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Developing a resilient UK halal meat production system for the domestic and export markets

Written by:

Dr Awal Fuseini NSch

June 2026

A NUFFIELD FARMING SCHOLARSHIPS REPORT

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*"Leading positive change in agriculture.
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Title	Developing a resilient UK halal meat production system for the domestic and export markets.
Scholar	Dr Awal Fuseini
Sponsor	The Central Region Farmers Trust and Three Counties Agricultural Society
Objectives of Study Tour	1. To develop a better understanding of halal meat production, market outlook and regulation in different countries with a focus on animal welfare and market opportunities; 2. To understand different slaughter techniques used for halal meat production in major meat producing countries; 3. To evaluate demand for fifth quarter products.
Countries Visited	NZ, Australia, Ghana, the UAE, Saudi Arabia, South Africa, Kenya, Tanzania, Somalia, Poland, Germany, Italy, Malaysia, Turkey, China, Uganda, and the UK.
Messages	1. The halal market is growing globally due to the increase in the population of Muslims, whose population is relatively younger globally with high disposable incomes in several countries. 2. NZ and Australia are the two largest exporters of halal red meat globally while halal chicken is largely produced in South America. 3. The majority of halal meat produced in the UK, the EU, Australia and New Zealand is derived from animals that have been reversibly stunned prior to slaughter. 4. There are opportunities for the export of halal meat to the Middle East, Asia and Africa; however, the UK lacks a robust halal regulatory framework which has led to low confidence in UK halal meat in some importing countries. 5. There is a rise in the demand for unconventional products such as offal, which is important for carcass balance and alternative or non mainstream products such as smokies (skin-on products).

EXECUTIVE SUMMARY

According to the 2025 State of the Global Islamic Economy Report, the value of the global halal food sector is projected to grow from US\$1.43 trillion in 2023 to US \$1.94 trillion by 2028 (Dinar Standard, 2025). This projected growth is underscored by rapid expansion in the population of Muslims globally due partly to high fertility rates. In the UK alone, Muslims account for 6.5% of the population (ONS, 2021), and it is reported to be a relatively younger population with high disposable income, therefore offering commercial opportunities in the longer term.

In 2025, the halal sector was estimated to contribute £1.7 billion to the UK economy (Lever et. al., 2025), and data from the Agriculture and Horticulture Development Board (AHDB) estimated the proportion of lamb consumed by Muslims in the UK to be around 30% (AHDB, 2024). In the same study, AHDB found that whilst only 6% of the general population is estimated to consume lamb weekly, up to 60% of Muslims consume lamb at least once a week, highlighting the opportunity for the sheep sector.

It is for the above reasons that I embarked on this Nuffield study tour to observe the steps other countries are taking to tap into the halal market. The aim is to utilise my observations to make recommendations for the UK meat industry with the hope of influencing a positive change in policy and to maximise opportunities in the domestic and export halal markets.

From my findings, Australia and NZ were found to have robust halal regulation systems; furthermore, they both have halal slaughter systems for beef, which the UK is currently lacking. To tap into the opportunities in the halal sector, the UK needs to improve its regulation and invest in halal compliant methods of beef production; the government must also invest in market access by opening more markets abroad.

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Nuffield Farming Scholars are available to speak to NFU Branches, agricultural discussion groups and similar organisations.

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CHAPTER 1: PERSONAL INTRODUCTION

My journey into agriculture begun at a tender age in Ghana, where I was born and raised. My late mum kept sheep, goats and poultry in the backyard mainly for what I would describe as a hobby or pleasure. She would always insist on us feeding and watering them before school and she also encouraged us to either become farmers or medical doctors. I swerved her dream and became neither!

However, as a result of her encouragement, I decided to study agriculture in secondary school and during my first degree in university. It did not stop there. I was fascinated by factors affecting the conversion of carcasses into meat. Bristol Veterinary School was to become my next destination where I completed an MSc in Meat Science and Technology before winning a Humane Slaughter Association (HSA) scholarship to pursue a three year PhD research to investigate the humane slaughter of cattle. My PhD research led to the development of a prototype head-only electrical stunner for adult cattle.

Prior to the completion of my PhD, I got the opportunity to become the first halal sector manager for the UK's Agriculture and Horticulture Development Board (AHDB). While I still hold this position on part-time basis, I recently became an independent consultant offering my services to industry and overseas governments. This is arguably the best career decision because it affords me the opportunity to travel around the world, while making contacts and building a professional portfolio. With a desire for continual learning, I applied for a Nuffield scholarship to understand the global systems and market opportunities for Halal meat.



