

The Karoo Meat of Origin certification scheme: a silver bullet?

Special issue: Teaching case studies in food and agribusiness management

CASE STUDY

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Abstract

The Karoo Meat of Origin certification scheme is the first certification scheme established to differentiate and protect a region of origin meat product in South Africa. Although this scheme has come a long way in protecting the value embedded in the name ‘Karoo’, many challenges and loopholes for non-compliance still exist. These challenges include opportunistic behaviour on the farmers’ side regarding the vulnerable free range claim as well as inconsistent supply and mismatched objectives of supply chain stakeholders. Because of these challenges the niche product has not yet come to its own. The purpose of this case study is threefold. Firstly, to understand the notion of Karoo Lamb as a geographical indication, and the subsequent establishment of the Karoo Meat of Origin certification scheme. Secondly, to identify and understand both the institutional and supply chain challenges that Karoo Lamb is faced with. Thirdly, to guide the certification scheme to evaluate their modus operandi for better regulation. Ultimately, the managerial decisions are expected to come full circle; if the certification scheme is better-managed consumers may be willing to pay higher premiums which might, in turn, convince farmers to become part of this prestigious certification scheme.

Keywords: differentiated lamb, South African Karoo Meat of Origin, supply chain challenges, opportunistic behaviour, monitoring and enforcement mechanisms

JEL code: D71, D80, L14, Q10

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A teaching note has been prepared for this case study. Interested instructors at educational institutions may request the teaching note by contacting the author or IFAMA.

1. Introduction

The farmers in the Karoo region have been boasting about the premium quality and unique sensory attributes of Karoo Lamb for many decades. Families of these farmers, residents from the Karoo as well as the visitors from the affluent cities, have been raving about the amazing taste and quality of Karoo Lamb. However, as a result of this reputation, many scrupulous businessmen took the opportunity of making a quick buck by selling any lamb as Karoo Lamb. Karoo farmers, on the other hand, were selling this superior product at commodity prices to abattoirs. It was only in 2006, during a meeting at the farm Dombietersfontein near Victoria West that the farmers and researchers discussed the potential of a geographical indication for Karoo Lamb. It was during this meeting that the farmers raised their voices and demanded: ‘we need to protect our Karoo Lamb! We need to prevent people outside the Karoo from misusing our name and selling it falsely.’¹ That remark and the subsequent decisions marked the birth of the Karoo Meat of Origin certification scheme which came into force in 2011.

The recent culinary boom and consumers’ interest in the origin of the food² they are consuming provides a considerable amount of support for the Karoo farmers for this certification scheme as they start to realise the uniqueness of their lamb products and the great marketing potential it possesses. This realisation, however exciting, brought about some frustrations. Due to the vastness of the region, the Karoo farmers struggled to form a collective and could not jointly protect their product’s geographical identity that was often exploited by stakeholders with little or no link to the Karoo region. The distance between the rural farmers and their urban target market meant that they struggled to educate their market on their product’s unique story and ultimately failed to, successfully, market their product as different from other lamb products.

After that first meeting at Dombietersfontein, the Karoo region, with its untouched beauty and silence, windmills, free roaming sheep and genuine hospitality suddenly became the topic of discussion on many forums. These images and the Karoo’s honest way of life are the reason why the Karoo concept became synonymous with quality and purity. This nostalgia attached significant marketing potential to the name ‘Karoo’. Regrettably, the value attached to the Karoo name, and the economic value that belonged to the Karoo people, was misappropriated by role players (abattoirs and retailers mainly) in the lamb supply chain, often, with little or no link to the region. The geographical advantage of rearing sheep in the Karoo was lost, an impending disaster for Karoo farmers, and confusing for consumers who had no way of telling the difference before actually tasting the lamb product.

For these reasons, it was necessary, especially for the Karoo farmers, to discuss the means on how to form a geographical monopoly in order to protect the Karoo’s assets from misappropriation. And so, on that chilly afternoon in the Great Karoo on the farm Dombietersfontein, with the help of academics and scientists, farmers, abattoir managers, and government officials joined hands to find solutions to protect the valuable heritage vested in the name ‘Karoo’.

2. The Karoo region

The Karoo, nested in the Northern Cape Province of South Africa (Figure 1), is the vast semi-arid area stretching north-eastwards from the Cape and covers almost 50% of the total area of South Africa (approximately 46 million hectares). The region is home to flocks of free roaming sheep and is far from major urban centres. The vegetation of the Karoo region is restricted by rainfall and is typically characterised by flat, dry shrubland and limited grass growth (Kirsten *et al.*, 2008).

¹ Extract from the minutes of the meeting held in Victoria West in 2006.

² Other perhaps more well-known examples of products with a geographical indication that are successfully protected and marketed include, amongst many others, Champagne, Prosciutto di Parma and Parmigiano-Reggiano (see *inter alia* Arfini (2000); Arfini *et al.* (2003); Barjolle and Sylvander (2002); Dentoni *et al.* (2012); Hayes *et al.* (2004)).

