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Gaps in Governance of Process-oriented Credence Attributes: The South African Free-range Dairy Dilemma

Danielle Serebro

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Summary

This study investigates the nature of labelling and regulation in South African free-range dairy production. It aims to reveal the complexities of designing and implementing regulation on process characteristics and policy's failure to address the heterogeneous needs of consumers and producers. In parallel, the tensions that arise in the policy-production interaction are considered. This research addresses a gap in the theoretical and industry literature regarding understanding and explaining labelling, certification and regulation of credence attributes, such as animal welfare, within food systems. It provides interesting and important insight into regulation's role in developing alternative production structures and niche markets as a response to variety in consumers' needs and tastes. It is therefore relevant more broadly for understanding drivers for and governance of other niche production structures such as organic, fair-trade and religious or cultural influences.

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Declaration of authenticity

I, Danielle Serebro, declare that the research report, *Gaps in Governance of Process-oriented Credence Attributes: The South African Free-Range Dairy Dilemma*, is my own work and that each source of information used has been acknowledged by means of a complete reference. This research report has not been submitted before for any other research project, degree or examination at any university.

signed: 

on: 8 September 2016

at: Johannesburg, South Africa

List of Acronyms

AGA: American Grassfed Association

APS: Agricultural Product Standards Act, 1990

ASASA: Advertising Standards Authority

CIWF: Compassion in World Farming

CPA: Consumer Protection Act

DAFF: Department of Agriculture, Forestry and Fisheries

DoH: Department of Health

DSA: Dairy Standards Agency

FAO: Food and Agriculture Organisation of the United Nations

FAWC: Farm Animal Welfare Council (UK)

IDF: International Dairy Federation

ISO: International Standards Organisation

ITA: Information Theoretic Approach

LSM: Living Standard Measure

MPO: Milk Producers Organisation

NAMC: National Agricultural Marketing Council

NCC: National Consumer Commission

NSPCA: National Society for the Prevention of Cruelty to Animals

OECD: Organisation for Economic Development

OIE: World Organisation for Animal Health

PD: Producer-Distributor

SABS: South African Bureau of Standards

SADC: South African Development Community

SAMIC: South African Meat Industry Company

SAMPRO: South African Milk Producers

SSF: small-scale farmer

TMR: Total Mixed Ration

UHT: Ultra-heat treatment

WTO: World Trade Organisation

WTP: Willingness-to-Pay

Chapter One: Introduction

1.1. Context and Introduction

Development of regulation that reduces transaction costs and enhances information flows within the South African dairy industry is essential for facilitating mutually beneficial trade between dairy producers and consumers. Beyond this, it is necessary to consider the broader socioeconomic impetuses motivating the creation of sector-specific policymaking, as regulation seldom exists for its own sake. The dairy sector makes an important contribution to employment, particularly in the rural areas of the Eastern Cape, and to the national economy. However, dairy market deregulation and its associated removal of subsidies, increased imports and retailer and processor dominance, has been profoundly negative for dairy farmers, 70 percent of whom have exited the industry over the past decade. In order to remain competitive, South African dairy farmers have consolidated and intensified their operations and many use industrialised production methods.[1] Industrialised agricultural production is frequently justified (see FAO, 2009) as a means of achieving food security and price stability, however, the South African dairy industry is characterised by excess supply and prices are not determined at the primary (farm) level but rather at the retail and processor levels.

Industrialised dairy production is also associated with a number of negative externalities such as poor animal welfare, environment unsustainability[2] and public health concerns. Consumers, both globally and locally, are becoming increasingly dissatisfied with these effects, including poor treatment of animals, and demand for ethical produce is consequently increasing. In order to respond to public concerns, more stringent and effective regulation is required, firstly, to moderate these negative externalities and, secondly, to provide consumers with verifiable information about the origin of their agro-food purchases.

This research report identifies the regulatory and institutional barriers inhibiting the development of alternative food systems in South Africa, through investigation of free-range dairy. These barriers are particularly pertinent in the dairy industry wherein policymakers and industry bodies are unwilling or unable to acknowledge heterogeneity and incorporate the preferences of ethical consumers and producers. This materialised with the 2011 prohibition of the free-range label on dairy products, which

[1] Intensive and extensive production are relative terms, neither of which have been defined internationally and with variations between them. In this paper, intensive systems (also referred to as feed-lot, zero-grazing and industrialised systems) refer to cows raised in high stocking density operations with minimal or no access to pasture, who are fed grain either exclusively or mixed with grass, and often receive hormones and antibiotics and are often overmilked using modern machinery. Typical characteristics of extensive (also referred to as free-range, free-roaming and pasture-based) dairy farming include less intensive production with lower milk yields, minimal or no use of antibiotics and hormones, and access to pastures.

[2] Studies (see European Commission, 2000; Flysjö et. al, 2011; O'Brien, 2012) show that industrialised dairy systems are associated with increased environmental degradation; others (see Scholtz et al., 2014) find that pasture-based systems have a higher carbon-footprint.

has restricted access to and dissemination of information about dairy products. This ban emerged from pressure on public authorities from dominant players who do not employ ethical methods and as a reaction to misleading claims. Due to these political and market constraints, South African consumers concerned about dairy cow welfare are unable to reflect their values through their purchases. In parallel, ethical suppliers are unable to use labels to communicate this differentiating factor.

Prior to this report, no attempt had been made by academics in South Africa to understand free-range labelling and its impact on the market. This report seeks to fill this gap by exploring the South African regulatory framework of free-range dairy labelling and the tensions that arise in the policy-production interaction. This is achieved alongside a critique of the selected literature's ability to explain this policy evolution and its impacts on production. The report finds that free-range labelling, of both dairy and other animal products and byproducts, has become an issue in South Africa due to 1) a regulatory approach wherein farm animal welfare and process practices are deemed inconsequential, 2) inefficient information flows and 3) unwillingness or inability of policymakers and academics to consider heterogeneous preferences of consumers and producers.

The focus of the case study is on free-range milk and animal welfare, the concerns of which differ in certain respects from niche markets motivated by religious or cultural considerations, environmental awareness or concerns about labour marginalization. This report presents one way of viewing niche markets, however these alternative systems, which address heterogeneity in preferences, consumption and production practices, suggest similar challenges for policymakers and academics. The findings of this paper can therefore be generalised to labelling and regulation of process- and quality-related concerns in all alternative food systems.

1.2. Objectives and Methodology

The primary objectives of this research report are to:

1) identify a comprehensive set of institutional barriers inhibiting the success of free-range dairy labelling in South Africa.
2) investigate how these barriers impact dairy producers and ethical consumers,
3) showcase heterogeneity amongst dairy producers and consumers, and
4) begin to understand how regulation and labelling affect animal welfare.

In addition to these primary objectives, a secondary objective is to explore and assess the relevance of the existing theoretical frameworks for understanding dairy production-system labelling and regulation. Within this secondary objective, the relevant theoretical frameworks which capture consumer and

producer preferences are described and their ability to explain the policy evolution and production interaction are assessed.

The methodology employed to investigate these questions draws on an inductive approach interrogating the relative merits of different theoretical frameworks and the nature of related literature. In parallel, a case study of dairy production, in particular ethical dairy, is constructed and used as a platform to explore the gaps in theorising on agricultural process labelling and regulation. The case study would have benefitted from comparison with an international counterfoil encompassing free-range dairy, however the literature on this was not available. Producers employing the free-range label as a marketing tool are responding to consumer demand for ethical products and the theoretical frameworks therefore provide insight from both the consumer and producer perspectives. The case study primarily focuses on the economic impacts that the regulatory status quo has on producers, however this, in turn, is shown to be consequential for consumers' access to both information and a product aligned with their values.

The free-range dairy market has been chosen for this case study because it is embodies important contemporary concerns, such as animal welfare and the quality turn in food systems. It is also a revealing example of the complexities and tensions inherent in developing regulation on production practices. These complexities are of particular interest in South African dairy where a lack of progress on standard setting has restricted information flows and the ability of consumers and producers to express their preferences for specific production systems.[3]

The research process for this report included the following steps:

1) extensive search of academic databases and the internet;
2) contacting references gained from initial search results and other contacts;
3) e-mail, in-person and telephonic interviews which provided access to sensitive information and clarified data obtained in step one.

The desktop research in step one yielded sufficient information on the chosen theoretical frameworks and industry structure, however minimal information was available on the question of labelling in South Africa. It was therefore necessary to proceed to steps two and three; however as free-range dairy is a relatively new, under-researched and sensitive topic many of the individuals and organisations approached were unable or unwilling to respond to my questions (see appendix one for list of interviewees). Only one dairy industry body, SAMPRO, and one retailer, Woolworths, responded to my request for an interview and both gave general responses. While there were ways of recovering

[3] The lack of definition also complicated the writing of this study and it is important to state here that while free-range can imply simply free-roaming animals, in this paper it is a broader term encompassing improved animal welfare. Where necessary, the terms narrow and broad free-range are used to describe the former and latter respectively.

information without the industry bodies, the lack of response from retailers meant that this part of the supply chain was inadequately surveyed leading to its exclusion from chapter five. Due to the sensitive nature of this topic, the interviewees were given the option of anonymity, however all responders stated their willingness to be named.

The interviews were intended as a means of extracting insight from different supply-side sources to understand the industry dynamics and producers' preferences for and understanding of process labelling. The interviews were not intended as a survey of the entire industry, but as an attempt to document information previously unexplored. The initial intention was to survey consumers, in addition to producers, to assess demand for free-range milk. This line of research was abandoned relatively early in the research process due to resource constraints as well as discovery of evidence of this demand available from producers, media sources and an existing survey (Vermeulen and Biénabe, 2010).

In most interviews, the questionnaire (see appendix two) ended up serving as an introduction to issues of which the interviewee had knowledge; my original questions often went unanswered. Although only ten interviews were conducted, they were representative of and covered most stakeholders in the supply chain except for retailers. The questions directed to retailers, processors and producers sought to obtain information about farmers' and retailers' awareness of regulatory developments, to assess attitudes and opinions of the regulatory framework as well as free-range methods and to better understand the constraints associated with regulation implementation and enforcement. The primary regulatory authority in this area, DAFF, was extensively interviewed in order to gain understanding of the relevant regulation as well as their constraints.

1.3. Report Outline

This report proceeds, in chapter two, with an overview of relevant theoretical contributions from the literature on products and processes, ethical consumerism and the information theoretic approach (ITA). The role of labels and certification schemes in conveying information about product attributes, with particular attention to credence and process characteristics is then investigated. Chapter three, contextual foundations, departs with a discussion on animal welfare regulation generally and within dairy production. This is followed by an introduction to free-range production systems and regulation in South Africa. Chapter three concludes by positioning free-range dairy within the alternative food systems approach and distinguishing between organic and free-range. Chapter four provides insight into the South African dairy industry structure, main stakeholders and the effects of deregulation. Chapter five, introduces the South African regulatory landscape governing free-range dairy and considers how this landscape affects producers and processors. This chapter explores the extent to which the theoretical frameworks presented in chapter two explain the evolution of policy and policy-

production interaction within the South African dairy industry. Chapter six concludes with the report's main findings and recommendations for future research.

Chapter Two: Theoretical Contributions: Process/Product Distinction, Ethical Consumerism, ITA and Labelling Schemes

2.1. Chapter introduction

This chapter begins with an analysis of three strands of literature, the process/product distinction, ethical consumerism and the information theoretic approach. Neoclassical consumer and producer theories, with their respective emphases on self-interested utility- and profit-maximisation, are unable to capture how altruism and ethical consciousness give rise to heterogeneous preferences, purchasing behaviour and production methods. We therefore turn to the theories included in this chapter as a framework for and introduction to animal welfare labelling and regulation. These approaches have been chosen, as they provide us with direct insight into consumers' heterogeneous preferences for specific processes, particularly ethical ones, and establish the importance of efficient flows of information between consumers and producers about these processes. A holistic approach, encompassing different but complementary theories, is required as none of these theories independently capture all areas of concern to the case study.

Part two of the literature review provides insight into the functioning and costs and benefits of labelling and certification schemes as policy instruments to overcome information failures. The regulatory vacuum within free-range dairy in South Africa necessitates that we turn to the literature as a reminder of the important economic implications of providing a policy framework to facilitate information flows between producers and consumers.

2.1.1. Process/product distinction

Implicit in much policy design and analysis is a sweeping distinction between product- and process-related information, with the former referring to end-use attributes and the latter referring to any costs or benefits to workers, animals or the environment that occurred during production (Howse and Regan, 2000). The World Trade Organisation (WTO) brought infamy to this conceptual distinction with its 1991 ruling in the Tuna/Dolphin case where it found that countries cannot unilaterally refuse imports based on harm caused to dolphins during the tuna-fishing process. Essentially the WTO claims that process-based trade restrictions, not related directly to a product's physical attributes, violate international trade law (Howse and Regan, 2000). Kysar (2004) notes that this process/product distinction deems process-related information invalid of consumers', producers' and regulators' attention. It is also too narrow a tool to use to understand why consumers might prefer certain

processes; however even without understanding why heterogeneous process-oriented preferences exist, the simple acknowledgment that they do exist is sufficient cause for allowing them to exert influence in theoretical debates and policy revisions. The present research aligns itself with Kysar's (2004) approach and proceeds from the recognition that process-oriented information weighs heavily on individual consumer preferences and must be incorporated into both firms' decisions on production methods and frameworks for policy analysis and design.