Image 1. The report author, Dr Awal Fuseini, on a study tour of the Al Quoz abattoir in Dubai (Photo credit: Dr Nasser Zeidan Elshafey).



CHAPTER 2: BACKGROUND TO MY STUDY SUBJECT

The UK is a major sheep meat producer in the world; in fact, it is the third largest exporter of sheep meat globally, behind only Australia and New Zealand. However, the UK has been unable to capture a good proportion of halal meat export to key markets in the Middle East, Asia and Africa. The aim of this study was to visit major exporting and importing countries to understand how halal meat production is regulated and the factors influencing the demand for halal meat in Muslim-majority countries. Sheep meat is the easiest species to compare because production and slaughter methods for sheep are similar in all major-producing countries. Poultry and beef slaughter protocols do differ between major processors in the UK, Australia and NZ, and the study is aimed at investigating whether this has any impact on the volume of halal meat exported to Muslim markets.

Halal poultry meat exports is also of interest in this report but the hypothesis is that the UK is constrained by the fact that apart from the UAE, the slaughter method used for UK poultry is not accepted in several Muslim-majority countries. This study therefore aims to investigate any other factors, apart from the way poultry is slaughtered, that are likely affecting UK export to the global halal marketplace.

The main method of producing beef in the UK is through the use of penetrative captive bolt stunning. This method of slaughter is deemed inconsistent with the halal rules by the majority of importing countries because it causes gross physical damage to brain cells resulting in death before exsanguination (bleeding). For a slaughter method to be acceptable for halal, it must not cause the death of the animal before it is bled. This study aims to look at the method of slaughter used in different countries and then examine if the slaughter methodology used in the UK is constraining export opportunities to Muslim-majority countries and propose solutions or recommendations .

Also of interest in this study is the role of shelf life in competing in Muslim-majority economies. For instance, chilled lamb from Australia has 90 days of shelf life whilst the same product produced in the UK achieves a shelf life of around 30 days or less. The study will investigate the factors responsible for shelf life and evaluate whether the shorter shelf life of UK beef and lamb puts UK exporters at a disadvantage.

Halal assurance is a major determinant of consumer purchasing decisions. While the UK has private halal certification bodies that are not linked to government, experts have indicated that halal meat certification and regulation in the UK is fragmented. In this study, regulation in other countries is compared to the system used in the UK. Countries like Australia and NZ have government and industry bodies' involvement in halal meat production with the Ministry for Primary Industries (MPI) in NZ and the Department of Agriculture, Fisheries and Forestry



(DAFF) in Australia fully involved in the regulation of halal by having direct interaction with halal certifiers and constantly involved in halal training, seminars and conferences abroad. Further, Meat and Livestock Australia (MLA) has offices in the Middle East to interact directly with buyers. The study investigates whether these investments give Australia any competitive advantage and whether the UK should consider similar investments to support the meat industry.



Image 2: The report author (left), and his hosts at a large cattle market in Accra, Ghana (Photo credit: Abubakari Mohamed Awal).



CHAPTER 3: MY STUDY TOUR

Countries visited were selected based on their production and import status. For instance, Australia and NZ were visited because they are major meat-producing countries. On the other hand, net-importing countries such as the UAE and Saudi Arabia were also included to gauge their purchasing indices. Furthermore, countries importing large volume of fifth quarter, for instance Ghana and Uganda, were included in the study. Fifth quarter are the edible by-products or offal of an animal i.e. liver, heart and feet. See table 1 for a list of countries visited.

Country	Month/Year
New Zealand	March 2025
Australia	April 2025
Ghana	February 2025
The UAE	February 2025
Spain	April 2025
Germany	April 2025
Italy	April 2025
Saudi Arabia	May 2025
Poland	June 2025
Malaysia	October 2025
China	October 2025
Somalia	October 2025
Uganda	November 2025
Kenya	November 2025
Tanzania	November 2025
Turkey	November 2025
South Africa	December 2025
The UK	January 2026

Table 1. A list of countries visited as part of the Nuffield scholarship.

3.1. Oceania: Australia and NZ

Australia and NZ were selected as part of this study because they both produce large numbers of livestock mainly focused towards export markets; halal is one of their targets.



3.1.1. Australia

According to the Meat and Livestock Australia (MLA), there were 79.1 million heads of sheep as of 30th June 2024 (MLA, 2025). In addition to supplying the halal markets with meat and carcasses, Australia is a major supplier of livestock to the Middle East, a controversial trade from animal welfare perspective which has been legislated to be banned on May 1, 2028. I visited beef and lamb processors, a slaughter equipment manufacturer, a research institute and DAFF. Slaughter without stunning is outlawed and there is government and trade body involvement in the regulation of the halal sector.

