mentioned retailers have several stores across South Africa and other Southern African countries, generating turnover that ranges between 93 and 130 billion in 2021. To ensure the production, transportation, and trading of safe food, the retailers claim to perform an on-site audit to verify the implementation of good agricultural practices (GAP) by their suppliers (Spar, 2022). As such, retailers are said to adopt the highest health and safety standards to prevent contamination (Gardner, 1993).

Greenberg (2016) argues that the food industry has great power in influencing consumer perceptions of food quality and health, from input into neutral dietary-based guidelines to advertising. Retail business is the fast-moving consumer goods industry and some of the retail groups operate through multiple store formats under assorted brands. During Covid 19 some of the retailers resorted (Checkers with 60 seconds, Pick n Pay with Asap, and Woolworths with Woollies dash) to online platforms and the platform is growing so fast.

Retail shops over the years have successfully pursued a clear and customer-led turnaround strategy through investment with other stakeholders most importantly government (Schoenberg et al., 2013). Some of the retailers have extensive engagements with government departments and regulatory authorities in all the markets in which they operate (Competition Commission South Africa, 2019). Key issues include maintaining food safety and product integrity, and maximising opportunities for investment, and employment. The industry claims to maintain a productive dialogue with regulatory authorities (Ho, 2021b). However, (Lopez-

Gonzalez, 2021b) an article in the daily maverick claims “food companies use every means at their disposal – legal, regulatory and societal – to create and protect an environment that is conducive to selling their products in a competitive marketplace”. Karim *et al*. (2020) concur that the industry uses public-private partnerships to undermine regulations. On the same note (McMahon, 2013) adds that big food companies are powerful and have strong ties to influence the national government. They have a role to play in the failure of public regulatory responses to health problems. On the other hand, the industry frames itself as part of the solution to a health problem such as obesity. The industry has all the power to positively impact public health, however, this only exists on paper. For instance, in the sugar taxing case, the industry submitted their highlighted support for action to prevent obesity and emphasised existing partnerships with the DoH to improve South African diets (Karim *et al*., 2020). The entrenchment of the industry in the DoH’s policymaking process and its influence were identified as a major source of corporate political activity (Karim *et al*., 2020). The industry and the professional association representing the industry and cane growers claim that there is no evidence sugar is the cause of obesity and other non-communicable diseases and it is only poor choice made by individuals and is it their responsibility to make better choices (Lopez-Gonzalez, 2021a; Lopez-Gonzalez, 2021b; Myers *et al*., 2017). Instead, the big argument made by the industry and association was the job loss and price hikes on products containing sugar (Karim *et al*., 2020; Lopez-Gonzalez, 2021b). This suggests for big food companies, business matters over the interest of the public.

***Processors and manufacturers*:**

The biggest well-known leading processing and manufacturing companies in South Africa include but are not limited to RCL Foods, Tiger Brands, and Rhodes Foods which falls under the formal sector. These companies control 80% of the food production in South Africa (Ho, 2021b) and are represented by the Consumer Goods Council of South Africa (CGCSA). Ledger, (2016) argues that it is evident that there is a close link between monopolisation or concentration of the food supply and choice (Ho, 2021b) since retailers also control 80 % of the grocery outlets to which the manufactured food is supplied. These manufacturers produce a diverse array of branded and private-label food products across multiple categories, including basic staples and premium specialty items, which are subsequently distributed to retail and food service customers.

Same strategy as the retailers, manufacturers, and processors partner with the government in establishing programmes that are claimed to benefit the communities or contribute to solidarity funds (Rouviere and Royer, 2017). On the other hand, food processors produce highly processed foods which are highly profitable, while health policies are trying so hard to eliminate the availability of unhealthy foods. Thus, this caused a conflict of interest between health-related policies and economic policies in particular (Thow *et al*., 2017). Thow and Mc Grady (2014) contend that the political influence exerted by investors with substantial investments at various stages of the supply chains creates a challenging situation for the government because they might negatively affect the profitability of the investments.

***Informal sector*:**

The Institute for Economic Justice (2018) defines the informal trading sector as the economic activities conducted by individuals and groups, involving the exchange of legitimate goods and services, within unconventional public and private spaces. This sector is characterised by its unorganised nature and the absence of regular business registration. In its most basic, informal trading takes place on the streets and pavements, on private property, and tends to require little more than the actual goods and services to set up (Dipeolu *et al*., 2007).

Food traded on the streets includes fruits and vegetables (fresh produce), liver Kebabs, chicken feet and gizzards, soft drinks, sweets and snacks, cooked foods, and raw and ready-to-eat meat (Masonganye, 2010). And these foods are sold through several types of informal trading as mentioned below:

- Streets and pavements (no structure): trading directly on the sidewalk or open ground is an effortless way to display one's goods without needing to transport extensive trading infrastructure. However, these traders are dependent on pleasant weather for trading and need to transport the goods to off-site storage each day.
- Mobile trading: trading on a bakkie or mobile object.
- Temporary furniture: using tables, crates, or shelves. Often umbrella is also used to provide shade from the sun.
- Semi-fixed structure: tents.
- Fixed structure: shack, containers, and caravan.
- Seasonal, night markets, and periodic markets (Masonganye, 2010).

In the 21st century, street foods have grown to be considered important in the informal sector (Dipeolu *et al*., 2007) compared to the 1950s. Despite limited quantification and accurate

statistics, the informal sector provides jobs to 71. 3% of people (Stats SA, 2020). Greenberg (2015) notes that the informal sector directly serves over 50% of all black South African who are economically marginalised. Over 40% of households in South Africa spend 60% of their total household income in the informal sector on food items such as vegetables, fruits, canned foodstuff, and cooked meals which are sold at spaza shops, fast food stalls and containers (Fourie, 2018). In many cases, the informal sector does not fully comply with food safety regulations due to various reasons, including limited knowledge and awareness of the regulations, lack of resources and infrastructure, and difficulties in implementing and enforcing such regulations.

The informal sector has been overlooked by the government in the past and there is clear discrimination in the treatment of the informal sector, including the manner of the enforcement of regulations by a local government (Ho, 2021a; Torero *et al*., 2006). According to Ho (2021a), this is "particularly because of how local government has regulated the space for trading". Fourie (2018) asserts that the informal sector was part of several initiatives such as the rural development programme, growth employment, and redistribution strategy, and the accelerated and shared growth initiative for South Africa, however, the new growth path fails to refer to the informal sector. This absence is executed in the national development plan's section on the economy. In the meantime, the national development plan sets a target for the informal sector to create 2 million additional employment opportunities by the year 2030 (NDP, 2015). The same goes for the big corporations, they use of informal sector for their operation and claim their commitment to empowering the black economy, while it is simply a tax evasion strategy (Bennie *et al*., 2023).

Additional to the above-mentioned issue, is a considerable obstacle to adequately addressing food safety concerns which is a result of the lack of accurate data on the full extent and cost of foodborne diseases that occur as a result of the unfavourable working environment in the informal sector (WHO, 2022). This data can be used as evidence which would enable policymakers to set public health priorities and allocate resources. Considering these obstacles, it can be difficult for the informal sector to effectively influence food safety governance like the industry since their presence in food safety governance discussions and platforms is limited.

5.2.5 Civil society

Civil society is also known as the 'third sector' (after government and commerce). The definitions are changing as the nature of civil society is evolving in an impactful and dynamic way. It now includes an ever-wider range of organized and unorganized groups (World Economic Forum, 2023). This study adopts the definition by the World Bank which refers to civil society "as a wide array of organizations: community groups, non-government organizations (NGOs), labour unions, indigenous groups, charitable organizations, faith-based organizations, professional associations, and foundations. In this case, we investigate the consumers, forums, and associations which present consumers and business groups in ensuring the production and consumption of safe food as well as the awareness of food safety rules and regulations. Thus, zoom into the Association for Dietetics in South Africa (ADSA), and the South African Association for Food Science and Technology (SAAFoST).

On the other hand, SAAFoST is a non-profit national association for food and technology that is concerned with advancing knowledge of food science and technology (SAAFoST, no date). The SAAFoST is a member of the Food Legislation Advisory Group within the Department of Health (DoH). In 1995, SAAFoST, in collaboration with the South African Dietetics Association, the DoH, and the South African National Consumer Union, established the Food Advisory Consumer Service. The purpose of this service is to provide accurate and scientifically supported information on food-related matters (Thow et al., 2017).

The Association for Dietetics in South Africa (ADSA) plays a significant role in modern medicine in both the public and private health sector (ADSA, no date), also, ADSA influences government food policy and has ties with food corporations (Ho, 2021a). Lopez-Gonzalez (2021a) argues that government and the industry hold meetings to discuss important food safety policy issues without inviting civil society and researchers. Canfield *et al*. (2021) argue that civil society lacks a voice in policy decisions. Policy outcomes through heightened civil society consultation will necessitate elevated capacity for civil society lobbying and communication in the food policy spaces. Several authors including Swinburn *et al*. (2015), Huang *et al*. (2016), and Schram *et al*. (2016) as quoted in Thow *et al*. (2017) contend that "the capacity of civil society to both support public interest and engagement with food security policy issues and bring key issues to the attention of policymakers has been identified as a significant facilitator of policy action globally". The latter is no different in the more specific issue of food safety.

5.2.6 Research institutions and universities

Academia and research institutions are the stakeholders in food safety. The research institutions help knowledge mobilization and innovations, strengthen capacities, and provides evidence-based solutions to policy process (FAO, 2021). Academia and research institutions such as the Agricultural Research Council (ARC), the University of Stellenbosch, and the University of Pretoria engage in multi-stakeholder dialogues on food safety issues. Each of these institutions has different relations with different stakeholders and plays significant roles in knowledge development and exchange. However, in some instances, research institutions are often not consulted or involved in policymaking decision processes.

The ARC is a public institution established according to the Agricultural Research Act 86 of 1990. As per the Public Finance Management Act, 1999 (Act No. 1 of 1999, amended by Act No. 29 of 1999), the ARC is classified as a schedule 3A public entity (ARC, 2013).

The South African government, represented by the DALRRD and the Department of Science and Innovation (DSI), has entrusted the ARC with the responsibility of managing and preserving National Public Goods Assets. These assets include national collections, such as gene banks, consisting of animals, bacteria, animal databases, range and forage gene banks, fungi, genetic material, insects, plants, yeasts, viruses, and more (ARC, 2013). These collections serve as valuable sources of genetic material for research and development, scientific reference, and future utilization. They also play a crucial role in the restoration of planting and breeding stock for national recovery in the aftermath of natural disasters.

The Centre of Food Safety at Stellenbosch University in partnership with the food industry and the companies affiliated includes but is not limited to Distell, RCL Foods, tiger brands, Woolworths, crown nation, and innovative solutions. The centre allows the above-mentioned stakeholders to develop and exchange knowledge, expertise, and experience in the areas related to food safety and food processing by sharing their science-based research.

The University of Pretoria Institute for Food, Nutrition, and Well-being (IFNuW) which was established on food-related challenges was also looking into food safety as one of its five institute research themes, and the institute was closed in November 2019 (IFNuW, 2013). The Department of Science and Innovation/National Research Foundation Centre of Excellence in Food Security was established in 2014 with a specific research theme on food safety. All these institutions along with their capabilities are doing ground-breaking scientific

research and some of which can be significant to address some policy issues, but researchers are hardly invited to the decision table.

5.2.7 Relationships between stakeholders

The lack of transparency in food safety governance in South Africa (Moropo, 2018) and the lack of capacity from the government side (Hunter-Adams *et al*., 2018) are of concern to the stakeholders. According to respondent 16 (academic) the temporary appointments of leadership in the department are a starting point for a disaster. The DALRRD has an acting director, and acting managers and deputies under him (DALRRD, 2022), hence, in their position it is difficult to make long-term decisions in any circumstance. Furthermore, in recent years there has been a shuffling of health ministers (Low, 2018) and it has caused messy disarray in policy and legislation that regulate processed food manufacturing and retailing (Ho, 2021b). She continues to argue that since the exit of the former health minister Aaron Motsoaledi, there has been a backslide in "prioritising regulations to coerce manufacturers and retailers to reduce or eliminate unhealthy ingredients in their food and beverage offerings and to change how these products are marketed to consumers" (Ho, 2021b). Government actions of dragging their feet on compelling food manufacturers to communicate the formulation in their processed food are letting the consumers down and letting the industry off the hook (Reardon *et al*., 2021; Ho, 2021b).

Secondly, the lack of coordination and communication between the different spheres of government is another issue (Food Imbizo, 2022). "Coordination is not only relevant locally, but it also applies to the international stage. Coordination is witnessed in the trading of goods among trading partners. Coordination in the export and import sphere is usually smooth due to the incentive of market access involved. In the same manner, there is a need for coordination and commitment to food safety locally" (Food Imbizo, 2022).

"The lack of communication between the different departments and levels of government involved in the regulation of food safety is a major challenge. The situation in South Africa is that there are three departments involved in food safety, the Department of Health, Department of Agriculture and Land Reform and Rural Development, as well as the Department of Trade, Industry and Competition" (Food Imbizo, 2022).

The lack of coordination and communication is a result of the fragmentation. Fragmentation in South Africa exists as both institutional and legislative (Hunter-Adams *et al*., 2018). Food

safety governance is fragmented in a horizontal sense, consisting of three departments (Boatemaa *et al*., 2019).

Lastly, the government has various partnerships with the industry, not that public-private partnerships are not the significant importance (Karim *et al*., 2020). However, the industry uses these partnerships to manipulate the government and other stakeholders to their advantage (Karim *et al*., 2020). In the South African case, it is more in public health, notwithstanding that the institutional relationships between public and private interests in public health are complex (Karim *et al*., 2020). In some instances, the broader political economy context shapes food safety governance (McMahon, 2013). He further content that, "there are many ways to produce food that is safe to eat. However, there are not many ways of producing food that can be globally traded as safe (Mc Mahon, 2013)." Figure 5. 5 display existing relationships among the food safety stakeholders.

The diagram shows that knowledge goes from the government to the private sector, especially the large corporations, but not only this is different from lobbying. knowledge is all the information that flows from the product companies when they must apply and submit to get a license to operate and the license to sell the products. There is no license given or granted by the Government to any corporation or any company, big or small if the safety studies are not submitted. These studies are knowledge for the government. There is lobbying, and lobbying is not just from large corporations or associations of the private sector towards the government but sometimes lobbying also goes from civil society to national government. if we define lobbying as an attempt to shape policies.

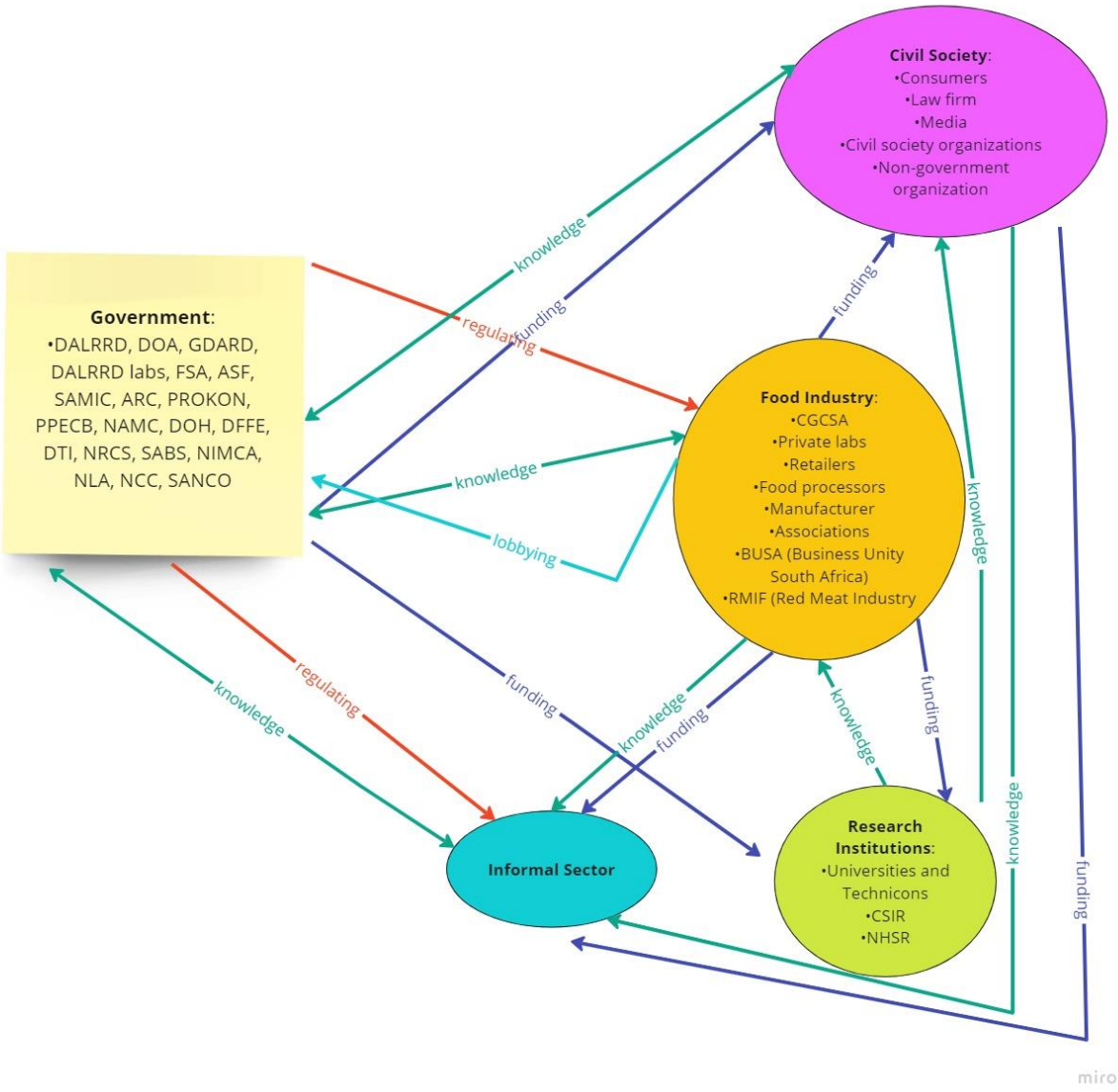

Figure 5.2: Diagram displaying food safety governance stakeholders and the existing relationships among the stakeholders.

Source: Food Imbizo (2022)

There is a link between the informal business and the local government in terms of regulations, even though these businesses have or do not have a license. So even if they do not have a license regulation is still, sometimes, or often applied by the people of local governments underground. For example, street vendors in many cities in developing countries and low- and middle-income countries, even without a license, still are subject to bylaws and rules and are still monitored by local governments and officials. Again, even if there are no

formal licenses, street vendors are already operating in the streets, and local governments should understand the importance of providing training on food safety to these people.

5.2.8 Conclusion

Traditionally, food safety departments were responsible for monitoring food standards and food safety quality attributes. However, things have evolved and so are the responsibilities of the food safety agencies. In South Africa, food safety governance falls under three different government departments and their appointed agencies. Hence, the power for influencing decisions is distributed across these departments. Thus, food safety stakeholders in South Africa include but are not limited to the food industry, civil society, and research institutions each with a unique role to play in the governance of food safety. Amongst these stakeholders, the government and the industry hold more power over other stakeholders to influence decisions related to policy issues. While stakeholders such as civil society and research institutions are hardly invited to the meetings their voices and opinions are also hardly considered important when making policy decisions.

5.3 South Africa's food Safety Legislation

5.3.1 Introduction

This section discusses the basic policies, legislation, and standards as measures for food safety governance in South Africa. In South Africa, the sale of food and other consumable items is controlled by legislation passed by the parliament and stakeholders mentioned in section 1 above (DoH, DALRRD, DTIC, 2013). In South Africa, various food safety legislations have been enacted to protect public health. These food safety legislations go a long way to ensure that food producers and processors maintain high safety standards to promote health. This section will discuss food safety-related policies, legislation, standards, programmes as well as guidelines. Parsons (1995) defines policy "as a statement by the government on what it intends to do, such as law, regulation, ruling, decision, order, or a combination of these." While standards in food safety are the minimum requirements stipulated by food safety agencies to ensure that food is safe at all points along the food chain in both international trade and within nations (Unnevehr, 2003). In terms of legislation and Acts, the two are often used interchangeably, but they are different. Legislation refers to the entire body of laws that are enacted by a government and regulate various aspects of society. It covers all the laws and regulations that are passed by a legislative body, including acts, regulations, and other legal instruments. Acts on the other hand, in the context of food safety,

refer to the pieces of statutory legislation that are enacted by the government to regulate the production, processing, distribution, and sale of food products (FAO, 2003). A guideline is a set of recommendations for practices. The guidelines are based on scientific and technical knowledge and are designed to prevent foodborne illnesses and protect public health (WHO, no date). They can cover various aspects of food safety, including recalls and food control for special events, etc. Lastly, programmes refer to temporary, organised efforts with a specific objective, aimed at improving or implementing measures to ensure the achievement of a certain goal and in this case to ensure (APMG International, 2022) the safety of food products.

5.3.2 Policies

South Africa does not have a specific food safety policy, only related broader policies such as the National Food and Nutrition Security Policy (DSD and DALRRD, 2013). The National Food and Nutrition Security Policy is driven by the constitutional mandate which is The Bill of Rights that states that "the right to have access to . . . sufficient food and water" and that ". . . the State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights" (Constitution, 1996). However, the above-mentioned policy does not address all necessary food safety issues such as outbreaks or foodborne illnesses, etc. Rather, the National Food and Nutrition Security Policy suggested there is a "… *creation of a body that will amalgamate the different entities responsible for implementing food safety regulations*" (DSD and DALRRD, 2013, p17). The mandate of this body will be to "… *develop a food safety policy for South Africa to regulate domestic and international food safety standards obligations, to develop and/or review the current legislation regulating food safety, integrate the enforcement of regulations industry, and harmonise the domestic food safety standards with international standards*" (DSD and DALRRD, 2013, p17). However, this body was never implemented until the present and the reason is not clear.

The Ministry of Health (2022) notes that the development and implementation of the National Food Safety Policy can help reduce the burden of foodborne diseases and other related problems in the country and provide a basis for the establishment of objectives, requirements, and guidance for application to specific sectors of the food chain. The question that readily comes to mind is why it has taken South Africa so long a time to develop and implement a national food safety policy.

5.3.3 Acts

This includes Acts governing food and drugs, standards, health, and safety of animal and plant products. Thus, the legislation relevant to food safety includes but not limited to Agricultural Products Act 119 of 1990 (Republic of South Africa, 1990); Animal Diseases Act 35 of 1984 (Republic of South Africa, 1984); Health Act 61 of 2003 (Republic of South Africa, 2004); Meat Safety Act 40 of 2000 (Republic of South Africa, 2000); Standards Act 8 of 2008 (Republic of South Africa, 2008); National Regulator for Compulsory Specifications Act 5 of 2008 (Republic of South Africa, 2008); Consumer Protection Act 68 of 2008 (Republic of South Africa, 2009); Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 (Republic of South Africa, 1947) as well as The Foodstuff, Cosmetics, and Disinfectants Act 54 of 1972 (Republic of South Africa, 1972). These legislations are in place to protect the health and safety of the South African public through the regulation of food, drugs, hygiene, sanitation, household chemical substances, and cosmetics. The legislations are articulated below (Table 5.4-5.6) and are categorised according to their directorate.

The Department of Health is entrusted with the normative duties of enforcing legislation pertaining to food products, following the guidance provided by the Recommended International Code of Practice set forth by the Codex. This includes developing and publicising regulations for food safety, food labelling, and related matters as shown in Table 5.4 below.