Kysar (2004), in response to the limitations of the process/product distinction, offers three perspectives explaining consumers' heterogeneous preferences for particular process attributes: the instrumental, expressive and ethical accounts. The *instrumental account* emphasises the externalities that a consumer's decisions have on the outside world. According to this perspective, individuals demand information on processes as they wish to use their activity in the market to influence production practices. In the *expressive account* individuals publicise their support for public goods and gain utility not necessarily by seeing a change in production processes but by being involved and having their preferences noted. In the *ethical account*, consumers practise their fundamental beliefs through process-led consumption, despite understanding that their impact on production systems is negligible; they are satisficed by not contributing to processes that they deem unethical. In response to the market-based approach associated with the ethical account, Timoshanko (2015) suggests that individuals who are aware that their purchasing decisions are inconsequential, are more likely to support the introduction of regulation to facilitate actualisation of their ethical preferences, than continue to purchase ethical goods. This critique is substantiated by a study in Great Britain, which found that despite high levels of support for animal welfare legislation amongst respondents, only 61 percent purchased more humanely produced goods (Bennett, 1998).

2.1.2. Ethical consumerism and the market-based approach

Ethical consumerism is an extension of the process/product distinction, particularly Kysar's (2004) ethical account. It assists in understanding preferences for certain management practices, such as free-range farming, and emphasises the growing importance of including these preferences when formulating policy. Ethical consumerism is broadly understood as the act of buying goods and services produced using methods that limit negative externalities to society, the environment and animals or, alternatively, boycotting those goods and services which do cause harm (The Institute of Grocery Distribution, 2007). While ethical consumerism encompasses producers and retailers who provide goods and services that appeal to individuals' morality (Irwin, 2015), it tends to be a consumer-driven, market-based approach. This has led to critics stating that ethical consumerism, with its emphasis on the personal, shifts regulatory and corporate responsibility onto individuals, in line with the mainstream neoliberal agenda on deregulation and citizen responsibility (Miller, 2007).

Animal welfare, in particular, is an issue for which individuals are expected to take full responsibility by purchasing products aligned with their values (Parker and de Costa, 2016). Parker et al. (2013) (quoted in Timoshanko (2015: 524)) note that the market-based approach associated with ethical consumerism "puts a significant moral and cognitive burden" on consumers. The present report, in line with Timoshanko (2015) argues that government regulation is needed to reduce the burden on citizen-consumers. Ethical consumerism also problematically presupposes that demand is able to accurately reflect consumers' values; however this research report illustrates that due to regulatory and market constraints, consumers may be unable to signal to producers that they want more ethically produced goods.

In the past two decades, ethical consumption has become increasingly ubiquitous in developed nations around the world (Lewis and Potter, 2011), and has recently garnered mainstream appeal and prominence in less developed capitalist nations (Lewis, 2012). A 2009 issue of Time magazine reported that in their survey of 1000 Americans, almost 40 percent claimed they had bought a good in the preceding year because they agreed with the producer's social or political ethos (Stengle, 2009). The limited studies that have been conducted on ethical consumerism in South Africa (Tustin and de Jongh, 2008; First Principles, 2011) reveal that South African consumers, who have historically been unable to voice their demands due to a government intolerant of dissent, are becoming increasingly concerned about making ethical purchases and focus on company ethics is proliferating in line with international trends. There is, however, a gap between intentions and actual purchasing behaviour.[4] According to Tustin and de Jongh's 2008 study, South African consumers remain more concerned about price, quality and convenience than ethical issues, such as animal welfare (Tustin and de Jongh, 2008).

2.1.3. The Information Theoretic Approach

Consumers who wish to consume ethically require full and accurate knowledge about the goods they intend to purchase. Discovering information on process-oriented quality characteristics, however, requires that producers are transparent and honest or that regulatory authorities take action to make this information available. In the mainstream neoclassical economic model, the market is simply the point where supply and demand meet to trade homogenous goods. This model assumes that producers and consumers are fully informed about all products within the market. The ITA, pioneered by Stigler (1961) and Akerlof (1970), acknowledges that this assumption is false and emphasises the important effects of accuracy and symmetry in the information held by producers and consumers.

[4] The survey by First Principles (2011) revealed almost 50 percent of South Africans consider rewarding ethical producers, while only 20 percent purchased goods from these producers in the preceding year.

Information asymmetry occurs when one party to a contract has greater knowledge than another, creating a power imbalance in market relations (Nasri, 2013). When there is imperfect information about product characteristics or quality, purchases are typically completed in an incomplete informational environment. When consumers have less information than firms, there is a reduction in efficiency and a loss of total economic surplus in that market (Caswell and Mojduszka, 1996). Information asymmetries are pervasive in agro-food markets as consumers have little to no ability to assess production practices. Farmers and retailers therefore have an incentive to hide negative information from consumers or cheat and publicise false information, resulting in a situation whereby consumers purchase products misaligned with their preferences or pay a premium where they should not. Without regulation these markets may not operate efficiently and products that are valued by consumers may go unproduced (Dankers and Liu, 2003). As noted by Golan et al. (2000), however, even though producers may look to hide negative attributes, certain factors may impede their efforts. For example, consumer skepticism and competition assist in exposing negative characteristics so that, even without government intervention, a significant amount of product information may be available.

Recognition of the difficulties consumers face in accessing verifiable information led Nelson (1970) and Darby et al. (1973) to distinguish between three types of product attributes determined by ease of information acquisition: search, experience and credence attributes. *Search attributes* can be easily identified by most consumers through visiting and comparing across retailers. *Experience attributes*, which include quality and taste, are identifiable only after consumption. *Credence attributes*, under which ethical production practices fall, are characteristics which customers are unable to discern even after consuming a good. In the dairy industry, credence attributes are overwhelmingly negative in terms of animal welfare and producers therefore have an incentive to hide this information. Regulation and labelling schemes can transform animal welfare from a credence attribute into a search attribute thereby eliminating information asymmetries and creating a more efficient market.

As shown by Akerlof (1970), where there are attributes that are not easily identifiable at the point of purchase, a market may unravel and suboptimal products (lemons) prevail. Akerlof (1970) applied a variation of Gresham's law (bad money drives out good money) to show that as price levels continue to decrease with the exit of good quality suppliers, a situation where no sales are concluded at any price may occur (disequilibrium). Without certified animal welfare labelling schemes, consumers are unable to acertain the welfare status of products at the point-of-purchase and will therefore be unwilling to exert effort to source ethical products or pay a price premium. Producers providing products with high welfare standards may consequently exit the market or move to less ethical production systems if they are more cost effective.

2.2. Labelling, standards and certification: credence and process-oriented quality attributes

2.2.1. Labelling: evaluating costs, benefits and success

The ITA provides the theoretical justification for labelling systems. Product labels are used to assist consumers in differentiating between identical products and have become increasingly popular for regulating food markets. With the international growth of the market-based approach and the regulatory void it has created, the product label has become essential as a means through which citizen-consumers critique the production practices of the food they purchase (Parker and de Costa, 2016). This space for political engagement has been created as labels serve as identifiers of process-oriented quality practices and transform credence attributes, such as animal welfare, into search attributes (Bonti-Ankomah and Yiridoe, 2006; European Commission, 2009).

Labels, however, are only able to function, and consumers are only able to engage with supply chains, with regulatory support. In South Africa, governance of and accountability in food supply chains and labelling is lacking. This has been revealed to the public through a number of high-profile cases, leading to a general mistrust in labels and the institutional structures that govern them (Cawthorn et al., 2015). In the free-range dairy market, lack of governance and accountability is reinforced as regulatory structures prevent consumer-citizens' use of labels to assume the government's role as custodians of truth and integrity in this supply chain. Understanding how labels function and why they are a necessary but insufficient tool is imperative to this report's case study, which argues that producers' treatment of animals as inputs into milk, a product that is difficult to differentiate, should be communicated via labels. The literature on labelling does not, however, directly assist in understanding the peculiar situation explored in this report, where labels are legally prohibited.

Caswell and Anders (2011) argue that labels allow for increased economic efficiency through important changes in the information environment, buying decisions and the market for quality-oriented processes. When firms label their goods, they do so on the assumption that the information they deliver is significant to consumers and that it will influence buying behaviour. Golan et al. (2000) therefore believes that producers, in attempting to convince consumers to buy their goods, may serve the public by improving dissemination of information. Kanter et al. (2009), however, suggest that in communicating positive information about products made using alternative methods (in their case, recombinant bovine somatotropin (rbST)-free milk), producers may stigmatise conventional products resulting in a net negative effect through reduced consumption of conventional milk or milk in general. In terms of animal welfare, however, the effect could be a positive one as consumers would switch to ethically produced milk or reduce their total demand for milk.

Labels may have benefits and uses beyond disseminating information, such as, developing markets, reassuring consumers that markets are monitored, establishing or reiterating public values, and acting as part of educational programmes (Caswell and Padberg, 1992; Caswell and Anders, 2011). Morris (1997) suggests that labels may enhance the image and/or profitability of ethical firms and encourage producers to consider the environmental and social consequences of their production, thereby correcting market failures. Caswell and Anders (2011), however, believe that labels may initiate market failures as private parties seek to profit from government labelling schemes that overstate positive characteristics.

Empirical research has found labelling schemes to be both unsuccessful (Variyam, Blaylock, and Smallwood, 1995; Moorman, 1996) and successful (Ippolito and Mathios, 1990; Ippolito and Mathios, 1995) in educating consumers and changing consumption behavior. Caswell and Padberg (1992) believe that the ability of labels to convey information effectively is limited as consumers must consider many different products in-store based on complex information leading to information overload and label avoidance. Golan et. al (2000) believe that although labels may rectify information asymmetries, i.e. where information exists, they are less likely to rectify information imperfections, i.e. where information is unclear. This is because imperfect information is, by its nature, difficult to communicate and consumers find it difficult to understand labels that provide information about issues that have not reached scientific or political accord. Although the literature treats animal welfare status as an instance of information asymmetry (European Commission, 2009; Main et. al, 2014) it may more closely resemble an information imperfection as there is no universally recognised tool for measuring animal welfare. There are however objective measures of free-range systems implying that this is an instance of information asymmetry and labelling schemes are therefore more likely to succeed.

Ethical labels may also be unsuccessful in achieving welfare objectives due to the public good factor, which implies potential freeriding on others' consumption of ethical goods (Robertson, 2003). For example, if only a small fraction of consumers purchase free-range milk, the objective of widespread humane treatment of dairy cows will not be achieved. Despite these hypotheses, empirical research by the OECD (2008) has shown that the positive impacts of labelling in promoting sustainability are continually increasing.

2.2.2. Standards: private v public

Labels are based on product or process standards, the former referring to the criteria set for a product's attributes and the latter including specifications for how products are produced (Dankers and Liu, 2003). Standards may be set by government or the private sector; private standards often

develop when governments fail to implement or enforce standards for which there is consumer demand. Voluntary welfare standards are typically championed by non-governmental organisations and implemented by private companies (International Trade Centre, 2011). Internationally and locally, public standards within agro-food markets typically address food safety and trade concerns, while private standards address quality standards related to origin, traceability and ethical concerns. The growth in private standards in South Africa can be attributed to a lack of confidence in public authorities' capacity to regulate food quality (Jaffee and Masakure, 2005) and the inflexibility of public standards to react to market changes such as ethical consumerism (Roberts, 2004). Biénabe et al. (2010) emphasise the importance of South African retailers in setting standards and regulating food quality. The increased market power of retailers and private standards points to the growing importance of "soft-law"[5] in regulating economic systems. Retailers, as well as other downstream role players such as processors, are able to shift the costs of compliance to farmers and increase their involvement in decisions made at the farm level without engaging in vertically integrated supply chains.

2.2.3. Certification

Certification is the process, after inspection or verification is completed, whereby a third party provides assurance that a product or process conforms with specific standards (Dankers and Liu, 2003). Particularly with credence attributes, producers, acting as first-party certifiers, are often unable to persuade consumers of the veracity of information on labeled products and so the label's value is reduced. Second-party certifiers, i.e. an organisation to which producers belongs that provides verification services, may assist in reassuring consumers; however it is third-party certifiers, both private and public, who lend the most credibility to labels. Voluntary private third-party certification programmes tend to emerge in response to public demand for verification of processing claims (Kysar, 2004).