3.1.2. NZ

According to data from World Barometer, as of September 30, 2025, the population of NZ was 5.3 million (WB, 2025). To put that into perspective, that is less than the population of London. However, from a livestock farming perspective, NZ produces more livestock than the UK. Cattle and sheep numbers were tracking down in 2024 due mainly to drought, but as of 30th June 2024, livestock numbers stood at 23.31 million sheep and 3.55 million cattle (BLNZ, 2024). I visited a beef processor, a halal certifier and MPI. Slaughter without stunning is banned; there is government and trade body involvement in the regulation of the halal sector.

3.2. Africa: Ghana, Somalia, Uganda, Kenya, Tanzania and South Africa (SA)

In Africa, the countries visited included Ghana, South Africa, Somalia, Kenya Uganda and Tanzania. The purpose of these visits was to examine whether these countries were exporters or importers and to look at their halal slaughter protocols and regulation. Demand for unconventional products was also examined.

3.2.1. Ghana

Ghana does not export either livestock or meat (with the exception of a handful of smokies); in fact as of 2024, Ghana was the largest importer of UK fifth quarter, with beef sinew and lamb ribs being two popular products. Although the country is a net importer, a small amount of smokies/skin-on are exported as a premium product to Europe. I interviewed the staff from the ministries of agriculture and trade, visited two livestock markets and a beef and lamb abattoir. Ghana is a Christian-majority country with no regulation of halal meat and the main method of slaughter is performed without stunning. I observed that a large proportion of small ruminants (sheep and goats) were processed into smokies/skin-on for the domestic and export markets. Some procesors indicated that their products are exported around the world, including to the UK.



3.2.2. Somalia, Kenya, Uganda Tanzania

These countries are significantly investing in their industries to support the export of meat and livestock to the Middle East. The main method of slaughter in all four countries is slaughter without stunning. All four countries are major livestock producers in Africa. Contrary to Ghana, smokies/skin-on production was nil in these countries which supports anecdotal evidence that smokies/skin-on products are a West African delicacy. There is some import of fifth quarter in Uganda to augment domestic supply.

3.2.3. South Africa

This country produces large numbers of animals and exports large volumes of lamb but also imports and exports beef and pork. The Middle East is a market of focus so halal meat is of importance to the industry. Slaughter without stunning is banned in the country. They have a robust halal certification system but there is no government or industry involvement. I visited halal certifiers, a beef processor and spoke at the H2O World Halal Summit.

3.3. Asia: China and Malaysia

China and Malaysia give contrasting pictures with regard to the regulation of halal meat in Asia. Malaysia has government involvement whilst the Chinese market is regulated non- governmentally.

3.3.1. Malaysia

Malaysia is one of the first countries in the Muslim world to establish a halal standard which is widely used globally. They have also invested in halal science including speciation testing, slaughter techniques and halal gelatine manufacture. On a visit to the University of Putra, Malaysia, it was discovered that one of the departments was dedicated to halal product research, indicating how seriously Malaysia has taken halal. It is also important to note that Malaysia is not an exporter but an importer mainly from Australia, NZ and South America.

3.3.2. China

The population of Muslims in China is similar to the population of Muslims in Malaysia at just over 20 million in both countries. However, while Muslims form a majority of the population of Malaysia, they are a minority in China. The study tour took place in two separate poultry abattoirs in Qingdao, China and in both premises, over 200,000 chickens were slaughtered every 10 hours. Both processors were mainly focused on export. With a human population exceeding 1.4 billion, China has a lot of mouths to feed. Although the processors visited were primary exporters, there is a huge amount of halal meat imported from Australia, NZ and South America.



3.3.3. Meetings and abattoir visits in Asia

The visit to Malaysia afforded me the opportunity to attend halal slaughter training organised by the Halal Products Research Institute at Universiti Putra Malaysia [Universiti=University in English] in Putrajaya, as well as the opportunity to attend the Global Halal Summit in Kuala Lumpur. I visited 2 poultry slaughterhouses and a meat processing plant in China.