Table 5. 4**:** Food safety-related legislation under the Department of Health

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
The Foodstuff, cosmetics, and Disinfectants Act	Act 54 of 1972	This act governs the manufacture, sale, and importation of all foodstuffs from a public health point of view; and provides for incidental matters	Includes food safety issues related to the labelling of food and food products; as well as the use of food additives, preservatives, and antioxidants.	Training of inspectors Products and premises audit and inspections Laboratory services Food export health certification Registration of products and premises. Food safety control	Throughout the food chain
The Health Act	Act 63 of 1977	To provide for measures for the promotion of the health of the inhabitants of the Republic; to that end to provide for the rendering of health services; to define the duties, powers, and responsibilities of certain authorities which render health services in the	Deals hygienic food handling, and inspection of food handlers, food premises, and the packaging of food	Food inspection Food hygiene control and preparation of food establishment sanitation ordinances	Entire food chain

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
		Republic; the primary objectives are to ensure the effective coordination of healthcare services, revoke the Public Health Act of 1919, and address any ancillary matters that may arise.			
The International Health Regulations Act	1974	This act applies to the International Health, Regulations, adopted by the World Health Assembly, In the Republic, and to provide for Incidental matters.	The act provides for the approval by the Department of Health of the source of food for consumption at ports, airports, on vessels, and aircraft, as well as for the inspection of such premises and the sampling of food by local authorities	-Inspection of premises and sampling -Food safety control	Entire food chain except for primary production

Source: Author's compilation

Department of Agriculture, Land Reform, and Rural Development's normative responsibilities are monitoring and enforcement concerning food safety, various aspects are encompassed, including animal health, plant health, veterinary public health, quality assurance for food safety, and agricultural products inspection services. through the Act of Parliament (Siphugu, 2011) as shown in Table 5.5 below.

Table 5. 5**:** Food safety-related legislation under the Department of Agriculture, Land Reform, and Rural Development

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
Agricultural Product Standard Act	Act No. 119 of 1990	To provide for control over the sale and export of certain agricultural products and other related products; and for matters connected therewith.	Deals with hygiene and food safety of regulated agricultural food products of plant origin for export.	Phytosanitary issues, plant health, and plant protection Pesticide registration Export certification	Primary production and processed products for export
Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act	Act No. 36 of 1984	To provide for the appointment of a Registrar of Fertilizers, Farm Feeds, and Agricultural Remedies; for the registration of fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants, and pest control operators; to regulate or prohibit the importation, sale, acquisition, disposal or use of fertilizers, farm feeds, agricultural remedies, and stock remedies;	Permits the usage of tested and registered chemical remedies, fertilizer, and pesticides that will bring no harm to consumers of the crop produced.	Laboratory services Products registration	Primary production
Animal Diseases Act	Act No. 35 of 1984	To· provide for the control of animal diseases and· parasites, for measures to	Ensure safe meat and animal products for both human and animal	Animal Health Veterinary drug control	Primary livestock production and animal produce

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
		promote animal health, and for matters connected therewith.	consumption by reasons of diseases	Animal traceability	
Meat Safety Act	Act No. 40 of 2000	To provide for measures to promote meat safety and the safety of animal products; to establish and maintain essential national standards in respect of abattoirs; to regulate the importation and exportation of meat; to establish meat safety schemes; and to provide for matters connected therewith.	Concerns with the safe handling of meat and animal products in abattoirs as well as abattoir inspections	-Meat hygiene -Abattoir inspections -Food safety and quality	All meat except processed meat and processed meat products

Source: Author's compilation

Department of Trade, Industry, and Competition normative responsibilities are shared amongst the food safety agencies under the authority of the DTIC. Each agency has its own unique set of responsibilities. The responsibilities include consumer protection, maintenance of legal metrology, eliminating counterfeit goods, promoting, and developing standards as well as amending laws related to sugar and liquor. Table 5.6 shows the legislation under the constitutional mandate of the DTIC and the appointed agencies.

Table 5. 6**:** Food safety-related legislation and agencies under the Department of Trade, Industry, and Competition

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
Consumer Protection Act	Act No. 68 of 2008	Promote a fair, accessible, and sustainable marketplace for consumer products and services, and for that purpose establish national norms and standards relating to consumer protection; provide for improved standards of consumer information; prohibit certain unfair marketing and business practices; promote responsible consumer behaviour; promote a consistent legislative and enforcement framework relating to consumer transactions and agreements; establish the National Consumer Commission (NCC); and repeal certain laws.	Addressing a significant concern in food safety, such as the labeling of genetically modified products, particularly when their content exceeds five percent.	Product recalls	All food value chain system
Counterfeit Goods Act	Act No. 37 of 1997	Strengthen prohibitions on trade in counterfeit goods; confer powers on inspectors and the police to enter and	Deals with one the especially prominent issue of food safety such as counterfeit food,	Product recall Disposal of unsafe	All food value chain system

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
		search premises, with and without a warrant; and confer powers on customs and excise to seize and detain suspected counterfeit goods.	tampering with food packaging, and expiry dates	counterfeit goods Inspections	
Legal Metrology Act	Act No. 9 of 2014)	Provide for the administration and maintenance of legal metrology technical regulations to promote fair trade and protect public health and safety and the environment and provide for matters connected therewith.	Related tools and methods used in food laboratories to analyse food contaminants to ensure food safety and protect public health	Laboratory analytical report Contaminants analysis	Entire food chain except for production
Measurement Units and Measurement Standards Act	Act No. 18 of 2006	Provide for the use of the measurement units of the International System of Units; provide for the designation, keeping, and maintenance of national measurement units and standards; provide for the establishment and functions of the National Metrology Institute of South Africa	Design, and usage of measurement units to ensure the required and acceptable amount, weight, and size of GMOs, preservatives, and additives content allowed in food and food product	Control GMOs Food safety control	Entire food chain

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
		(NMISA); and provide for the repeal of certain laws.			
National Regulator for Compulsory Specifications Act	Act No. 5 of 2008	Provide for the administration and maintenance of compulsory specifications in the interest of public safety, health, and environmental protection; and provide for the establishment of the National Regulator for Compulsory Specifications (NRCS).	Examine locally manufactured and imported seafood and canned fish product for quality, safety, and compliance checks and provide health certificates as per the foodstuff cosmetic, disinfectant act	Food and premises inspections Regulation	Entire seafood and processed meat products value chain
Standards Act	Act No. 8 of 2008	Provide for the development, promotion, and maintenance of standardisation and quality in connection with commodities and the rendering of related conformity assessment services. Provide for the continued existence of the South African Bureau of Standards (SABS) as the peak national institution; provide for the repeal of the	Develop food safety standards that are enforced by the government and apply to the industry, government, and the public.	Standard setting Training for industries on quality and safety assurance	Entire value chain

Act	Year promulgated	Purpose/Power they have	Relation to food safety	Food safety aspect	Where in the food chain?
		Standards Act, 1993 (Act No. 29 of 1993); and provide for transitional arrangements.			

Source: Author's compilation

5.3.4 Standards

Food safety standards are technical regulations for various food factors that affect consumers' health. Food safety standard describes the principles of control needed to ensure the supply of safe food to the consumer. In terms of classification, food safety standards include national food safety standards and local food safety standards (developed by local government) (Lepeintre and Sun, 2018). Standards are classified into two, quality standards and compulsory food hygiene or food safety standards. The DoH has developed food hygiene standards that prioritize the protection of consumers' health. Additionally, after implementing the Codex, food safety standards have been introduced. These standards serve the purpose of safeguarding consumers' well-being. On the other hand, another category of standards concentrates on aspects such as food quality, grades, and specifications, which are oriented towards producers (Lepeintre and Sun, 2018). South Africa's food safety standards are consistent and aligned with international standards systems, they cover standards such as generic, products, regulatory, inspection, and testing as shown in Table 5.8. However, Food additive standards are not independent but are developed and governed by the Foodstuffs, Cosmetics, and Disinfectants Act no 54 of 1972 (Sikuka, 2017). Interpretation and enforcement of standards can lead to inconsistencies. In South Africa, regulatory authorities are faced with a challenge in monitoring and enforcing standards across a wide range of food businesses, including farms, processing facilities, restaurants, and retail outlets. Limited resources pose challenges to effective enforcement.

Table 5. 7: South Africa's national food safety standards

Standards	**Description**	**Products**
Generic standards		Pesticides, food-related products, labelling
Product standards	Food ingredients and product standards	Includes various aspects including, grain, nuts and seeds, spices and condiments, fish and fish products, meat and meat products, beverages, liquor, honey, eggs, and egg products as well as milk and milk products.
	Food additives quality specification	Food additive quality specifications are in place: Sweeteners in foodstuffs, Preservatives and antioxidants, food colorants, miscellaneous

Standards	Description	Products
		additives in foodstuffs, and Codex general standard on food additives.
	Food-related standards	Food-related standards are in place: Food testing, certification, labelling, grading, classification, packaging and container, fortification, trade, procedural notices, and manufacturing
Regulatory standards		Divided into general and specific standards such as the enforcement of food regulations, registration measures, HACCP system, and prohibitions regulations.
Inspection and testing standards		Microbiological Pressure equipment

Source: Author's compilation from a desktop review

5.3.5 Guidelines

The South Africa Policy Guidelines on National Food Safety Alerts and Official Product Recalls was developed in 2004 under the directorate food control of the DoH (DoH, 2004a). A national food safety alert refers "to steps taken by the national health authority aimed at informing consumers of a potential or real health risk deriving from a specific foodstuff, which could still be available at food outlets or in the homes of consumers. It is further intended to raise awareness with the relevant health authorities responsible for the control of the foodstuff concerned" (DoH, 2004a).

The guidelines were developed after the incident that claimed the lives of two children from the Gauteng Province in February 2002, individuals tragically lost their lives due to botulism poisoning after consuming the contents of canned pilchards in tomato. As a consequence of the incident, a countrywide food safety alert was issued, urging the removal of all pilchard cans from retailers (DoH, 2004a).

Unfortunately, the country does not have legislation that refers to official food product recalls, government relies on the industry to self-regulate (Food Imbizo, 2022). Food safety authorities are facing difficulties in monitoring and keeping track of any food product recalls that may need to be conducted in the country (DoH, 2004a).

Hence, the objective of these policy guidelines is thus “to guide the roles and responsibilities of industry, but particularly, food control authorities, regarding national food safety alerts and official food product recalls, and how these should be conducted to ensure public safety” (DoH, 2004a). The policy guidelines also specify that DoH can develop a database and keep records of official and the country carried out voluntary recalls of food products (DoH, 2004a).

The guidelines for environmental health practitioners on food safety control at extraordinary events. A few years ago, during the *All-Africa* Games held in Johannesburg, Gauteng Province in 1999, a major food poisoning incident occurred when over 600 schoolchildren participating in the event became ill after consuming food provided at the games (DoH, 2004b). The incident had a profound impact on the event and received widespread media coverage, causing embarrassment for both the organizers and the nation. Although local health authorities responsible for food safety were partially involved in organizing the event, the incident revealed significant shortcomings in this regard (DoH, 2004b). The organizers, among others, were unaware of the importance of implementing proper measures for controlling food handling during the event. The lack of clear guidelines on the handling and storage of food during big events resulted in the food poisoning incident (DoH, 2004b).

As a result of these deficiencies, there was a need for the establishment of guidelines to effectively introduce food safety controls at such events, referred to as "special events" in this document. These guidelines aim to serve as a reference for the food control (health) authorities in the country responsible for ensuring that food served at extraordinary events are safe for consumption. Additionally, they emphasize the responsibility of special event organizers to fully cooperate with the relevant health authorities, especially those in charge of food supply and handling during the event (DoH, 2004b).

According to the guidelines (DoH, 2004b), extraordinary events are referred to as “situations which are of a limited time duration, and which took place at venues which are not operating continuously and is therefore considered as an ad hoc situation. It includes international, national, and local events such as sport, cultural, governmental, trade, etc., and examples are the recent world summit on sustainable development, the cricket world cup tournament, agricultural shows, music festivals, open-air church services, etc” (DoH, 2004b, Pg. 3)

5.3.6 Programmes

The food safety programmes are meant to address specific policy issues identified within the department. The DTIC established consumer and corporate regulation programme which it objective is to establish equitable practices in food trade and facilitate the harmonization of all food standards (DTIC, 2021). In the same spirit, DALRRD established the Agricultural Production, Health, and Food Safety programme which intends to protect the health of the consumers. These programmes and their sub-programmes are discussed below.

Programme 1: Consumer and corporate regulation

According to the APM body of knowledge (2019), a programme is a unique and transient strategic endeavour undertaken to achieve a beneficial change and incorporate a group of related projects. In this case, the purpose of the programme is to develop and implement coherent, predictable, and transparent regulatory solutions that facilitate easy access to redress and efficient regulation for economic citizens (DTIC, 2021). The rationale is to ensure improved compliance and more effective enforcement of consumer and corporate legislation to increase investor confidence; reduce regulatory burden to lower the costs of doing business; and ensure access to redress to citizens by strengthening legislation and implementation in consumer protection (DTIC, 2021). Table 5.8 presents sub-programmes under the consumer and corporate regulation programme as well as the purpose of each sub-programme and the anticipated outcomes.

Table 5. 8: Consumer and corporate regulation sub-programmes

Subprogrammes	Purpose	Outcome
Policy and Legislative Development	Develops policies, laws, and regulatory frameworks, and drafts legislation.	Improved regulatory environment conducive for consumers and companies as well as providing access to redress.
Enforcement and Compliance	Conducts trends analyses and socioeconomic impact assessments for policies and legislation and market surveys; implements legislation on matters about liquor; monitors and evaluates the effectiveness of regulation; and oversees the performance of the department's regulatory entities (Companies and Intellectual Property Commission, Companies Tribunal, National Consumer Commission, National Consumer Tribunal, National	Improved regulatory environment conducive for consumers and companies as well as providing access to

	Credit Regulator, National Gambling Board, and National Lotteries Commission).	redress.
Regulatory Services	Oversees the development of policies, laws, and regulatory frameworks and the implementation of the branch mandate, and provides strategic support to branch business units, respectively, in line with legislation and applicable governance.	Improved regulatory environment conducive for consumers and companies as well as providing access to redress.

Programme 2: Agricultural production, health, and food safety

The programme was established to manage the risk associated with animal disease, plant pests, genetically modified organisms (GMOs), and registration of products used in Agriculture. The programme also aims to promote food safety and create an enabling environment for increased and sustainable agricultural production. As shown in Table 5.9 the programme comprises three sub-programmes, namely Plant Production and Health, Animal Production, and Health and Inspection and Quarantine Services (DAFF, 2015).

Table 5. 9: Agricultural production, health, and food safety subprogrammes

Subprogrammes	Purpose	Strategic objective
Plant Production and Health	Focuses on increasing agricultural productivity with an emphasis on a sustainable plant production system, efficient use of genetic resources, and managing risks associated with plant pests, diseases, and GMOs	Ensure increased production and productivity in prioritised areas as well as value chains
Animal Production and Health	Aims to improve livestock production, health, and safety of animal products through the implementation of animal production, health, and public health strategies, projects, and programmes founded on sound animal health and production management principles, an informed extension service, and sustainable natural resources management.	Effective management of biosecurity, and related sector risks
Inspection and quarantine services	Focuses on the provision of leadership, guidance, and support in ensuring compliance with agricultural legislation and regulatory frameworks and overseeing the effective implementation of risk	Ensure the conservation, production, rehabilitation, and recovery of depleted and degraded natural resources.

	management strategies and plans for regulated agricultural products.	

5.3.7 Summary

This chapter consisted of two primary parts. In the first part, an analysis was conducted to unravel the roles of various stakeholders in ensuring food safety, spanning from the farm to the table. The second section of this chapter presented the food safety legislation in South Africa. Effective food safety policies, regulations, and food standards are necessary to guarantee food safety and protect domestic consumers as part of a national food safety governance. They are also essential to ensure the safety, quality, and authenticity of exported and imported food. There is no direct food safety policy in South Africa but regulations, standards programmes, and guidelines. National Policy for Food and Nutrition Security and Environmental Health Policy are the closest policies there are to food safety. The regulations are divided into three departments to be responsible for their development, coordination, and enforcement accordingly. In conclusion, food safety legislation is faced with several challenges. Firstly, there is no food safety policy and only one food safety-related policy that mention food safety. Secondly, the legislations are not well-implemented. Third and lastly, the state could benefit from enhancing its capacity and transparency when it comes to dealing with the food industry.

Chapter Six: Case studies on the role of stakeholders in impacting regulations

6.1 Introduction

The previous chapter (Chapter Four) set out stakeholders in food safety governance and their roles as well as the existing policies governing food safety in South Africa in general. This chapter adopts a case study approach to look at how networks of stakeholders have shaped specific policies that were published following the 2017/18 listeriosis outbreak, namely the Compulsory Specification for Processed Meat Products commonly known as VC 9100, Regulation relating to Hygiene Requirements for Premises and Transportation referred to as Regulation (R638), and the Regulations relating to the Hazard Analysis Critical Control Point referred to as Regulation (R607). To do this the chapter set out the stakeholder interaction at various stages of the policy cycle using the kaleidoscope model (KM) to break down the policy cycle and help identify areas of weakness and gaps in the governance.

The processed meat industry incurred a huge economic loss during and after the listeriosis crisis, especially the pig industry which attained massive losses (R 1 billion) as it was initially announced that they were the source of the outbreak (Heiberg, 2018). The government's Department of Agriculture, Land Reform, and Rural Development (DALRRD) suspended the operations of three major pork processing plants operated by Enterprise Foods, a subsidiary of Tiger Brands; Eskort Butchery; and Rainbow Chicken Limited (RCL) Foods in 2018 until the Department of Health (DoH) realized that the whole of the pork industry was not to be blamed but rather Tiger Brands as a specific processing plant. However, after this realisation, DoH did not issue any statement in the media to say that the entire pork industry was not the source of the outbreak. The original suspension prevented these plants from producing and trading meat until they complied with the new food safety regulations aimed at preventing the general spread of listeria. The decision to suspend the pork industry's operations was made by the DoH as a public health measure to protect consumers from any further exposure to the bacteria.

Subsequently, to control the entire processed meat value chain, certain regulations were put in place. These regulations included the: VC 9100; R607 and R638. These regulations

concern processed meat products and are corresponding as R607 deals with some of the aspects of R638. While R638 is informed by the South African National Standards (SANS) 885:2011 (Ed3) and SANS 885:2022 (Ed4), R607 is informed by Codex Alimentarius. SANS is a set of technical specifications and guidelines developed by the South African Bureau of Standards (SABS) technical committees. Regulations R607 and R638 have been overshadowed by VC9100 which requires production facilities to have a HACCP system (see Chapter 3) in place. This chapter presents three cases, each case study focuses on the role of stakeholders in impacting one of these three specific regulations at a different point of the policy cycle. The first case study outlines the role of stakeholders in the development of VC 9100. The VC stands for (Verpligte) in Afrikaans and (Compulsory) in English. The National Regulators for Compulsory Specification enforces VC 9100 and played a big role in leading the development process and consulting with other stakeholders for their input on the regulation as well as persuading the industry to pay the tariffs required to enforce the regulations effectively. This process has still not been finalised. This illustrates how the industry was able to stall the development of the Regulation in 2013 until the listeriosis crisis forced the topic back onto the political agenda in 2018. However, even then the industry has been able to stall and circumvent its full implementation.

The second and third case study looks at the role stakeholders play in the implementation of Hygiene Regulation R638 and the HACCP (R607). Regulations governing general hygiene requirements for food premises, the transport of food, and related matters are also known as R638. This case focuses on regulation R638 looking at the implementation stage of this regulation, enforced by environmental health practitioners. The issues identified in this case study are related to the implementation and include a lack of institutional capacity, proper training, and budget constraints which challenge the enforcement of the regulations.

The third case study focuses on Regulations relating to the Hazard Analysis Critical Control Point referred to as Regulation (R607). After the listeriosis outbreak, this regulation was made mandatory for all processed meat products. However, during the key informants' interviews, the EHPs stated that although compliant but some of the small businesses found it expensive to implement the HACCP system. All these three regulations influence the operations of the processed meat industry. Before setting out the case studies in detail, the

next two sections of this chapter first outline provide the landscape and economic scope of the processed meat industry as well as the impact of the listeriosis outbreak in South Africa.

6.2 The processed meat industry in South Africa

The processed meat industry is a contributor to the South African economy, providing jobs and contributing to the country's Gross Domestic Product (GDP). Processed meat refers to any type of meat that has undergone alterations aimed at enhancing its flavour or prolonging its storage duration. Techniques involved in meat processing encompass salting, curing, fermenting, smoking, and incorporating chemical preservatives. (Technavio, 2017). South African processed meat market is divided into five sub-sectors: poultry, pork, beef, lamb, and mutton, with different types of products including chilled, frozen, and shelf-stable (Mordor Intelligence, 2022).

According to the Department of Agriculture, Land Reform and Rural Development (DALRRD), (2021), the formal pork industry in South Africa is made up of approximately 400 commercial pork producers, 19 stud breeders, and a workforce of 10,000 individuals. Out of this total, there are around 4,000 farm workers, while the remaining 6,000 are employed in the processing and abattoir sectors.

South Africa is the largest regional exporter of processed meat (Mugido, 2018; Mordor Intelligence, 2022). South Africa exports processed meat products to Southern African countries Botswana, Lesotho, Malawi, Mozambique, Namibia, Seychelles, Swaziland, Zambia, and Zimbabwe (Mugido, 2018).

According to Mordor Intelligence, (2022), the second most demand for processed meat comes from hotels, restaurants, and food service providers, following household consumption. However, the rising cost of raw materials used in animal feed is a significant restraint on the growth of the industry and the affordability of the products. Religious practices do not allow for the consumption of pork products, so it further decreases the demand for pork (DALRRD, 2020; Mugido, 2018), wherein promotional campaigns by major companies and retailers are contributing to market expansion (Mordor Intelligence, 2022).

Processed poultry is the largest segment in the processed meat industry and accounts for around 40% of the market share. Processed chicken meat is predicted to perform well, mainly due to the rising prices of other meat and the strong popularity of Chicken meat in South Africa. Chicken meat is widely consumed in South Africa and accounts for 65% of the market share (Mordor Intelligence, 2022). Also, demand for meat products has been influenced by affordability, variety, prices, and services the retail and hospitality sector has offered their customers.

Over the past few years, the South African hog processed meat market has been expanding substantially (SAPPO, 2021). According to industry statistics, the country's demand for pig products has increased by 9% (Marais, 2023) because of a few factors, such as a growing middle class, an expanding population, and changing dietary preferences. One of the main products of the pork processed meat industry in South Africa includes sausages, bacon, and ham (Mugido, 2018).

Ready-to-eat processed meat products such as Vienna[1] and polony[2] are popular across all socioeconomic groups in South Africa. They are the cheapest source of protein, always available and easily accessible in the market, and have a long shelf life of up to five months if kept under an optimal cold storage temperature of 4^0 C (Thomas et al., 2020; Roets, 2018). Polony is a traditionally popular food in South Africa and also to some extent in other SADC countries. It is particularly common in South Africa. One of the main advantages of polony is its affordability. In South Africa, polony is a popular food item among low-income households because it is relatively cheap compared to other sources of protein, such as chicken and beef (Tshandu and Anetos, 2018).

6.3 Listeriosis Outbreak in South Africa

Listeriosis is a serious illness caused by the consumption of food contaminated by a bacterium called *Listeria monocytogenes* (CDC, 2023). The illness can be fatal, particularly for people with compromised immune systems such as pregnant women, the elderly, and babies (CDC, 2023). The listeriosis outbreak happened in South Africa between January 2017 and July 2018 and the source was unknown at the time. The World Health Organization

[1] A Vienna, also known as a cocktail sausage or frankfurter, is a small, thin sausage made from finely ground meat, typically pork, beef, or a combination of both. It is usually seasoned with various spices and herbs, then smoked or cooked. Vienna sausages are often served as a snack or used in dishes like hot dogs or stews.

[2] Polony, on the other hand, is a type of large, cylindrical processed meat that is typically made from a mixture of finely ground meat, such as beef or pork, along with other ingredients like fillers, flavourings, and preservatives. It is usually cooked and then sliced for consumption. Polony is commonly used in sandwiches, cold cuts, or as an ingredient in certain dishes.

(WHO) (2018) stated that identifying the cause was challenging since the signs of listeriosis may manifest in an affected person between several days to 90 days after consuming the contaminated food. However, Hunter-Adams et al. (2018) argue that the inability to pinpoint the origin of the outbreak for over a year is a significant contributor to the eventual severe outbreak and subsequent deaths, indicating a dearth of regulation and state capacity. It took until December 2017 for the Minister of Health to officially declare the outbreak. At the time, the product in question was still not identified, and neither was a recall order issued, until March 2018 (Food safety network service, 2018). The announcement made by the Minister of Health on March 4, 2018, revealed that the outbreak originated from polony and other ready-to-eat (RTE) products manufactured at the Enterprise Foods factory in Polokwane. As a result, Tiger Brands initiated a recall of the affected products (Department of Trade and Industry, 2018). However, some of the supermarkets still had ready-to-eat meat products on their shelves (Payi, 2018). This led to confusion and exposed flaws in the recall systems (Boatemaa et al., 2019). The listeria cases spread across the nine Provinces. Table 6.1 display the cases reported and mortalities from January 2017 to July 2018.