In addition to the development of private certification schemes, where there are market failures or imperfections, government may intervene in the market by regulating labelling or implementing mandatory labelling. Hadden (1986) notes that there are three primary market failures leading to intervention of this type: 1) lack of competition amongst firms; 2) information asymmetries between consumers and producers; and 3) health or safety risks. Golan et. al (2000) add a fourth category: externalities which occur when individual purchasing choices have welfare effects that are not captured within the market. Within the free-range dairy market, there is no automatic market mechanism which reduces information asymmetries and environmental and animal welfare externalities. This is consequently a market wherein government could improve efficiency by developing a legally binding national standard for free-range dairy and allowing either voluntary labelling certified by private third

[5] "Soft law" pertains to semi-legal tools which are not binding, or which carry less force than other regulations (Biénabe et al., 2010).

parties or, the less likely course, mandating that the production system from where milk comes is communicated on labels.

Chapter Three: Contextual Foundations: Animal Welfare, Free-Range and Alternative Food Systems in South Africa

This chapter turns to describe how animal welfare is incorporated into farming generally and, more specifically, in South African dairy production and regulation. The literature in this chapter is not focused exclusively on dairy, however it provides insight into the treatment of parallel concerns. Free-range dairy labelling is also a new and under-researched topic and this content therefore provides necessary context about the broader areas of concern under which free-range dairy farming and labelling are naturally positioned. These three areas are: 1) animal welfare; 2) free-range production systems and regulation; and 3) alternative food systems.

3.1. An introduction to animal welfare: regulation and labelling

This research report has thus far investigated information flows about ethical production practices fairly generally, however an objective of this report is to understand how market-based regulatory measures, such as free-range dairy labelling, affect animal welfare. Animal welfare refers to how an animal is coping with its living conditions. Welfare assessments are guided by the internationally recognised five freedoms: 1) freedom from hunger, thirst and malnutrition; 2) freedom for fear and distress; 3) freedom from physical and thermal discomfort; 4) freedom from pain, injury and disease; and 5) freedom to express normal patterns of behaviour. Animal welfare refers to the animal's state; an animal's treatment falls under terms such as animal care and husbandry (OIE, 2011b). This section begins to address this objective and highlights gaps in the literature as well as regulatory landscape.

Public concern about farm animal welfare is continually increasing on a global scale. This is a consequence of rapid increases in primary agricultural industrialisation, food safety and quality considerations, and an expanding understanding of animals' physiological and psychological needs (Hansson and Lagerkvist, 2015). Globalisation has also led to increased interest in animal welfare issues throughout the developing world, especially among countries looking to increase exports to Europe (FAO, 2010).[6] Animal welfare is therefore not only intrinsically valuable, but is also intimately related to broader government objectives including public health and trade. There has consequently been regulation on and certification schemes for animal welfare in developed countries for many years. These certification schemes tend to be set by private bodies using different standards and providing

[6] This is not a claim that concern for animal welfare only comes from its export potential. There is certainly concern for animal welfare in developing countries however this has often been superseded by human rights and poverty concerns.

inconsistent information to consumers, leading to intra-national and international disharmony and impeding domestic and global trade. This contrasts with the internationally accepted frameworks for the organic sector, which have allowed for the development of substantial global trade (Main et al., 2014).

Free-range and animal welfare labelling programmes can be either voluntary or mandatory depending on the existence of uniform standards and the extent of consumer interest. Without recognised measuring tools and standards for animal welfare, mandatory labels are unfeasible (Main et al., 2014), however, when labels are voluntary, they tend to convey only a product's positive characteristics. If those who wish to know about farm animal welfare and are prepared to pay a premium for high welfare status are only a small segment of the population, voluntary labelling is appropriate. If the majority of the population is concerned with knowing the welfare status of their food, a mandatory label is appropriate (Kehlbacher et al., 2012). However Caswell (1998) notes that mandatory labelling may result in higher costs than voluntary labelling, even if the majority desires more information, as the whole market, including those who do not value animal welfare, must be segregated and labelled.

The Farm Animal Welfare Council (FAWC) of the UK (2006) considers the arguments for providing animal welfare related information to consumers not only to improve information flows, but also to assist in improving animal welfare. The FAWC report (2006) suggests that if consumers have sufficient information to actualise their preferences for ethical products, producers and retailers will have a strong motivation to produce and source these products. Timoshanko (2015) critiques this market-based approach and argues that industrialised animal agriculture remains so prevalent despite public opposition because consumers are unable to reflect their values through their purchasing behaviour due to political and market constraints and are therefore unable to influence producers' choices.

Countries committed to a market-based approach to animal welfare view it as a "consumer preference issue" solved through provision of both high and low welfare products in the market. In these countries differentiating certification schemes often replace regulation as the primary means of solving animal welfare externalities (Fraser, 2006). The South African government has taken this approach, however there is an acute lack of information about farm animal welfare available to local consumers. The system is therefore dysfunctional and sourcing high welfare animal food products is a lengthy and complicated process with prohibitive transaction costs.

Increasing interest in animal welfare within South Africa and among trading partners has resulted in demand for assurances of high animal welfare status in animal products and by-products and the inclusion of welfare criteria in certification requirements for international trade of these goods (Directorate of Veterinary Public Health, 2015). Animal welfare in South Africa is regulated by the

Animals Protection Act of 1962 and the Performing Animals Protection Act of 1935. The DAFF administers these regulations, however there is no official enforcement due to insufficient resources, lack of training, personal attitudes unfavourable to animal welfare and inadequate penalties (OIE, 2011a). Enforcement is dependent on monitoring and reporting by individual citizens and NGOs, particularly the NSPCA (Directorate: Animal and Aquaculture Production, 2011), reflecting the ANC-led government's belief that animal welfare is an individual concern, rather than a public-good issue. The South African Veterinary Foundation together with the Department of Agriculture (DAFF) are working towards consolidating these acts into one animal care act and establishing a national animal care working group (Directorate of Veterinary Public Health, 2015). This working group, like the Animals Protection Act, will however not address free-range standards and the use of the term free-range on product labels.

3.1.1. Animal welfare in dairy production

International dairy research is primarily concerned with food safety, animal health and maximising milk yields. There are a number of papers (see Capdeville and Veissier, 2010; Botreau et al., 2009; Burow et al., 2013[7]), which consider the animal welfare implications of dairy production from a veterinary sciences perspective, but these do not review the economic implications. Similarly, the academic literature on dairy *labelling* focuses on country of origin (PIRS, 2008; Forbes-Brown, 2013), food safety including use of hormones and genetic modification (see Kolodinsky, 1997; Kiesel et al., 2004) and nutritional information (see Trichterborn, 2011; Matijević and Mabić, 2014). There is also an extensive body of literature on organic milk, however as with the research on conventional milk, this focuses on food safety rather than animal welfare (see Dhar and Foltz, 2005; Bernard and Bernard, 2009; Kanter et al., 2009).

There is, however, some literature focusing on providing consumers with information on dairy cow welfare and how this affects willingness-to-pay (WTP). Napolitano et al. (2008), in Italy, find that information about dairy cow welfare, particularly freedom of movement and hygiene, is a primary determinant of consumer WTP for yoghurt, but satisfactory eating quality, perhaps unsurprisingly, outweighs the importance of welfare information. Olynk et al. (2010), in the United States, also find WTP for certified pasture grazing (free-roaming) in milk production. Importantly, Elbakidze and Nayga Jr. (2012), also in the United States, find that information regarding cow welfare in dairy production provided without corresponding information about industrialised dairy practices did not increase WTP for higher welfare labelled dairy products. While this body of literature is important in helping us understand demand-side concerns, there is a gap in understanding how animal welfare

[7] Burow et al. (2013) investigated 41 dairy herds and found that pasture-grazing (i.e. free roaming) is significantly positively associated with dairy cow welfare.

labelling affects and is affected by producers and regulatory authorities, which the present research addresses.

An extensive review of relevant South African dairy literature is not possible because as revealed by Scholtz and Grobler (2009) and preliminary investigation for this report, coordinated research in the South African dairy industry is lacking and there is minimal exploration of animal welfare within dairy production. While dairy processors conduct extensive research, this focuses on product development and productivity at the micro- or firm-level. There is little research conducted by or on primary producers and production systems, or matching this to consumer preferences, at either the macro- or micro-level (Scholtz, 2007).

A number of papers (see Theron and Mostert, 2009; Manzana, 2007) have, however, considered the efficiency implications of pasture-based, mixed ration, and total mixed ration (TMR) or industrialised production systems in South Africa. This literature does not consider how these production systems affect dairy cow welfare and its contribution to this research is therefore limited. Extensive review reveals that no academic research has been conducted on the South African regulatory environment of dairy cow welfare labelling and its effects on producers, consumers and the efficiency of the dairy industry. This is a concerning trend because, as will be discussed further in chapter five, there is evidence of desire from both the supply and demand sides for better treatment of dairy cows and more efficient information flows about this treatment.

3.2. Free-range production systems

Although free-range production systems have always been present, the need to differentiate food produced in these systems is a response to the rise in industrialised agricultural systems, wherein animals are maintained in unnatural indoor confinement systems. In South Africa, free-range labelling schemes, which assert their distance from intensive and industrialised systems, have only been active for ten years (Molewa, 2015). This section therefore provides further background to the trends and developments of free-range production systems in South Africa, with which the reader may be unfamiliar.

There is currently no universally accepted definition of free-range animal husbandry (USDA, 2011), however even within industrialised farming systems, the World Organisation for Animal Health (OIE) (2011b) recommended that animals are given sufficient space to lessen discomfort and allow for fulfilment of natural behaviours. Overcrowding and continual regrouping in feedlots have been shown to increase social and physiological stress and to increase disease risk. While it is often taken for granted that pasture-based animals have better welfare, there is concern that the exclusive focus on this "consumer-friendly" element of animal welfare will lead to neglect of other important concerns such

as dehorning, castration and early weaning and removal of calves (Buller and Roe, 2012). As noted by Louise van der Merwe of Compassion in World Farming (CIWF) (2016, personal communication), in terms of cow welfare, narrow free-range is insufficient if it is not accompanied by the provision of shade. An animal welfare certified label that includes broad free-range methods may therefore ensure better animal welfare than the free-range label, but will be more difficult for farmers to implement and certification bodies to monitor.

Both internationally and domestically, there is also conflict amongst policymakers and industry bodies over the meaning of free-range as applied to dairy. In this research report, in line with both consumer perception[8] and local best practice as illustrated by the draft standalone free-range regulations for poultry and eggs, free-range dairy implies more than the minimum standard of access to pasture and includes good animal welfare practices in line with the OIE's five freedoms. It is beyond the scope of this research to develop an appropriate standard for broad free-range dairy and as no country has national regulation outlining these standards, it is useful to look at both local and international private standards. These standards are included in appendix three.

3.2.1. Free-range farming and regulation in South Africa

Currently only around three percent of laying hens are free-range in South Africa and the majority of pork comes from intensive farms (Health24, 2015). Primary beef farming in South Africa is mainly extensive, while dairy farming is based on both industrialised and pasture-based systems (Scholtz et al., 2014; Coetzee, 2016). Definitive statistics on the incidence of the various dairy production systems are unavailable, however data from the National Dairy Improvement Scheme[9], based on all cows that calved in 2012, indicates that of these 52 610 cows, 55 percent were reared in industrialised TMR systems (Banga et al., 2014). Industrialised dairy farming in South Africa is far more prevalent than in New Zealand and Australia where in 2010, it was estimated that only 2 percent of dairies were TMR or feedlot-style systems (Voiceless, 2015).[10] The South African estimate is however lower than in countries with harsher winters, including America, the Middle East and China where dairy farms are mainly industrial-scale indoor systems capable of housing tens of thousands of cows (McCholl, 2015).

There is no specific clause pertaining to free-range meat within the Agricultural Product Standards Act (APS), 1990 (Act No. 119 of 1990). In order for meat to be labelled as free-range in South Africa, farmers or retailers register a trademark and protocol with the South African Meat Industry Company

[8] Vermeulen and Biénabe (2010)'s consumer survey found that South African consumers associated the free-range term with animals that roam freely, are not force-fed, have high animal welfare and do not receive hormones.
[9] It is noted than only 20-25 percent of dairy farmers are registered with the National Dairy Improvement Scheme's official milk recording programme (Du Toit, 2016, personal communication).
[10] This figure will have increased in the last six years as Australia has turned to intensive farming in order to keep up with global markets (McColl, 2015).

(SAMIC), an assignee of DAFF. SAMIC assesses the protocol in line with international standards and carries out audits on behalf of DAFF. There are currently 24 different protocols registered with SAMIC; with 15 of the specifications available for consumers to view at www.samic.co.za. As the literature predicts, lack of public standards has led to producers developing their own standards with concerning implications for animal welfare and consumer's access to standardised information. Consumer watchdog, Sonia Mountford (2016, personal communication), notes that first-party standard setting has led to a lack of transparency, reliance on minimum standards and variance between trademarks meaning that consumers cannot know how the meat they are eating has been raised.

Internationally and domestically, there are legal definitions for free-range eggs and poultry. Eggs and dairy are both non-meat products of animal origin with similar status for ethical vegetarians. There are consequently parallels in the demand amongst these consumers for verifiable labelling and regulation of these two products.[11] It is interesting and informative to review the disparate ways in which international and domestic authorities have approached these products.

