

**Development of knowledge and leadership skills to support
implementation of animal-based welfare measures for farm
assurance programmes supporting New Zealand to be world leading
in farmed animal welfare**

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I am excited to have been a recent recipient of a Winston Churchill Memorial Trust Fellowship in 2019. My fellowship was to better understand if animal-based welfare measures are best supported on farm to better ensure that animal welfare assurance programmes reflect the welfare of the animals they have been developed for.

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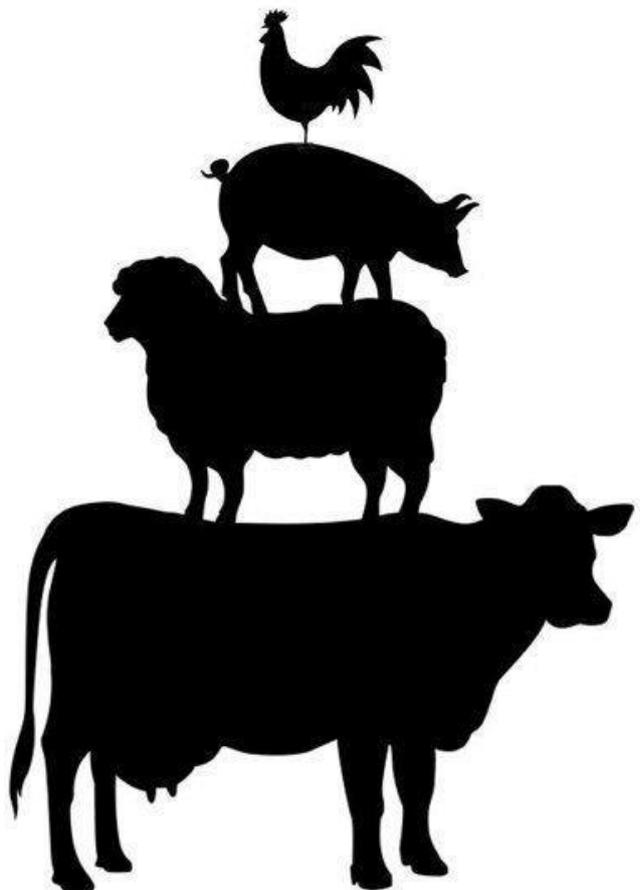
I would also like to thank Dr Kate Plush from SunPork Solutions Ltd for organising a full itinerary, not just with SunPork Solutions, but also with the newly appointed Research manager from Australian Pork, Dr Rebecca Althorn.

Also, a big thank you to those organisations and companies who welcomed me into their fold, and discussed with me the issues around animal welfare certification programmes, auditing, animal-based outcome measures, and everything in between; Inghams Group Ltd, the University of New England, Australian Eggs, Poultry Hub, Allflex Australia, the Department of Primary Industries, Australian Pork and the Animal Welfare Science Centre, Australian Pork, CSIRO and SunPork Solutions.

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Thank you for recognising the importance of what I was intending!



Executive Summary

My fellowship was to better understand if animal-based welfare measures are best supported on farm to better ensure that animal welfare assurance programmes work more effectively for those animals they have been developed for. As part of the fellowship, I travelled to Australia to better understand the variety of animal welfare accreditation programmes that exist, whether these programmes were utilising animal-based measures, and meet with, and learn from some fantastic animal welfare scientists, as well as visit some commercial agricultural centres. My goal was to better understand what animal-based outcome measures are being used, what measures are thought of as important and which ones could/should be used that not just address welfare of animals on farm but are also easily conducted on farm to ensure real change in farmed animal welfare. Thus, ensuring validity, reliability and feasibility of animal welfare schemes and animal-based outcome measures within those schemes.

Whilst in Australia, I visited a variety of different agricultural businesses, such as commercial meat chicken farms and industry funded bodies, such as Australian Eggs Ltd. I also visited several welfare research scientists working in the area of farmed animal welfare to understand their motivations regarding animal-based welfare measures.

Included within my report is a confidential report which has been redacted from the main report due to potential research opportunities. This appendix has been created for internal SPCA use only. The information and recommendations provided in Appendix 2 will assist SPCA in further relationship development with specific research organisations in Australia in the future.