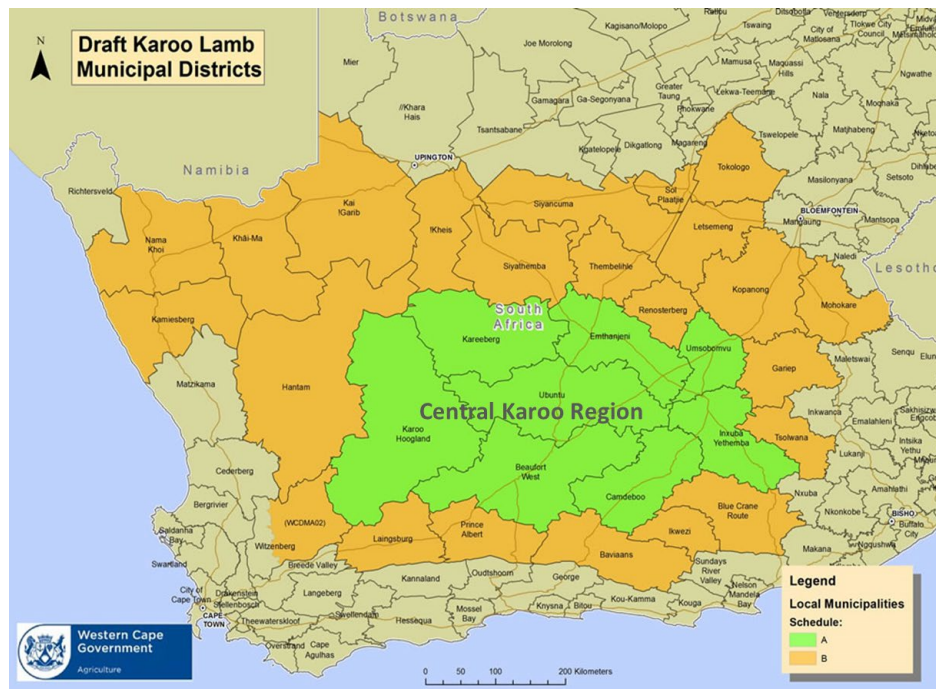


Figure 1. The Karoo region in South Africa (KMOO, 2016a).

Sheep and lamb produced on these Karoo shrubs are said to be ‘mouth-wateringly succulent, imbued with the subtle, fragrant flavours of the Karoo bush’ (Kirsten *et al.*, 2008). The Karoo vegetation is mostly a combination of different species of wild herbs which provide a distinct taste to Karoo Lamb products. It is this unique quality of Karoo reared lamb that makes the concept of Karoo Lamb most sought after. The exploitation attempts of lamb supply chain organisations with little or no link to the Karoo region is, therefore, not surprising.

3. Lamb production practices in the Karoo

The Karoo region is synonymous with free range lamb production practices and is also the image that comes to the mind of the consumer when thinking about the Karoo: free roaming sheep. The farming system of a typical Karoo sheep farmer (summarised Supplementary Table S1) is, therefore, that of an extensive and low-input system in a region with poor grazing capacity. Karoo farmers generally operate farms with grazing capacities that range between 5 ha per ewe, to as much as 13 ha per ewe, depending on the terrain. Most of the farmers producing lamb in the Karoo region operate farms that are larger than 5,000 ha and manage flock sizes above 500 ewes.

Rainfall in the Great Karoo varies between 137 and 315 mm per annum (data provided by South African Weather Service). According to the Karoo farmers, the annual rainfall ranges from 75 to 350 mm, but most farmers record rainfall of between 140 and 250 mm per annum. The rainfall season typically starts during January, peaks in March and April, and declines towards May. This relatively low and varied rainfall across the Karoo region impacts significantly on the grazing capacity of the natural veldt³ and as a result of this farmers are often forced to provide supplementary feed (either as creep feed in the veldt, or in a feedlot, or on a lucerne field) during the extremely dry months of October to February. If sufficient rain fell between the months of March and May, sheep would graze on natural veldt and would not require supplementary feed, at least during the months from April to September.

³ Veldt refers to uncultivated grass and shrub land in southern Africa. In the case of the Karoo, veldt refers to a combination of indigenous wild herbs.

Consequently, most Karoo farmers plan the breeding season such that lambs would be born in the months following the good rains, during March and April. During these months, the veldt is expected to be in good condition, which would allow ewes to produce enough milk to ensure fast-growing lambs, yielding high-quality carcasses. Some Karoo farmers do, however, follow opportunistic lambing practices where the rams are kept with the ewes on a continuous basis, which ultimately results in lambing intervals of less than 12 months. Due to the high fertility of the Dorper breed, the most common lambing system among the Karoo farmers is to aim for three lamb crops in two years. Karoo farmers, therefore, often plan a second lambing season during September and October. Although these lambs are born in the typical drier months and might require supplementary feed, the higher prices for supplying the Christmas market remains a good incentive.

Keeping the harsh conditions of the Karoo region in mind, it is not surprising to see the Dorper sheep as a common occurrence in the area. Farmers are, despite the Dorper breed's adaptability to arid regions, high fertility and good mothering abilities, in disagreement whether or not the Dorper is, in fact, the best breed. Although the Dorper breed is the most preferred among Karoo farmers, some farmers do, however, prefer to farm with Dohne Merino, Merino, Meat Masters or combinations of these sheep breeds. Dorper lambs are typically marketed from the ewes, at between three and four months of age, for slaughter. Merino lambs, on the other hand, are only marketed after their first shearing, at between five and six months of age. The highest and most sought after carcasses, which realises the highest market prices, are those of the A2 or A3 grade⁴, weighing between 18 and 22 kg. Most farmers, therefore, strive to deliver lamb with these specifications, in an attempt to realise the best possible price, thus yielding higher profit margins.