In the EU, for example, since 2012 there has been mandatory labelling on egg cartons defining the production system from which the eggs come (Main et al., 2014). In the UK, this labelling system led to a dramatic shift in consumer demand whereby 52 percent of eggs purchased in 2014 came from certified free-range farms (Timoshanko, 2015). Australia has very recently decided on a legally binding national standard for free-range eggs (Clennell, 2016). Similarly, in South Africa, free-range eggs are regulated according to a clause in regulation No. R. 725 of September 2011 of the APS (see appendix four for details). There is also standalone draft regulation on free-range eggs and poultry. While this clause is an absolute minimum standard and refers only to space requirements and access to the outdoors, there is draft standalone regulation on free-range eggs and poultry[12] which provides, with the South African Poultry Association's guidelines, more detailed information on rearing free-range poultry and eggs. These include the five freedoms, proficiency of animal handlers, indoor and outdoor space and access requirements, light and shade provision and predator control (New Dawn Poultry, n.d.).

The regulatory status quo in South Africa (including the drafting of standalone regulation) for free-range eggs and poultry is progressive compared to even many developed countries and represents a vastly superior framework to that existing for other animal food products, including dairy. However, as suggested by Parker and de Costa (2016) this market-based approach may still prove ineffective in informing consumers and may not spur widespread improvements in agricultural production systems

[11] Interest in free-range eggs has, however, been greater due to the higher incidence of industrialised egg production.
[12] It is unclear if this regulation will be promulgated despite it being ready for publication, because the state lawyers advising the DAFF have said that the APS does not provide for stand alone regulation based on production practices (Erasmus, 2016, personal communication).

and animal welfare[13].

3.2.2. Consumer demand for free-range products in South Africa

There has been very little work assessing the demand amongst South African consumers for free-range products, however an important paper by Vermeulen and Biénabe (2010) found that free-range, together with organic, are the most established credence attributes in the South African food system. South African consumers associate the free-range term with animals that roam freely, are not force-fed, have high animal welfare and do not receive hormones (Vermeulen and Biénabe, 2010).

Their study focused on upper middle-income and high-income consumers (LSM 7-10) and found that personal benefits[14] were the main motivation for purchasing free-range products, but importance was also given to high animal welfare standards. A lack of understanding was found to be the most important reason inhibiting purchase of free-range products. Only 48 percent of consumers were found to believe in the accuracy of free-range labels and preferred certifiers were the South African Bureau of Standards (SABS) (30 percent), farmers (20 percent) and retailers (15 percent). This reflects that consumers do not trust retailers given their significant market power, however as SABS is not involved in free-range certification, it also reflects consumer confusion. It was found that if free-range products are priced at similar levels to conventional products, there is likely to be a significant rise in the sale of free-range products. This is an important finding for free-range milk, which, as will be seen in chapter four, does not automatically command a price premium.

3.3. Alternative food systems

Alternative food systems include emerging food systems attempting to redefine conventional relationships between producers and consumers. The main attribute of alternative food systems is the 'quality turn' which encompasses ethical and health concerns (Skarstad et al., 2007). Free-range dairy is included in this category due to its focus on animal welfare. Research has shown that South African consumers desire accurate information on and are willing to pay for products from alternative food systems (Vermeulen and Biénabe, 2007) and animal welfare is one of the more significant attributes differentiating alternative and mainstream food systems (Cherry et al., 2013). While, in South Africa, pasture-based dairy farming is as typical as industrialised dairy farming, free-range dairy is an alternative food system due to its prioritising animal welfare as a quality attribute.

[13] Parker and de Costa (2016) look at free-range egg regulation in Australia, however their finding is equally pertinent to South Africa due to the many parallels in these countries' regulatory frameworks.
[14] These personal benefits may include health benefits as pasture-fed cows' milk contains 3-5 times as much Conjugated Linoleic Acid (CLA) as cows fed TMR. CLA is an anti-oxigent and anti-carcinogenic, which encourages reduced body fat and increased lean muscle mass (Smit et al., 2010).

3.3.1. Insight from the organic foods system

The organic food category is the most widespread alternative food production system in South Africa and receives the most attention in academic, development and policy circles (Chikazunga, 2012). Niel Erasmus of the DAFF (2016, personal communication) notes that the government's interest in organic systems, as opposed to free-range animal products, is primarily a consequence of organic fruit and vegetable's potential export value.[15] The organic foods system has given way to a wide body of literature in South Africa, which assists us in understanding the treatment of alternative systems in South Africa more broadly. It is included here, firstly, as a substitute for the very sparse literature on free-range animal husbandry and labelling in South Africa and, secondly, because organic systems are often conflated with free-range systems and it is therefore necessary to differentiate between them.

Chikazunga (2012) notes that as definitions within alternative food systems are fluid, unclear and often poorly regulated, South African consumers often cannot differentiate between organic and free-range. Although organic standards imply free-range farming methods, free-range products need not be organic and so the two concepts should not be equated or treated identically. Organic farming is a more complex and costly system of production that requires far more skill and knowledge and is therefore less accessible than free-range farming to most farmers, particularly small-scale farmers. Furthermore as animal welfare is not always a priority amongst the many aspects of organic farming, organic animal husbandry does not always ensure improved animal welfare (Christiansen and Boesen, 2001). The term organic as defined in South Africa's draft organic regulations (see appendix five), makes no mention of animal welfare, reflecting that this is not a priority in developing organic regulation in this country.

Despite the widespread interest in organic products, South Africa currently has no legislation, regulation or standards on organic farming. A draft regulation has been in existence for over a decade, but has not been enacted (SAOSA, 2014) primarily due to an inability of the APS act to incorporate process-oriented practices (as will be explored in chapter five). A report issued by the Institute of Natural Resources (2008) found that national organic regulation is essential in creating domestic consumer demand as well as in protecting suppliers and encouraging regional trade. South Africa's organic market remains fragmented and marginalised. The newly formed South African Organic Sector Organisation has been marginally successful in reducing fragmentation and providing organic farmers with a clear vision and sense of inclusivity (DAFF, n.d. (b)). The South African retail sector has, however, been more effective in growing quality-oriented niche markets, such as organics, by

[15] Implicit in this is that the government is more interested in accessing foreign markets than serving the concerns of South African citizen-consumers.

promoting the development of private certification programmes in an attempt to overcome government's failing to address these issues (Vermeulen and Biénabe, 2007; Biénabe et al., 2010).

Organic labelling in the European Union (EU) provides a good example of how a harmonised certification and labelling scheme can lead to the transformation of a niche market into a mass market. In the EU, government regulation, rather than private standards, has reduced organic market fragmentation and has made organic produce more appealing to retail chains for which efficient logistics and large-scale supply are essential (European Commission, 2009). Research has also revealed that organic regulation and labels have changed the meaning of organic farming, in the market, from an ethical practice to a standardised food quality characteristic (Guthman, 2005). This transformation, facilitated by regulation and labelling, allows us to consider the possibility of turning free-range dairy into a regulated food quality characteristic and thereby developing this market.

Chapter Four: South African Dairy Institutional, Regulatory and Production Structures

This chapter presents information on the South African dairy industry's institutional, regulatory and production structures. Insight is provided into the incidence of pasture-based and industrial systems in South Africa. The negative effects of deregulation on primary producers, through increased cost and price pressures, as well as on animal welfare, through the intensification which deregulation has necessitated, is discussed. This chapter, in section 4.3, also outlines the existing regulatory structure and tensions regarding the current and future needs of and developments within free-range dairy labelling in South Africa.

4.1. Dairy industry history and organisational framework

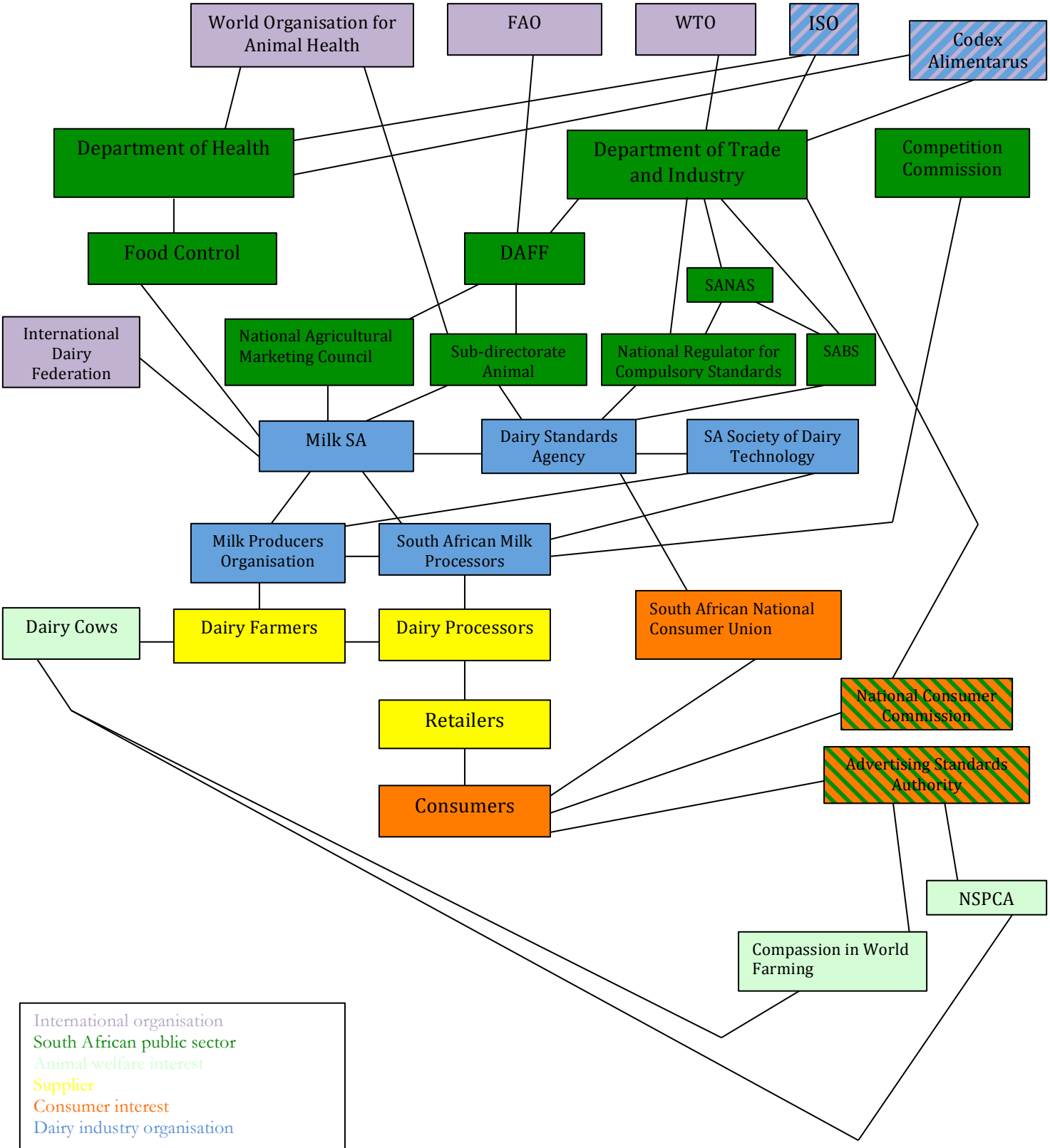
The South African dairy industry has traditionally been heavily regulated and protected by the state. The Dairy Industry Control Board was established by the Marketing Act of 1937 and later re-established by the Marketing Act of 1968. The Board had a sole mandate to sell milk and paid a fixed price, set and adjusted by the Minister of Agriculture, to dairy farmers. Beginning in 1982, statutory interventions in the dairy market were removed and the Dairy Board ceased its operations in December 1993 (NDA, 2000). The process of deregulation was completed in 1996 with the promulgation of the Agricultural Products Act of 1996 (Du Toit, 2009). Eradicating agricultural marketing boards and import and export controls was a means of removing the Nationalist Government's socialist control of agriculture (Kotze and Rose, 2015). There is now minimal government regulation in the dairy industry with the result that the South African dairy industry is one of the freest dairy industries globally (NAMC, 2001). These regulatory changes have seen power shift from producers to processors and retailers. Retailers, who were price-takers under the regulated system, have been the major beneficiaries of deregulation in most South African agro-food value chains (Greenberg, 2015). In the dairy chain, however, the dominant processors who act as price-setters have also been primary beneficiaries.

Deregulation led to the emergence of the following industry bodies: the Milk Producers Organisation (MPO) (represents primary producers and remains the most influential and active of the industry bodies), South African Milk Organisation (SAMO) (represented certain secondary producers i.e. milk processors; now defunct) and the National Milk Distributors' Association (NMDA) (represented the secondary industry; now defunct). In 1997, the South African Milk Federation (SAMFED) arose to facilitate collaboration of these three bodies. In 2002, Milk SA replaced SAMFED and came about in order to address the common concerns of the primary and secondary industries. In 2003, South African Milk Producers (SAMPRO) was established as representative of the secondary dairy industry

(Milk SA, 2011). The directorate of Food Safety and Quality Assurance within the Department of Agriculture, Forestry and Fisheries (DAFF), along with the Department of Health (DoH), provides information and technical advice to and sets regulation for the dairy industry. The Dairy Standards Agency (DSA) focuses on ensuring compliance with regulations and voluntary standards within the dairy industry. This agency has not developed standards for free-range methods or production-system labelling and believes that this is the responsibility of the DAFF (Burger, 2016, personal communication). The South African Bureau of Standards (SABS) has never been approached about developing free-range dairy standards (Murivhula, 2016, personal communication).