Table 6. 1**:** Cases reported and mortality rates by province.

Province	**Number of cases (% of cases)**	**Number of deaths (% of deaths)**
Gauteng	614 (57.93)	108 (50)
Western Cape	136 (12.83)	32 (14.82)
KwaZulu-Natal	83 (7.83)	21 (9.72)
Limpopo	55 (5.19)	11 (5.09)
Eastern Cape	53 (5.0)	13 (6.02)
Mpumalanga	48 (4.53)	11 (5.09)
Free State	36 (3.4)	9 (4.17)
North-West	29 (2.74)	8 (3.70)
Northern Cape	6 (0.57)	3 (1.39)
Total	**1060**	**219**

Source: NICD (2019)

There were 1053 cases of the disease reported with 219 deaths between January 2017 to July 2018 (NICD, 2019; Department of Health, 2018). Gauteng Province has experienced the

most infection rates and the highest mortality rate. While the Northern Cape Province has experienced the least infection rates and least mortality rates.

The DoH declared that “the meat processing industry was not cooperating for months. They did not bring the samples DoH requested” (Department of Health, 2018). In response, the CEO of Tiger Brands, the company responsible for the outbreak, Mr. Lawrence McDougall, stated: “that there was no direct link between the deaths and its cold meat products, therefore they did not contact the authorities”. The media has been playing a major role in drawing attention to such concerns. Consequently, certain consumers have become sceptical about food safety and have developed a lack of confidence in the food retail industry (Rootman, 2016). In addition to that, as per the news report by Sowetan Live broadcast on March 7, 2018, it was said that the regulatory agencies had not yet decided who would conduct further investigations into the outbreak, the National Consumer Commission, the DOH, or the DALRRD (Food safety network service, 2018). It is apparent that during the most fatal outbreak, the government took no action and awaited industry intervention.

Boatemaa et al. (2019) reported that faults in food safety governance played a role in several food safety issues within the food retail industry. For example, failure to enforce food safety standards and practices leads to noncompliance with both public and private regulations (Wilson & Worosz, 2014). According to the National Public Health Emergency Response Plan (2018, p. 3), the Department of Health said that “while the source of the listeriosis outbreak has been identified and case numbers are declining, the outbreak has highlighted potential weaknesses in both legislative and policy framework regarding food safety and regulatory/enforcement systems to ensure consistent and sound implementation of food safety norms and standards.”

Grace et al. (2017) contend that food safety crises are frequently attributed to the inability of government regulatory systems to enforce suitable standards and regulations. Harris (2020) concurs by pointing out that the government's approach to food safety regulation is generally responsive rather than preventative, as it tends to react to cases of foodborne illnesses instead of taking proactive measures to avoid them. Thus, the outbreak attests to the concerns regarding the lack of implementation of food safety regulations and standards in South Africa's food sector. The DoH, therefore, acknowledged that the South African food safety legislation needed an overhaul. Hence government decided to review critical pieces of food safety legislation (WHO, 2018) including to tightening regulations related to processors of

heat-treated, RTE meat products (Leblond, 2018). An overhaul of legislation was needed including the pieces outlined in the case studies below.

6.4 Case study one: Compulsory specification for processed meat products

6.4.1 Introduction

The previous section elaborated on the listeria outbreak that took place in 2017/18. This crisis led to the government amending some pieces of legislation and establishment of the VC9100. The product at fault was found to be a Ready-to-Eat product which is regulated under the regulation discussed in this section. This section reviews the compulsory specification for a processed meat product. The section starts by zooming into the background on the VC9100. Following that is a section on the stakeholders and their roles in impacting Compulsory Specification for Processed Meat Products as well as the impact of the listeria outbreak.

6.4.2 Background on Compulsory Specification for processed meat products

The VC 9100 is a regulation that applies to the handling, preparation, processing, packaging, refrigeration, freezing, chilling, labelling, marking, and storage of heat-treated and ready-to-eat processed meat products covered in the scope of South African National Standard (SANS) 885, processed meats products (Department of Trade and Industry, 2019). It includes the microbiological and food safety-related compositional requirements of these products (Department of Trade and Industry, 2019). Compulsory specifications in essence are developed to address a problem to public health, safety, and environmental protection. In clause 5.3 of the South African national standard 885 published in 2011 (NRCS, 2023), the classes of processed meat products are identified as heat treated and ready to eat categorized in the respective classes, and unspecified.

Before the Compulsory Specification was developed, there was the South African National Standard. However, these were not mandatory. The South African National Standard (SANS) for processed meat SANS 885 (ed3) was approved in 2011 by Technical Committee TC 1027 (which is managed in SABS and oversees the preparation of South African national standards) and following the procedures of the SABS standard division, in compliance with Annex three of the World Trade Organization/Technical Barrier Trade (WTO/TBT) Agreement in 2011 which include the “code of good practice for the preparation, adoption, and application of standards” (WTO/TBT, 2000) (see chapter 3 for more info on WTO/TBT). So, when the SANS 885 was being developed, it was noted that the standard will fall under

NRCS. In 2013 when the process of developing the Compulsory Specification started, NRCS was operating under the NRCS Act of 2008 and no longer under the regulator division of SABS.

According to respondent 1 (government), the notion of developing the Compulsory Specification for Processed Meat Products came about following the concerns from both the industry and the regulators that the processed meat industry should be regulated but that it was not. In 2013, there was only South African National Standard 885 published 2013 which was not compulsory.

Respondent 1 (government) (link this with the section where you explain where you explained this) says that the proposal went from the CEO of the NRCS to the technical department where they initiated the development process which involved intensive desktop research on the feasibility, risk, and impact of the proposed regulation.

6.4.3 Stakeholders

The process of developing the Compulsory Specification for processed meat started in 2013, and different groups of stakeholders have been involved. Each stakeholder has a different role to play and brings a different voice to the table to help improve the regulations. Figure 6.1 shows different stakeholder groups that were involved in the development of the VC9100. The stakeholders displayed in the diagram below are the same across the three case studies but serve a unique purpose in the different case studies.

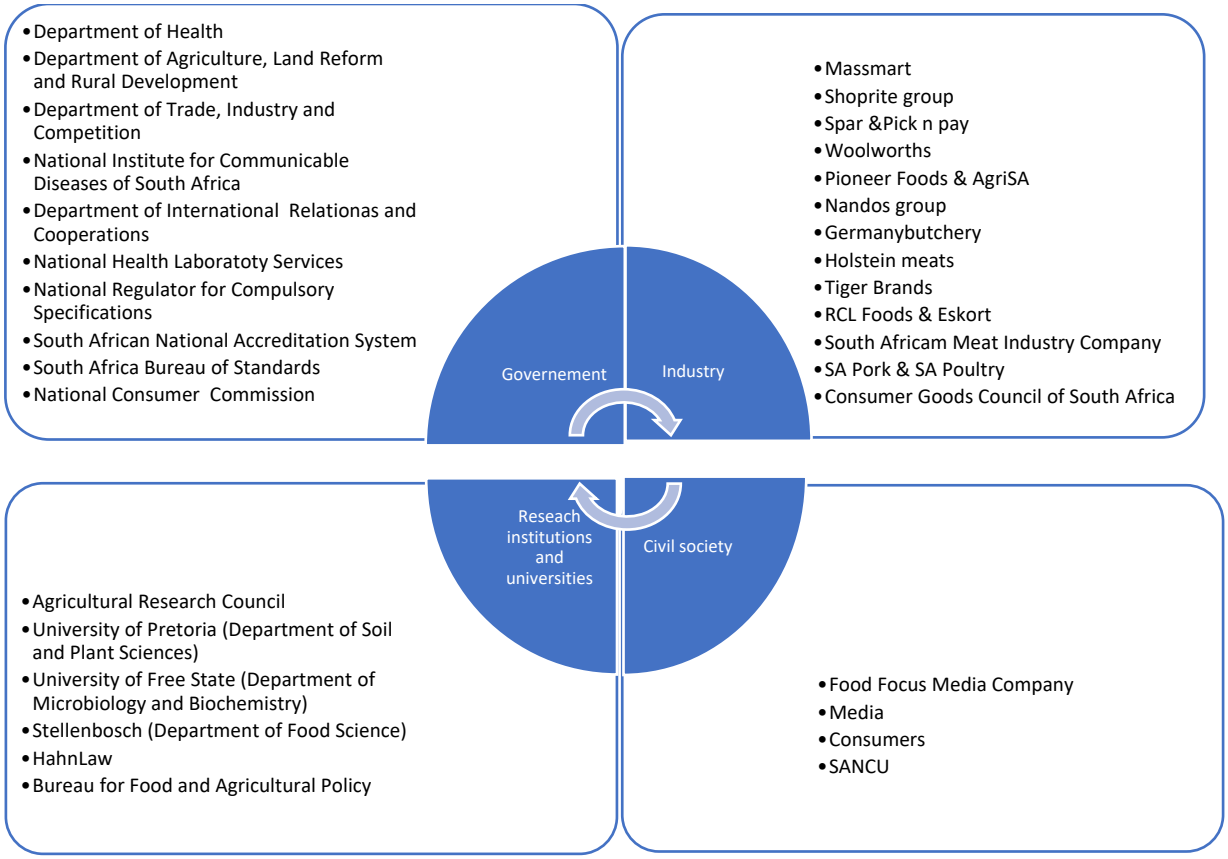

Figure 6.1: Stakeholders involved in the development of the Compulsory Specification for Processed Meat Products.

Source: Author's creation based on desk review and stakeholder mapping.

Government

Besides the government department (DoH, DALRRD, and DTIC) responsible for the regulations (see Chapter Five), some committees oversee the operations of these departments. The National Assembly (NA) of the South African Parliament appoints from among its members several Portfolio Committees to shadow the work of the various national government departments. Accordingly, the Trade and Industry portfolio committee is responsible for oversight of the Department of Trade, Industry, and Competition (DTIC) amongst other entities, including the NRCS which is responsible for the enforcement of VC9100 under the DTIC (Parliament, 2018). "This committee deliberates on bills covering the department's area of jurisdiction and scrutinises and reports on its annual budget and strategic plan. The members of this committee determine whether the government DTIC is delivering on what it promised and whether they are spending the public money they receive responsibly. As part of their oversight work, committees may also do site visits where they

find out directly from the people at ground level whether the government is delivering on its promises" (Parliament, 2018). Secondly, is the Technical Committee TC 1027 which oversees the preparation of SANS.

On the government side, the national regulator for compulsory specifications, the DoH, and DALRRD were responsible for drafting the regulation, and the rest of the stakeholder groups consulted and gave their inputs. The Consumer Goods Council of South Africa (CGCSA) promotes food safety and responsible manufacturing; hence they offer different food safety training and workshops on food safety-related topics for the industry and other stakeholders. The National Consumer Commission (NCC) has authority under Section 60(2) of the country's Consumer Protection Act to require food manufacturers to investigate, and if necessary, to recall products from the market (NCC, 2019).

Industry/private sector

The food businesses including retailers, butcheries, manufacturers, etc are regulated by the government even though some have their private standards. The food businesses are mostly represented by associations such as business unit South Africa (BUSA), and the red meat industry forum (RMIF) which largely does the lobbying and dealing with the government on behalf of the companies represented (Food Imbizo, 2022). For instance, the South African meat processors association (SAMPA) attends stakeholder consultations and gives input on policy drafts according to the client's feedback, complaints, and suitability. Further, SAMPA tries to ensure that their clients are regulatory compliant by frequently updating them with the latest information and making sure they are up to date with necessary pieces of training (Food Imbizo, 2022). During the stakeholder consultation, the industry like any other stakeholder has the right to give input and propose regulatory changes if they are not happy with a certain aspect of the regulation.

Civil society/consumers

Civil society is comprised of non-governmental organizations (NGOs), consumer groups, and other stakeholders who are not part of the formal government or private sector. In theory, civil society plays an important role in food safety governance by providing a critical voice in the development and implementation of food safety policies and regulations. However, in this case study, civil society is less active.

Respondent 2 noted that*:*

*There is very little to non-existent civil society participation. In the past, we tried to work with a consumer organization to try and just bring in that voice from civil society, but it's not working very well. This is not only concerning the food sector but across sectors in South Africa, where we still have issues around the transformation of these sectors in the sense that when you sit in stakeholder consultation meetings, you have very limited voices from civil society (*Respondent 2, government*).*

The involvement of civil society in food safety governance-related discussions is essential to ensure that the concerns and interests of consumers are represented. Civil society can provide valuable input into food safety policies and regulations by advocating for the adoption of measures that protect public health and safety.

Related to the involvement of civil society, respondent 8 (industry) shares the same sentiment*:*

Moderately, the layman on the ground is rarely involved. All stakeholders must be involved, consumers, public health, medical, food industry, government (other stakeholders), and municipalities. There is no conflict of interest in regulations formulation ALL affected stakeholders MUST be involved and consulted (constitutional right, active citizenry). Food safety is everyone's responsibility.

One of the main roles of civil society in food safety governance is to advocate for the interests of consumers and the public. Civil society organizations often have a greater degree of independence and freedom to voice concerns and criticisms than government or private sector actors.

Universities/research institutions

Universities and research institutions specialise in education and training which happen to be a very important element of food safety regulation. They also provide advice to industry, governments, and the public. Studies conducted by them are essential in determining the effectiveness of food safety strategies. They also research to identify new areas of risk and to develop new technologies to improve food safety (Food Imbizo, 2022).

The following narration was made to this effect:

The system's weakness stems from government officials feeling threatened by scientists and academia. Committees lack representation from academic institutions. At stakeholder

meetings, academics are invited but their potential to publish unfavourable results and expose system weaknesses is a concern.

According to Green et al. (2005), it can be inferred that involving researchers in food safety-related policy decision-making meetings can contribute to enhancing safe food preparation practices among food workers and managers. Researchers, with their expertise and knowledge in food safety education, training, and motivation, can provide valuable insights and evidence-based recommendations to inform policy decisions.

Officials believe it's the government's mandate, not academia's, and scientists should refrain from interfering. Opinions from scientists are heard but not implemented without a close trust relationship between academics and the government (Respondent 16, academic).

However, by actively engaging researchers in these meetings, policymakers can benefit from their perspectives, ensuring that policies are well-informed, effective, and aligned to maintain food safety standards.

6.4.4 The development of the compulsory specification in 2013/2014 and the pause

The development process was initiated in 2013 (see Figure 6.2 display a development process timeline). In terms of the stages as per the kaleidoscope model, the development process, in this case, study is represented by the agenda-setting and policy-design stages. The Compulsory Specification was developed by NRCS under the NRCS Act 5 of 2008 (Republic of South Africa, 2008), following section 13 of the Act. Section 13 layout clear guidance on procedures to be followed when developing a mandatory standard or regulation (Respondent 1, government).

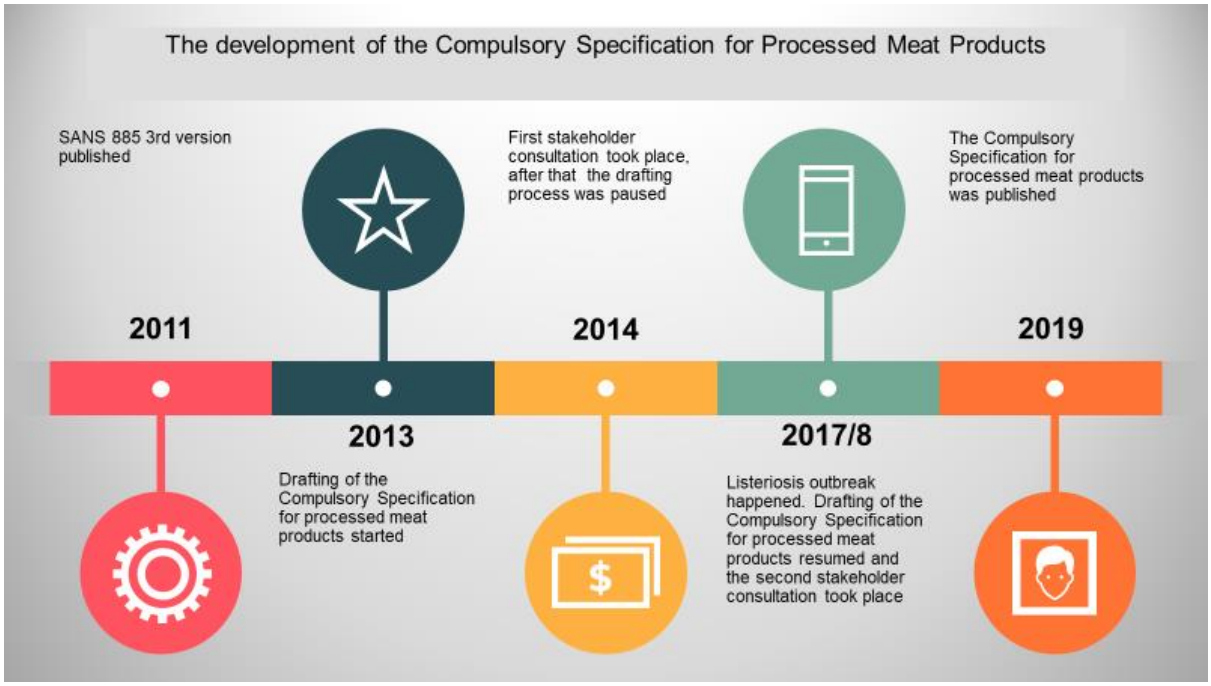

Figure 6.2: Compulsory specification for processed meat products development timeline
Source: Authors' creation

After the development process was initiated in 2013, the first stakeholder consultation took place on 7 March 2014. During this consultation draft of the VC9100 was accepted but not published (Parliament, 2018).

The purpose of the consultation was for stakeholders to comment on the draft regulation. However, there were challenges during that period, the first being the structure fragmentation, considering that there are three regulators DALRRD, NRCS, and DoH governing under the umbrella legislation when it comes to food safety, the Foodstuff, Cosmetics, and Disinfectants Act 54 of 1972 (Republic of South Africa, 1972). That is the main food safety act in South Africa presented by DoH. There is also the Agricultural Product Standards Act 119 of 1990 presented by DALRRD (Agricultural Product Standards Act, 1990), while processed meat is a co-shared commodity. NRCS was assigned the responsibility of enforcing the compulsory specification for processed meat, which covers the microbiological aspects and food safety aspects of processed meat products, whereas the quality aspects fall under DALRRD.

According to respondent 1 (government), *"There is a concern of contestation of mandate, where various government departments all want to regulate, but obviously, we do it under*

different pieces of legislation and we also use different methods to regulate". For instance, in most cases, NRCS strictly use SANS that are published by the SABS.

These three government departments all have a regulatory function that is mandated through direct inspections or mandated bodies such as the Compulsory Regulator for the fish or processed meat industries.

NRCS inspect the microbiological and food safety aspects of the products, DALRRD through their assignee, the agency for food safety inspects the quality aspect of the product and the environmental health practitioners under the jurisdiction of the DoH inspect the entire facility (Respondent 1, government).

All three regulators charge the industry different levies for their inspections (Respondent 7, industry). Hence, the industry feels the levies are too much for them. Respondent 9 (industry) stated that "*it would work much better for the industry if they had to deal with one government department instead of all three regulators as it becomes complex and costly for them*". This contestation was the second challenge that resulted in the development process being paused.

Respondents 1,2,3, 4 (government), 7, and 9 (industry), agreed that when the stakeholder consultation ended in 2014, the industry said they were not happy with the levies proposed and they did not commit to them. A levy sub-committee comprising members from the manufacturer's association, the *South African Meat* Processors Association, retailers, the Consumer Goods Council of South Africa, the South African National Consumer Union, and the NRCS was subsequently set up to further deliberate and come up with a solution. No agreement was reached (Parliament, 2018). This failed attempt of publishing the VC9100 reflects the level of disagreement on the tariffs stipulated.

6.4.5 The restarting of the process in 2017/18

The listeria outbreak prompted stakeholders to intervene for the regulation to be published. The NRCS addressed the trade and industry committee which met because of the listeriosis crisis stating that no VC9100 exists since it was not even published and adopted, to begin with. The NRCS only regulates canned meat products and not processed meat products (Parliament, 2018). They further mentioned that the problem was struggling to reach an agreement in terms of the levy payable.

After pausing development, the regulation in 2014, the Department of Trade, Industry, and Competition instructed the NRCS to resume the project on the compulsory specification in 2018.

One respondent narrated that:

The VC9100 became part of the interventions that the government wanted to put in place as a clear regulatory tool after the listeria outbreak. In that same year, NRCS held the second stakeholder consultation to address all the concerns that were brought forward in the first consultation concerning the implementation of the compulsory specification for processed meat products (Respondent 1, government).

The second consultation which took place in 2019 June at NRCS head office seek to reach a consensus for the VC 9100 to be finalised. During the stakeholder consultations, the retailers, manufacturers, and processors were represented by company representatives, or food safety experts who had the mandate to speak in the interest of the sector.

Respondent 16 alluded to this point saying:

They do it for two reasons, scouting information and adopting any upcoming changes as quickly as possible. They take a protected position and seldom share insider information. Maybe they see it from a competition point of view. They would want to protect their brand and the interest of a bigger image of the industry. For instance, the interest of the pork industry. They will not want any sensitive information on the pork industry to go out internationally as it might affect their trade. There is a lot of lack of trust and cohesion at the big meetings.

Tiger Brands was also represented at the consultation. Tiger Brands is one of the largest food producers in South Africa with international food businesses in Chile, Cameroon, Kenya, Mozambique, Nigeria, and Zimbabwe, consisting of a wide range of well-known brands under its portfolio (Website). Since the listeriosis outbreak, Tiger Brands has faced significant challenges related to food safety.

Respondent 16 further noted that:

Tiger brands was represented. Tiger brands as with other industry players, tend to be quiet in these meetings. They tend to operate behind the scenes, they will not be vocal. Maybe because a lot of people that represent the industry on the food safety platforms are often

coming from a legal background and or technical background. They will be mindful of representing the industry, and very mindful of not exposing the sector. They will choose their words carefully; they will have a measured influence in the whole process because they are still mindful of keeping doors open for themselves. For them, it is still about profit first. So, the stricter they make the regulation, the more risk is on their side and more accountability. It ends up being a legal imperative. It can cost the company a lot. They are very mindful in terms of the complicated nature of things. They are mindful of what they say. They cannot speak on behalf of the company because the company representative does not have the mandate to do so.

Furthermore, during the consultation, the main concerns expressed by the stakeholders according to the NRCS were:

- "Practical implementation of the VC, a consideration that there are three departments that have regulations or proposed regulations on processed meat- DOH, DAFF, and DTI through the NRCS
- The coordination of the inspection activities between the three departments will impact the cost and effectiveness of these enforcement activities.
- The impact on small/medium and micro enterprises in terms of certification cost (DOH) and the regulatory cost both from NRCS (Levies)and DAFF (Assignee cost)
- SAMPA advised the meeting that although consideration can be given to small businesses, some operators find it difficult, both financially and from a design perspective, to upgrade as necessary to comply with HACCP given the cost-benefit analysis which comes with infrastructure improvement.
- The concern on the different classes of processed meat products is different in the SANS in comparison to the DAFF standard.
- The concerns regarding the food safety gaps on SANS 885 (Micro and contaminants)" (NRCS, 2019).

The main issue was the levies stipulated by the government to be paid by the industry. However, the government and the industry still could not reach a consensus on the payable levy. Although the compulsory specification was published, the negotiations on the levy are still ongoing as of now in 2023 while the NRCS carries on with the inspections without charge. The VC9100 was signed into law on 8th August 2019 and authorizes the NRCS to conduct inspections to ensure compliance with regulations (SAMPA, 2019).

6.4.6 Summary

This VC9100 regulation was initially drafted in 2014. At the same time, the processed meat industry complained about the high levies that they would be charged. As a result of these challenges, the compulsory specifications on processed meats were not published. The development process only resumed soon after the 2017/18 listeriosis outbreak and the regulation when the government wanted clear Compulsory Specifications in this area. The regulation was published towards the end of 2018. However, negotiations between the industry and the regulatory bodies are still underway to agree on the levies that they will be charged for inspection. In the meantime, the inspections are without a charge to the industry and so they are battling to reach an agreement on the payable levy for processed meat products. NRCS was not keen on disclosing the implication of enforcing the regulation without the charge of the levy. On the other hand, the lack of voice and participation from civil society plays a key role in advocacy and monitoring for the interest of the public.