Conclusion and key observations

- Engage with the beef and lamb industry to discuss alternative methods of pain relief currently developed in Australia, and their extended use in New Zealand. This includes the new research tool, NumNuts, developed for lamb castration and tail docking.
 - Discussion has been undertaken with Beef & Lamb NZ, and CSIRO researchers regarding the use of Numnuts in New Zealand. However, at this stage registration, and distribution into New Zealand and other countries (e.g. UK) is currently pending.
- Develop a trans-Tasman Poultry Hub using the Australian experience of the Poultry Hub to enhance the concept for the New Zealand and Australia poultry industry to join and engage in. Invite the Director of the Poultry Hub, Dr Tamsyn Crowley to give an overview of the Australian Poultry Hub model. Poultry Hub Australia brings together diverse parties who have a similar interest in all things regarding commercial poultry.
 - A brief communication paper has been drafted for presentation to the New Zealand branch of the World Poultry Science Association (WPSA) conference to be held October 2020. The title of the draft – *Development of a trans-Tasman Poultry Hub*.
- Investigate using a standard framework for animal-based measures that could be implemented across Australia and New Zealand, formally recognised as being underpinned by scientific principles. This would support a recognised assurance scheme, relevant to our current agricultural conditions, which all farmers could be involved with. This would address issues in terms of ensuring welfare as priority in the agricultural sector, thus making animal welfare assurance schemes easier, more understandable by internal and external customers, and more recognisable overseas,

addressing concerns of the overseas market in terms of animal welfare, the environment and sustainability issues in New Zealand.

Introduction

Background

The purpose of the Winston Churchill Memorial Trust is to support people to travel overseas to learn from others and study topics that will advance their occupation, trade, industry, profession or community and benefit New Zealand.

My fellowship objective was to further develop my knowledge around animal-based welfare measures for farm assurance programmes to support New Zealand to be world leading in on farm animal welfare. As well, my intention was to develop a better understanding of the leadership skills required to undertake some of these challenges in the agricultural research area.