4. The relationship between the farmer and the abattoir

As with most commodity supply chains, the commodity supply chains in the sheep/lamb industry, are driven by volumes. The popular expression used in the red meat industry, 'an abattoir is like a crocodile that will devour you if you do not feed it', tells the story of an industry which is, seemingly, more concerned with profits and bottom lines, rather than obsessions over the claims and protocols of differentiated products. Although abattoirs are faced with very low-profit margins and overhead costs can only be retrieved when slaughtering runs at full or at least near full capacity, this push for higher volumes is never at the expense of the protocols of differentiated products. It is important to note that the abattoirs with whom the Karoo farmers do business have full farm-to-fork, batch level traceability systems in place. According to the abattoir managers interviewed, these traceability systems allow abattoirs to run more than one product line on the slaughtering floor, thereby enabling them to guarantee the authenticity of differentiated meat products such as Karoo Lamb, despite chasing volumes.

South African livestock farmers in general, are often heard complaining about the price they received from the abattoir for their livestock (lamb prices averaged at approximately 4.4 USD⁵ per kilogram during the data collection period), or that the carcass grades or weights did not meet their expectations. These complaints give the impression that livestock farmers often feel cheated by the abattoirs, and that the farmers did not trust the abattoir when it came to paying a fair price, based on the grade and the weight of the carcass. Contrary to this general observation, this is not the case. Among the Karoo farmers, there is a consensus that the abattoir is trustworthy and does have the farmer's best interest at heart. Admittedly, a few Karoo farmers do feel that the abattoir is dishonest when grading carcasses. These farmers revealed that, in some cases, the actual carcass grade is lesser than the anticipated grade. This assumed mistrust might be attributable to the cognitive bias of the independent grader, responsible for the grading process at the abattoir. In an attempt to reduce the mistrust between the farmer and the abattoir during the grading and weighing process, farmers are allowed to supervise the slaughtering process at the abattoir. Despite this opportunity, very few farmers do take the time to oversee the slaughter process.

⁴ The South African Meat Industry Company classifies carcasses based on age and fatness, where the latter represents the age of the animal (A – youngest to C – oldest) and the number represents the fatness of the animal (0 – no fat to 6 – excessively overfat). A full explanation of the classification system can be found online at the following URL: <http://www.samic.co.za/downloads/Redmeat.pdf>.

⁵ 1 USD = 13.65 R, calculated on the basis of the exchange rate on August 8, 2016.

However, perhaps the problem does not lie with the abattoir which is opportunistic, or the grader who suffers from cognitive bias, but with the farmer who might not know the quality (and expected grade) of his product, before sending it off to the abattoir. This lack of knowledge on the farmer's side might just be the biggest cause for mistrust and a subsequent tainted relationship between the farmer and the abattoir. Experienced, 'hands-on' farmers who know their product and is aware of the condition (expected grade, dressing percentage and weight) of the lambs to be marketed have no reason to squabble with the abattoir post-slaughter about 'incorrect' grades and weights.

As a result of the relatively small Karoo community and the companionship between the townsfolk, including the farmers and the abattoir, there exist, despite the fact that some farmers feel cheated, a good relationship between the farmers and the abattoir.

5. The initial challenge

Since that first gathering, in 'die Dorsmasjien' on the Dombietersfontein farm, on that chilly day in August 2006, it was clear that lamb produced in the Karoo is unique. Not only is the lamb organically reared under free range conditions, but the special diet of Karoo herbs gives the meat a unique 'spiced-on-the-hoof' taste. The nostalgia of the natural way of farm life, the windmills, and silence as the sun sets over the Karoo and her people, provides Karoo Lamb with a strong geographical and cultural connection.

There is, however, no insignia, no certification and no guarantee that the lamb product truly originates from the Karoo when it is sold as 'Karoo Lamb', which ultimately means that there is no way of protecting the economic value owed to the Karoo farmers.

The geographical name of the Karoo could potentially be protected by a geographical indication, based on the reputation of quality and flavour in combination with the nostalgia of the Karoo region. However, to protect the geographical name and its associated product, it is critical to establish whether the perceived aroma and taste differences between Karoo Lamb and lamb from other regions can be scientifically measured and proved. Until that winter day, no scientific research on the sensory qualities of Karoo Lamb existed. The situation soon changed, and it was not long before a team of academics and scientists was busy with research project, upon research project, to get the necessary proof to enable the Karoo farmers to create a geographical monopoly and protect the assets of the Karoo. Ultimately, the farmers wanted to, not only protect the reputation and image of their unique product that could be misappropriated to mislead consumers, but also improve the returns of Karoo Lamb production, through proper marketing and distribution, by using collective certification.

The Karoo farmers finally had a clear plan of action to protect their unique Karoo product and extract the value embedded in the geographical name – a collective structure. However, the vastness and the diverseness of the Karoo region made the functioning of a strong collective structure close to impossible. The Karoo farmers are typically organised in district farmers' unions and are members of the national and provincial Red Meat Producers Organization. There is, however, no collective structure or system, to promote Karoo Lamb as a reputable and unique product. There is also no collective system of quality management and certification for Karoo Lamb.

Up to that point in time, although the Karoo farmers had a clear vision, there was still no assurance, no certification and no label to guarantee the origin of Karoo Lamb. Consumers had to rely solely on their butcher, retailer or restaurateur's word, that they were indeed buying 'the real McCoy'. This blind reliance soon changed.