The relationships described above are summarised in the organogram below and extended to include other roleplayers in the dairy industry. The other roleplayers are not discussed outside of the diagram as they were found not to have a direct bearing on the contents of this research report.

Organogram depicting dairy industry role-players and interactions



source: author's compilation from publically available information

4.2. Dairy industry trends

4.2.1. Primary industry

Milk production in South Africa contributes a neglible amount (0.5 percent) to global production but is South Africa's fifth largest argicultural industry in terms of value (after poultry, maize, beef and wheat) (DAFF, 2014). Dairy farming in South Africa predominantly involves rearing female cattle for long-term milk production and is based on both indoor and pasture systems (Daff, n.d (a).; Scholtz et. al, 2014). Milk production is labour-intensive and provides employment to many workers (DAFF, 2014).[16] The most common breeds of dairy cows in South Africa are Holstein (Friesland), Jersey, Guernsey and Ayrshire (Daff, n.d. (a)). There are approximately 1.7 million dairy cows in South Africa (DAFF, 2014), however only half of these are in milk at any time (DAFF, 2011). Milk may be processed on the farm or taken to a dairy for processing and then sold to retailers.

4.2.1.1. Geographical changes and incidence of pasture-based and industrial systems

There have been major structural changes in South African dairy over the past few decades, including regional changes (see appendix six for a provincial breakdown of dairy farmers, production and cows). In 1997, approximately 52 percent of milk was produced in the Eastern Cape, Kwa-Zulu Natal and Western Cape; this proportion had increased to 81 percent by 2015 (Du Toit, 2009; MilkSA, 2015). Kwa-Zulu Natal and the coastal parts of the Eastern Cape are predominantly fully pasture-based due to mild climate and adequate rainfall. Dairy herds in winter rainfall areas, such as the Western Cape, are primarily kept in TMR systems (Du Toit, 2009). Dairy herds within inland Eastern Cape and the Northern provinces, including Mpumalanga, Free State, Gauteng and Northwest, are primarily fed concentrate or TMR and housed indoors in feedlot production systems (Theron and Mostert, 2009; Gertenbach, 2006; DAFF, 2014). Pasture-based cows in South Africa have been shown to produce approximately 62 percent less milk than those in industrial systems (Scholtz et. al, 2014); however reduced production costs associated with pasture feeding, due to lower capital and feeding costs, typically offset lower production (Theron and Mostert, 2009).

4.2.1.2. Effects of deregulation: milk farmer exodus

Since deregulation many smaller milk producers have exited the market. In the 1980s there were approximately 30 000 dairy farmers in South Africa (Newman, 2004). By 2006, there were approximately 5000 dairy farms in South Africa, which decreased to 2200 in 2012 (Coetzee, 2012) and decreased even further to 1728 in 2015 (MPO, 2015). This is primarily a consequence of the

[16] Although the number of dairy farms has reduced so dramatically, DAFF has not updated employment figures. It continues to use the estimate of 60 000 farm workers and 40 000 indirect workers (DAFF, 2010; 2012; 2014)

withdrawal of government support for milk producers, which has contributed to cost pressures. Government support is of peculiar benefit to commercial milk producers due to the highly capital-intensive and perishable nature of milk which limits farmers' options to selling, processing or dumping. The exit of marketing boards' support has also been accompanied by lower real producer milk prices. Production as well as marketing has also become increasingly competitive and due to economies of scale, the secondary industry procures less from smaller producers (MilkSA, 2015; Du Toit, 2009).

4.2.1.3. Production trends

Consolidation (whereby larger farms have taken over smaller farms' cows) and intensification of production has meant that despite the reduction in dairy farms, the average size and productivity of herds has increased, leaving the volume of production relatively unchanged (Coetzee, 2012). Dairy farmers complain of pressure from processors to convert to more efficient battery-style production (Nevin, 2013). In the 1980s dairy farms produced less than 500 litres daily (Newman, 2004). Today the average dairy farm produces 3700 litres per day, with an average herd size of approximately 300. Over 50 percent of milk is produced by farms producing in excess of 5000 litres daily (DAFF, 2012; Lassen 2012). Average milk production per cow increased by 54 percent between 2004 and 2014 (Dolecheck and Bewley, 2015). Cows are now over-milked and use of rbST[17], to stimulate milk production, has proliferated, with concerning implications for cow and human health as the incidence of mastitis, related to hormone-use and over-milking, grows.

4.2.2. Secondary industry and the buyer-driven chain

Production of fresh milk in South Africa generates approximately R10 billion in revenue per year, while the annual revenue of all dairy-based products is approximately R40 billion (Wesgro, 2014). The South African dairy industry is segmented into liquid milk products (such as milk, yoghurt and buttermilk), which comprises 58 percent of dairy consumption, and concentrated products (such as cheese, butter, milk powders and condensed milk). Fresh pasteurised liquid milk and long-life ultra-heat treatment (UHT) milk are the primary liquid products and hard cheese is the primary concentrated product (MPO, 2015). UHT milk is the fastest growing segment within the dairy industry and 41 percent of all liquid milk sales are UHT (Wesgro, 2014). Although the findings of this paper are applicable to all dairy products, the emphasis is on liquid milk (fresh and UHT) as the free-range label is typically used, internationally, on liquid products rather than concentrated products.[18]

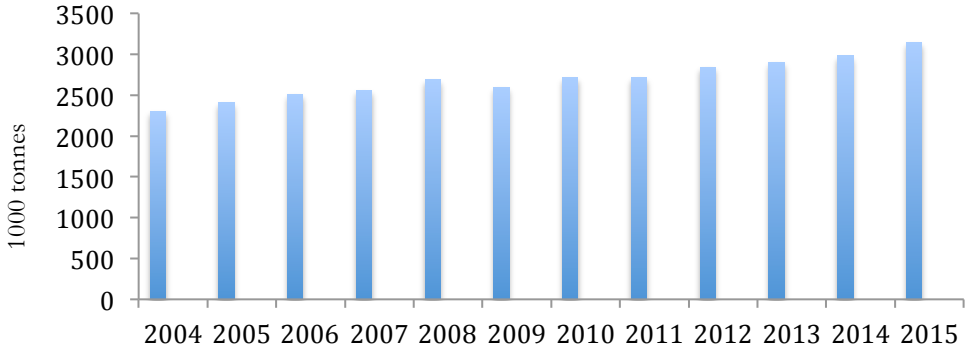
Approximately 95 percent of milk is sold in the formal market, 2 percent is sold informally and 3 percent is used for farmers' own consumption and for calves (MPO, 2015). Of the 150 milk buyers

[17] South Africa is one of very few countries, including the USA, Brazil and Mexico, were the use of rbST is authorised (Rochereau-Roulet et al., 2011).
[18] Processed dairy products are easier to differentiate and market and this may be why suppliers have shown more interest in labelling their milk, rather than other dairy products, as free range.

operating in South Africa, 115 are producer-distributors (PDs) (farmers who process their own raw milk) (MPO, 2015); however 65 percent of raw milk is processed by just three buyers, namely Clover Industries Ltd. (who purchased the yoghurt and UHT operations of Dairybelle in 2014), Parmalat SA (Pty) Ltd. and Nestlé (Cutts and Kirsten, 2006).[19] Clover is the largest buyer with approximately 29.4 percent of the fresh milk market and 17.5 percent of the UHT milk market (Wesgro, 2014). The retail sector for milk is highly concentrated with four retailers, Spar, Pick 'n Pay, Woolworths and Shoprite/Checkers, accounting for over 80 percent of total sales (Lassen, 2012).

The following graph shows raw milk purchases in South Africa between 2004 and 2015. Milk purchases, as well as milk production, continue to increase despite a continually declining number of processors.

Annual raw milk purchases (2004-2015)



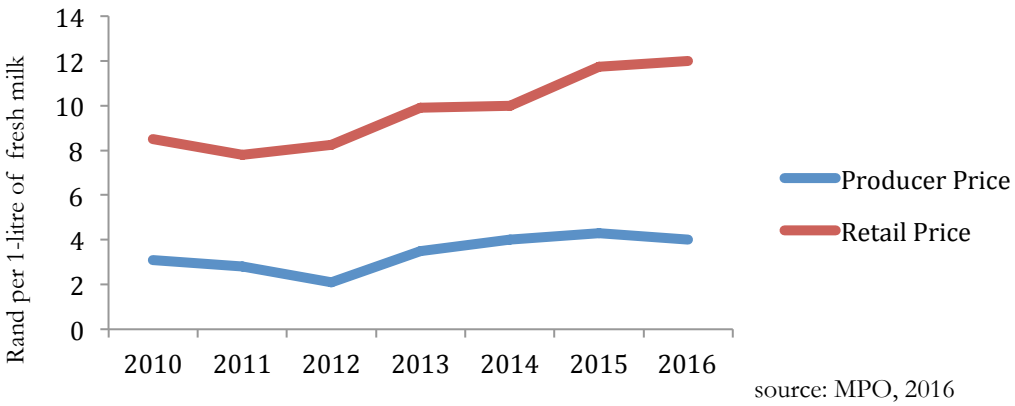
source: MilkSA, 2015; MPO, 2016

The producer/farmgate price (the price paid to farmers) for milk averages ZAR 4 per litre, while the average retail price is ZAR 12 per litre; it is unclear how this ZAR 8 farm-to-retail price spread is distributed between processors and retailers (MPO, 2016). The farmer receives a third of the final price despite there being minimal processing of milk and despite the farmer carrying the full cost and risk of producing the milk. The bargaining power of processors and retailers means that dairy producers are unable to set wholesale prices of dairy products (Newman, 2004). Dairy farmers believe that corporate stakeholders' market power has made dairy farming unsustainable (Nevin, 2013); a claim which is tenable in light of the dramatic reduction in dairy farm numbers.

[19] In 2006, the Competition Commission brought a case against eight milk processors, including Clover, Nestlé and Parmalat, for price-fixing and collusive practices; however the case was dropped in 2011 due to procedural problems (Lipman, 2011).

The following graph shows trends in producer and retail prices between January 2010 and January 2016[20]. While producer price increases have remained low and below inflation, retail prices have continued to rise (MPO, 2016).

Producer and Retail Price of Milk per 1-litre



source: MPO, 2016

The following table provides a breakdown of the retail price per 2 litres of fresh milk as of March 2016. This illustrates that free-range milk does not uniformly demand a price premium, even when producers continue to claim that their milk is free-range or pasture-based (as is the case with Sundale, to be discussed in chapter five, and Woolworths (see appendix seven for details)). Exploring the reasons for price differentials unrelated to free-range or intensive production methods is beyond the scope of this paper.

Price comparison of industrial and pasture-based milk per 2 litre fresh milk

Brand	Production system claim	Price
Woolworths Ayshire Milk	Pasture-based	R26.95
Woolworths Essentials Milk	Industrial and pasture-based	R22.95
Pick 'n Pay Brand Milk	Industrial and pasture-based	R21.79
Clover	Industrial and pasture-based	R26.49
Douglasdale	Pasture-based	R21.99
Faircape Ecofresh	Industrial	R23.99
Sundale Free Range Milk	Pasture-based	R22

source: information from processors, retailers and public websites

[20] The retail price refers to fresh milk per litre for milk bottled in 2-litre plastic containers, therefore the retail price is underestimated as two 1-litre bottles are more expensive than one 2-litre bottle due to packaging costs.

Within the literature (see Timishanko, 2015 and Fraser, 2006), demand for food products with higher animal welfare status is framed within a price premium paradigm where demand is constrained by the higher prices that these products elicit. In this paradigm, where price is the dominating factor, even when consumers are well informed and value animal welfare, they may be unable to express their preferences due to financial constraints. In the South African free-range dairy market, demand is constrained less by price and more by a regulatory structure, which impedes communication of process-oriented quality attributes. As suppliers are unable to communicate to consumers that their product is free-range, they are unable to command a price premium for this differentiating factor. Animal welfare is negatively affected because new entrants to the market have no price-based incentive to use pasture-based systems and will be forced to over milk their cows to remain cost competitive. Provided that a significant number of consumers demand free-range milk, regulation and verifiable labelling schemes may assist in changing the price structure of the dairy industry. Farmers who are certified as free-range may be able to charge a higher price to processors (or retailers in the case of producer-distributors) making primary dairy farming more viable. Whether this price increase is passed on to consumers or used to reduce the large gap between retail and farm-gate milk prices, will depend on free-range milk consumers' price elasticity of demand.