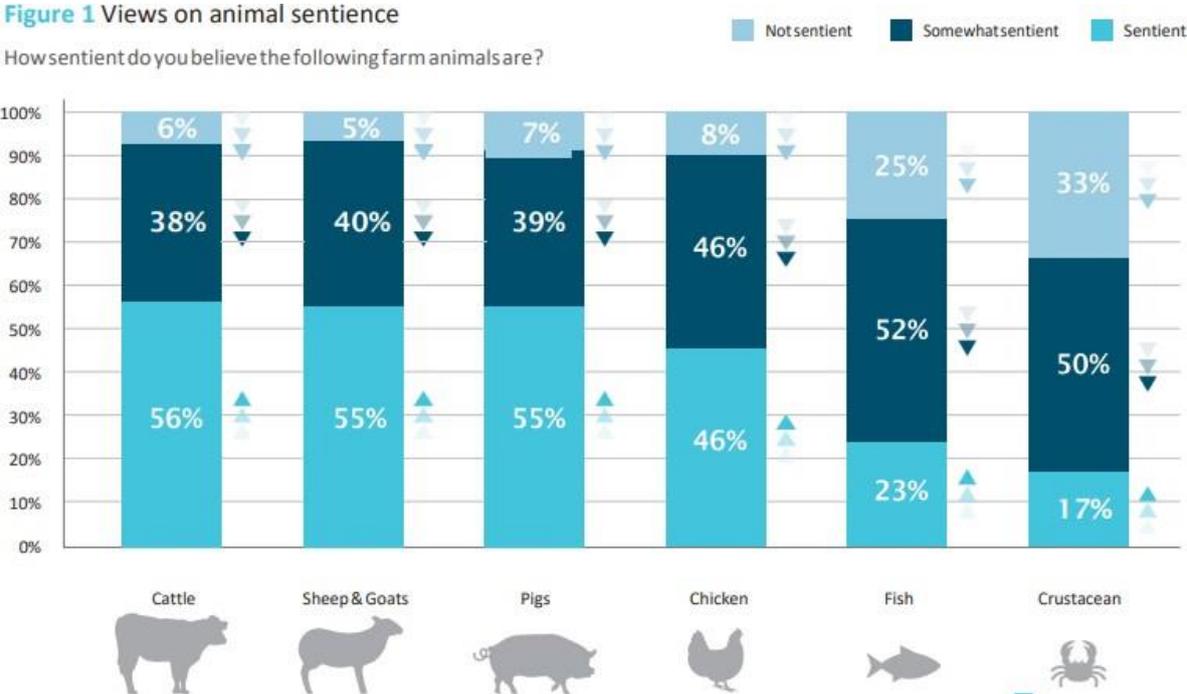
The importance of animal welfare

Daily media reports illustrate that farmed animal welfare is increasingly important to consumers. Increased awareness of farming practices and animal well-being is reflected by a growing change in society's attitude towards farmed animal welfare. Public perception of animal welfare is now of utmost importance, leading itself to the idea that a social licence is a prerequisite for farming. New Zealand's reputation of being '*clean and green*' in terms of having environmentally sustainable and animal-friendly agriculture underpins our wider agricultural identity. This is now under increasing pressure, not just on a local front, but also globally. These factors have the potential to disrupt the growth and supply chain of agricultural products in New Zealand, especially in regard to New Zealand's agricultural export industry.

In alignment with the importance of animal welfare in New Zealand, the explicit recognition that all animals are sentient was introduced to The Animal Welfare Amendment Act (No 2)

Parliamentary Council Office, 2016) in 2015. Sentience means that animals can experience both positive and negative emotions, including comfort and pleasure, and pain and distress (New Zealand Veterinary Association, 2018). Although sentience is not defined in the Act, the New Zealand Veterinary Association (NZVA) states “*development of the definition encourages prioritisation of positive states and welfare enhancement consistent with scientific knowledge and current public expectations of good practice*” (<https://www.nzva.org.nz/page/positionsentience/Sentience.htm>).

Interestingly, acceptability of whether animals are sentient, varies by species. For example, the figure below shows variation in the views of Australian’s in regard to farmed animal sentience (Futureeye Pty Ltd, 2018). Further analysis showed that 57% believed animals were aware of pain and hunger. However, the percentage decreased when people were asked whether they believed animals had the capacity to express wants, seek positive experiences, or possess complex social lives (Futureeye Pty Ltd, 2018).



Many people view current legal animal welfare standards as insufficient. This is reflected by the number of voluntary farmed animal welfare certification schemes developed, which offer consumers scheme standards in which animals are believed to experience ‘good’ or ‘better’ welfare - than the minimum required – for that country. Many of these farmed animal welfare schemes reflect, to some extent, what the public want for farmed animals, such as having outdoor free range or organic production (e.g. SPCA Blue Tick, FRENZ and BioGro). The growth in demand for products from these production systems is also growing. For example, the organic farming sector is – globally - one of the fastest growing agricultural sectors, as well as being one of the most recognised food labels. This ultimately reflects consumer concern about a wide variety of issues, rightly or wrongly, including those associated with the environment, sustainability of farming systems, farmed animal welfare, food safety, superior taste and health and nutritional concerns, and lack of confidence in the conventional food industry, (Sacchi et al., 2015; Hoffman and Wivstad, 2015, Henryks et al, 2015). Many consumers show preferences for specific types of farming systems linked to the perception of enhanced food quality and taste. Research by Bray and Ankeny (2017) shows that there is a link between purchasing products from specific production systems, such as cage-free eggs, and perceptions of quality that then further motivate people to purchase these products – even though they are sometimes more expensive.

Voluntary animal welfare standards

Many agricultural companies and organisations are developing their own voluntary animal welfare standards, some of which are occasionally embedded within their farm assurance schemes, to address overseas requirements from parent companies and overseas customers to address specific requirements and consumer expectation. However, standards developed

in-house do not necessarily have clear proactive, welfare outcomes relevant to New Zealand's farming practices, nor are they specific to the welfare requirements of the animals themselves.

There are compelling reasons why farmed animal welfare should be important to all food companies. Farmed animal welfare is becoming more important for food companies to address and is especially evident in the retail sectors where importance is attributed by consumers to animal welfare issues. For example, surveys in the United States and Australia have demonstrated that upwards of 70% of consumers are concerned about farmed animal welfare. A German study of chicken consumers found 59% expressed an interest in buying chicken from higher welfare systems; and in France, the market for higher welfare Label Rouge chicken in the whole chicken market exceeds 60% (https://www.bbfaw.com/media/1082/briefing-no7_faw_and_the_consumer.pdf).