6. The beginning of ‘Karoo Meat of Origin’

In 2009 the Karoo Development Foundation was established as an *inter vivos* trust (nr IT1498/2009) in terms of Section 6(1) of South Africa’s Trust Property Control Act (Act 57 of 1988)⁶ by the Karoo farmers who were part of that first momentous gathering in 2006. The main purpose of the Karoo Development Foundation was to trace, record, protect, and honour the rich heritage of the Karoo, by acting as a custodian of the intellectual property rights that rest in the name ‘Karoo’ (Kirsten, 2011; KMOO, 2016a).

Shortly after the establishment of the Karoo Development Foundation, a system of auditing and certification started to take form, to prevent the exploitation of the Karoo as a concept and to protect the geographical value attached to Karoo products. Finally, during 2011, the Karoo Development Foundation registered the Karoo Meat of Origin certification mark at the South African Companies and Intellectual Property Commission, and at the South African Department of Agriculture, Forestry and Fisheries under the Agricultural Products Standards Act (Act 119 of 1990)⁷. The certification scheme also complies with the Consumer Protection Act (Act 68 of 2008)⁸. The Karoo Meat of Origin certification mark qualifies as an approved protocol under South Africa’s new labelling regulations⁹ that came into operation on 1 March 2012. These regulations aim to prevent the use of ‘misleading descriptions’ on labels and allow the use of quality descriptions, such as Karoo Lamb, only with protocols approved by the Department of Agriculture, Forestry and Fisheries (Kirsten, 2011).

The registration of the Karoo Meat of Origin certification mark (Figure 2), effectively meant that it was now illegal to label a product as ‘Karoo Lamb’ if it is not certified under the Karoo Meat of Origin certification scheme. As a system of auditing and certification, the main responsibility of the Karoo Meat of Origin certification scheme is to prevent opportunistic behaviour (misleading consumers by selling products with no link to the Karoo region as ‘from the Karoo’ to exploit the marketing potential that rest in the name ‘Karoo’) by the Karoo farmers, the abattoirs, processors and/or packers, the retailers, and butcheries. This responsibility includes: (1) enforcing the Karoo Lamb standards and requirements; (2) monitoring, through the South African Meat Industry Company (an independent third party), the Karoo Lamb supply chain organisations for compliance with the standards and requirements; (3) creating sanctions and penalties for mal-practices; and (4) generating incentives to reward compliance with the protocols (Kirsten, 2011).

⁶ The South African Trust Property Control Act: <http://tinyurl.com/ybvkuybm>.

⁷ The South African Agricultural Products Standards Act: <http://tinyurl.com/yasm6dmq>.

⁸ The South African Consumer Protection Act: <http://tinyurl.com/yceh35ue>.

⁹ The new food labelling regulations of South Africa: <http://tinyurl.com/yd4ofbtv>.



Figure 2. Karoo Meat of Origin marks (Source: KMOO, 2016a).

According to the stipulations of the Karoo Meat of Origin certification scheme, Karoo Lamb is defined as:

Sheep meat [mutton or lamb] that carries the Karoo certification mark. Sheep meat, regardless of breed, produced and slaughtered in the Karoo region. Only sheep originating from [that is, born in] the Karoo, or, alternatively, that are born outside the Karoo but remained in the area of the Karoo for a continuous period of at least six months immediately before slaughter, and which are free of diseases. Karoo sheep derive from free-range grazing or production on indigenous veld vegetation with access to clean water.

The certification mark guarantees that genuine Karoo Lamb comes from animals reared on natural veldt, with at least two of the six fragrant indigenous shrubs that have been scientifically proven to infuse the meat with a unique herby flavour. These shrubs are; *Plnthus karrooicus* ('Silverkaroo'), *Penzia spinescens* ('Skaapbossie'), *Eriocephalus ericoides* ('Kapokbossie'), *Salsola glabrescens* ('Rivierganna'), *Pentzia incana* ('Ankerkaroo'), and *Pieronia glauca/rosenia humilis* ('Perdebos') (Vermeulen *et al.*, 2008). The certification mark also guarantees that sheep are free from hormones and routine antibiotics, that slaughter is performed humanely, and that the meat is traceable from farm to fork.

In accordance with the protocols developed by the Karoo Development Foundation and set out by the Karoo Meat of Origin certification scheme, Karoo farmers are required to comply with at least the following minimum standards¹⁰:

- Farmers need to provide evidence that their farms are located in the Karoo region. They also need to provide proof that they practice free-range production systems on indigenous Karoo veldt, in sizable camps representative of the identified typical Karoo vegetation, and that animals are not grazing on permanent pastures.
- The occasional use of feeding supplements that may contain cereals, silage or any other natural plant matter, provided as supplementary feeding, to assist during times of drought and to improve the condition of animals during the reproductive cycle, may be allowed to a maximum of 30% of the total daily intake. The supplementary feeding must be given in addition to free-range grazing on the Karoo veldt. Written records of all supplementary feed fed to animals on the farm should be kept. Added antibiotics and other chemical additives are not allowed in the feed.
- Lamb originating from feedlots or planted pastures does not qualify for the use of the name Karoo Lamb. Free range grazing, or production on indigenous veldt, is a specific requirement as it is an acknowledged contributing factor to the sensory attributes of Karoo Lamb.
- All growth stimulants, either hormonal or anti-microbial, are prohibited.
- Animals may be brought off the veld and kept in pens only for, medical treatment, adverse weather conditions, marking/tagging of animals, shearing activities, and/or awaiting loading for transportation.
- In general, good animal practices must be followed regarding animal handling, the monitoring of animals and flock health, management of sustainable camp stocking rates, and the availability of sufficient and clean water sources.
- Transportation of livestock must be in accordance with the regulatory procedures stipulated in the Animal Protection Act¹¹ (Act 71 of 1962). Also, animals may not be transported further than 250 km from the farm to the abattoir.
- The farmer should complete and sign a declaration of compliance to Karoo Meat of Origin standards after every delivery or pick up. The farmer should keep this document on file for auditing purposes.