3.4. The Middle East: Saudi Arabia and the UAE

3.4.1. Saudi Arabia

Saudi Arabia and the UAE are two of the largest halal markets of interest to the UK and other major producers, including Australia and NZ. Both Saudi Arabia and the UAE are estimated to import around 90% of their beef, lamb and poultry. They also import livestock from Australia, Pakistan and East Africa to cater for their religious festivals. The imported animals are usually slaughtered without stunning which has concerned animal welfare groups in Australia and other places. As a result, the export of live animals is scheduled to be banned in Australia in 2028. During interviews with meat buyers in Saudi Arabia, shelf life of UK meat was a major concern followed by price competitiveness. MLA has identified the wider Middle East market as a strategic buyer and has invested in staff and offices, engaging with chefs and wholesalers to further cement their presence in the region. All animals were slaughtered without stunning, with government involvement in halal regulation.

3.4.2. UAE

During a visit to an abattoir, all animals were slaughtered without stunning. Further interaction with staff revealed that some of them were not aware or had never considered stunning; the same observations were made in Africa (except South Africa, where there is a ban on slaughter without stunning). There is government involvement in halal regulation in the UAE and they have a well structured and developed halal ecosystem. Whole lamb carcass, lamb racks, 6-way cuts of mutton and offal were identified as the main products in demand. I was able to visit the regulators in the country.

3.4.3. Meetings and abattoir visits in the Middle East

Image 3 shows a photo taken during a visit to a small ruminant market in Riyadh, Saudi Arabia. There were meetings in multi-species abattoirs, and to meat importers and regulators in Saudi Arabia and the UAE.



Image 3: Photo of the author and his host at a small ruminant market in Riyadh, Saudi Arabia
(Photo credit: Peter Williams).

3.5. Europe: Germany, Italy, Poland, Spain, Turkey and UK

Turkey is located transcontinentally in Europe and Asia, but it has been added to the list of countries in Europe in this report for ease of reporting. A total of six countries were visited in Europe.

3.5.1. Germany

At the time of the visit, Germany was producing halal meat mainly for domestic consumption, but also a reasonable volume for export. The Germans have a regulatory system to prevent the overproduction of non-stun meat. They operate what is called a 'slaughter-to-order' system where abattoirs have to demonstrate demand for unstunned products before slaughter. According to some processors the system is uneconomic resulting in many processors moving from slaughter without stunning to pre-slaughter stunning. The poultry and lamb abattoirs visited were both slaughtering with stunning. There is no government or overarching halal authority.

3.5.2. Italy

I visited a large sheep abattoir slaughtering without stunning. This abattoir was mainly processing for the EU and the Middle Eastern markets. It is important to note that although this abattoir was slaughtering without stunning, I was made aware that some halal abattoirs in Italy stun prior to slaughter.

3.5.3. Poland

Poland appears to be moving towards large production of non-stun slaughtered meat to serve the domestic and some export markets in Europe and the Middle



East. It is worth noting that many years ago, Poland banned slaughter without stunning, but re-introduced it for economic reasons. There were visits to beef and poultry (chicken and turkey) abattoirs and both processors were slaughtering without stunning at the time of the visit for export to the Middle East and Europe. For confidentiality, the names of the companies will not be disclosed. There is no government or overarching halal authority within the country.

3.5.4. Spain

Spain ships a reasonable volume of products to North Africa, due to its proximity and is now also exporting to Middle Eastern countries due to the relative price competitiveness of Spanish meat. The sheep abattoir I visited was slaughtering with electrical stunning with occasional non-stun slaughter depending on customer demand. It has no government or overarching halal authority.

3.5.5. Turkey

In Turkey, I attended and spoke at the World Halal Summit. Turkey is where the Organisation of Islamic Cooperation (OIC) is headquartered so there is a lot of work going on regarding the standardisation of halal. There is government involvement and opportunities for export from the UK due to high per capita consumption and low production (23kg-poultry, 21 kg-beef and 7kg sheep meat annual per capita consumption). The main method of slaughter is without stunning and I was able to visit a beef abattoir in Izmit.

3.5.6. UK

The UK has a large Muslim population and exports large volumes of halal lamb to EU member states. Halal beef on the other hand is imported from other countries because the main method of beef slaughter in the UK is penetrative captive bolt which is not approved as halal by most certifiers. Apart from the EU, the UK also exports a small volume of sheep meat to the Middle East; however, price competitiveness is the a major stumbling block, coupled with the issue of shorter shelf life when compared to competitors like Australia and NZ. Slaughter without stunning is permitted in the UK.



CHAPTER 4: KEY FINDINGS

Presented in this chapter are the key observations or findings made in each country during the study tour.