Recent research out of Australia, shows that concerns around livestock transportation practices on land and sea are also highly contentious, and during focus groups, participants have described their perceptions of livestock transportation as '*disgusting*' and the idea that animals were treated '*cruelly*' during transport (Buddle et al., 2018). Furthermore, a survey conducted of United States consumer's attitudes toward welfare certifications and willingness to pay for foods from animals raised under more humane conditions indicated that 78% of respondents would be willing to pay extra for foods with a trustworthy welfare certification both in supermarkets and in restaurants (Spain et al, 2018). Several other studies have also concluded that consumers in North America and Europe place significant value on food products carrying (apparent) assurances of higher welfare standards (Wolf et al, 2016; Miranda-de la Lama et al, 2017; Lusk et al, 2008).

In some cases, the public's introduction to the modern dairy farm comes in the form of videos documenting abuse and other contentious practices. These types of images can have a massive impact. In February 2014, an undercover video taken on a New Zealand owned dairy farm operating in Chile reported that over 6,000 calves had been killed using blunt force trauma (Gulliver, 2014). This video resulted in public outcry in New Zealand and a change in law protecting farm animals; the New Zealand Animal Welfare Act (Animal Welfare Amendment Act, 2015) states that *'it is illegal to kill a calf by blunt force to the head, except in emergency circumstances'*. In December 2015, graphic footage of young calves being mistreated prior to slaughter made headlines across the world, with news sites reporting *"the latest controversy to hit New Zealand's dairy industry"*.

https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11553905

These examples indicate how animal welfare scandals can accelerate the pace of change as a result of overwhelming pressure from consumers and the public. This thereby highlights the importance of mitigating risk in the first instance by having evidence of high welfare standards and best practice in New Zealand's agricultural farming systems.

Global perspective

Animal welfare is of primary concern to many large organisations overseas including, Nestlé, McDonalds, Waitrose, Whole Foods, Kraft Heinz Company and Cargill. The Business Benchmark on Farm Animal Welfare (BBFAW) is a leading global measure of company performance on farm animal welfare and provides a global measure of company performance on animal welfare. BBFAW has shown to be influential in changing corporate practices on animal welfare management. In the 2017, BBFAW report covering 110 global food companies, including Fonterra, (responsible for ~30% of the world's dairy exports), the company's

performance was ranked tier 4 out of 6 tiers, indicating the company is making progress on implementing its policies and commitments on farm animal welfare. However, Fonterra is also considered to be a non-mover amongst the tiers (Business Benchmark on Farm Animal Welfare, 2017). Moving forwards both nationally and internationally there is an inherent requirement for a social licence to operate, in which animal welfare ranks highly.

Animal welfare is becoming increasingly important and this is also highlighted in terms of business risk and financial performance (Bohlin & Wiebe, 2016). This is highlighted by the Business Benchmark on Farm Animal Welfare (BBFAW, 2016) investor statement in which eighteen institutional investors (representing £1.5 trillion in assets under management) have committed to take account of a company's farm animal welfare policies when analysing food companies in relation to recommending investment opportunities for long-term investors (<https://www.bbfaw.com/news-and-events/press-release/first-global-investor-statement-on-farm-animal-welfare-launched/>). An ethical approach to animal welfare can therefore enhance a company's reputation in the eyes of its customers, and potential investors, thereby becoming an important part of its marketing strategy.

Nestlé is a Swiss multinational food and drink processing conglomerate and is the world's largest food concern including well-known brands, Nestlé and Maggi. Nestlé are also partnering with the Global Coalition for Animal Welfare (GCAW) (<http://www.gc-animalwelfare.org/>). GCAW is the world's first industry-led collaboration aimed at advancing animal welfare globally, composed of Aramark, Compass Group, Elior Group, IKEA Food Services, Nestlé, Sodexo and Unilever) with combined revenues of USD 165 billion dollars (http://www.gc-animalwelfare.org/wp-content/uploads/2018/10/GCAW-FAQs_Oct-2018.pdf). As an example of how strongly animal welfare is becoming for business

negotiations; Nestlé state they *'want to be a catalyst for poultry welfare'* by processing cage free eggs in Europe and the United States by 2020 and worldwide by 2025. All poultry meat production in the United States will be according to Global Animal Partnerships (GAP) requirements. Global Animal Partnerships is a non-profit organisation working to improve animal welfare by creating and managing a 5-Step Welfare Rating Program for farmed animals. The requirements under the GAP welfare program include slow growing meat chickens, amongst other requirements (e.g. natural light in the sheds, behavioural enrichment, reduction in stocking density, and raised areas for perching) with requirements that will affect the whole supply chain (<https://www.poultryworld.net/Meat/Articles/2019/1/Nestle-We-want-to-be-a-catalyst-for-poultry-welfare-386395E/?cmpid=NLC|worldpoultry|2019-01-30|Nestl%E9>). GAP is therefore a voluntary farmed animal welfare scheme, driven by business initiative with an underpinning animal welfare concern. Other global brands moving toward this change in poultry welfare include Unilever and Marks & Spencer, who also have animal welfare policies related to other sectors of agriculture, including the red meat sector.