The next section presents a next case related to processed meat products through hygiene regulation known as R638. This regulation focuses on the implementation stage, enforced by environmental health practitioners. The issues identified related to implementation include lack of institutional capacity, proper training, and budget constraints which challenge the enforcement of the regulation.

6.5 Case study two: The Regulations Governing General Hygiene Requirements for Food Premises, the Transport of Food, and Related Matters

6.5.1 Introduction

The second case study focuses on R638, looking at the implementation stage of the regulation. It focuses on the roles of the stakeholders in the implementation of R638 as well as the challenges they are faced with in terms of enforcement. It demonstrates how a lack of stakeholder consultation contributed to the inability of enforcers to implement the regulation. The section first focuses on the background of the regulation thereby followed by a section focusing on the stakeholders and their role in impacting the regulation of general hygiene requirements. The last section focuses on the challenges of enforcement of the regulations identified in this study which included budgetary constraints, lack of knowledge, lack of institutional capacity, and non-compliance.

6.5.2 Background to Regulation R638

Regulation R638 is a General Hygiene Requirement for Food Premises, the Transport of Food, and Related Matters, a regulation under the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972 and was gazetted in June 2018 (Department of Health, 2018). R638 was published on the 25th of June 2018 and effective from 1 July 2018. This replaced R962 of 2012 (R918 of 1999). According to the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972, in the interest of public health, a regulation or amendment may be published without a comment period if it is considered essential (WTO, 2018). Hence, for this reason, there was no stakeholder consultation, due to time constraints. R638 is an entry-level regulation. It defines the basic hygiene requirements expected from all food handling businesses as minimum legal compliance. The regulations also describe the legal facilities that should be in place for a hygienic environment (Jackson, 2019). R638 is a prerequisite for any implementation of regulation R908.

The DoH amended the regulation after the listeria outbreak to make it stricter than the previous entry-level regulations as they replaced the SHALL with MUST to emphasise the obligation for the industry to comply, for instance, section 3(7) states that the certificate MUST be displayed in a conspicuous place (Department of Health, 2018). This regulation applies to all food premises except those controlled in terms of the Meat Safety Act, of 2000. The following are included in R638, Food Premises: building, structure, stall, vehicle; Certificate of Acceptability (COA) to be issued by the local authority; Requirements for transport of meat (after Abattoir) (Department of Health, 2018).

Regulation R638 is a basic requirement before any business is allowed to sell food or manufacture food for selling, the business has to be inspected and vetted by the environmental health practitioners (EHPs) and be issued a certificate of acceptability. COA is "a food handling business permit which confirms that a food handling organisation is conforming to basic food safety and hygiene requirements" (ASC Consultants, 2021). Respondent 9 (from the industry) agreed that COA is a legal document that binds the food safety responsibilities to the person in charge, it includes the details of the food business, the identity number, and names of the as well as the district office that conducted the inspections and issued the certificate. If the food business is not compliant, the municipality is permitted to give a prohibition order if you have not attended training, or you don't have the right certificate, which is COA. Respondent 10 (from civil society) and respondent 9 (from the

industry) stressed the same sentiment that EHPs are responsible for enforcing the regulation which they do not understand, and they have never been trained for. As a result, they have too much work and are put under unnecessary pressure not being equipped to deal with new requirements.

There are numerous changes incorporated in R638 which are supposed to be an improvement to the old version of the regulation. The changes include, firstly, a mandatory requirement that 'MUST' be met by 'ALL' food handling businesses. The temperature of the display of hot foods has been lowered from 65º C to 60º C. Under the standards and requirements for facilities on food premises, Annexure F of the regulation explains in detail the cleaning instructions and equipment sanitisation in the butchery. It states the hot detergent solution for washing the equipment should be 40° C - 60° C (Jackson, 2019). In terms of the standards and requirements for protective clothing, one is required to provide protective clothing for visitors too (Jackson, 2019). While in terms of the duties of a food handler**,** the new requirement is to wash hands after handling allergens to avoid cross-contamination (Jackson, 2019).

The significant amendment of the regulation is the additional requirement for specific duties for the person in charge of the food premises. The person in charge should be the person who can supervise food handling practices on a day-to-day basis, and who will be liable for any criminal acts (Respondent 7, industry). The person in charge must now be able to demonstrate that he/she is suitably qualified and/or trained in principles and practices of food safety and hygiene. Respondent 10 (civil society) stated that the training should be accredited or provided by the inspector. However, no definition is given for accredited (Jackson, 2019).

The person in charge must then still ensure all food handlers are now trained in principles and practices of food safety and hygiene. In addition to training, the person in charge must evaluate the effectiveness of the training through assessments and arrange for follow-up training if required (Department of Health, 2018). Finally, records of training must be kept, and training programmes must be updated. The person in charge must ensure that persons under his control, who handle food, meet the standards and requirements of the regulations (Department of Health, 2018).

In addition to this requirement for training, the person in charge must demonstrate compliance with the regulations by keeping records of processing, production, and distribution (Department of Health, 2020). These should be kept for at least six months after

the shelf-life of the product (Department of Health, 2018; Jackson, 2019; Department of Health, 2020).

Another new requirement is a traceability system and a recall procedure that must be in place. The activation of a product recall must be officially reported to both the local inspector and the National Directorate: Food Control (Department of Health, 2018; Jackson, 2019; Department of Health, 2020).

Regarding the regulatory landscape, the national consumer commission has a mandate in terms of section 60 of the Consumer Protection Act 68 of 2008 (Republic of South Africa, 2009) to recall unsafe food products. However, the Department of Trade and Industry (2018) argues that the national consumer commission does not have the technical capacity to conduct a proper recall and "therefore relies on decisions of the other institutions and government departments for technical support which can result in delays".

6.5.3 Stakeholder involved in the implementation of regulation R638

Government

The DoH used to have health inspectors all of whom reported directly to the National department, but the DoH found that to be unmanageable in 2004 they moved the responsibility of health inspections from the national to the municipal level and they changed the name from health inspectors to environmental health practitioners who now report to the local MEC for health at a local level under the jurisdiction of the DoH (DTI, 2018). In a nutshell, R638 is enforced at municipal or Metro levels by EHPs who serve the DoH under a section called Municipal Health Services. As such, R638 is a regulation forming part of the Foodstuff, Cosmetic, and Disinfectants Act 54 of 1972 and the act governed by the DoH (Regulation Governing General Hygiene Requirements for Food Premises, the Transport of Food and Related Matters, 2018). R638 specifically is assigned to local governments who are the EHPs, who enforce it and do inspections (Department of Trade and Industry, 2018).

The EHPs also inspect the food company building their factory. The EHPs advise in terms of how they should build the facility to comply with the regulation. They also do inspections before they apply for their accessibility certificate to see if they comply with the minimum requirements and issue the COA under R638 (Respondent 7, from the industry*)*. The EHPs are often accompanied by the Metro police for inspections especially when they need to issue a fine for non-compliance (Respondent 13, local government).

In the event of an outbreak of foodborne illness, the National Consumer Commission has authority under Section 60(2) of the country's Consumer Protection Act 68 of 2008 to require food manufacturers to investigate, and if necessary, to recall products from the market (DTI, 2018).

Industry/private sector

Any business related to food is required to meet the minimum hygiene specifications according to R638. According to this regulation, if the business is compliant before they start operating, they are to have obtained the COA. Thus, food businesses have a responsibility to be compliant.

Furthermore, actively engaging in policy development and providing valuable input during stakeholder consultations is another important responsibility for food businesses, in addition to ensuring compliance. Other than complaints, the industry plays a role in giving comments on policy/ regulations drafts and inputs during stakeholder consultations if there are any. This is important because the industry is primarily responsible for food safety.

Civil society/consumers

Consumers are not legally bound by R638. Instead, the regulations are developed to ensure that food products sold to consumers are safe and pose no harm when consumed. At this point, the researcher did not have access to information on whether or not civil society is aware of the challenges faced or any civil society's current activities.

Universities/ research institutions

The main objective of the Universities is to conduct research, in this case into food safety issues. This research may focus on identifying and analysing food safety risks, developing and testing new food safety management systems, or evaluating the effectiveness of existing food safety policies and regulations. Universities may also collaborate with government agencies, NGOs, and industry stakeholders to develop and implement effective food safety policies and regulations. In addition, the universities can advocate for the interests of consumers and the public.

Universities can advocate for the interests of consumers. Universities can produce research that can help inform the public of the potential risks and benefits of certain products or

services, as well as advocate for consumer protection laws and regulations. Furthermore, they can provide educational resources to the public to help them make informed decisions.

The researcher from the University of Pretoria published the following reports:

- Comparative microbiological safety study of fresh produce sold and consumed in informal markets, Gauteng.
- Food safety knowledge, attitudes, and practices of Tshwane Street vendors when managing fresh produce.
- Microbiological quality and safety of fresh vegetables and coleslaw salad in South Africa and the publics' food knowledge, attitudes, and practices.
- The prevalence and characterisation of foodborne pathogens isolated from food from school feeding programmes in South Africa.

After these reports, the academics tried to spread the information as a form of awareness to the communities where research was conducted to ensure proper food handling practices. They did this by designing flyers which they handed out to students on campus, communities, and schools where postgraduate students collected data for their studies.

6.5.4 Challenges with the implementation of R638

Lack of stakeholder consultation

As mentioned in the section above regulation R638 was amended and gazetted in 2018 during the listeria outbreak. There was no stakeholder consultation at that time to incorporate inputs from different stakeholder and clarify some aspects of the regulations which needs clarification or interpretation to have an effective regulation. It was said by respondent 9 that it was due to time constraints due to the listeriosis outbreak, regulation had to be published immediately for public protection, therefore, there was no consultation. The following narrative buttresses this point:

*Although the regulation was already drafted when the listeriosis outbreak happened, the development process of the new regulation was done. The consultation with the stakeholder, especially the industry and the primary enforcers of the regulations to ensure everyone understood what is expected of them was not done (*Respondent 9 from the government*).*

Because the regulation's amendment design was rushed during the listeriosis outbreak, the EHPs lose an opportunity to clarify and improve a specific part that they were unfamiliar with and struggled to understand or interpret to make it simpler to enforce.

*As a result, this became an issue when the regulation came into effect, the environmental health practitioners struggled to understand and interpret the regulations. It has been two years since the regulation has been in effect, but environmental health practitioners are still trying to understand how to enforce it. And it's now dependent on the inspector themselves or the municipality, how they interpret certain section*s (Respondent 7, from the industry*)*.

The Department of Health should have at least assisted the environmental health practitioners by making them understand what requirements of them the new regulation and also could have trained them to do the inspections (Respondent 7, from the industry*)*.

The South African government lacks urgency in food safety governance and an absence of preparedness for emergencies or crises (Ref). This lack of readiness has serious implications for the health of the population and the country's economy.

Another respondent explained that:

This is three years after the regulation has been in effect and only now the local government is trying to understand how to enforce it. So, I would say that the government itself was not prepared. The inspectors were not prepared. They didn't understand it. The industry was not in my opinion prepared for it. You know, some people are only starting to know about the regulation now. This is because it was more proactive and there was not enough interaction with the industry, and also the people who were supposed to enforce this regulation. I think they could have trained them and properly communicated. And also, there has been a lot of confusion on how to interpret certain sections of the regulation. And that is because no one was given an opportunity to consult and explain clearly the aspect of the regulation. And it's now dependent on the inspectors themselves or the municipality, how they interpret certain sections. (Respondent 10, civil society).

Person in charge

Another challenge is that the training to be offered to the person in charge of the premises is not specified and currently they are being offered the low-level training. The person in charge plays a critical role in ensuring that food is handled and prepared safely and hygienically and that all activities related to food handling, storage, and transport comply with the relevant regulatory requirements in South Africa.

T*he DoH did not define in the new regulation what must the training for the person in charge entails, it only states that the person in charge must be adequately trained/accredited trained*

but does not specify it should be accredited by whom or what 'adequately' means (Respondent 7, from the industry*).*

Due to the lack of clear guidelines from the DoH about the training designed for the person in charge, respondent 7 further notes that.

The training offered for the person in charge is low for their position and is similar to the general production worker/food handler.

Furthermore, the situation led to some companies not financially preparing to invest in the proper training.

There are food companies that set a budget for training but then there are those who take a chance and go for the cheapest online training as long as they have the certificate (Respondent 7, from the industry*).*

R638 generically says the person in charge of the premises must make sure that the food they sell is not contaminated and that it's safe (Department of Health, 2018). According to the respondent below, it is difficult to keep track without a reference point.

Regulation *R638 is such a broad requirement that a person working in a food processing plant can't be on the lookout for every possible thing that can go wrong if there is no reference point to look at. At least there should be some sort of checklist of things to look out for, as they can't make sure it is safe. Moreover, R638 doesn't require a person in charge of premises to have any formal education in food safety. It only says the person in charge of the premises must be adequately trained. In addition to that, several food factories operate with someone from a different field (accountant for example) than food safety. But not a person who studied microbiology or a related formal scientific programme in food safety can understand the risk inherent in food production, there is no requirement for that. Subsequently, companies are offering R638 training courses that last two days* (Respondent 7, from the industry).

Budgetary constraints

Budgetary constraints were found to be one of the biggest problems at the local municipality level. Without a sufficient budget, local government cannot build enough office space to accommodate all EHPs employed, leading them to find space outside of municipal offices to

sit and do all administrative work they are required to do. This appeared to cause setbacks for environmental health practitioners.

*we have issues with office space, the huge issue that you find in other regions, we don't have enough office space now the environmental petitioner cannot go to the office to conduct the administration work. So, they will have to do that decision work at home. And remember, what we do is, we are field workers. So, I will have to go into the office in the morning, do my administration in the morning, then around probably 9, then I will go out, conduct my inspections and around three, I will come back, finish off that administration for the day. And then I will also go back around four (*Respondent 13, local government*).*

Budgetary constraints are a major challenge facing local municipalities. Despite limited resources, local governments must provide essential services to their citizens.

I think you can add a section on the general collapse of municipal services. They have been assessed in terms of general efficacy service delivery etc. For water and sanitation, we only have a handful of effective ones left mostly in the Cape. This is and for sure will be linked to the EHPs.

Institutional capacity

Lack of manpower is another challenge that affects the inspections and effective enforcement of food safety regulations. According to Mr. Mavundza, (Environmental Health Practitioner from local authorities) as quoted from the Department of Trade and Industry report (2018) "*There is currently a capacity constraint among the environmental health practitioners*". Mr. Mavundza further mentioned that "*when the function of health inspections shifted to the municipality level, the resource plan was not attached. Thus, the municipalities are experiencing financial constraints, especially when the environmental health practitioners have to conduct quality assurance*" (Department of Trade and Industry, 2018).

There is a high demand for EHPs in South Africa, but the supply is limited. The ratio of practitioners to the population is currently below the required ratio, which is one practitioner for every 15,000 people (Shezi *et al*., 2019). The shortage of professionals in the industry has led to increased workloads for existing practitioners, resulting in burnout and increased staff turnover.

Another respondent also indicated that:

There are not enough EHPs to conduct inspections. According to the environmental norms and standards, the ratio is supposed to be 1:10 000 (one EHP is responsible for 10 000 community members). However, the World Health Organization noted that if there is a shortage of inspectors the ratio can be extended to 1:15 000. Nonetheless, In the case of South Africa, EHPs are responsible for more than 15 000 community members. This means they have an extremely high workload and pressure. The EHPs are part of primary health care, however, they are less represented at any level (national, provincial, and local municipality level) in such a way that government would rather hire more nurses instead of EHPs, this is not because there not enough qualified people with degrees relevant to environmental health (Respondent 15, local government).

One of the main reasons for the shortage of EHPs in South Africa is the insufficient funding for recruitment, training, and retention of staff. Many municipalities in the country are faced with budget constraints, which limit their ability to hire and train new staff. This results in a shortage of skilled professionals who can carry out inspections, investigations, and enforcement actions to ensure compliance with environmental health regulations.

Another respondent further noted that:

*We lack resources. even human resources we don't have and that's a serious concern also, that we don't have people to go out and do the inspections that is why you find that we take long. We need to be going to the companies every month to inspect how they manufacture their products, but you find that we go there after three months. So, the companies know that you are not visiting them soon and they can do what they want (*Respondent 12, local government*).*

The EHPs are an essential part of primary health care in South Africa. Their work plays a critical role in promoting and protecting public health, preventing, and controlling diseases, and ensuring that communities have access to safe and healthy environments. However, EHPs are not always given the support they require. Their work is often undervalued, and underfunded they are not given the same status as other healthcare professionals.

Relative to primary health care another respondent also narrated that:

The EHPs are there to make sure people don't get sick from food poisoning, but the actions of the government say they prefer people getting sick first to be treated by nurses in the hospitals.

In addition, instead of hiring permanent EHPs, the government normally high people on a six-monthly contract basis, and when that six months is done the load of work carried by contract EHPs hang without no one to take over (Respondent 14, local government).

The lack of manpower is a significant barrier to effectively enforcing environmental health regulations in South Africa. Government should invest in adequate human resource capacity in all spheres of government to ensure that we can monitor compliance with and enforce the specific legislation (DEFF, no date).

Lack of knowledge and training

The result showed that knowledge was another issue that environmental health practitioners are faced with. One respondent noted that:

According to the regulation system, every individual that wants to open whether it's a shop, whether it's a stall, whether it's a canteen or spaza shop so long as they are selling or handling food, whether food is prepared or processed, they should have a certificate of accessibility from the municipality. But the challenge that the inspectors experience challenges concerning people who open shops everywhere serving food to the public without the proper documentation Furthermore, when the EHPs come to inspect the facility, the owner will be hostile saying they were not aware that they needed a certificate to operate. According to the regulation system, EHPs must issue a fine because the person did not let the municipality know that they are opening food premises because of a lack of that knowledge (Respondent 12, local government).

Non-compliance

As far as regulations are concerned, the result showed that there is a high number of non-compliances in the food industry.

One respondent eluded that:

There is a lot of non-compliance in small businesses, especially in townships. The first time they will be nice after doing the inspections especially if the findings show non-compliance, they normally say they will fix whatever needs to be fixed. However, on the follow-up, they will now pretend as if they don't understand English and what is being communicated to them or they find a new person working meaning they have to keep on going to the same premises, people finding different people, who claim they are a person charge. At a point, where a fine needs to be issued or notice to close the establishment they then get intimidation or

threatened by the store owner because they feel like the EHPs are overdoing it (Respondent 13, local government).

Regulation R638 requires that all kitchens must be clean and hygienic, with proper ventilation and adequate space for the preparation and storage of food, but most of the kitchens in government schools are not compliant with these regulations.

Another respondent narrated that:
The main challenge for government schools under the feeding scheme programme is structural non-compliance. The kitchens at most schools were not meant to be kitchens but classrooms meant for learning purposes and not for the preparation of food. The renovations of the building take longer than expected because there are no sufficient funds allocated for renovation. Meanwhile, the school kitchens do not meet the requirements in terms of 638 to make sure that the kitchen has all the necessary equipment that is needed in ensuring that food is properly handled from the point of receiving to the point of consumption (Respondent 14, local government).

Structural non-compliance is a term used to describe the failure to adhere to safety regulations and standards in the design and construction of buildings. It can lead to increased risks of harm and safety hazards, such as the lack of fire safety measures. Even school kitchens are to be compliant with R638.

Relative to the structural non-compliance another respondent also narrated that:

Structural non-compliance is a big issue compared to challenges such as lack of PPE or someone wearing jewellery while preparing food. Since its government to government, the EHPs are not allowed to issue fines but a compliance notice (three or four notices), and if still not fixed the EHPs have the authority to escalate the matter beyond the school principal to the department of education at the district level. In most cases, the department always acknowledges the problems brought to the fore but hardly sees anything being fixed.

When non-compliance occurs in the big food industry in South Africa, it can have serious consequences for public health, consumer trust, and the reputation of the industry as a whole. As such the listeria outbreak was the result of the non-compliance in the big food industry. However, the researcher did not get information about the level of non-compliance because the industry does not report such matters and is not fully transparent. Further, some of the industry stakeholders declined the invitation to participate in this study. This is a particularly

important point to note as food safety is a shared responsibility and requires full support transparency and honesty.

6.5.5 Summary

The section of this chapter presents the case on R638, a regulation under the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972. This regulation was already drafted and awaiting approval from the minister of health when the listeriosis outbreak occurred. The challenges faced with this regulation are its enforcement and implementation of it. The first is, there was no stakeholder consultation when R638 was amended. Hence, stakeholders did not get an opportunity to express their views and concerns about the regulation and/or the process taken when amending the regulations. The result of that is several challenges such as the enforcers of the regulations struggle to interpret it. Enforcers do not understand the regulation and in addition to that, they have never been trained in the context of implementing the regulation.

Another challenge is concerning the person in charge of the premises. The training given to the person in charge is at a very basic level and does not cover all the responsibilities assigned to him/her. Moreover, the person in charge of the premises is given the responsibility to ensure the food they sell or produce to sell is not contaminated. However, there is no clear guideline that serves as a reference point to start with. The next section presents a next case study related to processed meat products through HACCP known as R908. This regulation has now been made mandatory for all processed meat products however, it is expensive to implement especially for small businesses and due to this issue, they end up not being compliant with the regulation.

6.6 Case study three: The regulation relating to the application of the hazard analysis and critical control point system (HACCP system): Amendment (No. R607 of 2018)

6.6.1 Introduction

The third case study focuses on the Regulation relating to the application of the hazard analysis and critical control point system (HACCP system): Amendment (No. R607 of 2018). It zooms in to explore the roles the stakeholder plays in the implementation of R607 as well as the challenges they are faced with in terms of enforcement. Case study 2 also explored challenges at the implementation stage same as this case study. However, both have unique implementation challenges. It demonstrates how enforcers of the regulations struggle with the

issue of non-compliance by the food businesses that do not have the HACCP system in place, and some do not have basic knowledge of HACCP.

The section first delves into the background of the regulation thereby followed by a section focusing on the stakeholders and their role in impacting the regulation of the critical points system. The last section zooms into challenges of enforcement of the regulations identified in this study which included issues on cost-benefit calculation, lack of committed policy champions, lack of knowledge, non-compliance, and lack of advocators.

6.6.2 Background to Regulation R607

HACCP is a system that was developed in the late 1960s. It was designed for the National Aeronautical Space Agency (NASA) and the space program in the United States of America (Lateefat et al., 2018). The regulation aimed to minimize and reduce end-point testing after processing. All the operations carried out in the kitchen in the preparation of food and drinks are coordinated by the aspect of the procedures contained in the HACCP system (Lateefat et al., 2018). In a nutshell, the HACCP system is a preventive-based method for reassuring the safety of food products. Biological, physical, and chemical hazards can be prevented, reduced, or eliminated through this system (Read more about HACCP in Chapter Three) (Weinroth et al., 2018). In the late 1971s, The US presented HACCP at the first National Food Safety Conference, following that in 1983 the WHO EUROPE recommended the use of HACCP; hence, other sectors adopted the system (Weinroth et al., 2018).

Before the food and beverage industry globally adopted HACCP, they were just using basic hygiene requirements. Most of the information was developed in the medical sector and moved to the higher education sector. The educational system started implementing the system and even adopted HACCP in some countries. There is a natural evolvement before HACCP where basic hygiene became established in Society. Later, the food industry adopted HACCP and it became an assurance that if you have HACCP, you manage your risk (Respondent 16, academic).

The South African HACCP system is based on the global HACCP system developed by Codex, but with some local adaptations to suit the specific needs and requirements of the South African food industry. R607 is a regulation under the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972 and was gazetted in June 2018 (Department of Health, 2018). R607 amends R908 of 2003 by making provision for the mandatory application of a HACCP System by the food handling enterprises (Department of Health, 2018).

Before the listeria outbreak, HACCP was applied by the food industry voluntarily. Thus, voluntary application tended to be inadequate in the listeria crisis. On this note, one respondent elaborated that "*HACCP is as effective as the people implementing it. It is always about sustainability, how you effectively manage it after hours or during peak season or when there are strikes and you bring in the alternative workforce which is not trained and management enforcing it and setting an example for the workforce and the effectiveness of the training adopted in the company. HACCP is as good as the culture in the company and the mindset of the company, its starts at the top*" (Respondent 16, academic).