Following the establishment of the Karoo Meat of Origin certification mark, producers of Karoo Lamb, abattoirs, processors and packers, butcheries, retailers, restaurants and any other outlet can apply to be audited and certified to use the Karoo Meat of Origin certification mark. To join the certification scheme farmers and other interested parties are required to complete an application form and pay a once off application fee. As

¹⁰ The standards to which abattoirs, processors, packers, butcheries, retailers and restaurants should comply with is stipulated on the official Karoo Meat of Origin website: www.karoomeatoforigin.com.

¹¹ The South African Animal Protection Act: <http://tinyurl.com/y9znbctp>.

soon as the application form is received, the certification scheme notifies the South African Meat Industry Company of the application, which then sends an official to conduct an audit to ensure compliance with the standards as set out by the certification scheme. If the entity passed the audit, the certification scheme issues a certificate of compliance after which an annual or monthly membership fee, depending on the type of entity¹², is payable. Farmers are required to pay an application fee of 219.78 USD and an annual membership fee of 0.006 USD per hectare (about 29.30 USD for an average 5,000 ha farm). Abattoirs, processors and packers are required to pay 275.60 USD in application fees and a monthly membership fee of 263.74 USD. Retail outlets, including butchereries and in-store retail butchereries, have an obligation to pay annual application (50.11 USD) and membership fees (74 USD) excluding the cost of travel for auditing the retail outlet. Although these fees might seem excessive, there are definite profits to be made for participating in the Karoo Meat of Origin certification scheme. For example, a typical farmer (annually rearing 500 lambs on 5,000 ha to yield carcass weights of 22 kg), assuming a premium for Karoo Lamb of between 0.07 and 0.15 USD per kilogram carcass weight, will realise a net gain of 520.22 USD¹³ per annum (approximately 1.4% of total net farm income) for being part of the certification scheme.

The Karoo Development Foundation has achieved a remarkable milestone with the protection of Karoo Lamb as a geographic indicator. This certification mark is now a well-recognised geographical indicator, providing assurance of the unique credence attributes and origin in the same way that Prosciutto di Parma, Roquefort and Champagne are protected. But, is the Karoo Meat of Origin certification scheme a silver bullet?

7. Karoo Meat of Origin success stories

Up to date, 209 Karoo farmers have been registered, which relates to a total of 417 farms covering close to two million hectares. Of the certified farmers, 97% agrees that Karoo Lamb is a unique product that deserves a niche market and 94% of the farmers believed that Karoo Lamb should be traded at a premium. When asked what premium they would be willing to accept, 49% of the farmers felt that a premium between 0 and 0.15 USD would be acceptable, and 44% said that they would prefer a premium of between 0.22 and 0.37 USD. However, most of the Karoo farmers felt that the premium should be justified by what the consumers are willing to pay.

Further down the supply chain, five abattoirs, four processors or packers, 18 butchereries, and one retailer are now part of the Karoo Meat of Origin family. Together, this supply chain was responsible for producing, slaughtering, processing and packing, and marketing approximately 13,813 carcasses between February 2015 and February 2016. Although this is but a fraction of the total sheep slaughterings in South Africa (approximately 5.35 million carcasses per annum (DAFF, 2016)), the anticipated capacity of Karoo carcasses is believed to be close to 100,000 carcasses per annum.

The success of the Karoo Development Foundation's purpose, through the Karoo Meat of Origin certification scheme, is evident from newspaper headlines and success stories in popular magazines (Figure 3), the launch of Karoo cookbooks, and continuous research publications in scientific journals. A discussion on Karoo Lamb on the television show 'Nasie in gesprek' was also broadcasted, in October 2015, on various South African television channels. Karoo Lamb was also profiled on a local morning show 'Espresso' through a cooking demonstration.

Since the initiation of the Karoo Meat of Origin certification scheme the Karoo Lamb profile attracted considerable interest, with the Facebook page surpassing the 1000 likes mark and an increasing number of Twitter followers. These social platforms do not only stimulate curiosity and subsequent demand among consumers, but it also provides farmers with the opportunity to educate consumers about the unique attributes of their Karoo Lamb chop. However, tall trees catch much wind, and it is believed that products with

¹² More information on the application process and fees payable is available online via the following URL: <https://www.karomeatoforigin.com/register>.

¹³ Income: 500 lambs × 22 kg × 0.07 USD premium per kg = 770 USD subtract from this the expenses to be part of the certification scheme: 219.78 USD + (0.006 USD/ha × 5,000 ha) = 249.78 USD.