New Zealand perspective

New Zealand is primarily an agricultural export country, and in the year to August 2016, meat and wool alone accounted for \$8.1 billion in exports (Norman, 2016). Specifically, the New Zealand dairy sector is currently worth \$14.4 billion to New Zealand and primarily driven by worldwide consumer demand (Ballingall and Pambudi, 2017). Recently, the dairy sector, (of which Fonterra is the largest dairy company in New Zealand) has launched a new strategy stating, amongst other commitments, that by 2023 New Zealand dairy *"will be world leading in on-farm animal care ensuring every animal is valued and treated with care and respect"*

[\(https://www.dairytomorrow.co.nz/\)](https://www.dairytomorrow.co.nz/). To achieve this will require an understanding of animal-based measures and how these measures can be implemented effectively on farm, whilst providing recording and transparency of these measures and ensuring continuous improvement of animal welfare.

For the agricultural industry to compete overseas requires a proactive approach in ensuring the utmost care and respect for animals farmed in New Zealand, which ultimately needs to consider animal-based measures. As livestock industries have an increasing need to demonstrate high welfare, it is hoped this approach will provide a common framework for describing welfare and a way for continually improving welfare that can help meet societal expectations. More importantly, the process and knowledge are owned and generated by the agricultural industry rather than standards enforced externally.

As mentioned previously, the New Zealand government recently introduced animal sentience into the Animal Welfare Act (1999). However, exactly what this means, and how it should and could be implemented, is up for discussion. In addition, large agricultural sectors, such as the dairy sector have stated high goals in terms of animal welfare. How exactly this will be achieved is also open for discussion. But without scientific principles of animal-based measures for benchmarking, transparency of measures and ensuring continuous improvement on farm, this will be a difficult goal to achieve.

My involvement via the Winston Churchill Fellowship Trust will provide me with appropriate training, knowledge and skills to support on farm management practices, such as those required understand and implement animal-based measure, including understanding industry and farmer self-assessment, feedback and benchmarking of appropriate animal-based welfare measures.

Voluntary animal welfare accreditation schemes

As part and parcel of many organisations and companies, there may be policies regarding the welfare of animals within their supply chain. In New Zealand, this would be in addition to the Codes of Welfare and Animal Welfare Act (New Zealand). For example, Synlait ' *strive for all their dairy cows to experience a life of great health and positive wellbeing*' (<https://www.synlait.com/sustainability/>) and farmers are expected to exceed the industry best practice outcomes. Moreover, there is a financial incentive for those dairy farmers who can achieve and exceed those standards. Synlait's Lead with Pride programme encompasses not just farmed animal welfare, but also biodiversity, greenhouse gases (GHG) and emissions, and management of the environment. For farmers able to achieve the top tier, Gold | Elite, milk premiums are increased up to a potential \$0.25 kgMS (https://www.synlait.com/wp-content/uploads/2018/10/Synlait-LWP-Black-Book-Update_100918.pdf) (<http://www.scoop.co.nz/stories/BU1806/S00708/synlait-commits-to-a-sustainable-future-with-bold-targets.htm>). Generally, a company's policies around animal welfare will not be enforced legally (unless there is failure to reach minimum standards, or incidents of animal abuse). However, as part of the company's business risk mitigation, suppliers will be required to address the company's animal welfare policies or risk non-renewal of their contract in the future (section Managing Business Risk).