The narrations above attest to the statement by Lateefat et al. (2018) referring to the survey done by MacAuslan (2003) which noted that a vast number of businesses place their reliance on obtaining certificates instead of paying attention to achieving competency in food handling and hygiene practices.

6.6.3 The amendment of regulation R607

Due to the identification of RTE processed meat products as the cause of the listeriosis outbreak, the Director General of Health advised that food handling enterprises be required to implement a mandatory HACCP system. Similarly, similar to case study 2, the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972 allows for the publication of regulations or amendments without a comment period if it is determined to be in the interest of public health (WTO, 2018). Hence, for this reason, there was no stakeholder consultation, due to time constraints.

This regulation is an amendment of the regulations relating to the application of the HACCP by the listing of the categories of food handling enterprises in Annexure B as provided for in Regulation 3 and Annexure A of the Regulations. These are processors of meat and poultry products. Thus, the requirement that no food may be handled without a HACCP system fully implemented now applies to those businesses (FAO, 2018).

Table 6. 2**:** New components of R607 integrating processed meat products.

Sector	**Food handling enterprise**	**Date Listed**
Meat and edible meat offal, preparations, and products	All processors of ready-to-eat heat treatment products as defined in SANS 885.	The food industry had until the 14th of March 2019 to be compliant with the new regulation.

Poultry, preparations, and products	All processors of ready-to-eat heat poultry products as defined in SANS 885.	The food industry had until the 14th of March 2019 to be compliant with the new regulation.

Source: Department of Health, 2018

Related to the amendment of the regulations, respondent 16 (academic) noted that *"in South Africa, regulations are revised after 5 years, and some amendments usually happen after an incident or guidance coming from WHO or global trends adopted where there is new information or new methods or new knowledge. The normal review process is systematically done to continually improve the system. You review the entire system or whole regulation. If you do an amendment, they will annually review that standard. It's a specific change in a system. Amendments are expected after an outbreak".* The respondent continued explaining that*, "the amendment was driven by the government with interaction with industry and academic institution. It takes place in committees such as FLAG for example. The amendment is usually driven from two sides. In this case of a big outbreak, it was the government".*

6.6.4 Stakeholders involved in the implementation of R607

Government

The DoH is responsible for the overall coordination, policy development, and auditing of the national food safety control program, and for serving as the international liaison for the government to develop regulations for importers and exporters. Enforcement activities of regulation 908 (i.e., food inspections) are carried out in local government by EHPs. Therefore, the DOH does not inspect food processing establishments but rather conducts periodic audits of inspectors who work for local authorities (DoH, 2018a). In the event of an outbreak of foodborne illness, the National Consumer Commission has authority under Section 60(2) of the country's Consumer Protection Act to require food manufacturers to investigate, and if necessary, to recall products from the market (DTI, 2018).

Concerning R607, respondent 16 (academic) narrated that:

The government had to immediately review and amend the regulation. In a case of a big outbreak, the government usually drives it because of reputational risk, and it affects trade, trust, and health. There is also pressure from other government departments, such as the Department of Agriculture.

Following the mentioning of FLAG above, respondent 16 explained what FLAG is:

FLAG is a body between health, agriculture and trade, and industry. The FLAG body is really to be the platform that they get together. They are supposed to invite the industry. The problem is the industry is big. With these FLAG meetings, you will maybe have 1 industry sector represented and they will not share information with the other industry sectors. I believe Flag membership has to be expanded. They do not have academics, there might be, but as far as I know, no. if they are there, there are not getting the information about FLAG meetings. I am not sure if they are having FLAG meetings anymore. Covid might have disrupted.

Industry/private sector

Food manufacturers and processors are regulated by the national government in this case under the regulation relating to hazard analysis critical point systems and it is mandatory by law, especially for meat processors not only for export and import purposes but for public health. Thus, the industry has a responsibility as processors and manufacturers to comply according to the stipulations of the regulations. *The industry interacted with the government during the listeria outbreak regarding the amendment of the regulation. However, the industry did not get a chance to give their input as there was no period for comments on the regulations* (Respondent 16, academic*)*. The industry had nine months from the date of publication (14 June 2018) to make sure the HACCP system is in place and that they comply with the new regulation. All ready-to-eat processed meat producers had to have a HACCP certificate which is issued by a SANS-accredited certifying body by 14 March 2019 (SAMPA, 2019)

Universities/ research institutions

Hahn and Hahns Attorneys have attorneys in the field of food law who have engaged with government, industry, and other stakeholders. Besides focusing on laws and representing their clients (either industry or consumers), they provide guest lecturers and training in food law including food safety to the industry and other stakeholders (Respondent 10, civil society).

Same to the industry, universities and research institutions did not get a chance to give input on the regulation before its published since there was no time to do so due to concerns about public health (Respondent 16, academic).

6.6.5 The implementation of R607

The R607 is a system of food safety. The implementation of the HACCP system in South Africa is mandatory for certain food businesses, including those involved in the production, processing, and packaging of high-risk foods, such as meat, poultry, and dairy products. These businesses are required to implement and maintain a HACCP-based food safety management system that is designed to identify and control hazards at each stage of the food production process.

One respondent noted that:
The businesses that are dealing with the food need to identify the critical points during their manufacturing processes, which is never an issue for them to do (Respondent 15, local government).

Another respondent explained in terms of the application of the system saying:

They need to identify where can the problem (biological, physical, or chemical) is while they are manufacturing the food product. Take a restaurant for example, you should check on things that are hazardous or that may ultimately be hazardous in the food premises. Some are critical in your food production, for example, the storage, there must be proper maintenance of the cold chain. The facility manager must ensure that food is stored in a manner that doesn't attract rodents. The control points apply both inside and outside the food production building. R607 would require a food processing facility to have a flow diagram displaying all critical points for ensuring that food is safe as well as the flow of food products from receiving to the point of serving. Considering that the food products delivered are transported by a certified vehicle as per regulation R638.

6.6.6 The challenges in the implementation of R607

There are several challenges associated with the implementation of the R607 which sprout from significant root causes. These root causes are a cornerstone for compliance mechanisms and technical expertise gaps.

Respondent 16 (academic) noted challenges related to HACCP:

The will, accountability, capacity, competency, specific skills in terms of laboratory diagnostics, interpretation of data and information, trust, and respect.

Driving communications about food safety-related issues is a shared responsibility among all food safety stakeholders. Information is shared through multiple media channels such as articles, magazines, newspapers, press conferences, radio and television interviews, technical reports, etc. These are effective ways to reach the population at large.

Respondent 16 further elaborated on the challenges stated above, noting that:

There is a lack of effective communication. Information is not moving rapidly enough across spheres. It is not conveyed in an easily absorbable format, particularly if you look at information for instance the listeria outbreak, informing the man on the street, informing street vendors to make them aware of handling meat, processing and storing meat.

Science communicators are essential to translate scientific, policy, legal, and governance information and make it understandable to everyone in the food system. However, South Africa hasn't developed enough expertise in science communication.

Respondent 16 elaborated on the challenges stated above, noting that:

Irrespective of the level you operate in. whether you are cleaner, you need to understand the importance of hygiene or a CEO who needs to understand the importance of managing his food safety system and believing it, living it, and ensuring it is done optimally.

In the realm of food safety, policy networks have a vital role in guaranteeing the safety of food for consumption. When policy networks are stronger, the outcomes related to food safety tend to be more positive. This is because strong governance networks can coordinate the efforts of various stakeholders, including regulators, producers, and consumers, to achieve common goals.

In terms of networks, the explanation given was that:

The network was strong, and it was broken because it lost a lot of key people, a lot of drivers, people with initiative, and people willing to take the lead. 10 to 20 years ago there was better communication between government departments. At the moment, it is controlled and a closed loop between key players with the health and agriculture department. The Department of Trade, Industry, and Competition has fallen away in terms of the influence sphere. In the past, they were a key player with the SABS. The relationship between the DoH, DALRRD, and DTIC, is at an all-time low. I think it is because the leadership and the competence and the ability to lead from trade and industry have fallen away. That network system linking trade and industry, health, and agriculture is at the lowest. Remember trade and industry is

responsible for SABS, and the national regulator (but only covers fish and meat and certain food items) is where the network breaks up. They are responsible for other entities such as the CSIR and SANAS which is important for the integrity of the whole system. There is a lack of effective networks and effective communication between SANAS and the rest. Even if SANAS has the mandate, they are not adequately recognised by health. There is almost a competition that you are in my domain, instead of understanding that we are jointly responsible for food safety.

Worthy of note that the weakness of the network influences the outcome of what is supposed to be:

The lack of trust and leadership within the network of the different stakeholders is primarily why we do not have a strong food safety culture in the country. If you are going to change something, you must get all the role players on the table, empower everyone, and must have a responsible body. There must be trust and openness. At the moment they are just protecting their domains. They have lost too much capacity with competent people who understand the complexity of it (Respondent 16, academic).

Lack of knowledge

Lack of knowledge and understanding of HACCP and its functioning was found to be one of the challenges related to R908. The following narratives buttress the point.

The challenge with R908 at times even in a well-built structure you will find that people or management does not understand the HACCP even if the inspectors try and explain that HACCP involves the people working with or doing the actual job and that the management must be very much limited in HACCP to get perfect results (Respondent 11, local government).

Respondent 12 (local government) added to say that:

You know, the challenges mostly are the knowledge. We find that people don't have a clear knowledge of food safety, they just, they're just more in the production, the does is to produce, not looking at the safety of the food and the lack of technical expertise, are the problem when we develop a food safety program because the technical knowledge is technical. So, you need an expert to do to implement the HACCP and I think all the departments in the processes, need to know HACCP, they need to be trained, people need to be trained, and they need to know because we find that when we are enforcing this, people

don't have the knowledge we talk about or they just show us your critical control point. They don't know what you're talking about when you are producing a food product.

Lack of Advocators

Based on the interviews the following key issues can be highlighted that provide more context to the notion of lack of advocators. Some examples include the following:

Respondent 13 narrated that:
At the moment the Municipal Health Services team is a strong advocator for food safety laws and legislation. Simply because it is their daily job and responsibility to ensure food safety from the primary level. However, this seems not to be enough, more people are needed to advocate and lobby for food safety at all levels-national, provincial, and municipal levels says EHPs.

The respondent held a firm belief that the absence of people to advocate for food safety regulations at all levels is obvious. This notwithstanding, environmental health practitioners view the national department of health as the main advocate for food safety the at this point, says respondent 14: *national department because they are the ones responsible for these legislations.*

On the other hand, one respondent felt the opposite and explained that:

We as Municipal Health Services, because we are the ones enforcing the regulation, and if we see businesses not complying especially small businesses in townships, we try to assist them. we would constantly be speaking to the person, educating this person about the dangers of his responsibility to produce safe food for the community that the person wants to produce.

Lack of committed policy champions and cost-benefit calculation

Policy champions remain critical to pushing the agenda of the policy domain, including food safety. Respondent 14 (local government) eluded on the point that policy champions can be anyone who is dedicated to the cause; *I would say that the health inspectors are the policy champions because they ensure proper implementation and compliance of regulations daily.*

Respondent 12 (local government) narrated to the point of the lack of committed policy champions:

We are faced with some challenges on the ground, and they seem to be invisible within the primary care system. Some of these challenges result from negligence from top management and the lack of committed people who are willing to invest their time and resources and advocate for food safety by translating and spreading the agenda to decision-makers and opinion leaders as well as the managers.

Related to the cost-benefit calculation, it was indicated they lead to severe loss including loss of human lives. The respondent indicated that:

Moreover, a lack of resources and other challenges slows down the effectiveness of regulatory enforcement, and hence people end up paying with their lives. Simply because the government does not prioritize preventative measures in the first place but rather deals with issues after the crisis (Respondent 15, local government).

non-compliance

Non-compliance can occur for a variety of reasons; thus, non-compliance can have serious consequences for both the food business and consumers. Regulations are there to be implemented and enforced to ensure food safety.

Respondent 12 noted below the issue with compliance:

The big companies don't have a problem with regulation 908 because they already have a HACCP system in place. Their only challenge is that implementing R908 is rather expensive. It requires ample investment because if the facility does not comply with the R908 it will require millions of rands to do a reengineering of the system according to the business manufacturing processes. Furthermore, the situation differs between the big and small manufacturers. The big manufacturers are somehow well-off while some of the small township operators struggle to keep up. The structure, to begin with, does not comply with R638, the basic hygiene requirements and let alone R908.

Though the big business already had a HACCP system when the listeria outbreak happened, it was not compulsory. Also, even though the system is already in place, contamination can still happen if the HACCP system is not maintained properly. Hence, the system can only be effective as it is maintained.

The above narration shows that some business struggle and respondent 8 (industry) noted that:

SMMEs are struggling in this regard.

Related to what motivates the industry to comply, the respondent narrated saying that:

Just show them how important complying is. Now we just refer to the listeria outbreak and tell them how the crisis ruined Tiger Brand's reputation and they start wanting to comply and if your food is safe, everyone believes in that and gains trust from the consumers (Respondent 12, local government).

One respondent noted that sales are another thing that motivates the industry to comply with regulations:

*It's mostly for their sales because if they don't comply, they can't sell the product, and there are consequences to noncompliance. Also, because they want to export that is a big motivator for the exporters to comply because they know if their product doesn't meet our requirements, we cannot issue a health certificate (*Respondent 3, government*).*

The industry is driven and motivated by profit and not by consumer safety. Their primary goal is to make a profit. Therefore, relying solely on industry self-motivation to implement mandatory regulations may not be sufficient to ensure compliance. To address this issue, governments typically establish penalties for noncompliance with mandatory regulations. These penalties can vary depending on the severity of the violation and the level of intent. Penalties can include fines, suspension, revocation of licenses or permits, and even criminal charges in extreme cases. One common approach to confirm that food businesses are compliant with regulations is through inspections and audits.

Related to the motivation to comply, respondent 4 expressed that:

*With regulation, there should not be a motivation for food businesses to comply, besides the fact that their products are at a higher risk like ready-to-eat products is higher risk. So, what should motivate the food industry is their conscience, because if their products are not safe to eat, then someone can die (*Respondent 4, government*).*

According to the quote above, while the latter is true in principle, it is not the same in practice. That is one of the reasons why HACCP was made mandatory.

6.6.7 Summary

The section of this chapter presents the analysis of the regulation relating to the application of HACCP under the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972. This regulation was amended in 2018 after the listeriosis outbreak to include processed meat products. The challenges faced with this regulation are its effective implementation and enforcement. The enforcers of the regulations struggle with the issue of non-compliance by the food businesses

that do not have the HACCP system in place, and some do not even understand this system. Another challenge is the lack of policy champions. There are no committed champions to ensure that all the necessary administration of the municipal offices and their operations run accordingly to ensure that there is a sufficient budget to effectively enforce R908.

6.7 Overall summary

This chapter adopts a case study approach to look at how stakeholders have shaped specific regulations that were published following the 2017/18 listeriosis outbreak, namely the VC9100, R638, and R607. Snapshots of stakeholder interactions at different stages of the policy cycle were captured, enabling the identification of weaknesses and gaps in the policy process.

The Compulsory Specification for Processed Meat Products was initially drafted in 2014. However, there were some challenges where the regulatory bodies could not agree among themselves as to who will enforce the regulation. On the other hand, the processed meat industry complained about the potential high levies that they would be charged. As a result of these challenges the compulsory specifications on processed meats could not be published. The regulation was finally published in June 2018 after the listeriosis outbreak. However, negotiations about the levies are still ongoing between the industry and the regulations.

The R638 was already drafted and awaiting approval from the minister of health when the listeriosis outbreak occurred. The challenges faced with this regulation are enforcement and implementation. Firstly, there was no stakeholder consultation, hence, stakeholders did not get an opportunity to express their views and concerns about the regulation and/or the process taken when amending the regulations. This prompts various challenges such as the enforcers of the regulations they struggle to interpret. Enforcers have never been trained about the regulation and do not understand the correct interpretation or assessment. Lastly, the training given to the person in charge of the premises is low level and does not cover all the responsibilities assigned to him/her according to the capacity of their responsibilities.

The regulation relating to the application of the HACCP system was amended in 2018 after the listeriosis outbreak occurred to include processed meat products. The challenges faced with this regulation are the implementation of it. One common approach to confirm that food businesses are compliant with regulations is through inspections and audits and if not compliant some penalties vary depending on the severity of the violation and the level of

intent. Penalties can include fines, suspension, revocation of licenses or permits, and even criminal charges in extreme cases.

The enforcers of the regulations struggle with the issue of non-compliance by the industry, especially the small-medium businesses that do not have the HACCP system in place and some do not even understand the basic principles of this concept. The biggest concern is the perceived costs associated with effective implementation. The next chapter provides an analysis and conversation about the data presented in chapters five and six.

Chapter Seven: Discussion

7.1 Introduction

This chapter provides an analysis and conversation about the data presented in chapters five and six. To do this, the chapter uses the lens of the theoretical framework presented in chapter two of the Kaleidoscope Model (KM) and policy network theory. This discussion connects the empirical results to the literature discussed in chapter three, highlighting the areas where the literature has gaps. The inner circle of the KM highlights a core set of 16 variables, that influence change in a particular policy domain. They are known as a key determinants of policy change and they are categorised according to five stages of the policy process: agenda setting, design, adoption, implementation, and evaluation and reform. These policy process stages help distinguish which variables take priority at different stages. The case studies presented in Chapter Six follow three stages of the KM namely, agenda setting, design, and implementation. Thus, while the kaleidoscope model identifies important factors influencing the policy cycle which can influence policy processes in each of these cases, network theory adds a valuable layer of analysis by uncovering the complex relationships, dependencies, and interactions among the stakeholders involved within these key determinants. The combination of the two theoretical frameworks provides a more nuanced understanding of the underlying factors at play within the policy processes visible in each of the case studies as well as facilitates a theoretically informed view of the gaps and weaknesses in the food safety governance arising in each case.

There are two schools of thought about the network theory: the interest intermediation school and the governance school. In the interest intermediation school, networks consist of a limited number of participants with some groups consciously excluded. While the governance school sees networks as relying on the horizontal, self-organising coordination between a wide variety of public and private actors that may also straddle multiple institutional venues (Borzel, 1997; Adam and Kriesi, 2019). This dichotomy in network theory helps us understand how the policy processes are influenced by the various actors by looking to see if there is a closed interest mediation network or a more open issue (governance) network. A closed interest mediation network between industry and government could keep food safety governance from progressing (i.e., policy change) while the latter would allow for more

power to shift to consumers and food safety outcomes (and policy change). Thereafter recommending improvements for and substantive policy outcomes in South Africa's food safety governance.

The KM and the policy networks are intriguing, yet it falls short of acknowledging the concept of power, therefore, the study refers to the political economy at the end. Political economy, on the other hand, broadens this perspective by highlighting the significant influence of the entire food industry, revealing that food safety governance represents just one facet of the power imbalance within the broader food system (governance).

7.2 Power dynamic between food safety stakeholders

Chapter Five showed how fragmented the government food safety actors are and the weakness in the relationship between the government (and its agencies) and consumers. The food safety responsibilities are shared between three different government departments and food safety agencies. The role and responsibilities of these departments and agencies are specified and remain non-integrated. Hence, the power for influencing decisions is distributed across these departments. Food safety stakeholders in South Africa include government (and its agencies), the food industry, civil society, and research institutions each with a unique role to play in the governance of food safety.

Amongst these stakeholders, the government, agencies, and the industry operate in a closed policy network and are more able than other stakeholders to influence decisions related to policy issues. The industry often meets or consults with the government through their associations and organisations. Stakeholders such as civil society and research institutions are hardly invited to the meetings, and their voices and opinions are considered not important when making policy decisions. For example, the National Institute for Communicable Diseases (NICD), the government, and the food sector were at the forefront of the reaction during the 2018 listeriosis outbreak in South Africa, with the industry recalling products while the government was in damage control operational mode of action. The first response mostly excluded the civil society and research institutes, only as the outbreak persisted, they were invited to meetings and consultations.

The South African food safety policy network at times displays traditional hierarchical forms of power, and in a very significant manner also adopts vertical coordination. The South African government is the custodian of the main responsibilities of food safety and, takes on

a hierarchical approach to decision-making. However, DoH has decentralised itself by establishing enforcement at lower levels of government i.e., at municipal, metro, or provincial levels. According to data in chapter five, the Provincial DoH has been appointed to oversee food safety at the regional level in addition to the DoH, which oversees implementing food safety laws at the national level. To monitor food safety and address cases of foodborne illness, these departments collaborate closely with regional administrations, company representatives, and other groups.

The decentralisation of implementation encourages greater engagement and input from provincial stakeholders while yet leaving final decision-making authority with the national government regarding food safety policies. For example, the engagement and input of regional stakeholders in food safety policies. In principle regional stakeholders, such as local government authorities, community organizations, and regional industry representatives, are supposed to be given opportunities to contribute their perspectives and expertise during the policy development and implementation process. However, in practice in the case studies there was little evidence of such happening. This decentralization allows for more context-specific decision-making and ensures that local concerns and realities are taken into account. However, despite this engagement, the ultimate decision-making authority regarding food safety policies lies with the national government. The national government retains the final say in setting standards, regulations, and enforcement mechanisms to ensure consistency and coherence across regions.

While the multiplicity of food safety control agencies may be the norm Low-Middle Income Countries (LMIC) including South Africa, they suffer various drawbacks, including lack of capacity, coordination, and confusion of jurisdiction. For example, the lack of communication between the DoH and the National Regulator for Compulsory Specifications (NCRS) contributed to the initial tardiness of the response to the outbreak.

In addition, there is no national overall food safety policy, and there are inconsistencies in legislation. For example, the South African government has enacted several food safety laws, including the Foodstuffs, Cosmetics, and Disinfectants Act 54 of 1972 and the Meat Safety Act 40 of 2000, which should help to enhance the protection of public health, ensure the safety and quality of food products, and establish regulatory frameworks for the food industry. The First Act requires that all food products sold in South Africa be labelled with a list of ingredients, while the Meat Safety Act 40 of 2000 does not have a similar requirement

for meat products. This creates a contradiction between the two laws, as meat products may not be subject to the same level of labelling requirements as other food products.

Moreover, the Standards by the South African Bureau of Standards (SABS) aim to provide and promote quality in terms of different products, as well as conformity assessment services, yet they are not always binding or compulsory in the food industry. Furthermore, there is a lack of transparency in the food industry, with some companies failing to disclose information about their products and processes, making it difficult for regulators to identify and address potential food safety risks. On the hand, during the listeriosis outbreak, the government did not have access to data because of the accreditation agreement with the labs. The next section outlines the discussion on specific cases to understand the weakness of the food safety governance system fully.

7.3 Compulsory Specification for Processed Meat Products

In this case study, the data is interpreted in three policy process stages: agenda-setting, policy design, and policy adoption. In this case, we see how the food industry played a role in pausing the publication of the Compulsory Specification for Processed Meat Products (VC9100). Taking into account the variables influencing decision-making at this stage, such as the political landscape, public sentiment, and stakeholder concerns, becomes imperative for the effective implementation of policies aimed at tackling food safety governance.

7.3.1 Agenda setting

Three variables are important in the agenda-setting phase of the KM. First, policy needs to address a *recognised, relevant problem.* The problem must be claimed as a priority and require immediate attention by the government and/or actors. The second variable is the occurrence of *focusing events,* unpredictable events are referred to as focusing events and they are always important since they are the sole trigger of attention to a problem. The last variable is *powerful advocates,* who play a key role in pushing for action for this particular policy change (Resnick *et al*., 2018).

Authors Moyane *et al*. (2013), and Nyenje *et al*. (2012) quoted in Boatemaa *et al*. (2019) point out that, in South Africa's food retail industry, there had been reports of food safety issues that could have a negative impact on health. For instance, food goods offered for sale had been shown to include foodborne pathogens, high levels of pesticide residues, mycotoxins, and anti-microbial-resistant pathogens. Therefore, before the listeriosis outbreak,

the legislative issue related to the regulation governing RTE meat products was recognised by the researchers and the media as a *problem*. Then in 2013, the government brought the issue forth that processed meat products were not regulated as they should be and that was when the initiative to develop a VC9100 started.