4.1 Australia and NZ

4.1.1. Australia

Halal slaughter in Australia accounts for over 90% of throughput; as a result, a lot of investment has gone into halal market development and regulation with the support of the industry and government. The Australian government's DAFF holds the legislative control for the production of halal meat in the country. The department works with halal certifying bodies to ensure seamless certification of meat premises. Any abattoir wishing to export halal meat must register with the two bodies mentioned above. This is called the Australian Government's Authorised Halal Program (AGAHP). The regulatory system in the UK is different and less robust than the one used in Australia. Below (figure 1) is the structure of the Halal regulatory framework in Australia.



Figure 1. The Halal regulatory landscape in Australia (DAFF, 2025).

4.1.1.1. Unique Halal Logo

Australia also has a unique halal logo (figure 2) which is not the case in the UK. The use of a unified halal logo ensures that processors are operating according to similar protocols and it can also be used as a tool against fraud.



Figure 2. Australia's unique Halal logo (DAFF, 2025).

4.1.1.2. Shelf life of beef and lamb

Chilled beef and lamb from Australia have longer shelf life than similar products from the UK. With some sea shipments of chilled products requiring up to 6 weeks transport to reach their destinations, longer shelf life gives exporters an added advantage with an extended sales window. Vacuum packed chilled lamb from Australia has 90 days of shelf life whilst vacuum packed chilled lamb from the UK typically has 30 days (or less) shelf life. Chilled Australian beef can also achieve up to 120 days of shelf life. The following were some of the reasons given for their longer shelf life:

- Farmers sending cleaner animals to the abattoir which reduces contamination with spoilage organisms during dressing.
- Better refrigeration systems with better cold chains from abattoir to export destination delaying bacterial growth.
- Gas flushing to eliminate certain spoilage organisms.
- Automation with less human contact with carcasses or meat therefore reduced risk of contamination.

4.1.1.3. Diathermic Syncope (DTS)

During my visit to Australia, I observed a new method of stunning using microwave energy (Figure 3). Energy is generated and applied to the head to increase the temperature of the brain to induce unconsciousness and enable humane slaughter of bovine animals. It is yet to gain approval in the EU and UK.

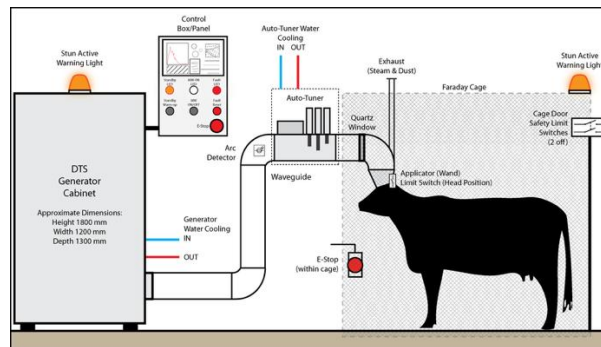


Figure 3. Diagrammatic representation of the DTS stunning system (Jenson, 2025).

4.1.2. New Zealand

4.1.2.1. Regulatory Landscape

In NZ, meat production is built around export. Like Australia, the government of NZ is involved in halal regulation through the MPI who regulates the certification bodies and halal abattoirs. Any abattoir wishing to export halal meat must register with the MPI; a similar governmental registration system does not exist in the UK. For the halal certifier to be registered with the MPI, it must have recognition with at least one major halal importing country and the certifier also needs to be accredited locally by the Joint Accreditation System of Australia and NZ (JAS-ANZ). See figure 4 for the regulatory framework.

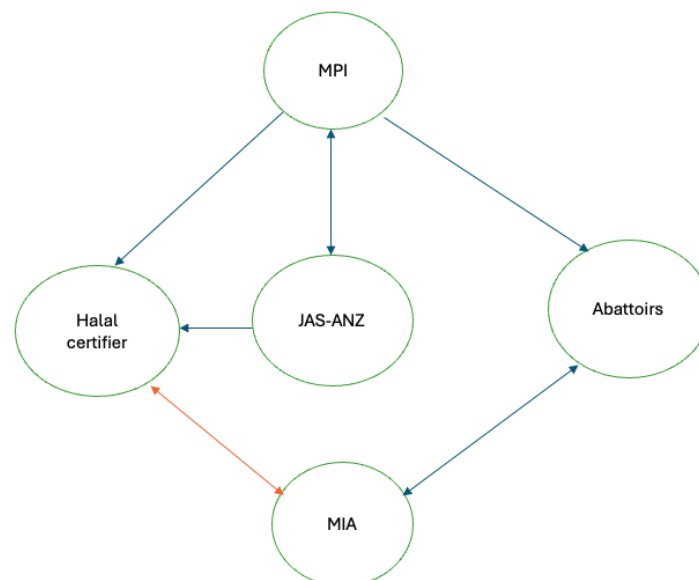


Figure 4. The halal regulatory framework in NZ (Author's own).