There are also many voluntary, farmed animal welfare certification schemes within New Zealand (e.g. SPCA Blue Tick and PigCare™) and around the world (e.g. RSPCA Assured (UK), Global Animal Partnership (GAP)). These assurance schemes can play an important role in ensuring welfare standards above the legal minimum, giving consumers confidence to buy animal products knowing that the animals have had a good life. Certification into these voluntary schemes can be very attractive, in that there is a growing demand from companies

for benchmarking animal welfare in which the entire supply chain can aspire. For example, all Woolworths fresh chicken in Australia is RSPCA Approved, and all chicken used as an ingredient will be RSPCA Approved by 2020 (https://www.woolworthsgroup.com.au/page/community-and-responsibility/group-responsibility/responsible-sourcing/Animal_Welfare). This imposes demands further down the supply chain to ensure that all farms supplying chicken for ingredients into many products are required to get certification under the RSPCA standards. These schemes may include benchmarking of animal-based measures, and auditing against a defined set of criteria – which may or may not involve a third-party auditing body. In addition, recognition by consumers, and/or public awareness around certain production systems can reduce demand for such products, for example veal from bobby calves.

Animal-based measures

Interest is increasing in developing methods for on farm assessment and auditing of animal welfare. Primarily, these rely on resource based and management based measures or features of the environment that an animal lives in. However, these are not always the best measures as they do not always correlate with the outcome's indicative of good animal welfare. For example, piglet tails are commonly docked very early on in life in commercial situations. Tail biting is a common welfare concern as it can cause infection, is painful and can cause carcass condemnation. However, it is a controversial procedure, especially when performed without pain relief. Additionally, tail biting is multi-factorial with many factors influencing expression of this maladaptive behaviour (e.g. improper diet, over-stocking, lack of enrichment). Therefore, tail docking is used to prevent tail biting from occurring.

In relation to measuring the welfare of pigs kept in commercial environments, certification programmes can measure the size of the enclosure that the animals are kept in, indicating

environmental measures and ideally how many pigs should be kept in that area. However, a potentially easier animal-based measure may be to understand whether the pig's tails are bitten or not. Pigs kept in good conditions, with appropriate resources, and enough space, in general, do not tail bite. For example, free range pig farms do not need to tail dock piglets for their farming practice for various reasons.

However, some of the issues related to animal-based measures are; time-consuming, a sufficient sample size is necessary, which can add to the time consideration, training is required to be able to effectively measure the same trait over time (and requires re-training), some animal-based measures are not absolutely certain, and the majority of measures, measure negative states (e.g. feather cover of hens measures the amount of feather cover on a hen measuring how much coverage a hen may have lost in her lifetime from – potentially - being feather pecked).

Goals

My engagement with various organisations in Australia will help provide me with appropriate training, knowledge and skills to support on farm management practices through self-assessment, feedback and benchmarking of appropriate welfare practices. Throughout my time whilst engaging with people at the various organisations, I asked questions related to the use of animal-based welfare measures, voluntary animal welfare schemes, research associated with animal-based welfare measures and auditing of these welfare schemes using a variety of key questions below.

Key questions

Are agricultural companies interested in animal-based welfare measures?

Regarding commercial agricultural companies, certification of animal welfare is important and how that is measured is important, but there was no uptake specifically in animal-based measures, it was more that the relevant measures need to be taken. Regarding that, there are concerns as to the number of different audits that occur from various organisations, and what is being recorded, as some measures are the same for different companies, whilst others have a requirement for a different measure. Whether or not these measures are the best ones for those species, indicating the relevant welfare concerns are not always apparent. These include primarily resource based, and management-based measures, as they are generally the easiest measure to take. Regardless, all commercial companies are still required to complete specific welfare audits relevant to that specific market in order to sell animal-based products. As well, companies also generally facilitate and require their own self audits for animal welfare (amongst others). For example, all meat chicken farmed in Australia under the Inghams brand has certification under the RSPCA Approved Farming scheme. In addition, many companies have additional standards that they incorporate into their own quality assurance programmes in relation to livestock breeding, production, hatcheries, live bird pickup, transport and processing that they manage and monitor to ensure appropriate care of the animals. On top of this, many of the poultry companies' major commercial customers will have their own auditing programmes that specifically include aspects related to animal welfare. Add to this, the Model Code of Practice for the Welfare of Animals – Domestic Poultry is a set of minimum standards for housing, management and transportation of meat chickens – like the New Zealand Code of Welfare for Poultry.