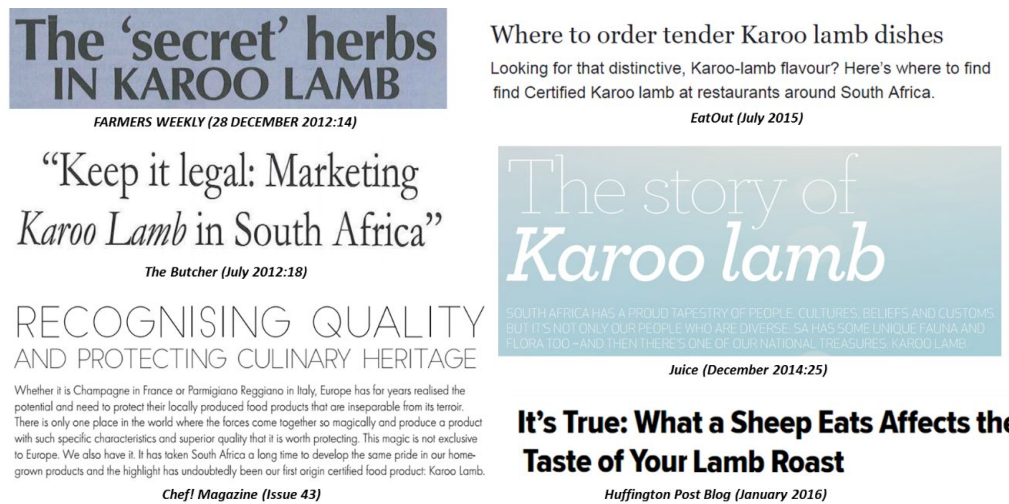


Figure 3. Karoo Lamb headlines (KMOO, 2016b).

exceptional qualities and subsequent premium prices are subjected to higher instances of fraud, which is what makes Karoo Lamb vulnerable to exploitation.

The raising interest in the product and the work that went into protecting the geographical indication paid off in a spectacular way. In August 2015 the first container of Karoo Lamb was exported to Dubai. The Karoo Development Foundation are cautiously excited and hope that this container is the first of many. As a result of this higher demand, higher prices for Karoo Lamb might follow, especially if supply cannot keep up with growing demands.

Very recently, the European Union has recognised Karoo Lamb as a geographical indication. Karoo Lamb was thus listed as one of the foreign geographical indicators on their list of geographical indicators. As such the name will now be protected in the European Union. Once the last technical barriers are removed, the expected big demand for this niche product will certainly present great export opportunities for the Karoo farmers with price premiums that will be in the order of 2 and 5 USD per kilogram.

Although higher lamb prices are something to get excited about, even more so when you are a farmer, the Karoo Meat of Origin certification scheme should be vigilant against opportunistic behaviour during these times.

8. Vulnerabilities of the certification mark

Trust, transparency, traceability and efficient coordination between farmers, abattoirs, processors and packers, retailers, butcheries, delis and restaurants are the pillars on which this certification scheme is built. It is, therefore, imperative that certified members comply with the protocols as set out by the Karoo Development Foundation to ensure the integrity of the certification scheme. Although the Karoo Meat of Origin certification scheme takes every precaution to protect the Karoo Lamb protocols by auditing and certifying the users of the mark, it is possible that some of the Karoo Lamb claims and protocols might be vulnerable to opportunistic behaviour by the users of the mark.

The pure nature of lamb production practices in the Karoo region puts the free range and ‘from the Karoo’ claims under pressure. As mentioned earlier, the Karoo region is a semi-arid region characterised by unpredictable, below average rainfall, which translates into poor grazing capacities of more than 5 ha per ewe. Karoo farmers are known to provide supplementary feed, *ad libitum*, during the typical dry season (October to February), which is cause for concern. According to the Saunders Comprehensive Veterinary

Dictionary (2007), *ad libitum* feeding is described as ‘food [being] available at all times with the quantity and frequency of consumption being the free choice of the animal’. Although a limited amount (approximately 300 g of supplementary feed per lamb per day) is allowed according to the protocols, the Karoo Meat of Origin certification scheme cannot be sure to what extent farmers adhere to this limit, especially when feed is provided *ad libitum*. It might, therefore, be very possible, that the Karoo farmers’ feeding practices are directly contradicting the ‘from the Karoo’ protocol, whether intentional or not.

Until recently, studies had not yet been done to determine how many days on alternative feed it takes for a Karoo Lamb to lose the unique flavour derived from the natural Karoo veldt. However, Prof E. C. Webb (Department of Animal and Wildlife Sciences, University of Pretoria, South Africa; personal communication) confirmed that, based on recent research, a Karoo Lamb would lose the unique flavour after spending only 30 days off the Karoo veldt, either in a feedlot or on a lucerne field. It is for this reason that the protocols do not allow for the finishing of lamb on feedlots or lucerne fields pre-slaughter, since it will change the unique taste of the Karoo Lamb product (also see Erasmus *et al.*, 2016), for which the consumer is willing to pay a significant premium (Van Zyl *et al.*, 2013).

What is further worrying is the fact that the drier months (months of low supply) coincide with the South African summer season (October to February), and the Christmas holidays (months of high demand). The supply of Karoo Lamb might not keep up with the high demand during these times, which could make feedlots all the more attractive because of its quicker turnaround time, compared to the free range practices of Karoo Lamb. Additionally, this mismatch between the demand and supply of Karoo Lamb might lead to higher prices for lamb carcasses, which would make the production of Karoo Lamb even more profitable. By keeping the deterrence theory (Onwudiwe *et al.*, 2004) in mind, farmers might choose to violate the Karoo Lamb protocols; if the gains of supplying feedlot reared lamb under the Karoo Lamb certification mark outweigh the consequences of being caught for non-compliance.