4.1.2.2. Unique Halal logo

Similar to Australia, NZ has a unique Halal logo (figure 5) developed specifically for its meat industry. It can be used for domestic or export markets unless a foreign buyer specifically requests for another logo to be placed on their products.



Figure 5. NZ's unique Halal logo. (IMPI, 2025)

4.1.2.3. Stun recovery

For a business to participate in the halal program, it must also participate in NZ's full stun recovery demonstrations. Abattoirs are allowed to do this with one animal per year; however, where there is a need to do this more than once a year, the abattoir can make a request for this through the government.



Image 4. The author with staff from the Ministry for Primary Industries in Wellington, NZ (Photo credit: MPI).



4.2. Africa

4.2.1. Ghana

4.2.1.1. Smokies production

Smokies or skin-on sheepmeat is the process of torching the skins of small ruminants onto the carcass without removing the skin after slaughter. It is considered a delicacy by people of West African origin because it gives meat a distinct smoky flavour. UK and EU food hygiene legislations require the skin to be removed immediately after slaughter during the dressing procedure, so smokie production is currently illegal in the UK and that is also the case across the EU. Despite being illegal, it is produced in unlicensed abattoirs in the UK and has been linked with gangs involved in rural crime (Fuseini, 2023). Organisations such as the National Sheep Association have lobbied for it to be legalised in the UK. Processors in Ghana indicated no historic link between smokies consumption and public health emergencies. They also indicated that they export the product to Europe. Image 5 shows a visit to a major smokies facility in Tamale, Ghana.



Image 5. the report author visiting a smokies production facility in Tamale, Ghana (Photo credit: Abdul Rahman Safianu).

4.2.1.2. Fifth quarter products from the UK

During a visit to two meat importers in Ghana, they indicated the love for beef sinew and lamb ribs from the UK. They indicated that these products are popular among Ghanaian consumers. It also highlights the fact that UK farmers produce high quality meat. From meat exports perspective, the ability to utilise every part of the animal helps to balance the carcass in order to maximise profits. The UK should continue to strengthen its economic ties with countries like Ghana in order to continue to reap the benefits associated with trading in products that are not usually consumed in the UK.



Image 6. The author and Dr Dennis at the Ministry of Food and Agriculture in Accra, Ghana (Photo credit: Adam Abdul Rashid).



Image 7. The author on a visit to two large fifth quarter importers in Ghana (Photo credit: Roger Benni).



4.3. Asia

4.3.1. China and Malaysia

Slaughter without stunning was the main method in Malaysia, whereas stunning was common in urban areas in China with no ban on slaughter without stunning.



Image 8. The author with his Chinese hosts during a visit to a poultry processor in Qingdao, China (Photo credit: Siriporn).

4.4. Middle East

4.4.1. Saudi Arabia and the UAE

Slaughter without stunning was the common method, however they are both net importers of meat and livestock.



Image 9. The author with staf from Dubai Municipality during Gulfod in Dubai, UAE (Photo credit: Sadik Sulemana).

4.5. UK and the rest of Europe

The UK and parts of Europe have large Muslim populations, with a mixture of slaughter with and without stunning across the countries visited.



Image 10. The author attending a workshop on food fraud organised by the National Food Crime Unit, including illegalities around the production of smokies in the UK (Photo credit: Elizabeth Swancott).



4.6 Competitive advantage

In this section, aspects of production which make other countries more competitive than the UK are presented in table 2.

Country	Competitive Advantage
Australia/NZ	Longer shelf-life of beef and lamb products
	Relatively low price for beef and lamb (per kg)
	Availability of products all year round, whereas production in the UK is seasonal
	Perceived consistent products with better eating quality (views of UAE buyers). Australia and NZ products were described as the best in the world by Saudi Arabia and UAE buyers.
	Proximity to key halal markets in Asia (China, Malaysia, Indonesia and Singapore) and the Middle East (Saudi Arabia, the UAE, Kuwait, Qatar, Oman, Bahrain and Jordan).
	Use of halal compliant methods of slaughter for beef, both methods used in Australia and NZ are contrary to UK animal welfare legislation.
Kenya, Somalia, Tanzania, Uganda	Better halal regulation with government involvement while halal regulation in the UK is fragmented with no government involvement
	Relatively low cost of labour
	Relatively low prices of products (per kg)
Poland	Better halal regulation
	Large volume production of meat from animals slaughtered without stunning providing easy access to markets demanding the product
	Relatively low cost of labour
Spain	Relatively low prices of products (per kg)
	Relatively low product prices (per kg)
South Africa	Low labour cost and low product prices (per kg)

Table 2. Areas where other countries compete well with the UK.