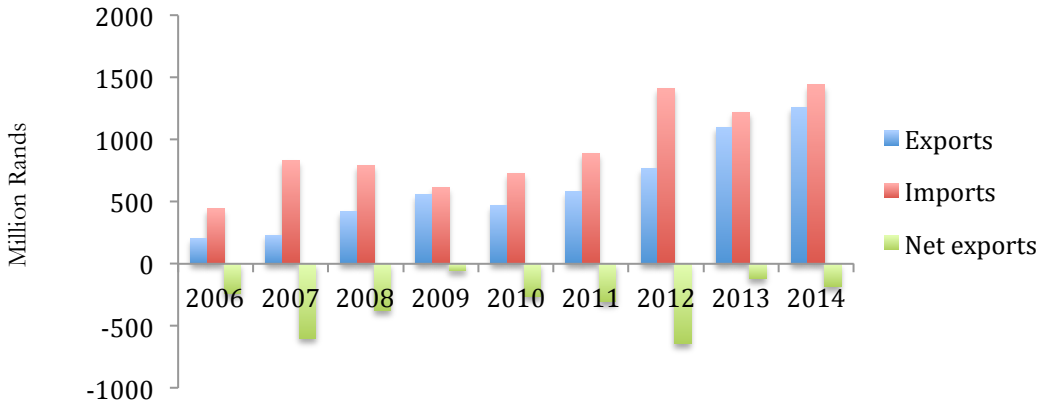
It also worth noting that the current regulatory vacuum, whereby free-range labels are banned, may be of benefit to a small group of conscientious consumers who inspect farms on their own behalf. These consumers could then purchase a product aligned with their values without paying a price premium. Furthermore, pasture-based dairy farms are able to profitably sell their milk at a price equal to industrialised farms, implying that even with free-range regulation and certification and a small price premium, the average South African consumer is likely to be able to afford this superior product. This will allow poorer consumers to express their value for animal welfare, which has previously been deemed to be the exclusive province of the affluent. This again reflects the problems associated with conflating demand with preferences as it leads to a perception of lower LSM groups as lacking concern with ethical issues.

4.2.3. South Africa's milk consumption and international trade

Domestic milk supply typically exceeds domestic demand in South Africa, however consumption of milk has been increasing over the past decade due to population growth (DAFF, 2014). Milk consumption in South Africa is dominated by LSM 7-10 (Hunt, 2011) (see appendix eight for details on consumption patterns). This is an important finding as demand for free-range produce is typically found amongst higher income groups (Vermeulen and Biénabe, 2010), implying that even before in-depth research into demand for free-range milk is conducted, we may be able to assume that free-range labelling is important for the primary consumers of milk.

South Africa consumes 98 percent of the milk it produces (Bloomberg, 2015) and is net importer in value terms with the vast majority of exports going to SADC countries. The following graph shows exports, imports and net exports of all dairy products. Both imports and exports have fluctuated over the past decade, however both show overall positive growth. Milk and cream comprise 17 percent of imports and 46 percent of exports on a mass basis (MPO, 2015); data for milk disaggregated from cream was found to be unavailable.

Dairy Imports and Exports (2006-2014)



source: Wesgro, 2014; MPO, 2015

The fact that milk, due to its perishable nature, does not have significant export potential beyond Southern Africa helps to explain why there is minimal interest from South African policymakers in developing animal welfare certified milk labels. As discussed in chapter three, in many developing countries, demand for assurance of high animal welfare has come from developed trading partners. The theoretical frameworks presented in chapter two do not assist in explaining the factors, beyond price, that influence these preference variations across countries. Starr (2009) notes that the literature on ethical consumerism does not capture the effects of heterogeneous variables such as demographics and knowledge of and concern about ethical issues, inhibiting development of policies to promote and facilitate production and consumption of ethical products.

4.3. Policy evolution and policy-production interaction within South African free-range dairy

This sub-section triangulates information sourced from publically available draft and promulgated legislation, interviews with private stakeholders and the DAFF to reveal evidence of a regulatory vacuum and producer tensions within the free-range dairy market.

4.3.1. Policy evolution

The South African regulatory framework governing process-oriented attributes, particularly farm animal welfare, like many countries', reflects a market-based approach aligned with neoliberal politics. This approach, also associated with ethical consumerism, assumes that the only regulatory intervention necessary to ensure that the market responds to ethical consumers' demands and provides an appropriate supply of humane products is pursuance of the Consumer Protection Act of 2008 (CPA) and labelling regulations. Within the free-range egg, poultry and red meat markets, this does not amount to an outright regulatory vacuum due to allowance for voluntary labelling and private certification bodies. However as explored in this section, a substantial gap is present for free-range milk as not only is there no standard, definition for or regulation of this product, voluntary labelling and private certification has been banned since 2011.

In addition to the Animals Protection Act of 1962, there are three primary acts regulating dairy in South Africa. These are, under the authority of the DAFF, the Agricultural Product Standards Act of 1990 and the Marketing of Agricultural Products Act of 1996[21], and under the authority of the DoH, the Foodstuffs, Cosmetics and Disinfectants Act of 1972. Suppliers of dairy must also abide by the CPA, enforced by the National Consumer Commission (NCC). The Advertising Standards Authority of South Africa (ASASA) has authority to preside over advertisement claims, however as a private body it has little power to effect punitive measures against violators of its code. International codes, set by the International Standards Organisation (ISO) and Codex Alimentarius, set norms for food quality and safety that are recognised in global markets. These international codes do not address either broad or narrow free-range methods and will therefore not be discussed further.

The Agricultural Product Standards (APS) Act of 1990 controls the sale, export and import of particular agricultural goods to maintain certain standards with regards to the quality of products and packing, marking and labelling. The structure and mandate of the APS act does not make provision for management/process practices and there is currently no act in place addressing process-oriented standards. According to Niel Erasmus (2016, personal communication), head of the Food Safety and Quality Assurance Directorate of the DAFF, "there have been attempts to include management control systems in the act but this was not properly defined and the act has been stretched to allow for organic product and free-range egg and poultry standards". The South African government has taken the approach of the WTO to the process/product distinction, whereby processes are deemed inconsequential. This conceptual distinction dominates the DAFF's regulatory approach despite citizen-consumers' valuing certain processes over others and wanting access to information about the processes used to produce their food. Furthermore, in creating legislation, the DAFF "relies on

[21] The Marketing of Agricultural Products Act, 1996 defines the mandate of the National Agricultural Marketing Council, clarifies the role of the DAFF in marketing agricultural products and clarifies the management and use of statutory levies and agricultural industry trust funds.

industry to represent consumers' demands" and therefore does not attempt to survey individual consumers (Erasmus, 2016, personal communication). As discussed previously, however, demand is rarely able to fully capture consumers' preferences due to social, political and economic constraints. Furthermore it is difficult to imagine that even if industry is able to capture an array of heterogeneous preferences amongst consumers, that these would be aligned with producers' concerns and therefore communicated to the DAFF.

The DAFF claims that its ability to develop detailed standards for free-range dairy is inhibited by the lack of international guidelines, unlike the South African free-range egg and poultry and organic draft legislations for which there were internationally agreed upon standards. It is true that, globally, there are no national standards for free-range dairy, however the DAFF could refer to the private standards discussed in chapter three and included in appendix three. If the DAFF lacks the capacity and expertise to develop its own free-range protocol it should make provision for registration of private standards. As discussed in chapter two, private standards and certification schemes are routinely used to address process-oriented quality concerns; however this alternative is not a panacea as government involvement is required to educate consumers and private schemes may not drive widespread improvements in animal welfare.

Regulations Relating to the Labelling and Advertising of Foodstuffs No. R.146 of the Foodstuffs, Cosmetics and Disinfectants Act of 1972 was enacted to prevent misleading or ambiguous food labels. R.146, which applies to both domestic and international food manufacturers was released by the DoH in 2010 and became effective in 2011. Under Misleading Descriptions of R.146 it states:

> "47. (1) Any word, statement, phrase, logo, or pictorial representation which implies a message of … humane treatment/rearing of food animals, such as, but not limited to, "grain fed", "grassfed", "Karoo lamb", "natural lamb", "country reared", **"free range"**, "pure", "organic", which are linked to specific protocols which are registered with the Department of Agriculture or regulations in terms of Agricultural Products Standards Act, 1990 (Act 119 of 1990) or National Regulator for Compulsory Specifications Act, 2008 (act 5 of 2008), will be permitted on the prepackaged labelling and advertising of these products" (Department of Health, 2010: 26).

The identical provision is included in section (48) of the amended Labelling Regulation draft R.429 of 2014.

The new dairy and imitation dairy regulations (R.260 of 27th March 2015) confirm that free-range dairy regulation in South Africa will continue to go against international trends which have seen free-range labelling becoming increasingly commonplace. According to the new regulations:

> "claims such as "grass fed" or "free range", etc. will only be allowed on a foodstuff regulated by the DAFF if (a) a protocol has been registered with the DAFF, or (b) the regulations administered by the DAFF provide for the use of such claims." (DAFF, 2016: 13)

R.260 does not make provision for (a) the registration of any these protocols, or (b) the use of such claims; these claims are consequently prohibited from appearing on dairy products.

4.3.2. Policy-production interaction: free-range dairy industry tension

This sub-section clarifies that dairy producers and processors, like consumers, are not a homogeneous group. There are many ways in which producers' preferences differ, the discussion here focuses on their preferences for certain legislation as informed by the production methods they employ. The existing literature does not capture how standard setting and labelling of ethical goods are influenced by dominance of certain players and tensions within the supply chain. This section addresses this gap by revealing that the preferences of the larger producers and processors dominate the industry organisations' positions and, ultimately, the state of regulation.

According to Kevin Penderis (2016, personal communication) of Free Range Dairy certifiers[22], when the labelling regulations were promulgated in 2010 there was a one-year postponement wherein the DAFF was to develop a protocol for free-range dairy that would fall under the Dairy Regulations of APS act. This protocol was developed in consultation with Free Range Dairy and included in an undated and unpublished draft (DAFF, n.d. (c)). In this draft, "free-range dairy cows" are defined as "cows that are able to range freely on pasture and graze pasture, including spending a minimum of 300 days on pasture and grazing pasture annually". The full clause, which outlines minimum access to pasture and maximum stocking density aligned with the narrow definition of free-range, is included in appendix nine.

When the protocol was ready for publication, Naresh Naidoo of the DAFF met with the industry bodies in Pretoria. According to Penderis, "at this meeting, [the free-range protocol] was squashed by the MPO and it appeared that this line of action had been decided on prior to the meeting as it was not

[22] Free Range Dairy was the only dedicated free-range dairy certifier in South Africa. This company ceased their operations in 2011 when the free-range label was effectively made illegal.

in their interest as the majority of their farmers [use] TMR [systems]"[23]. Two farmers, Kevin Lang (2016, personal communication) and Pierre van Rensburg (2016, personal communication), independently corroborated that the MPO had ensured that this regulation failed as many of their more powerful members use industrialised systems. Chief economist at SAMPRO, De Wet Jonker (2016, personal communication) suggested that although some of its members have expressed interest in implementation of free-range dairy regulation, SAMPRO as an organisation does not have a position "for or against free-range legislation". It is unsurprising that SAMPRO has not openly advocated for implementation of free-range dairy legislation, as the dominant processors in South Africa do not distinguish between milk from pasture-based and industrialised producers. These processors would therefore be disadvantaged if the smaller processors who source strictly from pasture-based farms are able to label their milk as free-range. Furthermore the chairperson of SAMPRO, Melt Loubser, is a dominant producer-distributor who has, in the past, directly benefitted from the lack of regulation (as discussed in chapter five).

Purity Mkhize of the Food Safety and Quality Assurance Directorate of the DAFF (2016, personal communication), however, believes that "the industry does not want free-range labelling because they believe that most people will use it as a marketing strategy. Industry does not want something that gives competitors a small advantage and DAFF is strict on claims that cannot be substantiated and may mislead the consumer, therefore DAFF [agreed] to rather wipe [the free-range regulation] out". There is merit to the observation that free-range dairy labels may be used as a marketing tool in an industry where many farmers already use pasture-based, if not broad free-range, methods; the public should be protected from misleading claims. Restricting consumers' access to information in a market that is rife with information asymmetries is, however, not in the public interest. Farmers that are truthful, despite using potentially unethical production processes, should not be prejudiced by other farmers' fraudulent claims. Furthermore, this approach does not align with either international best practice, which facilitates private standards and certification and labelling of free-range dairy, or the local framework applied to other free-range animal products and byproducts. The regulatory structure should allow for competitive advantage to be gained by producers who exert resources to ensure that their animals are treated well and by the processors who choose to source from only these producers.

[23] The MPO chose not to respond to numerous requests for comment; however Koos Coetzee, chief economist of the MPO, stated that "when dairy herds are put into housing the longevity of the cows increases and they suffer fewer foot injuries. Yet 'free-range' products are more expensive" (Coetzee, 2015). This reflects a narrow view of animal welfare as well as misinformation on prevailing pricing structures as illustrated in the previous chapter.