The other important claims, free of routine antibiotics and growth hormones, are usually not vulnerable to non-compliance. These substances are commonly used in feedlot set-ups where animals are kept and fed in pens to finish pre-slaughtering. However, feedlot production practices are, under normal conditions, not common in the Karoo region. The remoteness of the Karoo region, and the subsequent high costs associated to feed and feedlots (attributable to the high transport costs of feed), limit feedlot production practices and therefore, the use of substances such, as routine antibiotics and growth hormones. Be that as it may, never say never. During times of severe droughts and high prices, the benefits of running a feedlot might outweigh the costs, which suddenly requires the Karoo Meat of Origin certification scheme to be vigilant against the use of growth hormones and routine antibiotics.

It is clear that the reputation of Karoo Lamb, regardless of the presence of the Karoo Meat of Origin certification scheme will, at times, be vulnerable to non-compliance and opportunism, specifically during times of drought and in times of high demand. Throw in the price premium for authentic, certified Karoo Lamb of between 0.07 and 0.15 USD per kg carcass weight, and there it is – the perfect environment to violate protocol.

The vulnerable claims (free range and ‘from the Karoo’), and the triggers for opportunistic behaviour (droughts, times of high demand and the premium for Karoo Lamb), as identified above, require proper monitoring and enforcement mechanisms to prevent non-compliance that could cause serious reputational damage. From the measures set out on the Karoo Meat of Origin website it does, however, seem like the Karoo Meat of Origin certification scheme lacks the modus operandi to monitor compliance with the protocols, and to reprimand non-compliance and opportunistic behaviour. Currently, the following measures are in place to deal with non-compliance in the Karoo Lamb supply chain:

- In the event of any critical or unacceptable deviation from the Karoo Development Foundation’s guidelines, certification is revoked with immediate effect, and the guilty party would have to cease use of the Certified Karoo Meat of Origin mark.

- Once certification is revoked, the relevant party will have to reapply for permission to use the Certification Mark.
- In the event of a minor deviation, the Karoo Development Foundation will issue a Corrective / Preventative Action Request, and will re-inspect or monitor compliance (at the licensee's cost); failing in which case the licence will be revoked as in the event of a critical or unacceptable deviation.

The mere length of the strategies to deal with non-compliance, compared to the protocols developed by the Karoo Development Foundation, begs the question: how serious is the Karoo Meat of Origin certification scheme about dealing with non-compliance?

9. Current challenges

As mentioned earlier, the South African Meat Industry Company (appointed by the Karoo Meat of Origin certification scheme) audits farmers, abattoirs, meat processors and packers, butcheries, and retailers for compliance with the Karoo Meat of Origin protocols. Although the auditing and certification process is a necessary condition for compliance with the protocols, it does not prevent non-compliance by either one of these organisations. For example, referring to the feeding practices of Karoo farmers, it is almost impossible for the South African Meat Industry Company to detect wrongful feeding practices by the Karoo farmers, especially since an announced audit is only done every four years with the promise of random audits (which rarely take place) after that. Although the current auditing system is not necessarily geared to prevent non-compliance, it does increase the probability of being caught, to some extent. However, without consequences for misconduct, these monitoring and auditing systems will not necessarily reduce non-compliance (Nagin and Pogarsky, 2003).

As mentioned earlier, the consequences for non-compliance includes the revocation of certification, upon which the relevant organisation should immediately cease the use of the certification mark, and will have to reapply for permission to use it. Although this is stated on the official website of the Karoo Meat of Origin certification scheme, very few Karoo farmers are aware of the penalties that are imposed for misbehaving.

In addition to the behavioural challenges, the Karoo Meat of Origin certification scheme is also faced with a number of other institutional and supply chain challenges. However, a proper understanding of these challenges requires a proper understanding of the Karoo Lamb supply chain and its stakeholders, their objectives and motivations. The Karoo Lamb supply chain currently consist of 209 Karoo farmers, five abattoirs, four processor/packers and approximately 19 retail outlets (Figure 4), that compete with other niche lamb products such as certified natural¹⁴ and free range.

As mentioned earlier the stakeholders participating in the supply chain contributes varying amounts to the Karoo Meat of Origin certification scheme's fund. Abattoirs, for example, contribute considerably more in application and membership fees compared to farmers and retail outlets. This uneven investment in the collective creates opportunities for institutional challenges such as hold-up and lock-in problems where one party takes advantage of the other party's vulnerability as a result of a relatively higher investment.

Although most of the institutional challenges have been contained, issues pertaining to inconsistencies in especially volumes and regular deliveries, as a result of different stakeholder objectives, proved to be harder to manage. If these objectives are not aligned towards a common goal of the successful creation and protection of a geographical monopoly by means of vertical and horizontal coordination, it would be impossible for the stakeholders to, successfully, extract the economic value attached to the Karoo name. At this point in time, only one of the five abattoirs is able to consistently commit to and deliver on each order placed by the retail outlets. Incidentally, this is also the only abattoir that functions within a close community of farmers, with strong support towards the collective that are proud of their product. The other abattoirs, however, hide

¹⁴ More information on certified natural can be found at the following URL: <http://tinyurl.com/ycot8958>.