To export meat to long distance destinations, longer shelf-life gives businesses a competitive advantage because buyers usually prefer products with longer shelf life, this gives them sufficient time to sell the products. UK meat exporters therefore need to look at ways they can extend the shelf of meat. Further, the UK should explore halal-compliant beef slaughtering methods in order to take advantage of the growing demand for halal beef globally. While some countries are more competitive due to low labour costs, , this is something that is not easy to change. High labour costs and high cost of inputs in the UK make UK meat relatively more expensive than other countries.



CHAPTER 5: DISCUSSION

Prior to 2020, the UK exported meat to the EU market without restrictions. However, when the UK exited the union on the 31st of January 2020, the Commission classified the UK as a Third Country, which comes with particular challenges when exporting. Being a Third Country opens your goods to more scrutiny at EU ports of entry (borders) and the need for Veterinary Certification, meaning that UK exporters began to see exports to the EU as less economically feasible, particularly to low volume exporters, due to increased costs and the burdensome process. As a consequence, many small scale exporters either halted their export business, or started exploring markets outside the EU.

The halal market presented a great opportunity to UK exporters post-Brexit, however, the UK has under utilised the market opportunities it presents. As part of this Nuffield Scholarship, visits to Australia and NZ showed that they both export halal meat to 130 countries. Although the findings revealed that they produce more animals than the UK, they have been able to have more unified and consistent halal production protocols; for instance, they have a consistent method of slaughter and halal regulation is overseen by the government and industry bodies like MIA in NZ. They have also introduced full stun recovery demonstrations as assurance tools. The situation in the UK is that we have a fragmented halal regulation system with no government or industry involvement. This has meant that buyers have more confidence in products produced in Australia and NZ than UK products.

Also in Australia and NZ, a large volume of halal mutton is exported. When compared to the UK, the majority of mature sheep are halal slaughtered, and consumed domestically with a very small volume exported. The UK should consider export markets like the UAE and Saudi Arabia which are important halal mutton destinations. Low shelf-life, seasonality and higher prices are hindering UK exports to the Middle East. The industry must look at ways it can extend shelf life for its own benefit. The seasonality of production and prices are two areas that cannot easily be influenced since they are determined by intrinsic and extrinsic factors which cannot easily be manipulated.

In Germany, although there is no ban on slaughter without stunning, the use of their 'slaughter-to-order' model has almost brought the volume of non-stun to zero. According to processors, it is a difficult system to practically comply with. Poland on the other hand has increased its throughput in non-stun abattoirs. Non-stun meat is preferred by some Muslims, so Polish processors have identified a gap in the production of non-stun meat within the EU so they are currently serving this market and the Middle East.

Australia also supplies live animals to several countries in the Middle East mainly for consumption during religious festivals. On a visit to a livestock



market in Dubai, Australian sheep were sold for US\$600 per head. However, as stated above, Australia is scheduled to ban live export in 2028 for perceived animal welfare reasons. Livestock traders at the Dubai market indicated that when the ban comes into play, they will start importing livestock from East Africa and neighboring countries like Yemen and Pakistan. Two farmers in Australia expressed their dissatisfaction at the ban, arguing that if the right transport units are used, there are no welfare issues. This is a very contentious issue.

In Ghana, the consumption of fifth quarter products from the UK was a welcomed observation; buyers indicated that lamb rib bones and beef sinews from the UK were seen as the preferred product because UK processors, according to the buyers, were good at producing and packing the products. Ghana also produce and export smokies which are considered a delicacy by people from West Africa. The UK government should conduct more scientific research on any possible adverse effect on human health. If found to pose no health concerns, then the government should consider legalising it.



CHAPTER 6: RECOMMENDATIONS

As a result of this study, the following recommendations are offered for consideration by policy makers in the UK meat industry.