Chapter 5: Policy's Impact on Producers and Processors

The following three cases exemplify the impact on dairy producers and processors, and indirectly on consumers, of the policy vacuum explored in the previous chapter. The inability of South Africa's current regulatory landscape to adequately address management practices and animal welfare concerns has led to conflict within the industry, as shown in the previous chapter, and between consumers and animal welfare activists on the one hand and producers, processors and retailers on the other. The first case, Fair Cape, represents an instance where information asymmetries about production processes were exploited as a marketing tool to attract ethical consumers. It also reflects the detrimental impact of the regulatory gap on consumers, animal welfare and competing producers. The second case, Fairfield, reflects the role of private bodies, such as the NSPCA and ASASA, as protectors of government regulation. Evident here is the government's lack of capacity as well its lack of involvement in animal welfare issues. The third case, Sundale, reflects that both the DAFF and private bodies are unable to uniformly enforce the ban that has been issued.

5.1. Fair Cape

Fair Cape is a producer-distributor based in Durbanville, Western Cape. Fair Cape's sales and marketing director, Joel Serman (2016, personal communication) notes that the farm has 3500 cows with approximately 2000 cows in milk at any time. Each cow is milked three times a day, producing on average 39 litres of milk (far more than the national average of 19 litres (Lassen, 2012)). The Fair Cape brand is sold at all major retailers. Fair Cape is also Woolworths' biggest dairy supplier, although their milk is sold under the Woolworths brand. The CEO and founder of Fair Cape, Melt Loubser, is also the chairperson of SAMPRO, vice-chairman of Milk SA and president of the South African National Committee of the IDF.

News24 (2007) lauded Fair Cape for converting to a free-range system and being one of the first South African suppliers of free-range milk.[24] Fair Cape labelled their milk with the trademark "Fair Cape Free Range" ™ (see appendix ten); however it became apparent in 2011, after a consumer, Muriel Gravenor, visited the farm that their cows are not free-roaming or pasture-based but rather are fed TMR and reared in barns (Gravenor, 2011). The company acknowledged these facts reflecting that consumer skepticism may force firms to reveal accurate information about credence attributes ex-post. However, diverging from the information theoretic approach's prediction, consumer skepticism appears to be minimally effective in motivating firms to label accurately prior to discovery of falsehood. This case also provides evidence that in countries, such as South Africa, where the

[24] News24 (2007) described free-range as products "produced from livestock that are well-treated, and live in natural, comfortable and hygienic conditions". This reflects the consumer perception of free range rather than any official standard.

neoliberal paradigm is dominant, regulatory responsibility is often shifted to the citizen-consumer and consumer bodies.

Fair Cape notes that the lack of regulation for free-range dairy has led to many unscrupulous producers labelling their products as free-range without justification (Gravenor, 2011). Fair Cape claim they should be set apart from these producers as they believed that by placing "Fair Cape" before "free range", they were differentiating their product from milk from pasture-based cows (Serman, 2016, personal communication). They further justified their use of the term free-range by noting that they included six bullet points (in small font) on the back of each label providing information about their cows (see appendix eleven). However this was an inadequate means of explaining their primary label as even a cursory review of the literature (see Caswell and Padberg, 1992) emphasises that consumers base their purchasing decisions on only the most visible text. There was extensive criticism of Fair Cape within the dairy industry (Penderis, 2016, personal communication) and they now label their milk as "Fair Cape Eco-fresh" ™.

While Fair Cape's use of the free-range term was certainly misleading and inaccurate, its actions as a profit-driven firm seeking to differentiate its product amongst many near-identical products, are understandable in light of there being no standards and, at the time, no ban on the free-range term. Furthermore, this company does seem to believe that animal welfare is important. CEO Melt Loubser has stated that "Fair Cape realises the importance of a healthy, comfortable animal to ensure the success and profitability of its business" (Booyens, 2013). This leads to the question of why this company chose to utilise the free-range term rather than a more accurate one such as "animal welfare friendly" or even "cruelty-free". As noted by Serman (2016), "the label free-range has become fairly well known amongst South African consumers, even if there is no consensus as to its precise definition". He further indicated that as this term is not regulated or defined in terms of cattle in South African law, Fair Cape did not believe that attributing their own protocol to the term was unethical. Fair Cape used this term in lieu of a more accurate one in order to appeal to and differentiate its product to a broader base of consumers. Buller and Roe (2012) note that the focus on animals being "free-range", due to this being a widely acknowledged and "consumer-friendly" element of animal welfare, may lead to other important welfare concerns being neglected. However, the literature fails to explore how catch phrases and "consumer friendly" terms may actually be to the detriment of consumers' access to information. Consumers are likely to give preference to and even pay a premium for a product bearing a label with which they are familiar, and are unlikely to research further and explore whether the product actually aligns with their preferences and understanding of the label.

The literature (see Morris, 1997) also notes that ethical product labelling can bolster a company's reputation as an ethical supplier, however it fails to consider that fraudulent labelling does not necessarily destroy this reputation if the fraud is not widely known. The Fair Cape case illustrates that

misleading labels and marketing do not only misinform consumers while they are in use but also serve as the basis for undeserved loyalty and acceptance of price premiums once the label has been rectified. This is particularly true if a large segment of the consumer base does not seek out product information beyond the label and if mainstream news sources do not publish stories exposing the mislabelling. Regulation of labels is therefore not only important in ensuring accurate representation of a single product in a specific time, but also in limiting unfair competitive advantages derived from company reputation in the long term.

5.2. Fairfield Dairy

Fairfield Dairy is a producer-distributor based in the Midlands, KwaZulu-Natal and supplies Woolworths, Spar and Pick 'n Pay under the retailers' own brand names. Fairfield's and their suppliers' cows are free to roam and feed on pastures, however their diet is supplemented with grains, pulses, and vegetable proteins, in a mixed ration system. The cows do not receive antibiotics or growth hormones. Fairfield's own farm only has 300 cows. In peak production, Fairfield's Ayrshire cows produce an average 25 litres per day, while their Holsteins average 32 litres per day (Phillips, 2012).

Fairfield erected a billboard, visible from the busy N3 highway in the Midlands, featuring two cows breaking through a brick wall and the words "free range" in the centre (see appendix eleven). The NSPCA's head of public relations, Christine Kuch, questioned the truthfulness and substantiation of Fairfield's free-range claim and issued a complaint with the ASASA in 2015. The NSPCA argued that Fairfield's claim could not be substantiated as there are no protocols registered with the DAFF nor any regulation for free-range dairy cows in South Africa (Kuch, 2016, personal communication; Umraw, 2015). The ASASA concurred with the NSPCA and it was agreed that the billboard would be removed, however Kevin Lang (2016, personal communication), CEO of Fairfield Dairy, maintains that their cows are treated humanely and that Fairfield complies with European standards for free-range dairy.[25] Lang also expressed his regret "that the discussions regarding instituting free-range regulation that were taking place around 2011 were squashed by the MPO". Lang believes that as the climate in KwaZulu-Natal is ideally suited to pasture-based dairy farming, the dairy farms located there are truly free-range (in the narrow sense) and should be able to market their products as such. This shows the importance of geographical placement as a preference-driver. He has found that consumers want pasture-based dairy products and believes "they should be able to use labels to differentiate between these and products from the TMR-systems found throughout much of the rest of South Africa".

The NSPCA's Kuch (2016, personal communication) stated that the NSPCA regards "the outcome in this case as a moral victory. The public deserves honesty and the NSPCA believes in complete transparency in advertising, particularly of production methods". It remains unclear as to why the

[25] It is unclear to which European standards Lang was referring as there is no uniform standard for free range dairy cows in Europe.

NSPCA chose to expend its extremely scarce resources on this matter when animal welfare at Fairfield is better than most dairy farms. The lack of regulation and dedicated certifying bodies has placed the NSPCA in an uncomfortable, and potentially conflicting, dual role as protector of both animals and advertising standards.

5.3. Sundale Free Range Dairy

Sundale Free Range Dairy is the largest private dairy processor in East London with over 420 employees. Sundale takes in approximately 100 000 litres of milk a day and is the largest milk buyer processing fresh milk in the Eastern Cape. Sundale sources their milk from twelve pasture-based farms using Jersey cows within East London. They supply all major retail chains. Pierre van Rensburg (2016, personal communication), CEO of Sundale, has based his business model on the belief that "many South African consumers are looking for products made in an ethical way and are moving away from factory farming and mass-produced milk".

Sundale continues to refer to their product as free-range, despite the regulatory ban (see appendix twelve). Van Rensburg indicates that the farmers he sources from are all pasture-based and he "would like to be able to pass on this message to consumers because it is the right way of treating livestock and because it is difficult to find ways to add a uniqueness to milk". Sundale has therefore advocated for the implementation of free-range standards, however whether his farmers would qualify as free-range is dependent on the purview of the definition as some utilise rbST. It is unclear whether Sundale continues to label their product as free-range due to misunderstanding or intentionally evading the regulation. There did appear to be a lack of knowledge and understanding amongst the producers and processors interviewed regarding the registration of protocol with DAFF and whether or not free-range protocol for dairy have been registered. This lack of understanding and implementation of the regulation in the APS act is further reflected by DAFF's circulating a clarifying notice in this regard six years after labelling regulations were published (DAFF, 2016). This case illustrates an additional layer of regulatory failing; DAFF have not only banned the use of free-range labels without attempting to draw up standards, they are also failing to enforce their ban. It would therefore be more prudent to allow the use of the free-range label when it accords with either their own national standard or private protocols and certification schemes.

Van Rensburg alluded to another important implication of allowing the free-range label, which has not been adequately explored in this research report due to space constraints. The majority of the farmers that supply his milk are small-scale emerging farmers (SSFs). If these farmers were able to ensure the welfare of their livestock, the implementation of even broad free-range regulation would be in their interest. This has been the case with organic certification schemes, which are generally viewed as creating improved income opportunities for resource-poor SSFs (Chikazunga, 2012). Organic systems

have therefore become a popular tool for economic development and poverty reduction. Biénabe at al. (2010) believe that alternative food systems in South Africa may assist in knowledge acquisition and market access but often result in increased entry barriers due to increased transaction costs. As discussed in chapter three, free-range methods, particularly the narrow version, are far easier to implement than organic methods and transaction costs are lower. The free-range dairy market could therefore create even more opportunities for SSFs than the organic foods market, revealing its utility not only in addressing niche interests but also as a tool for broader economic development.

Chapter 6: Conclusion

This study proceeded with an overview of the literature on consumption and production of and information flows about goods with potentially undesirable process attributes. Labelling and certification schemes were presented as useful tools to transform credence attributes, such as animal welfare, into search attributes. These market-based tools were then shown to function effectively only if government sets enforceable national standards and regulation wherein consumers' specific and heterogeneous preferences are acknowledged and embedded. The case study addressed a significant gap in the dairy literature and provided new information and insight into the nature of free-range dairy in South Africa. This insight was contrasted with the industry and theoretical literature. A number of limitations and gaps were identified in both the academic and policy discourse on dairy and ethical consumption, the most pervasive of these being the inadequate exploration and incorporation of heterogeneous consumer and producer interests.

Dairy producers and processors were shown to be a heterogeneous group whose regulatory preferences, in this instance, are driven by their treatment of livestock, geographical placement, and choice of production system. It was shown that regulation fails to acknowledge and incorporate these diverse preferences and needs, for example, by disabling certification and branding of free-range dairy for marketing purposes. The South African dairy value chain was shown to be a buyer-driven chain and the influence of dominant producers on industry bodies was explored. Finally, interviews with producers, PDs and processors revealed the impacts of the regulatory vacuum in free-range dairy on the supply chain, information flows from producers to consumers and the efficient functioning of the market.

The need for a more defined and nuanced policy approach is also evident in the failure of the market-based approach to bring about improved animal welfare. The South African government has delegated enforcement of animal welfare regulation to the public and free-range labels, where they are allowed, are predominantly self-regulated. This implies that animal welfare is regarded as merely a consumer preference concern solved by providing a choice between high and low welfare goods. This report has shown that this approach differs in the dairy market. In addition to the especially hands-off approach of South African authorities in this market, producers are also prevented from self-regulating and responding to perceived demand through marketing. The failure of this approach is compounded by consumers' inability to take on the role of regulator as their access to information regarding production systems has been effectively cut off. These insights confirm that consumers, producers and animals stand to benefit from more flexible regulation and increased policy involvement.

As was shown in the organic foods and free-range egg markets, regulation assists in spreading awareness, building consumer confidence and facilitating the development of potentially profitable sectors. Although there are already a large number of South African dairy farmers using pasture-based methods, the cows on these farms may still suffer some of the harms experienced by their industrialised counterparts. A narrow clause within the APS, while an improvement on the status quo, is inadequate to inform consumers about the welfare status of their milk and will not, on its own, inspire deep or widespread improvement in dairy cow welfare. A comprehensive document, such as the stand-alone regulation for free-range eggs, is therefore required. This regulation including a broad and nationally agreed-upon definition for free-range dairy will provide the first step; a necessary second step is to involve credible certifiers. This two-step process will assist in transforming the free-range production system into a regulated and established food category. This will also improve information flows between producers and consumers of free-range milk and allow dairy farmers to differentiate their product, potentially limiting further dairy intensification and future dairy farmer exit.