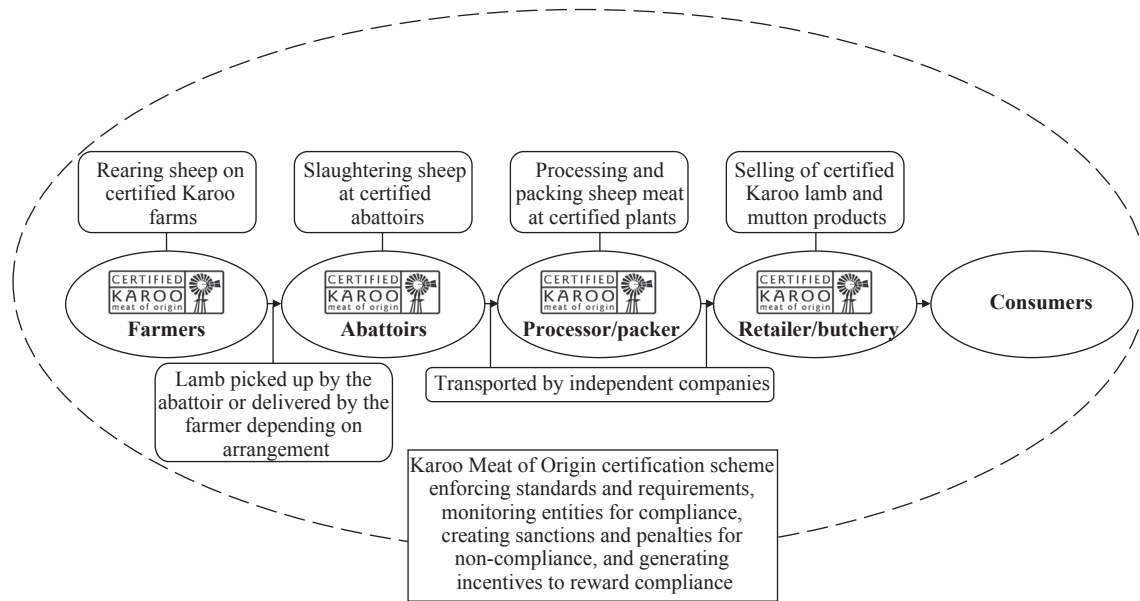


Figure 4. Karoo Meat of Origin supply chain certification points (Van der Merwe, 2012).

behind excuses of small and inconsistent orders which, because of great distances travelled and subsequent high transport costs, cannot regularly be delivered. Other reasons provided are the fact that Karoo Lamb is a seasonal product and might become unavailable during times of severe droughts which makes it difficult to find a market since the abattoir cannot promise year round consistent supply. Keeping in mind that the successful abattoir is less than 100 km from its unsuccessful counterpart, and have been successfully servicing a number of retail outlets (Gauteng and the Western Cape that implies 1000 and 500 km travelled respectively) for a number of years, one has to wonder if perhaps the real reason is a lack of coordination and commitment towards a common goal between the stakeholders in the supply chain. Unfortunately, the relatively uncoordinated nature of the Karoo Lamb supply chain also results in uncoordinated marketing strategies which influence Karoo Lamb demand and ultimately spills over to small and inconsistent orders to create supply problems.

Regretfully, the Karoo Meat of Origin certification scheme is not a silver bullet to market and protect the geographical value embedded in the Karoo name. Although the Karoo Development Foundation, through the certification scheme accomplished a lot during the past ten years, the Karoo name remains vulnerable to misappropriation, and because of inconsistent supply, Karoo Lamb is yet to become a household brand.

10. What’s next?

After that first gathering in the Great Karoo, ten years have passed during which the Karoo Development Foundation, through the Karoo Meat of Origin certification scheme, built the dream of protecting and capturing the geographical advantage of rearing sheep in the Karoo region. It is safe to say that they have (so far) been relatively successful. Not only is the Karoo Meat of Origin’s membership on the increase, but Karoo Lamb is gaining popularity, and is quickly becoming the South African (and, shows potential to be the global) lamb consumer’s product of choice.

What could possibly go wrong, right? Wrong!

Just below the surface of these successes, the following questions still linger in the minds of the passionate Karoo farmers who was part of that very first gathering. How do we align the objectives of all the stakeholders participating in the Karoo Lamb supply chain? How do we ensure consistent supply and what can we learn

from success stories such as Prosciutto di Parma? How do we continuously monitor the compliance of Karoo farmers, especially during times of drought? What should be done if Karoo farmers are found to be guilty of non-compliance? Can the Karoo Meat of Origin certification scheme become a silver bullet?

Acknowledgements

The authors would like to extend their appreciation to the Karoo farmers for sharing their valuable insights about the Karoo Meat of Origin certification scheme and for sharing their Karoo Lamb production knowledge. The authors are furthermore grateful for the abattoirs and retail outlets who were willing to discuss some of the biggest challenges faced by the certification scheme. The research was funded by the Red Meat Research and Development SA and the Bill and Melinda Gates Foundation.

Supplementary material

Supplementary material can be found online at <https://doi.org/10.22434/IFAMR2016.0106>.

Teaching note.

Table S1. Profile of a typical Karoo farmer and his farming operations.

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