Although the process to develop regulation VC9100 already started in 2013, its implementation was stalled due to disagreement between the government, agencies, and the food industry. Until the *focus event* the listeriosis outbreak (read more about the listeriosis outbreak in chapter six) that brought the legislative issues to the fore. And eventually, the new regulation was published four years later.

In this case, the government is a *powerful advocate*, the NRCS in particular, the food safety agency established to make sure that all food items, particularly processed meat products, adhere to the necessary laws and standards is the regulated authority responsible for the mandatory specification for processed meat products in South Africa. The NRCS has been a driving force behind the formulation and enforcement of food safety legislation because it has a keen interest in guaranteeing the general food security of specific food items in the food supply chain and protecting public health.

7.3.2 Policy design

According to the KM, policy design is also characterised by three variables First, is *knowledge and research*, credible and legitimate research and knowledge provided by researchers, donors, policy entrepreneurs, and technocrats (Haas, 1992) as evidence of what features of policy design will help to achieve goals (Resnick *et al*., 2018). The second variable is *norms, biases, ideology, and beliefs*. The ideologies of steering actors about the role of the state can shape which policy designs are feasible (Resnick *et al*., 2018). The last variable is *cost benefits*, which include political goals such as winning votes, or more traditional financial concerns about affordability.

The stakeholder consultation was held in June 2019 and included input from research institutions in the country which served as platforms for *knowledge and research* dissemination. During the consultation, a researcher raised a point that although the regulations governing microbiological standards for foodstuffs are now aligned with the international food safety standards, they however, still did not address the effective regulation and control of *Listeria monocytogenes*.

The Department of Agriculture, Land Reform and Rural Development (DALRRD) proposed rules establishing a zero-tolerance limit for raw poultry and raw beef (i.e., 0 CFU/25 g) and a 100 CFU/g restriction. However, according to the researchers, this was, not possible because, *Listeria monocytogenes* is naturally present in foods and the environment in quantities that are higher than the zero-tolerance level (i.e., 0 CFU/25 g) and the 100 CFU/g limit. Despite the researchers' viewpoint, the legislation did not change. The food industry was one of the most important stakeholders in the consultation because of their central role in the. manufacturing, processing, and distribution of processed meat products. However, though the industry was in attendance, they hardly commented during the stakeholder consultation. Industry in short still did not agree with the levies stipulated.

In terms of *norms, biases, ideologies, and beliefs*, Jenkins-Smith and Sabatier (1993) quoted in Resnick *et al*. (2018) argue that the narrow design of the regulations is informed by deep beliefs about human nature shaped by norms and socialisation. Resnick *et al*. (2018) stated that the type of focusing event identified in the agenda-setting stage can play a strong role in this regard. Crises, for example, "reduce the time for thoughtful analysis, prompting policymakers to prefer on-the-shelf solutions from elsewhere or rely on "bounded rationality" cognitive shortcuts, and deep beliefs". The same is true for the South African case concerning the listeriosis outbreak.

The listeriosis disease outbreak was unexpected, nonetheless, the prevailing norm of the food industry to prioritise economic growth over public health concerns can be seen in the case of the compulsory specification for processed meat products. This *norm* shaped the *ideologies* and *beliefs* of both government and civil society. It led the government to *belie*ve that the food industry could not self-regulate, especially on risky food products such as processed meat, and that the regulation was necessary to be published with immediate effect even though the industry did not agree with the levies stipulated.

The listeriosis outbreak resulted in hundreds of deaths, thousands of job losses, and millions of rands lost due to product recalls, lawsuits, and decreased market demand for the products. The listeriosis outbreak could have been prevented if the food industry had paid the levy as originally intended, as the resulting costs incurred are significantly higher in comparison. Ultimately, the cost of the outbreak was higher for the public than for the industry.

7.3.3 Policy adoption

During the development and first stakeholder consultation for the compulsory specification for processed meat products, both government and the industry were powerful actors and had significant roles to play in ensuring food safety governance. The government wanted the industry to accept the levies which will enable the regulators to enforce the legislation effectively through inspections, thereby ensuring the production and consumption of safe food. The food industry has traditionally been motivated by profitability while considering food safety as a crucial requirement that must be adhered to. This aspect is often not set as a business priority even though it is a national public health and safety issue. This presents a potential conflict of interest between the government and the food industry, as each is working to further their interests at the expense of the other (Mozaffarian *et al*., 2018). Resnick *et al*. (2018) argue that *powerful opponents versus proponents*, may not surface early during the agenda-setting but rather after the policy design is sealed and the prospective 'winners' and 'losers' of a policy reform become clearer (Resnick *et al*., 2018). As such, government and food industry players were seen as opponents in the case of the adoption of the VC9100. The conflict of interest between the government and the food industry presents an example of a *powerful opponent* versus a *proponent*.

7.3.4 Network theory

In this case study, the government and the industry operated as an interest intermediate network rather than a governance network. Some of the stakeholders (e.g., consumers) were excluded from the discussions and their interests were not weighted highly until a focusing event changed the situation. Some are involved in the discussion, but their inputs are not included when final decisions are made or considered when designing the policy/regulations. Hence, some of the challenges such as inconsistency in legislation and miscommunication are a result of the exclusion of stakeholders and their viable inputs. The network typologies found in the literature share a common understanding of an interest intermediate network as a power dependency relationship between the government and interest groups (Borzel, 1998). As such, this case study shows that these power dynamics have resulted in the industry prioritising its interest over ethical and legal considerations.

The relationship between the government and the food sector can be influenced by a variety of circumstances, making the power dynamics between the two complicated and diverse (Swimburn, 2019). The food sector is subject to the laws, regulations, and policies of

governments. This includes setting requirements for food safety and labelling, limiting the use of chemicals and other components, and regulating promotion and marketing techniques (Reilly *et al*., 2010). On the other hand, the food industry can exert influence over the government through lobbying and other forms of political activity (Swimburn, 2019).

Kim and Milner (2019) state that large food businesses could have a lot of money to spend on lobbying activities and strong connections to government leaders; however, this is most likely in the United States of America whereas, in South Africa, there is a general lack of interaction and mistrust between industry and government.

These relationships can lead to policies and regulations that are favourable to the food industry but may not always be in the best interest of public health. The food industry is highly concentrated in terms of market power, which allows it to wield significant political influence (Swimburn, 2019). The previous Director-General of the World Health Organization (WHO) observed that this economic power easily translates into political power, which enables the industry to maintain its subsidies and favourable policy environments (Chan, 2013).

For example, in 2016, South Africa introduced a sugar tax to combat obesity and related health issues (Hofman *et al*., 2021). However, the food industry, particularly soft drink manufacturers, strongly opposed the tax, and legislation was significantly watered down (Abdool-Karim *et al*., 2020). Despite this opposition, the government ultimately implemented the sugar tax in 2018 (Koen *et al*., 2018).

Again in 2016, the South African government put into effect the innovative mandatory salt-reduction strategy, which aimed at reducing the amount of salt in processed foods and ultimately reducing the incidence of cardiovascular disease in the country, which is a leading cause of death (Kaldor, 2019). However, the industry argued that reducing salt in processed foods would affect the taste and texture of their products and could lead to consumer dissatisfaction. This resistance made it difficult for the government to enforce the reduction targets, and many companies continued to exceed the recommended limits (Van loggerenberg *et al*., 2023).

Stuckler and Nestle (2012), claim that food systems have been primarily developed to provide food for those who have the financial means to pay for it. As a result, these systems prioritise economic outcomes such as generating profits for individuals and companies

involved in the food industry and promoting economic growth, exports, and productivity for countries.

In this case, the food industry's prioritisation of economic growth and profits over public health and consumer safety is further evidence of its closed network approach to food safety governance. Due to the industry's efforts to influence food safety policy for its benefit, it is perceived as an interest group. There are doubts regarding the efficacy of government regulation. International scholars, Hawkins and Holden (2013) contend that in general, the industry influence is eroding the effectiveness of government regulation. Between the industry and government and food safety agencies, the interest of the industry prevailed as the development process of the regulation was stalled for some time until it was published in 2018, and still after it was published, the NCRS has been doing the inspections even though the industry was still not paying the levies as they were still lobbying for approval of lesser levies.

7.3.5 Summary

This case study examines the actions of the actors involved in policy change surrounding the policy problem related to the regulation governing ready-to-eat meat products in South Africa at the agenda-setting and policy design stages. The listeriosis outbreak served as a focusing event that brought the policy problem to the political agenda and eventually led to the adoption of the compulsory specification for processed meat products regulation. The government and NRCS are powerful advocates for regulation VC9100.

This norm of the industry prioritising economic growth over public health shaped the ideologies and beliefs of both government and civil society. This belief was also helped by the listeria outbreak which demonstrated that the industry could not self-regulate, especially on risky food products such as processed meat. This perception resulted in the decision to publish the regulation with immediate effect, despite the industry’s ongoing disagreement with the stipulated levies.

In this case study, the government and the industry operated as an interest intermediate network rather than a governance network as some of the stakeholders were excluded from the discussions. The industry's interests prevailed over those of the government and food safety agencies. The regulation development process was delayed for a considerable time and was eventually published in 2018. The regulation is being implemented, but the industry is not yet paying the levies.

7.4 Regulations governing general hygiene requirements for food premises, the transport of food, and related matters (R638).

This case study takes place at the adoption and implementation stages of the policy process. Pierson (2011) argues that setting the agenda and designing the policy does not ensure that it will be adopted or implemented. According to Hudson *et al*. (2019), because they necessitate the cooperation and coordination of numerous actors and stakeholders, the adoption and implementation phases are essential to the success of a policy. The success or failure of policy adoption and implementation can be influenced by variables like resource availability, political will, and institutional capacity (Mthethwa, 2012). In this case, we see how a stakeholder consultation has resulted in several implementation challenges including misunderstanding and misinterpretation of the regulations.

7.4.1 Policy adoption

Resnick *et al*. (2018) pointed out that one determinant here is *powerful opponents versus proponents*, the second determinant is *government veto players*, and veto players are individuals or collective actors whose agreement is necessary for a change of the status quo (Hug and Tsebelis, 2002). Veto players are identified by the country's Constitution, legal framework, and political system. Lastly, *propitious timing*, when and how quickly the adoption occurs is shaped by the nature of the policy or the type of approval it seeks (Resnick *et al*., 2018).

For all the stakeholders to adopt the policy there should be a comment period which may also be a stakeholder consultation where views, concerns, and suggestions are given to improve the policy and to ensure an effective policy outcome. The R638 case study shows that there was no stakeholder consultation in this case because the government claimed there was no time for such, and the amended regulation had to be published immediately for the sake of the health of the consumers. The regulation was adopted; however, the case study further shows that the enforcers ended up interpreting the regulation differently. The situation, thus, leads to ineffective and inconclusive inspections.

Policy changes typically are much slower when there are more stakeholders because a greater range of stakeholder interests needs to be considered, especially when opponents are powerful (Tsebelis, 2002). The *powerful proponents* were the Department of Health and since there was stakeholder consultation, there are no identified opponents for R638. *Propitious timing*, following the listeriosis outbreak, the regulation was passed with no consultation and

promptly adopted. The challenges only began to arise once the implementation process began.

7.4.2 Implementation

According to the KM, the implementation stage is influenced by four variables. The key factor to implementation is the availability of *the requisite budget*. The delay in the release of and lack of budget may result in implementation delay or total failure (Matland, 1995). The second critical requirement for implementation is *institutional capacity.* Institutional capacity is not only limited to the education, skills, and infrastructure of the official responsible for implementing the policy, but also administrative capacity is required. *Implementation veto players*, in this case, the Department of Health, were seen as *implementation veto players* who exercise a high degree of discretion in the implementation of R638. The *commitment of policy champions* helps provide legitimacy and support to implementing agencies (Resnick *et al*., 2018) champions they can also be the implementers if need be.

Despite a policy being successfully adopted, the results may still be ineffective if it is not properly implemented (Cerna, 2013). Pressman and Wildavsky (1984) argue that the implementation process is more important than the policy itself. In other words, how the policy is implemented is far more important to its success than the policy itself. The challenges raised at the adoption stage already set off the implementation process on the wrong foot. The environmental health practitioners (EHPs) who are the enforcers of the regulation could not comment on the regulation. For instance, to say they have a challenge with understanding the regulation thus interpreting it into action. Additionally, they highlighted that the *budget* allocated for enforcing the regulation was insufficient and amended it to make it clearer and more understandable, and feasible with their budget and capacity.

If policy implementation is to be partly controlled by subnational authorities, then local governments need the requisite resources and training to fulfill their mandates (Pelletier *et al*., 2012; Lapping *et al*., 2012). The data from the R638 case study in chapter six shows that the *budget* allocations are inadequate to cater to the day-to-day activities relating to inspection and enforcement. The financial constraint further implicates human and institutional capacity.

Insufficient inspectors were one of the main challenges encountered by regulators. Enforcers unanimously reiterated that the human resource element was pivotal to ensuring the success

of the food safety regulatory implementation and enforcement. Enforcers successively revealed that the number of personnel manning the affairs on food safety in the Tshwane municipality especially was inadequate. Inadequacies in value-chain engagement, laboratory capacity, and training: Food safety is not the responsibility of a single stakeholder but is a partnership between value-chain actors. The management of food safety should be considered a concerted action that needs cooperation between the government, enterprises, customers, and civil societies. Equipped laboratory infrastructure with trained analysts to support the monitoring, surveillance, and enforcement activities is also noted to be inadequate.

7.4.3 Network theory

Policy networks at different governmental levels, such as national, sub-national, and local, influence and shape interactions between interest groups, which has a significant impact on how power is distributed in the policy subsystems of liberal democracies (Marsh and Rhodes, 1992). The subnational authorities often struggle to allocate sufficient resources to local governments for implementing food safety policies, resulting in inadequate monitoring and enforcement of food safety regulations. Although subnational authorities and local government are all government stakeholders they operated in isolation. The subnational authorities as the party controlling funds to be dispersed to local government operated as a close network by limiting sufficient resources to fulfil their mandates.

The efficacy of public institutions, as well as their capability to provide services and meet the requirements of citizens, can be hampered by a lack of institutional capacity. The public's trust in the government and other institutions may be damaged as a result, which may cause social unrest and instability. Furthermore, a lack of institutional strength can make it challenging to put laws into effect and enforce them, which can promote an atmosphere of impunity and weaken the rule of law. In addition, the government's lack of a comment period during the reviewing process for the regulation suggests that they operated in a closed network.

The absence of public participation and consultation during the reviewing process created a power dynamic where the government controls the policymaking process, limiting the influence of other stakeholders. As such this top-down approach created a closed network where the government is the primary decision-maker, and other actors are excluded from the process. Here, however, the listeriosis outbreak moved the scales of power away from the industry, preventing them from using their veto (as they initially did in the case of study one)

and excluding them from the decision-making process. However, this top-down decision-making process had unintended consequences that prevented the implementation phase from being adequately thought out and made it impossible to do so within the existing institutional resources and budget. The government only held such power as decision-maker in this case compared to case study one because of the listeriosis outbreak, the government especially the DoH as the concern with illness and death weighed on them and made them excise their authoritative power in this case.

7.4.4 Summary

This case study takes place at the adoption and implementation stages. The DoH used the *propitious timing* of the listeria outbreak to push through the adoption of R638 without consultation. This blocked out industries that were not able to act as veto players. However, the lack of consultation (even within the government and its agencies) left many problems in the implementation phase and the government was unable to enforce it.

The DoH was a *powerful proponent*, and no opponents were identified since there was no stakeholder consultation. However, the *budget* allocations were inadequate to cater to the day-to-day activities relating to inspection and enforcement, which was already destined to be strained by weak human and institutional capacity.

Although the provincial government and local government are all government stakeholders they operated in isolation. The provincial government as the party controlling funds to be dispersed to local government operated as a close network by limiting sufficient resources to fulfill their mandates. In this case, the government's lack of a comment period during the reviewing process for the regulation suggests that they operated through hierarchical control. It didn’t work because they needed the whole network to be on board to implement the Regulation effectively, especially since they had so little budget and human resources.

7.5 Regulations Relating to the Hazard Analysis and Critical Control Point System (R607).

This case study takes place at the implementation stage of the policy process. However, it touches on some variables from the policy design and evaluation, and reform stages. The implementation stage is a critical phase in the policy cycle, as it involves translating policy into action. Therefore, ensuring successful implementation can be aided by understanding the variables from the policy design and evaluation stages.

The final step in a cycle of policy is evaluation, which offers the chance to evaluate the degree to which by a predetermined point, policy objectives have been met (Hudson *et al*., 2019). To better inform future policy development and implementation, the post-implementation review aids in identifying any gaps or potential improvement areas in the policy implementation process. Additionally, it offers a chance to gather feedback from stakeholders and assess the overall impact of the policy (Theodoulou and Kofinis, 2004). The challenges identified in this case study were the non-compliance by the industry due to the high cost of Hazard Analysis and Critical Control Point (HACCP) installation, lack of knowledge about HACCP, and lack of institutional capacity.

7.5.1 Implementation

According to Resnick *et al*. (2018), the implementation stage is influenced by four variables, namely, *requisite budget, institutional capacity, implementation veto players commitment of policy champions* (for more explanation on these variables, refer to the first paragraph in 7.2.4 in case study two).

The R607 case study shows that HACCP has been adopted by the food industry a long time ago, but in South Africa, the processed meat industry applied HACCP only voluntarily. Therefore, although some of the big businesses already had the HACCP system installed, its effectiveness depended on the daily upkeep of the system: If the system is not well kept it can lead to food contamination resulting in foodborne illnesses as can be seen with the listeriosis outbreak. The regulation was amended in 2018 after the listeriosis outbreak making the regulation mandatory. Hence, administration changes and new processes come into play. The challenges faced with this regulation are its enforcement and implementation of it.

As mentioned by Resnick *et al*. (2018) the key prerequisite for implementation is having the necessary funds available. Strategic planning and policies must be in line with the capacities of the government, the corporate sector, and civil society, and they must be supported by enough human and *financial resources*. Assessing the volume and stability of government resource expenditures by their national and international commitments and food system policy frameworks is one technique to assess implementation (Fanzo *et al*., 2021).

Another challenge is concerning the person in charge of the premises. The training given to the person in charge is low-level and does not cover all the responsibilities assigned to him/her. Moreover, the person in charge of the premises is given the responsibility to ensure the food they sell or produce to sell is not contaminated. However, there is no clear guideline

that serves as a reference point to look at. The lack of clear guidelines is evidence of the lack of *institutional capacity*.

Furthermore, regarding the lack of *institutional capacity*, data in chapter six shows that there is a communication breakdown. Information is not moving rapidly enough across spheres. It is not conveyed in an easily absorbable format, particularly if you look at information about the listeriosis outbreak for example.

Some of the businesses were not compliant with the regulations because of the cost of implementation they had to carry. Data further show that the enforcers of the regulations who in this case emerge as *implementation veto players* are faced with the issue of non-compliance by the industry, especially the small-medium enterprises (SMEs) who do not have the HACCP system in place and some do not even have a basic knowledge of HACCP. Resnick et al. (2018) argue that private sector actors may sometimes refuse to implement government policies that undermine their profitability or competitive advantage. Big businesses already had the HACCP system in place, and they were self-regulating partly because of the lack of resources and capacity that the government relied on industry to guide it in regulating the sector until the Listeriosis outbreak made it very obvious (to the whole country/ world) that the regulation was in adequate and in favour of industry and so the decision making set up had to be changed.

Despite having HACCP, it is the responsibility of the managers and food handlers to ensure that the HACCP system is well-maintained daily to ensure safe food production. The EHPs are inspecting the big processing plants under the amended HACCP system regulations R607,

To overcome incentive, resource, and capacity challenges, the *commitment of policy champions* remains important (Gore, 2014). The data shows that at the local government level, there are very few committed champions to ensure that all the necessary administration of the municipal offices and their operations runs accordingly to ensure that there is a sufficient budget to effectively enforces R607. Some of these challenges are attributed to potential shortcomings in the oversight and management practices of top-level executives and the *insufficiency of committed people* who are willing to invest their time and resources and advocate for food safety by translating and spreading the agenda to decision-makers and opinion leaders as well as managers.

7.5.2 Evaluation and reform

According to the South African legislative system, regulations are supposed to be periodically reviewed after every five years to update the policies and regulations to ensure they remain relevant and effective in addressing the needs of the society; hence, *evaluation and reform* were crucial. In this case, the regulation was revised due to the listeriosis outbreak. The revision of the regulation aimed to improve food safety standards and prevent future outbreaks.

7.5.3 Network theory

Klijn (2008) claims that it is only through joint efforts (governance networks) that policy problems in modern society can be solved. These policy networks are also faced with challenges (Kickert *et al*., 1997). Firstly, the more actors involved in the partnership, the more difficult it becomes to reach an agreement (Kickert *et al*., 1997). They further mention that reaching an agreement may be rendered impossible when actors have different interests. Again, the industry is prioritising economic growth over consumer safety as the data revealed that some of the businesses were not compliant with the regulation. Hence the industry was operating as a close governance. The non-compliant businesses may have different interests and priorities than those who are compliant, making it difficult to reach a consensus on how to enforce the regulation.

Now, it is controlled and a closed loop between key players with the health and agriculture department. Furthermore, the data revealed that a few of the government properties such as public-school kitchens which are used to prepare food for children were not compliant with the regulation. The DoH has a mandate to ensure food safety through R607 and the EHPs are enforcing the regulations on the group to ensure food safety, however, the Department of Education (DoE), and the Department of Infrastructure Development (DoID) are responsible for ensuring that school kitchens are up to the proper standard and are compliant. This situation has significant implications for the efficient operation of the government, which is why it depends on policy networks to ensure the effective delivery of public services. This reliance stems from the government's recognition that it may lack the required expertise to adhere strictly to regulations without external assistance.

7.5.4 Summary

This case study examines the implementation of HACCP regulations in the South African processed meat industry, which was voluntary until it was made mandatory in 2018 following a listeriosis outbreak. The challenges in implementing the regulation include the cost of implementation for small-medium businesses, non-compliance, and lack of commitment from policy champions at the local government level. The subsequent section aims to explore the political economy aspect to gain a comprehensive understanding of the limitations of the food safety governance system and its position within the broader context of the food system.

7.6 Food safety governance in South Africa

Food safety governance is a critical aspect of public health that encompasses various regulatory measures (Zhu *et al*., 2019), policies, and enforcement strategies to ensure that food is safe for human consumption. In South Africa, the food safety governance structure is fragmented, with several regulatory bodies, government departments, and agencies involved in different aspects of food safety (Boatemaa, *et al*., 2019). This fragmentation leads to overlaps, gaps, and inconsistencies in food safety policies, regulations, and enforcement strategies, making it difficult to ensure that all food products in the country are safe for human consumption (Hunter-Adams *et al*., 2018).

The lack of political will by the government, combined with the lack of transparency when it comes to dealing with the food industry, is another pressing issue when it comes to food safety governance in South Africa (Levy *et al*., 2021). The South African government has been slow to implement food safety regulations, and even slower to enforce them. This lack of political will has resulted in an ineffective food safety system. This can be seen in the numerous food safety scandals that have rocked the country in recent years such as the listeriosis outbreak and continuous food product recalls (Unnevehr, 2022). In addition, the government has been slow to respond to the growing number of foodborne illnesses in South Africa. Hunter-Adams *et al*. (2018) argue that the current system is inadequate to deal with the growing threat of foodborne illness, and the government has failed to take the necessary steps to ensure that food safety regulations are being enforced. Nonetheless, there has been a recent response regarding food-related noncommunicable diseases in South Africa. The Department of Health has recently issued Draft Regulations on Labelling and Advertisements. The regulations

strive to, among other things, challenge the occurrence of food-related non-communicable diseases. Draft Regulation R3337 has not been implemented yet but is open for comments.

The listeriosis outbreak in South Africa made it evident that the nation's food safety issues needed to be addressed. Boatemaa *et al*. (2019) argue that even where rules are in place, it might be difficult to put them into practice. The government should be the driving force behind a safe food system, establishing effective legislation, and identifying who is responsible for enforcing these standards because there is an urgent need for greater forms of accountability within the food system. The implementation and enforcement of legislation will then be the next point on the agenda along with other administrative challenges, which include knowledge diffusion processes and channels.