- The regulation of halal meat production in the UK is currently very fragmented and needs proper co-ordination with an overarching authority to increase consumer confidence.
- More research is needed to extend the shelf life of UK beef and lamb. I suggest that the industry should consider extending it to up to 80 days; Australian chilled lamb has 90 days' shelf life. Extending the shelf life will make UK products more competitive and desirable in most export markets outside the EU.
- The UK should work on identifying a halal compliant beef slaughter method similar to what NZ and Australia have done. Unfortunately the methods used in those countries are not accepted in the UK, but they are approved for halal slaughter by the major halal importing countries. For instance, non-penetrative captive bolt is not accepted in the UK but approved for halal slaughter in key markets.
- Further research must be carried out on smokies to evaluate any impact on public health. If found to be safe to eat, then the government should consider legalising them for the benefit of sheep and goat farmers and to be able to discourage processing in makeshift abattoirs.



CHAPTER 7: AFTER MY STUDY TOUR

The impact of this Nuffield Farming Scholarship on my professional life cannot be underestimated. I have made connections around the world and armed myself with information that will be invaluable. As a result of my experience, I decided to go into private technical consultancy after a few study tours and built my own client portfolio.

In Australia, I visited an abattoir trial research facility which led to a strong rapport with the owner. When I returned to the UK, he called and invited me to speak on my findings at the H2O Halal Summit in South Africa in November 2025. This was done on a consultancy basis. My visit to the UAE also led to a technical consultancy with the Dubai government. There is also an opportunity for me to do halal meat consultancy for the Halal Products Development Company in Riyadh in the future. So the future is a positive one to look forward to.

To further support the industry in understanding and accessing the halal market, I am developing an animal welfare and halal slaughter course based on my scientific background and data collected through my Nuffield study tour. The aim is to get the course approved/accredited by a UK institution and then look to open the training to anyone in the world.



The author speaking at the 2026 European Halal Congress in Sarajevo (Photo credit: Kemal Sejranic)



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CHAPTER 9: BIBLIOGRAPHY

AHDB (2024). Consumer insight: Halal retail and consumption trends 2024. <https://ahdb.org.uk/knowledge-library/consumer-insight-halal-retail-and-consumption-trends-2024> (Accessed, 16/01/2025)

Dinar Standard (2025). State of the global Islamic economy 2025. <https://www.dinarstandard.com/post/sgier-2024-25> (Accessed, 16/01/2026).

BLNZ (2024). Stock number survey 2024: As of 30 June 2024. <https://beeflambnz.com/knowledge-hub/PDF/stock-number-survey-30-june-2024.pdf> (Accessed 29/12/2025).

Lever J., Miele M., Dastgir S., and Fuseini A. (2025). Niche market making in the UK sheep sector; performing the Halal market in uncertain times. *Journal of Rural Studies*, 119, 103728.

MLA (2025). Australia's sheep meat industry: Fast facts. https://www.mla.com.au/globalassets/mla-corporate/prices--markets/documents/trends--analysis/fast-facts--maps/mla_sheep-fast-facts-2025_301025.pdf (Accessed 29/12/2025).

ONS (2021). 2021 Census. https://www.nomisweb.co.uk/sources/census_2021 (Accessed, 16/01/2025)

WB (2025) New Zealand population. https://www.worldometers.info/world-population/new-zealand-population/#google_vignette (Accessed, 16/01/2026).



APPENDIX: GLOSSARY

Bovine: Used to refer to large ruminants in the subfamily, Bovidae, including cattle. Bovine is used in this report to refer to cattle only.

Caprine: Derived from the Latin word caper, used to refer to goats

Captive bolt: A mechanical device, usually used to humanely slaughter cattle

Consciousness: Ability to become aware of one's environment

Death: Irreversible loss of function of the brainstem

Demonstration of life: Allowing a stunned animal to show signs of life such as return to rhythmic breathing

Dianthermic Syncope: A method of stunning which generates microwave energy to raise the temperature of the brain in order to induce brain dysfunction resulting in insensibility

Exsanguination: Causing loss of blood through severance major vessels

Fifth quarter meat: Edible by-products or offal of an animal ie liver, heart and feet.

Full recovery: Allowing a stunned animal to recover fully from the stun and return to its original state (prior to stunning)

Halal: Arabic word for things that are permissible

Non-stun: Slaughter of conscious animals without pre stunning

Ovine: Used to refer to sheep

Poultry: Can be used to refer to all domestic birds. Poultry is used in this report to refer to the domestic fowl

Shelf life: The length of life from packing a product to spoilage

Slaughter: Causing death through blood loss

Slaughter-to-order: Allowing the production of a product to match established demand

Smokies: Meat or carcass produced by torching the fleece off the skins of animals post slaughter

Stunning: Any intentionally induced process which causes brain dysfunction (usually prior to bleeding)

Unconsciousness: Loss of awareness



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