Whilst this study has focused on the particular niche market of free-range dairy, the research has pointed to broader political and economic trends with important implications for governance of all agro-food systems in South Africa. Firstly, the influence of the neoliberal paradigm on the ANC-led government's pursuit of agricultural deregulation was shown to have had important consequences for agricultural value chains, including but not limited to dairy. Deregulation was shown to have entrenched buyer dominance, which has precipitated the exit of thousands of farmers and forced the remaining farmers to dramatically reduce costs through increased productivity. Within the dairy industry, deregulation has contributed to dairy intensification and industrialisation at the expense of animal welfare and human health. Deregulation has also been accompanied by regulatory capture and this was shown to be an important determinant of policy design in relation to free-range dairy. The impetus for change in these trends is unlikely to come from within agricultural industries and requires independent state involvement through targeted policy design and implementation.

Secondly, this study highlighted the limitations of market-based regulatory approaches to and explanatory frameworks for alternative food systems. The free-range dairy market was presented as an illustration of the damaging short- and long-term implications of leaving market forces to control negative externalities and to respond to ethical preferences. Policy design in South Africa fails to address consumers' and producers' specific needs for dynamic and flexible solutions to agro-food market failures such as environmental damage, health and safety risks and ill treatment of farm animals.

Thirdly, it was revealed that the South African authorities have failed consumers by refusing to acknowledge their preferences for specific process-oriented qualities. This insistence on the

process/product distinction and dismissal of processes as unworthy of regulators' regard was shown to be evident in there being no parliamentary act able to incorporate or set process standards without, potentially illegal, "stretching". This raises the need for policy redesign and development of new and effective institutional structures.

This research has served as a brief introduction to the regulatory concerns of the South African free-range dairy market. Further research is suggested in the following areas:

1) The future of free-range milk will depend to a large extent on consumer demand and a consumer-oriented approach to understanding dairy labelling practices is important not only in its own right, but also in response to changing market dynamics. A consumer survey is therefore required to establish preferences, demand and willingness-to-pay for free-range dairy amongst South African consumers.
2) It is also necessary to gain increased understanding of how to develop a regulatory structure in South Africa which makes provision for control over process-oriented quality attributes and which acknowledges the heterogeneity in consumer and producer needs within both food and non-food markets.
3) The role of South African retailers and processors in sourcing free-range dairy and setting free-range standards (either based on or in lieu of the national standards) must be investigated.
4) The potential impact of free-range dairy regulation and certification schemes on market access for small-scale farmers must be considered.

The identification of further areas of dairy production and policy research highlights the need to advance the theoretical conceptualisation of consumer and producer interaction. This research confirms the importance of capturing heterogeneity at the sector- and policy-level and incorporating broader macro influences arising from South Africa's particular political and historical setting.

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Appendices

Appendix 1: List of interviews

The following individuals were contacted during the research process:

Organisation	Person contacted	e-mail address
Interviews (telephonic and in-person)		
Fairfield Dairy	Kevin Lang	KevinL@fairfield.co.za
Sundale Dairy	Pierre van Rensburg	Pierre@sundale.co.za
Fair Cape Dairy	Joel Serman	Joel.serman@faircape.co.za
Woolworths	Karin Carstensen	Karin.Carstensen@woolworths.co.za
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Appendix 2: Sample Questionnaire

1) What do you know in terms of the current state of legislation on free-range dairy in SA? How would you amend or improve the current legislation?

2) Is free range regulation important to you in terms of current activities or future plans?

3) Would you like to see the reinstating of regulation permitting free range labelling? Why/Why not?

4) How would the implementation of an official certification and inspection programme affect your production methods, revenue and marketability?

5) If third party certification was allowed, would you be happy to cover the costs?

6) Do you believe that there is substantial demand for free-range/ ethical products in South Africa?

7) Do you believe a sufficient number of consumers will be willing (have been willing) to pay a premium high enough to cover the higher costs of production that free-range dairy and private certification implies?

8) Why do you farm using free-range methods?

9) Do you believe that free range regulation and labelling will lead to:
    a) better informed consumers
    b) improved dairy cow welfare?

Appendix 3: Free-range dairy standards

1.

American Grassfed Association (AGA) (2015) Certified Dairy Standards include the following:

1. All cows must be maintained on range, pasture, or in paddocks with at least 75 percent forage cover or unbroken ground during the growing season. Removal from pasture is only allowed during severe weather or emergencies.

2. Cows must not be fed grain.

3. Cows must not be fed or injected with antibiotics. Sick animals must be treated but their milk cannot enter the AGA Grassfed Dairy system.

4. No hormones or organophosphates may be administered.

5. Dairy cows must be traceable by written records throughout their lives. Cows can only be brought in from other AGA Dairy farms or certified organic herds.

6. Dairy calves must receive colostrum within 6 hours of birth and have access to high quality forage and pasture after 7 days.

The UK's Free Range Dairy's Pasture Promise certification mark is based on the following simpler standards suited to colder climates:

1. All cows shall be grazed for a minimum of 180 days a year (160 days in Scotland).

2. During the grazing period cows shall be grazed both day and night.

3. Both summer and winter diets for cows shall include not less than 60% forage (on a dry matter basis).

4. Male dairy calves shall not be shot at birth and must be raised for beef / veal or be sold for rearing (Free Range Dairy, 2012).

The now defunct South African Free Range Dairy® certifiers standards included the following:

1. Cows eat quality natural food without any added hormones.

2. Antibiotics are only used when prescribed by a veterinarian and only when a cow is ill. Milk from a cow treated with antibiotics is only usable once the cow is healthy and screening reveals that all trace of antibiotics is out of her system.

3. All producers must adhere to internationally established animal welfare standards.

4. Cows must graze pastures with adequate space to exercise and express natural behaviour.

5. Calves must be humanely housed and appropriately cared for.

6. Cows must have constant access to clean, fresh water and quality feed.

7. Farming practices must promote environmental integrity and stewardship (Penderis, 2016).

Appendix 4: Free-range egg clause

Regulations Regarding the Grading, Packing and Marking of Eggs Destined for Sale in the Republic of South Africa of Agricultural Product Standards Act (APS), 1990 (Act No. 119 of 1990) In R. 275, the clause on free range eggs falls under "restricted particulars on containers and outer containers" and states as follows:

> (2) (a) Eggs shall only be marked with the expression "free range" or "vryloop", if such eggs were obtained from poultry that had continuous daytime access to open air runs for at least 6 hours per day: Provided that –
>
> (i) open air runs be mainly covered with vegetation where poultry is able to scratch and dustbath; and
>
> (ii) open air runs be big enough to allow ample running space.
>
> 19 (c) The Free Range clauses shall be applicable until the Free Range Regulations for poultry and eggs are promulgated.

Appendix 5: Organic definition

In the South African draft organic regulation , **"organic"** means produced by the specific management practices indicated in these regulations, which are designed to -

(a) enhance biological diversity within the whole system;
(b) increase soil biological activity;
(c) maintain and improve long term soil fertility;
(d) recycle wastes of plant and animal origin in order to return nutrients to the soil, thus minimising the use of non-renewable resources;
(e) rely on renewable resources in locally organised agricultural systems;
(f) promote the healthy use of soil, water and air as well as minimise all forms of pollution thereto that may result from agricultural practices;
(g) handle agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and vital qualities of the product at all stages; and
(h) become established on any existing farm through a period of conversion, the appropriate length of which is determined by site specific factors such as the history of the farm-land and type of crops and livestock to be produced.

source: DAFF (n.d. (b))

Appendix 6: Distribution of dairy farmers, average number of cows in milk and milk production by provinces

Province	Number of milk farmers (August 2015)	% Distribution of milk production (October 2014)	Average number of cows in milk per farmer
Western Cape	515	26.8	281
Eastern Cape	256	27.7	769
Northern Cape	16	0.8	76
KwaZulu-Natal	262	26.8	574
Free State	281	7.3	140
North West	191	4.2	90
Gauteng	98	2.3	117
Mpumalanga	92	3.3	169
Limpopo	12	0.8	230

source: MilkSA (2015)

Appendix 7: Woolworths' pasture-based claims

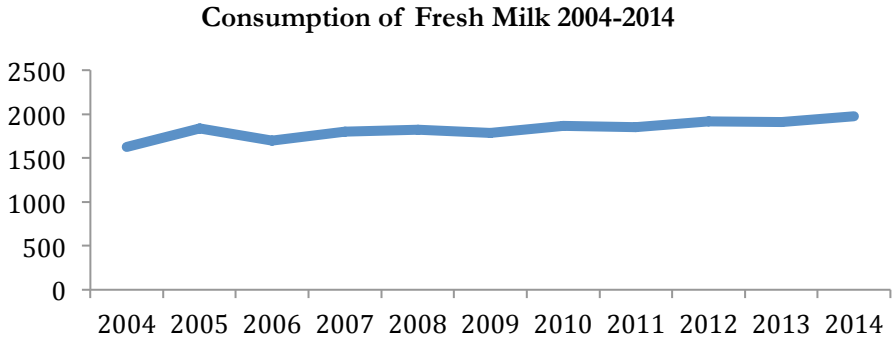
While Woolworths has not used the precise term free-range on their dairy products, they have consistently emphasised that their Ayshire cows are pasture-based. For many years the Woolworths Ayshire milk label included a picture of a cow in a field,[26] a depiction reiterated by television and print advertisements. Another label stated, "Ayshire milk is as nature intended" (Mountford, 2014) and in Woolworth's TASTE magazine it was claimed that Woolworths Ayshire dairy cows "spend their days in tranquil green pastures with access to plenty of good food and fresh, clean water". In 2014, Grass Consumer Action Group, which has since been disbanded, questioned the authenticity of Woolworths'

[26] It is fairly standard practice for milk processors, including First Choice and Clover, whose milk is not strictly from pasture-based cows, to include an image of cows grazing in a field on their milk bottles. This is clearly deceptive and ought to be addressed by authorities.

marketing and labelling of both Organic and Ayshire milk. In response to Grass' investigation, Woolworths acknowledged that only half of the herds that supply their Ayshire milk are actually free-range (Grass, 2014). The current label on Woolworths Ayshire milk states that Ayshire cows are "able to walk around at their leisure", however, and continues to perpetuate the image of free ranging cows. Their long life UHT milk's label also states that "Woolworths long life milk is from cows that graze on pastures in the beautiful Eastern Cape".

Appendix 8: Milk Consumption

Average annual per capita milk consumption in 2011 was 25 litres with consumption led by the upper LSM bands. LSMs 9 and 10 drink more than double the national average at 53 litres, while LSMs 7 and 8 drink 38 litres per capita, LSMs 5 and 6 average 23 litres and LSMs 1 to 4 only drink 9 litres per capita (Hunt, 2011). The following graph shows increased fresh milk consumption in South Africa over the past decade. This increase in consumption is caused by population growth rather than increased individual demand; per capita consumption of fresh pasteurised milk has seen only 1.7 percent growth over the past decade. UHT milk consumption on the other hand is growing rapidly amongst all LSMs in South Africa and increased by 26.9 percent between 2012 and 2015 (MPO, 2014; MPO, 2015; MPO, 2016).



source: Quantec

Appendix 9: Clause on free-range dairy included in undated draft version of Regulations Relating to Dairy Products and Imitation Dairy Products of the APS act (DAFF, n.d. (c))

> (10) Dairy product may only be marked with the expression "free range" on milk or "made from free range milk" on dairy products if such milk is from a farm certified as "free range" by the assigned certifying body (still to be appointed) and complies with the following standards;

(a) Dairy animals must be able to range freely on pasture and graze pasture, including:

(i) spending a minimum of 300 days on pasture, grazing pasture annually, and

(ii) obtaining a minimum average of 30 % of their dry-matter intake annually from grazing pasture.

(b) The stocking-density of dairy cattle on pasture should not exceed 130 head per hectare.

(a) The stocking-rate of dairy cattle on pasture should not exceed 2,000 kg per hectare. (See guidelines for calculation attached as Annexure 1)

(b)

ANNEXURE 1 – GUIDELINES FOR CALCULATING FREE RANGE PROVISIONS

Guide to calculations

Average heifer weight =	(((Average cow weight x 0.9) – 35) ÷ (Average age at first calving x 30.5)) x (Age at first calving ÷ 2 x 30.5) + 35
Stocking rate =	(Average cow weight x Number of cows in herd + Average heifer weight x Number of heifers) ÷ Total area of fertilized pastures
Average camp size =	Total area of fertilized pastures ÷ Number of camps
Average group size =	Cows in herd ÷ Number of groups of cows
Stocking density =	Average group size ÷ Average camp size

Appendix 10: Fair Cape milk label



source: Gravenor (2011)

Appendix 11: Fair Cape label's additional information



source: Gravenor (2011)

Appendix 12: Fairfield's billboard



source: Umraw (2015)

Appendix 13: Sundale's logo



source: www.sundale.co.za