In the South African food safety governance network, there is a communication breakdown, and information is not conveyed in an easily absorbable format. The closed loop between key players with the health and agriculture departments and the reduced influence of the Department of Trade and Industry present challenges to policy networks. Reaching an agreement may be difficult when actors have different interests. To solve policy problems in modern society, joint efforts through governance networks are necessary, but challenges remain.

In the middle of the 2017 academic year, a well-known soft-drink corporation surprised many by making a voluntary pledge to support the health of South African children. Specifically, the company committed to no longer providing its sugar-sweetened beverages (SSBs) to primary schools across the country (Sulcas, 2022). Two years later, researchers from Witwatersrand University decided to examine the impact of this promise. Their investigation revealed that despite the pledge, the corporation's products were still being sold at 54% of school tuckshops and shops near schools where tuckshops were not present (Sulcas, 2022). Addressing policy problems in modern society can be challenging, particularly when actors have divergent interests. It becomes crucial to foster joint efforts through governance networks to achieve agreements.

Erzse *et al*. (2022) contend that voluntary actions (VAs) have been successful in reducing the perceived necessity for statutory measures by LMIC governments in various countries. This is because the VAs seems to eliminate the need for legislation from the government's perspective. However, the researchers discovered that these types of commitments are not effective and have caused significant delays in implementing stricter policies in South Africa.

While voluntary actions are preferable to no policy action, they have limited effectiveness (Vergeer *et al*., 2019) or are not effective at all. As a result, allowing powerful food companies to enact their policies by making voluntary commitments can be counterproductive.

7.6.1 Power of business over food safety governance

A weak government (with capacity difficulties), the absence of civil society actors, and powerful industry actors appear to dominate as seen in chapter five and the case studies. This is consistent with how the South African food industry is generally seen. Food is a good business everywhere in the world and South Africa is no exception (Ledger, 2016). The examination of governance forms in South Africa encompasses both system-wide and commodity-specific value chain governance, taking into account the evolving nature of these governance structures. Prominent corporate entities play an active role in influencing the accessibility, affordability, and desirability of food products.

Food security and the need to keep food prices affordable remain important issues for many citizens. Global food prices rose dramatically in 2022 (NPR, 2023). The chief economist at the Agricultural Business Chamber of South Africa pointed out that, the soybean crops in Brazil and Argentina were greatly impacted by droughts, which resulted in a significant increase in prices. It was suggested that such a disruption could have a profound effect on the vegetable oil market. Additionally, China has substantially boosted its grain reserves (Smit, 2023).

High food prices were caused by a combination of expensive fuel and the direct impact of Russia's invasion of Ukraine on the prices of wheat, maize, and sunflower oil (Wasserman, 2023a). Despite this, South Africa experienced relatively mild food price increases compared to other regions of the world (Smit, 2023). In February, food and beverage price inflation in South Africa rose to 13.6%, the highest it has been since 2009, according to Statistics South Africa (Stats, 2023). At the same time, household incomes have been under growing strain (Wasserman, 2023b).

The COVID-19 pandemic and load shedding have had a significant impact on food prices in South Africa. The pandemic has disrupted global supply chains and caused significant economic instability (Botha, 2021). Load shedding has also had an impact on food prices. Power outages have disrupted food processing and storage facilities, leading to spoilage and

waste (Mare, 2023). In addition, farmers have struggled to irrigate crops and power farm equipment, which has affected crop yields and led to shortages and price increases for certain products. This has had a disproportionate impact on low-income households, who spend a larger portion of their income on food and are more vulnerable to food insecurity (The Conversation, 2020).

There is substantial evidence indicating that we are currently experiencing a food regime primarily driven by corporate interests. This means that corporations hold significant influence both in material terms and in shaping the understanding and discourse surrounding the food system (Greenberg, 2016). Greenberg (2017), as quoted in Hunter-Adam et al. (2018), argues that since the deregulation that took place after the 1994 transition to democracy, the food system has come to be characterised by significant economic concentration and centralisation of power.

Adeniyi *et al*. (2021) agree and point out that big food firms now have a significant role in determining the direction of corporate power. There are a set of services regulated by the government such as health and safety regulations such as hygiene standards for the storage and transportation of meat and other food products, and the inspections of the factories. Those who do not comply are set to pay a fine or business closure. Even so, there are still a few big companies that dominate the food industry and have the power to dictate the market terms and take control of governance by how they want to be regulated, when to be regulated, how, and by whom. Furthermore, these corporations receive backing from politically influential investors who hold substantial investments across various stages of the supply chains (Thow and McGrady, 2014).

Adeniyi *et al*. (2021) added that big food corporations now have the chance and authority to essentially run the food system due to the near absence of effective public regulation, as well as the acts or inactions of several stakeholders who have accepted the operation of the dominant system (Adeniyi *et al*., 2021). Ledger (2016) made an example of a player and a referee in terms of governance. The meat processing industry played the same game. They approached the government to say we need you to regulate this particular product but during the process, the industry decided that the government is not doing this according to the industry's rules and so they decided to play referee and pause the process of publishing one of the important regulations known as VC9100.

Because the government under the influence of neo-liberal economics wanted to reduce state involvement in the economy and increase the feasibility of a free market for the sake of an efficient way of allocating resources in 1997 the South African government withdrew from the complete governance of agricultural markets, although the government still governed some parts of the food system the whole government is controlled by the industry (Ledger, 2016). It is the details of the governance structure of our agri-food system that determine the distribution of power within it, and thus the outcomes of the system.

7.7 Summary

The chapter discusses and interprets the data presented in the previous chapters using the KM and policy network theory as the guiding theoretical framework. The core set of 16 variables in the KM is identified as key determinants of policy change, categorized according to five stages of the policy process. The network theory helps understand how policy processes are influenced by various actors, whether through a closed interest mediation network or a more open issue network. The chapter also discusses the political economy of South Africa's food systems, recommending improvements for substantive policy outcomes in food safety governance. To gain a comprehensive understanding of the weaknesses within the food safety governance system, this study needed to examine specific cases as well as the broader context of the food system in which food safety governance operates. Three case studies are analysed in terms of the policy cycle stages, identifying gaps and weaknesses in the policy processes.

Chapter Five shows that the South African food safety governance is shared across three different government departments and several food safety agencies, each with specified roles and responsibilities. Opportunity to influence decisions is distributed across these departments and agencies, while stakeholders such as civil society and research institutions have limited influence over policy decisions compared to the food industry.

The first case study focuses on the agenda-setting and policy design stages of the policy cycle, specifically on the compulsory specification for processed meat products. Before the listeriosis outbreak food safety was already a *recognised policy problem*, however, the *focusing event* which is the listeriosis outbreak brought the legislative issues to the forefront. The strong proponents of regulation VC9100 are the government and the agencies (NRCS). The government's conflict of interest with the food business regarding the levies serves as an illustration of a strong *opponent versus a proponent*. The stakeholder consultations, which were organised to examine issues as they were viewed, provided a platform for the sharing of

knowledge and science-based evidence. However, the science-based evidence was not welcomed as it was still not incorporated into the regulation. Both the government and civil society's *ideology* and *beliefs* were moulded by the industry's *norm* to prioritise profits over food safety. As evidenced by the listeriosis outbreak which caused the government to conclude that the food industry cannot self-regulate, particularly when it comes to risky food products like processed meat, and that the regulation needed to be published with immediate effect even though the industry still did not accept the levies proposed.

The second case study focuses on the adoption and implementation of food safety regulations in South Africa, looking at the R638 regulation. No stakeholders were consulted in this instance which caused several implementation difficulties. In this instance, the DoH and minister were viewed as the *government veto players* with the authority to determine whether or not the public should have a say in the updated R638. Since both the sector and the government are having problems with the regulation's execution, it is unclear who the strong *opponents and proponents* are.

The data from the R638 case study demonstrates that the *budgetary* allotments are insufficient to cover routine inspection and enforcement actions. The budgetary restriction also affects institutional and human capabilities. Although local governments and subnational authorities are all members of the government, they operated independently. The subnational authorities such as executives, and director generals, who oversaw allocating funds to local governments, worked as a closed network by limiting the resources necessary to carry out their duties. In this instance, it also appears that the government worked in a closed network because there was no comment period during the regulation's approval procedure.

The third case study focuses on the implementation of HACCP regulations in the South African food industry. The challenges in implementing the regulation include the *cost* of implementation for small-medium businesses, non-compliance, and lack of commitment from policy champions at the local government level. The lack of *committed champions*, negligence from top management, and communication breakdown also affect implementation. The food safety governance operates as an interest intermediate network. Regular evaluation and reform of regulations are also necessary to ensure effectiveness.

The South African food safety governance is operating as an interest intermediate network rather than a governance network. It is dominated by powerful industry actors due to weak government capacity and the absence of civil society actors. The industry is highly

concentrated along the whole food chain, with big food firms having significant power to determine the direction of corporate power. This is exacerbated by the near absence of effective public regulation and the acceptance of the dominant system by several stakeholders. Government regulations on health and safety exist, but few big companies dominate the industry and have the power to dictate market terms and take control of governance. The implementation and enforcement of legislation and addressing administrative challenges should be a priority for the South African government. The next chapter gives an overall conclusion to the study and makes recommendations for improving food safety governance.

Chapter Eight: Summary, Conclusion, and Recommendation

8.1 Introduction

The previous chapter provided analysis and conversation about the data presented in chapters five and six. This chapter provides a summary of the thesis, a conclusion, and recommendations made for further implementation.

As outlined in chapter one, the main aim of this study is to analyse food safety governance in South Africa and identify areas of weakness. The precise objectives are:

- To map the key stakeholders and government institutions in food safety governance in South Africa, and what are their roles.
- To identify the main food safety policies strategies, and programmes in place in South Africa.
- To determine how are these strategies, policies, and programmes developed, implemented, reviewed, and the role of various stakeholders and institutions play in this.
- To understand why apparent weaknesses are arising in food safety governance in South Africa.

This study hypothesised that food safety in South Africa is dominated by a narrow interest mediation network involving mainly government actors and industry and that a better governance outcome could be obtained if the network developed into a governance network so that it includes more stakeholders that are actively involved (i.e., that greater network management is needed). The objectives set in this thesis were tackled as follows: objectives one and two were covered in chapter five; objective three is addressed in chapter six and objective four is addressed in chapter seven. This chapter provides an outline for the entire thesis. First, it provides a summary of the key findings and evaluates how effectively the aforementioned objectives were achieved. This chapter then outlines these primary contributions to the knowledge of the chapter. The final section of this chapter provides recommendations for the improvement of food safety governance in South Africa.

8.2 Summary of the main findings

Objective one is addressed in chapter five. The findings reported in this chapter provides supportive evidence that the food safety governance structure in South Africa is fragmented as reported by Boatemaa *et al*. (2019) and Hunter-Adams *et al*. (2018). This chapter provided a contextualized overview of the different stakeholders involved in the governance of food safety, namely the government, food industry, civil society, and research institutions and universities (a list of stakeholders can be found in Table 5.1). Of these, not all are involved in decision-making processes which reflect the lack of cohesion, collaboration, and interaction.

The South African government is the custodian of the main responsibilities of food safety, and therefore, takes on a hierarchical approach to decision-making. However, it has decentralised regulatory activities to provincial or metro levels of government and numerous agencies that have roles relating to food safety. In addition, the government holds a very close relationship with the food industry.

In this study, the claims made by Ho (2021b) and Ledger (2016) have been confirmed, being that South Africa has a concentrated food system and supply chain where retail is highly concentrated within the power dynamics of a few retailers. The study also confirmed a claim made by Schoenberg *et al*. (2013) that retailers have successfully pursued a clear and customer-led turnaround strategy through positive engagement with other stakeholders, most importantly the government. In addition, the biggest well-known leading processing and manufacturing companies in South Africa include but are not limited to RCL Foods, Tiger Brands, and Rhodes Foods. These companies control 80% of the food processing sector in South Africa.

Amongst these stakeholders, government, agencies, and industry operate in a close network and hold more power over smaller players which do not allow the same influence on decisions related to policy issues.

The informal sector has been overlooked in the past and there is a clear differentiation in the treatment of the informal sector, including the manner of the enforcement of bylaws in a local government this finding is confirmed by Ho (2021a) and Torero *et al*. (2006). This chapter validated this claim as the study revealed that they were not involved in any decision-making processes related to food safety governance even though it should form part of the stakeholders as it caters to the majority of the low- and middle-income population. At the

same time, non-governmental organisations (NGOs), community groups, and labour unions were not involved in the consultations and decision-making process as it relates to food safety or food control.

Objective two is covered in chapter five**.** South Africa does not have an overarching specific food safety policy, only one related to the broader food security and nutrition domain i.e., the National Food and Nutrition Security Policy. This policy does not address the necessary food safety issues such as disease outbreaks or foodborne illnesses, etc. Rather, the National Food and Nutrition Security Policy only reference the "*creation of a body that will amalgamate the different entities responsible for implementing food safety regulations*" (DSD and DALRRD, 2013, p17). In addition, in 2018, following a listeriosis outbreak, President Cyril Ramaphosa announced intentions to establish a food safety agency or regulatory authority to prevent future similar occurrences. The primary responsibility of this agency would be to guarantee the greatest levels of health and safety to safeguard consumers. Mukamba (2011) and, Versfeld and Ngcobo, (2021) concurred that establishing a South Africa Food Safety Agency could enhance the effectiveness of government operations, leading to reduced financial expenses, including expenses related to compliance, better coordination, and increased adaptability in addressing potential food safety emergencies at both national and regional levels. This is not a new idea, as the concept of a food safety agency or regulator was initially proposed in 2001, but no tangible progress has been made since then and no valid reason has been communicated as to why the body does not exist. Furthermore, there is no overarching national food safety policy.

The chapter confirmed claims made by Marks (2015) that even though food safety is a crucial and growing global health issue, current regulations do not effectively meet the demands of today's food safety requirements. While many countries depend on a set of established legal protocols to safeguard food safety, these measures frequently prove insufficient. This study highlights the continued fragmented legislative framework within three government departments responsible for their development, coordination, and enforcement. However, the pieces of legislation are not well-implemented or integrated. South Africa operates through four types of standards namely: generic standards, product standards, regulatory standards, i.e., inspection, and testing standards. Policy Guidelines on National Food Safety Alerts and Official Product Recalls were developed in 2004 under the directorate of food control of the Department of Health (DoH).

Objective three is addressed in chapter six through a case study approach to assess stakeholder networks and how they shaped specific policies that were published following the 2017/18 listeriosis outbreak; the Compulsory Specification for Processed Meat Products (VC9100), Regulation relating to Hygiene Requirements for Premises and Transportation (R638), and the Regulations relating to the Hazard Analysis Critical Control Point (R607). It was found that the same stakeholders were impacted by all three regulations or the specification.

The listeriosis outbreak served as a focusing event that brought the legislative issues to the forefront and eventually led to the adoption of previously developed but not adopted compulsory specifications for processed meat products. Government and the relevant agencies in particular the National Regulator for Compulsory Specifications (NRCS) are powerful advocates for regulation VC9100. The conflict of interest between the government and the food industry presents an example of a powerful opponent versus a proponent. The norm that the industry prioritises profits over consumer health shaped the ideologies and beliefs of both government and civil society. This belief was also strengthened by the listeriosis outbreak which demonstrated that the food industry cannot be left to fully self-regulate, especially on risky food products such as processed meat, and that the regulation was necessary to be published with immediate effect. The regulation is currently being implemented, but the industry is not yet paying levies. In this case study, the government and the industry operated as an interest intermediate network rather than a governance network as some of the stakeholders were excluded from the discussions. The industry's interests were considered more important than those of the government and food safety agencies. The regulation development process was delayed for a considerable period and was only published in 2018. Even after publication, the industry continued to lobby for approval of reduced levies.

The second case study focuses on R638. The challenges faced with this regulation relate to its enforcement and effective implementation. There was no stakeholder consultation process. Thus, the regulation was adopted without interrogation, validation, or discussion amongst the stakeholders because the DoH used propitious timing to push it through without consultation. This blocked the industry which was not able to act as a veto player. However, the lack of consultation, even between the government departments and food control agencies, left many challenges in the implementation phase, making government unable to enforce it.

The DoH was a powerful proponent, and no opponents were identified since there was no stakeholder consultation. The data from the R638 case study shows that the budget allocations are inadequate to cater for the day-to-day activities relating to inspection and enforcement. The financial constraints further implicate a lack of human and institutional capacity.

Although subnational authorities and local government are all government stakeholders they operate in isolation. The subnational authorities as the party controlling funds to be dispersed to local government operated as a closed network by limiting sufficient resources to fulfill their mandates. In this case, the government's lack of a comment period during the reviewing process for the regulation suggests that they operated in a closed network.

The third case study is R607. The challenge faced with this regulation is the implementation of it. The challenges in implementing the regulation include the *cost* of implementation for small-medium businesses, non-compliance, and lack of commitment from policy champions at the local government level. The lack of *committed champions*, negligence from top management, and communication breakdown also affect effective implementation.

Stakeholders have an important role to play in policy development, implementation, and review. Government departments, and agencies, hold the primary responsibility for policy development. They conduct research, draft proposals, and make decisions based on national interests and priorities. The industry also plays a significant role, particularly in implementation, as they bring resources, expertise, and innovation to turn policies into tangible actions. However, the input of civil society groups is equally important. These stakeholders contribute valuable insights, advocate for marginalised communities, and ensure policies align with societal needs. They have a role in policy review, providing feedback, engaging in public consultations, and holding decision-makers accountable. Thus, there the case study highlighted the need for collaboration and inclusivity in policy development, implementation, and review processes.

Objective four is covered in chapter seven. The use of the KM in chapter seven revealed that there are challenges in the food safety governance structure throughout the policy cycle stages such as the lack of committed policy champions, insufficient budget, lack of institutional capacity, as well as enforcement pose and implementation challenges. Furthermore, the use of network theory allowed the chapter to also revealed that these

challenges resulted from stakeholders operating in a close network instead of a more open and inclusive governance network.

The South African food safety governance structure is operating as an interest intermediate network rather than a governance network. It is dominated by powerful industry actors due to weak government capacity and the absence of civil society actors. This signifies weaknesses in coordination, accountability, transparency, information sharing, and resource allocation. These weaknesses undermine the effectiveness of food safety governance, leaving the system vulnerable to risks and compromise ensuring safety of the food supply chain. The industry is highly concentrated along the food value chain, with big companies having significant power to determine the direction of corporate power. This is exacerbated by the near absence of effective public regulation and the acceptance of the dominant system by several stakeholders. Government regulations on health and safety exist, but few big companies dominate the industry and have the power to dictate market terms and take control of governance. The implementation and enforcement of legislation and addressing administrative challenges should be a priority for the South African government and industry should be a supportive role to better align with government policy and directives in a coherent way. The next section gives an overall conclusion to the study and makes recommendations for improving food safety governance.

8.3 The main contributions to knowledge

8.3.1 *This is the first comprehensive and organised evaluation conducted on food safety governance in South Africa, identifying areas of weakness that will enable the presentation of holistic recommendations for improving the system.* Mukamba (2011) noted that the comprehensive and organised evaluation of food safety governance in South Africa is critical for identifying areas of weakness and developing recommendations for improving the system. Such evaluations provide valuable insights into the challenges and opportunities facing food safety governance and can help guide policymakers in developing effective new policies and regulations. The importance of comprehensive evaluations of food safety governance is also emphasised by Kussaga *et al*. (2008). Their paper emphasises the need for comprehensive evaluations of food safety systems to identify areas of weakness and develop effective strategies for improvement.

Authors such as Versfeld and Ngcobo (2021) and Mukamba (2011) strongly suggest that to strengthen the food safety system, establishing a single agency responsible for food safety,

implementing a unified legal framework, and establishing a food safety committee with broad representation will benefit both food industry and consumers in several ways. This study hypothesised that food safety in South Africa is dominated by a narrow interest mediation network involving mainly government actors and industry and that a better governance outcome could be obtained if the network developed into a governance network so that it included more stakeholders that were actively managed (i.e., that greater network management is needed). This hypothesis was supported by data, and it could be a possible solution to the South African food safety regulatory issue. This recommendation is for improving the food safety system and to ensure that all stakeholders, including government, industry, and consumers, are involved in the decision-making process. This would ensure that all voices are heard and that the regulations that are established could be better designed and implemented. Additionally, adequate resources and training should be provided to ensure that regulatory bodies can effectively monitor and enforce food safety standards.

8.3.2 *This research contributed to identifying both strong and weak relationships within the network*. By recognising these networks, it is then possible to develop meaningful collaborations to improve food safety governance in South Africa. This research identified which departments and agencies have close working relationships and which are more isolated. In addition, the research identified which stakeholders have stronger connections with the government and which have weaker connections.

Katzenstein (2018) argue that effective policy networks require strong relationships between stakeholders and that these relationships are critical for developing effective food safety policies. At the same time, Damgaard (2006) posits that effective policy networks require both horizontal and vertical relationships between stakeholders and that these relationships are critical for developing effective food safety policies.

Identifying strong and weak network relationships between stakeholders is important because it allows policymakers and stakeholders to understand the barriers to effective policy dialogue and collaboration. For example, if there are weak relationships between government agencies and consumer organizations, it may be difficult to develop policies that effectively protect public health. On the other hand, if there are strong relationships between government agencies and industry groups, policies may be developed that prioritise industry interests over public health.

8.3.3 *The study has linked the kaleidoscope model and policy network to 'identify' and 'explain' the weaknesses in food safety governance.* The advantage of using these two theories together is that they provide a more comprehensive understanding of the dynamics of food safety governance. By combining the two theories, we can better understand how multiple actors and systems interact to create an overall food safety governance system. This approach gives us insight into the power dynamics and the influence of various stakeholders on the decision-making process. It also helps to identify gaps in the system and to develop strategies to address those gaps. Furthermore, this approach allows us to consider the ethical implications of food safety governance, such as the impact on vulnerable populations and the need for equitable access to safe food.

8.3.4 *The study has investigated policy networks in a real-world context of food safety in South Africa.* The importance of understanding policy networks in South Africa cannot be overstated. These networks are critical in determining policy outcomes and have been the subject of much research in political science and public policy. In the context of South Africa, policy networks have played a crucial role in the country's transition to democracy and its efforts to address pressing social and economic challenges. Levy *et al*. (2021) noted that the division of policy networks in South Africa has been associated with the nation's move toward democracy and its endeavors to tackle long-standing social and economic disparities. This study found that the policy network involved in the development of the policy was dominated by government actors and the industry, with limited involvement from civil society and other stakeholders. This finding has important implications for the legitimacy and effectiveness of the policymaking process in South Africa.

8.3.5 *The research presented in this study adds valuable insights to the growing body of literature on discussions and exchanges related to food safety governance.* Food safety is a critical issue globally, and as a result, there has been an increasing amount of literature on policy dialogue related to food safety governance. This study contributed to literature that examines and evaluates the policies and regulations that govern food safety, as well as the various actors involved in the policymaking process. It further provides literature on valuable insights into the actors involved, the institutions that govern food safety, and the broader political and economic context in which these policies are developed.

Understanding the complexities of food safety governance and developing effective policies and regulations that safeguard public health are crucial aspects in this field. Engaging in

meaningful discussions and exchanges of ideas among stakeholders plays a vital role in achieving these goals. The importance of constructive discussions in food safety governance is also emphasised in the World Health Organisation's (WHO) "Global Strategy for Food Safety: Safer Food for Better Health" report. The report emphasises the importance of engaging all stakeholders in constructive discussions, including policymakers, industry representatives, consumer groups, and civil society organisations. The WHO argues that discussions related to food safety governance are critical for developing effective food safety policies that protect public health.

8.4 Recommendations

8.4.1 Policy network

As discussed in chapter two, interest intermediation and governance networks are theories used to analyse governance dynamics. They differ in their objectives, methods, and outcomes, and both have advantages and disadvantages. Interest intermediation focuses on representing the interests of specific groups and ensuring that their views and perspectives are considered in the policymaking process. The objective of interest intermediation is to influence the policymaking process to produce outcomes that are beneficial to the group being represented (Borzel, 1998). Lobbying, advocacy, and negotiation are frequently used in interest mediation to sway the legislative process. Interest groups employ a variety of tactics, such as direct lobbying, grassroots campaigns, and media outreach, to communicate their viewpoints to decision-makers (Mykkanen and Ikonen, 2019). Interest intermediation frequently results in specialised and focused modifications to a particular policy or regulation. Interest mediation can help the group being represented achieve its goals, but it can also produce policy outcomes that are biased in favour of some organisations' interests and not those of the general public (Rizopoulos and Sergakis, 2010).

On the other hand, the governance networks focus on bringing together different actors in the policymaking process to facilitate collaboration and cooperation. The objective of governance networks is to produce policy outcomes that are more inclusive and reflective of the needs and perspectives of all relevant actors (Borzel, 2008). To encourage cooperation and teamwork, governance networks employ a variety of strategies, such as cooperative problem-solving, information sharing, and consensus building. The results of governance networks are frequently more comprehensive and indicative of the requirements and

viewpoints of all pertinent parties (Wang, 2022). Nevertheless, they can also be slow and inefficient and may not achieve the same level of specificity as interest intermediation.

To address the shortcomings of the interest intermediation approach, South African food safety governance should consider opening the decision-making process to a wider group of stakeholders that have a more representative, inclusive influence on decision-making. There are parts of the network (i.e., industry) that will not be keen to consider opening up the network and will work hard to block this as the current network suits them very well. The preference is for the responsibility of opening up the network to be placed on the government stakeholders– i.e. network management. Although this research is beneficial, it is important to note that these networks are constantly changing. The government is constantly evolving and so are the stakeholders. As such, it is important to frequently monitor these networks to ensure that the government can develop meaningful collaborations.

Poole *et al*. (2021) and Walls *et al*. (2019), as quoted in Kushitor *et al*. (2022), eluded that it is difficult to create cooperation and collaboration among different groups and stakeholders, their interests, and actions within the many subsystems of the food system to produce a synergistic outcome. Stakeholder interests, specialisation, power dynamics, political compromises, and accountability have all contributed to obstacles in coordinating actions both within and between these sub-systems (Baker *et al*., 2018; Peters 2018; HLPE, 2018)). These coordination issues have prevented progress in improving the food system, despite multiple efforts, highlighting the necessity of reevaluating and restructuring the global coordination of food systems (HLPE, 2020). Network management is therefore important in this case.

8.4.2 Network management

The effectiveness of network management heavily relies on the caliber of leadership and the dedication influenced by the representatives of the organisations involved (Kickert *et al*., 1997). Based on the preceding discussion, it can be contended that in order for networks to achieve the desired synergy in public service, these challenges must be addressed. According to the interest intermediation school of policy networks, they are self-regulating within a certain framework (Roiseland, 2007). However, according to the governance school of networks, networks cannot self-steer because they are horizontal and broad. Meaning that, when multisectoral parties are blended, they may fail because the extensive array of values,

norms, power, trust, and experience might clash and produce undesirable conflict and tension therefore, network management is needed (Klijn and Edelenbos, 2007).

In South Africa, network management is an essential tool for ensuring that food safety governance is effective, efficient, and accountable. The threats to food safety are continuously changing, and incidents involving food safety may have serious health and legal repercussions for customers, the food business, and the overall economy. Hence, it's crucial to have a flexible, adaptive governance framework that can react to new threats. Consumer health and well-being are both dependent on the integrity of the food supply chain. To ensure that food safety rules and regulations are founded on the most recent scientific data and industry standards, network management provides a platform for knowledge exchange among many players in the food supply chain.

The suggestion is made that the government assume the role of network management, overseeing the coordination of various actors within the supply chain. This would involve ensuring their collaboration in addressing potential risks to food safety and implementing robust food safety laws and regulations. This also promotes collaboration among various actors in the food supply chain, which contributes to the development of a more inclusive and effective governance structure for food safety. Various stakeholders, including government agencies, business associations, and civil society organisations, can work together to address challenges in food safety and develop effective solutions through the management of policy networks. With this strategy, a governance system that is more inclusive participatory, and better able to meet the needs of all stakeholders is encouraged.

8.4.3 Food safety policy and agency

This study recommend that South Africa prioritise the development of a comprehensive food safety policy to safeguard public health and enhance consumer confidence. Such a policy should encompass various key aspects. Firstly, it should establish clear standards and regulations for food handling, production, and distribution, aligning with international best practices. This would ensure consistency and harmonisation within the food industry. Additionally, the policy should emphasise the implementation of rigorous inspections and monitoring mechanisms throughout the food supply chain to detect and mitigate potential risks. Adequate resources and training programs should be allocated to enable effective enforcement of the policy. Furthermore, the policy should encourage collaboration between

government agencies, industry stakeholders, and research institutions to foster knowledge exchange and continuous improvement.

The suggestion to establish a food safety agency was made in 2014 on the national nutrition and food security policy but never materialise due to the lack of resources. However, this study still suggests the establishment of a food safety agency as this will ensure effective coordination and regulation of the food system throughout the country. This agency should bring together all key stakeholders in the food value chain, including public and private sector scientists, as their expertise and insights are crucial for developing evidence-based policies and standards. By constituting a diverse range of stakeholders, the agency can foster collaboration, knowledge sharing, and collective decision-making processes to address food safety challenges comprehensively.

8.4.4 Recommendations for future research

Further avenues for exploration have been identified in the study. One recommended avenue involves conducting a comparative analysis among developing countries that exhibit a fragmented governance system and lack a national food safety policy, as well as those that have successfully implemented such a policy. This will provide valuable insights into the into the impacts of the lack a national food safety policy, as well as the potential advantages associated with its presence. Additionally, this comparative research may shed light on the best practices that developing countries can adopt when implementing a comprehensive food safety policy.

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Appendices

Appendix 1: Letter of permission

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Humanities

10 May 2022

To whom it may concern

RE: Letter of permission to conduct interviews for research

I am a student at the University of Pretoria, in the Humanities Faculty, enrolled for PhD in the Department of Political Sciences. As part of the requirements for the fulfilment of my study, I am conducting a study with an aim to better understand the food safety governance. The thesis is titled: **Food safety governance in South Africa: A policy network approach**. Thus, the objectives of the study are to determine the key stakeholders and institutions in food safety governance in South Africa, and what are their roles in food safety policy processes and to identify the main food safety policy strategies, policies, and programmes in place in South Africa. We are in the process of gathering data through an interview and focus groups discussion that will be used in our study regarding this issue, we would like to ask your permission to interview or invite some of your employees working under food safety in the focus group discussion that will help us obtain information we need in relation to our topic.

If the employee is not able to join the focus group discussion scheduled, we will do interviews with them instead. The interview will take place at a venue and time that will suit your employees and will not take longer than two hours. I will make use of a voice recorder to take notes. Your employees do not have to participate in this research if they do not want to, and if they decide not to participate, they will not be affected in any way. If they decide to participate, but change their mind later, they can still withdraw their participation up to the point of publication of my thesis and or scientific reports and articles in journals. Their identity will be protected, pseudonyms will be used during data collection and analysis, only my supervisors and I will know their real names.

The data collected will be stored in a cloud which is password protected. It will only be shared with my supervisors (as signed below) and will be locked up for safety and confidentiality purposes.

We would greatly appreciate your consent at our request.

Thank you for your time and positive action.

Kind Regards

Ntombizethu Mkhwanazi

……..
PhD candidate
Department of Political Sciences
University of Pretoria
076 824 7355
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Dr Camilla Adelle

……..
Senior Research Fellow
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Prof. Lise Korsten

……..
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Appendix 2: Letters of Permission to conduct interviews from Department of Agriculture, Land Reform, and Rural Development.

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE DIRECTOR: FOOD SAFETY AND QUALITY ASSURANCE
Private Bag X 343, Pretoria 0001; 20 Steve Biko Street, Pretoria, 0001
Tel:+27(0)12 3197303/7176.E-mail:BoitshokoN@Dalrrd.gov.za; Website:www.Dalrrd.gov.za

22 April 2021

Ms Ntombizethu Mkhwanazi
University of Pretoria
Political Science Department
PRETORIA
0001

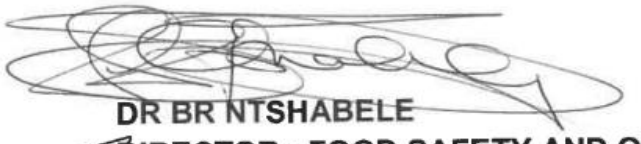
Dear Ms Mkhwanazi

SUBJECT: PERMISSION TO CONDUCT INTERVIEWS WITH EMPLOYEES IN THE DIRECTORATE FOOD SAFETY AND QUALITY ASSURANCE

The Directorate Food Safety and Quality Assurance (FSQA) thanks you for entrusting us with the request of conducting interviews with some of our employees working under food safety governance for a research project.

It is herby approved that you approach and interview FSQA colleagues as requested.

Kind regards



DR BR NTSHABELE
DIRECTOR : FOOD SAFETY AND QUALITY ASSURANCE
DATE: 22/04/2021

Appendix 3: Letters of Permission to conduct interviews from Department of Health

DIRECTOR GENERAL
HEALTH
REPUBLIC OF SOUTH AFRICA
PRETORIA
Private Bag X828, PRETORIA, 0001, Dr AB Xuma Building, 1112 Voortrekker Rd, Pretoria Townlands 351-JR, Pretoria, 0187, Tel (012) 395 8000
CAPE TOWN
P.O. Box 3875, CAPE TOWN, 8000, 103 Parliament Towers, Room 615, Plein Street, CAPE TOWN, 8000 Tel (021) 461 2040 Fax (021) 461 6864

Ms Ntombizethu Mkhwanazi
University of Pretoria
PRETORIA
0002

Dear Ms Mkhwanazi

PERMISSION TO INTERVIEW OFFICIALS OF THE NATIONAL DEPARTMENT OF HEALTH ON FOOD SAFETY GOVERNANCE IN SOUTH AFRICA

Your application letter received on 09 December 2022 refers.

1. RESOLUTION AND APPROVAL

It was recently resolved by the Directorate: Health Research in consultation with the affected Units within the National Department of Health (NDoH) that; the request to conduct a study according to the following Protocol be approved:-

STUDY TITLE: FOOD SAFETY GOVERNANCE IN SOUTH AFRICA: A POLICY NETWORK APPROACH

1.1 BEFORE THE COMMENCEMENT OF THE STUDY

Please note: Copies of written Research Ethics Committee approval to be submitted to the NDoH before study commences.

2. AUTHORISATION

Authorisation is hereby granted to interview the following official within the NDoH

- Ms Penny Campbell (Director: Food Control)

3. PLEASE FORWARD

It is a requirement that a copy of this letter be forwarded to all the relevant NDoH officials, including the approving Research Ethics Committee(s).

4. THIS AUTHORISATION IS SUBJECT TO THE FOLLOWING CONDITIONS

(a) The NDoH shall be notified of any decision to discontinue the research study. The reason for such cancellation shall be stated.

(b) The research study shall be conducted in accordance with the Protocol submitted to the NDoH. Any Amendment(s) to the protocol, shall first be submitted to the NDoH.

5. PROGRESS REPORT

Submission and presentation of the final report of the study with recommendations to the NDoH is required.

6. INFORMED CONSENT

It is the NDoH requirement that in all research projects the 'Principle of Informed Consent' should be adhered to. This applies to research study volunteers and participants.

Yours sincerely

DR SSS BUTHELEZI
DIRECTOR-GENERAL: HEALTH
DATE: 31/01/2023

Appendix 4: Letters of Permission to conduct interviews from City of Tshwane

CITY OF TSHWANE
IGNITING EXCELLENCE

City Strategy and Organizational Performance

Room AOE 044 | Ground Floor, West Wing, Block D | Tshwane House | 320 Madiba Street | Pretoria | 0002
PO Box 440 | Pretoria | 0001
Tel: 012 358 2182
Email: ThabisaMb@tshwane.gov.za | www.tshwane.gov.za | www.facebook.com/CityOf Tshwane

My ref: **Research Permission/ Mkhwanazi**
Contact person: **Pearl Maponya**
Section/Unit: **Knowledge Management**

Tel: 012 358 4559
Email: PearlMap3@tshwane.gov.za
Date 29 September 2022

Ms Ntombizethu Mkhwanazi
Future Africa Campus
University of Pretoria
South Street
Koedoespoort 456-Jr
Pretoria
0186

Dear Ms Ntombizethu Mkhwanazi,

RE: FOOD SAFETY GOVERNANCE IN SOUTH AFRICA: A POLICY NETWORK APPROACH

Permission is hereby granted to Ms Ntombizethu Mkhwanazi, Doctor of Philosophy id Political Science Degree Candidate at the University of Pretoria (UP), to conduct research in the City of Tshwane Metropolitan Municipality.

It is noted that the aim of the study is to better understand food safety governance in South Africa and identify areas of weakness. The City of Tshwane further notes that all ethical aspects of the research will be covered within the provisions of UP Research Ethics Policy. You will be required to sign a confidentiality agreement with the City of Tshwane prior to conducting research.

Relevant information required for the purpose of the research project will be made available as per applicable laws and regulations. The City of Tshwane is not liable to cover the costs of the research. Upon completion of the research study, it would be appreciated that the findings in the form of a report and or presentation be shared with the City of Tshwane.

Yours faithfully,

PEARL MAPONYA (Ms.)
DIRECTOR: KNOWLEDGE MANAGEMENT

Appendix 5: Consent form

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Humanities

I, ...agree to take part in the research project titled: Food safety governance in South Africa: A policy network approach. I understand that I will participate in either focus group discussion or an interview about this topic for approximately one hour at a venue and time that will suit me, and the interview will be audio recorded.

I understand that the researcher adheres to the following principles:

- Voluntary participation in research, meaning that the participate understand that there will not be any sort of compensation and that they may withdraw from the research at any time before the thesis and scientific articles are published.
- Informed consent, meaning that the participant is informed about the research purpose, and must grant consent before they partake in the research.
- Privacy, implying that their identify will be anonymous and will be protected at all times.
- The data collected will be stored in a cloud which is password protected. It will only be shared with research supervisors and will be locked up for safety and confidentiality purposes.
- The data will be used for publication of a thesis and or scientific reports and articles in journals.

I, the undersigned, have read the above and I understand the nature and objectives of the research project as well as my potential role in it. I voluntarily consent to participate in either focus group or interview. I understand that if I decide to participate, but change my mind later, I can still withdraw my participation up to the point of publication of the thesis and or scientific reports and articles in journals. I understand that my identity will be protected, pseudonyms will be used during data collection and analysis. The data collected will be stored in a cloud which is password protected. I also grant the researcher the right to use my contribution to the research project in completing this project as well as other projects.

Signature: .....

Date: .....

Place: .....

Appendix 6: Interview guide-VC9100

Interview guide

Food safety governance in South Africa: A policy network approach

As a knowledgeable person on food safety issues in South Africa, your response to this interview is important in the preparation of a report in the food safety governance issues in South Africa.

The aim of this study is to better understand food safety governance in South Africa and identify areas of weakness.

This interview aims to:

- To determine the background of the implementation of food safety law and regulations
- Identify strengths and weaknesses in the current food safety governance as well as the current situation of regulatory implementation.
- Identify barriers and opportunities for regulatory compliance.
- Identify challenges and problems currently being faced and considerations for future developments and recommendations for improvement of the governance of food safety.

Time of interview: .....

Date: …….....

Duration: .....

Pseudonym: .....

A semi structured interview guide for the government stakeholders

A. General questions:

i. Under which institution are you employed?
ii. What is your occupation/responsibilities?
iii. How many years have been working on this position?
iv. How involved are you with the Compulsory specification for processed meat products?
v. Is the regulation new? If not, what has changed with the regulation?

vi. During the stakeholder consultation, what were the pressing issues raised?
vii. Were the issues/challenges settled?
viii. Is the industry willing to adopt this new regulation?
ix. How will your institution ensure regulatory compliance by the industry?
x. What are consequences the industry is to face when not complying with these regulations?

B. Questions on Listeria outbreak:

i. What do think was/is the main problem that led to the Listeria outbreak?
ii. Do you foresee another outbreak in a near future? Please elaborate?
iii. How is the communication and collaboration between the government and industry when it comes to food safety related matters? Please elaborate by giving examples.
iv. What did listeriosis outbreak highlights for you/ lesson learnt? (As someone working with food regulations)

C. Policy design:

i. Do you think government follows an inclusive approach when designing and developing food safety regulations?
ii. Do you think all stakeholders involved in the development and implementation of the food safety regulations do NOT have conflict of interest?

Is there anything you would like to add?

Thank you for your time and for sharing the information!

Appendix 7: Interview guide-R638

Interview guide

Food safety governance in South Africa: A policy network approach

As a knowledgeable person on food safety issues in South Africa, your response to this interview is important in the preparation of a report in the food safety governance issues in South Africa.

The aim of this study is to better understand food safety governance in South Africa and identify areas of weakness.

This interview aims to:

- To determine the background of the implementation of food safety law and regulations
- Identify strengths and weaknesses in the current food safety governance as well as the current situation of regulatory implementation.
- Identify barriers and opportunities for regulatory compliance.
- Identify challenges and problems currently being faced and considerations for future developments and recommendations for improvement of the governance of food safety.

Time of interview: .....

Date: …….....

Duration: .....

Pseudonym: .....

A semi structured interview guide for the government/regulator stakeholders

D. General questions:

xi. Under which institution are you employed?
xii. What is your occupation/responsibilities?
xiii. How many years have been working on this position?
xiv. What is your or institution's role in relations to R638?

E. Implementation:

i. Who implements R638?
ii. Do they have sufficient resources and institutional capacity to enforce R638 and face challenges that emerged during implementation?
iii. What are the enforcement challenges do you face?
iv. Have there been attempts to address R638 implementation challenges before?
v. If so, have they succeeded or failed?
vi. In your own point of view, are there any gaps or overlaps in the R638? If there are, please explain?
vii. In your point of view, are there areas of concerns in terms of the development of enforcement of R638 that needs to be addressed?
viii. Who are the policy champions for R638 and what are their responsibility?
ix. Who lobby or advocate for food safety regulations?

Is there anything you would like to add with regards to R638?

Thank you for your time and for sharing the information!

Appendix 8: Interview guide-R607

Interview guide

Food safety governance in South Africa: A policy network approach

As a knowledgeable person on food safety issues in South Africa, your response to this interview is important in the preparation of a report in the food safety governance issues in South Africa.

The aim of this study is to better understand food safety governance in South Africa and identify areas of weakness.

This interview aims to:

- To determine the background of the implementation of food safety law and regulations
- Identify strengths and weaknesses in the current food safety governance as well as the current situation of regulatory implementation.
- Identify barriers and opportunities for regulatory compliance.
- Identify challenges and problems currently being faced and considerations for future developments and recommendations for improvement of the governance of food safety.

Time of interview: .....

Date: …….....

Duration: .....

Pseudonym: .....

A semi structured interview guide for the government/regulator stakeholders

F. General questions:

xv. Under which institution are you employed?
xvi. What is your occupation/responsibilities?
xvii. How many years have been working on this position?
xviii. What is your or institution's role in relations to R607?

G. Implementation:

x. What is the R607 all about?
xi. Who implements HACCP/R607?
xii. What are the challenges related to implementing/enforcing the regulation?
xiii. Have there been attempts to address these challenges before?
xiv. If so, have they succeeded or failed?
xv. Is the industry willing to adopt this or comply with the new regulation?
xvi. In your own point of view, what motivates the industry to compliance with regulations?
xvii. In your own point of view, are there any gaps or overlaps in the R607? If there are, please explain?
xviii. In your point of view, are there areas of concerns in terms of the development or enforcement of R607 that needs to be addressed?

H. Adoption and compliance

i. What is the role of the government in regulatory compliance?
ii. What is your perception and experience with regards to the South African food safety regulatory strategies?
iii. What are the implications for South African food safety regulatory strategies?
iv. How effective do you perceive the South African food safety enforcement strategies to be?

Is there anything you would like to add with regards to R607?

Thank you for your time and for sharing the information!

Appendix 9: Stakeholder mapping workshop concept note

Food safety Mapping Workshop

Mapping food safety stakeholders in South Africa

When: 8th November, 13.00-15.30
Where: Zoom
Register here: https://uwc.zoom.us/j/91750179489

The governance of food safety involves rules, standards, and regulations set by the state that control and influence aspects of food safety conduct. However, food safety governance is multilevel and complex, involving multiple stakeholders, sphere of government with interrelated responsibilities. Moreover, its involves reconciling interests, values, and perspectives of stakeholders both inside and outside of government from different sectors and policy areas including international trade, environmental, agriculture, human rights, and health. Within the Government food safety governance is fragmented. There are three government departments, namely the Department of Agriculture (DALRRD), the Department of health (DoH), and the Department of Trade and Industry (DTI). These three departments further have assignees such as the agency for food safety agency, South African Meat Industry Company, Leaf services, Nejahmogul Technologies Agric Services, Impumelelo Agribusiness and Product control of South Africa or agencies such as National Regulator for Compulsory Specification, The South African national accreditation system, National Metrology Institute of South Africa and South African Bureau of Standards appointed which take upon some of their responsibilities. Outside government we have the food industry, civil society, research institutions and universities, NGOs, and Private sector. For the sake of improving the governance of food safety, it is essential to get a visual representation of all the people who can influence food safety and to note how they are connected. Hence, by better understanding the stakeholders involved is the first step towards trying to find out how we can improve the governance for the stronger.

In this interactive workshop, we will map the food safety stakeholders and tease out the main relationships between them. We will use the 'net mapping' methodology to co-produce a stakeholder map during the online workshop splitting into break away groups and working on interactive white boards. After 40 minutes, we will move back to the main meeting room to report back and discuss further.

Round table discussion:

Facilitator: Dr Florian Kroll

Presentations: Mrs Janet Tomkom-Coetzer (Hans &Hans)
Ms Rosheda Muller (Informal Economy Development Forum)
Department of Health (TBC)

Panel remarks: Ms Maphuti Kutu (National Regulator for Compulsory Specification)
Mr Peter Gordon (South African Meat Processor Association)
Dr Itumeleng Matle (Agricultural Research Council)
National Consumer Council (TBC)

Appendix 10: Stakeholder mapping workshop programme

Food Imbizo:
Mapping food safety stakeholders in South Africa

Tuesday 08 November 2022, 13.00-15.30, Zoom meeting

Registration link: https://uwc.zoom.us/j/91750179489

Agenda

Time	Activity
13.00	**Welcome:** Mr Florian Kroll (University of Western Cape) and **Introduction:** Prof. Lise Korsten (University of Pretoria)
13.10	**Presentations:** ***Reflecting on the past: challenges of governance of food safety in South Africa*** ● Mrs Janet Tomkom-Coetzer (Hans & Hans) ● Ms Rosheda Muller (Informal Economy Development Forum)
13.40	**Panel Remarks:** ***Finding pathways towards better food safety governance.*** ● Ms Maphuti Kutu (NRCS) ● Mr Itumeleng Matle (ARC) ● Mr Peter Gordon (SAMPA)
14:00	**Questions and General Discussion**
14:10	**Stakeholder mapping:** **Outline of task-** Zethu Mkhwanazi **Group facilitators**- Mrs Grace Molelekoa (University of Pretoria) and Ms Thabang Msimango (University of Pretoria), Ms Ndaindila Haindongo (University of Pretoria) **Questions:**

	1. Identify stakeholders (institutions, organisations, and associations) in South Africa who are involved in food safety governance. 2. Categorize the stakeholders into different groups (e.g., government, civil society, industry, etc). 3. Draw line (s) showing relationships among the stakeholders and mention the kind of relationship they have. 4. Draw a dot next to each stakeholder that you think has the most influence in food safety governance (max 3 dots (votes) per person).
15.00	**Feedback from the groups**
15.25	**Wrap up:** Mr Florian Kroll and Ms Zethu Mkhwanazi
15.30	**Close:** Prof. Lise Korsten

Appendix 11: List of interviews

Dates of the interview	Stakeholder	Meeting place
07 April 2022	Industry	University of Pretoria
13 April 2022	Government	Zoom
19 April 2022	Government	Zoom
21 April 2022	Government	Zoom
28 April 2022	Industry	Zoom
29 April 2022	Industry	Written answers via email
29 April 2022	Government	Zoom
09 May 2022	Industry	Zoom
27 May 2022	Industry	Zoom
9 July 2022	Civil society	Their office
13 October 2022	Government	Zoom
18 October 2022	Government	Zoom
19 October 2022	Government	Zoom
03 November 2022	Government	Zoom
04 November 2022	Government	Zoom
12 January 2023	Academic	University of Pretoria