To ensure that agricultural industries are proactive and moving forwards there are also various funding opportunities. To follow the poultry theme, AgriFutures Chicken Meat program is designed to support the meat chicken industry to achieve benefits to industry through targeted research addressing priorities for industry and government (<https://www.agrifutures.com.au/rural-industries/chicken-meat/>). The program is funded by industry, as well as Agrifutures Australia and other research and development corporations. One of the industry's currently RD&E objectives is to deliver safe food and good animal welfare outcomes with one strategy related to *“Continue to support the development of objective animal welfare measures, with a focus on pain assessment, in partnership with other funders”*. Therefore, there is strong emphasis on ensuring farmed animal welfare is important, as well as understanding how objective animal welfare measure can and should be used.

In the case of research organisations, the answer was a resounding “yes!” In terms of research organisations, understanding and ensuring that the best animal-based measures are used is very important. However, methods to measure and the measures themselves are also changing as the scientific understanding of farmed animal welfare and the needs and wants of those animals becomes clearer. Therefore, what may be a good measure today, but takes a long time to measure, may be better measured with a technology break through. For example, *Campylobacter* is the commonest bacterial cause of gastrointestinal infection in humans and chicken meat is a major source of infection throughout the world (Colles et al, 2016). A research tool, optical flow, monitors the behaviour of live meat chickens and analyses the ‘optical flow’ patterns made by the flock movements within the shed. Results have shown that *Campylobacter*-free meat chicken flocks show a different behaviour, flock movement, compared to an infected flock (Colles et al, 2016). This is an example of an animal-based measure being able to be measured (e.g. movement of a flock of meat chickens) and used

effectively with advanced technology. However, more research is required to understand exactly what the optical flow measures (e.g. direct effect of Campylobacter on chicken behaviour or other signs of reduced welfare). The requirement for further research adds to the complexity of using animal-based measures and what they measure. Thus, the links between factors (resources and management) and their welfare consequences (using animal-based outcome measures as indicators) is far from simple. Nonetheless, research organisations are working to develop a toolbox of valid, reliable animal-based measures, from which the most appropriate or combination of measures, can be used.

Benchmarking is becoming more relevant as a way to track changes, either within a farm over time, or potentially to compare farms. When the same animal-based measure is compared among farms with similar housing and management systems, it may support identification of those farms or systems that are outside the normal range of variation giving relevant information to enable assessment of the welfare of that particular group of animals.

What are research organisations doing regarding developing animal-based resource measures?

All the research organisations I spoke to, as well as some of the commercial agricultural companies have interest in the animal-based resource measures. However, depending on the funding within each organisation, there are some opportunities to do further research within the companies, whilst there are also opportunities to engage with industry led funding research opportunities. For example, Agrifutures Chicken Meat Program, Australian Eggs, Meat & Livestock Australia (MLA) are funded from a variety of sources, which then allocate funds into key research areas. As part of this, MLA has funded a collaborative project with CSIRO, NSW DPI and the University of Melbourne addressing welfare

benchmarking and management to develop a framework for risk assessment, monitoring and data analysis in order to improve welfare management of beef cattle and meat sheep as they move through the supply chain (<https://www.mla.com.au/research-and-development/animal-health-welfare-and-biosecurity/strategic-partnership-for-animal-welfare-rda/>). Another project funded by MLA is investigating specific behaviours of beef cattle when their welfare has been compromised using electronic systems and ear-tag based technology to remotely monitor and collate these behaviours.

These types of funding opportunities show that animal welfare is a key priority for all of the livestock sectors in Australia, as well as forming part of their strategic plans for the future.

There are funding opportunities available in this area, as well as research organisations with the right expertise and resources to enable these goals to be achieved.

Further information in regard to direction of research organisations and animal welfare follows in the appendices attached.

How is auditing for animal welfare affecting agricultural companies?

In many circumstances, the number of audits for animal welfare (and other requirements) is ever increasing. However, on-farm auditing has an important role to play in reassuring consumers and customers that livestock production operates in an acceptable manner. Retailers, such as Woolworths and fast food restaurants, such as McDonalds and KFC are more able to regulate and require how animal-based products are farmed, grown and produced. With, increased awareness of farming practices and concern around food production methods, as well as the market power of major international food retailers, this ensures that welfare auditing will continue to be a requirement for all major agricultural

systems. However, there are also concerns that obtaining a price premium from these welfare friendly production systems can be limited.

What can be taken away is that many (the majority) of companies have adopted formal animal welfare policies and standards, assigned managerial responsibilities, set objectives and target as well as introducing audit processes of their own to ensure that their own policies are implemented across the company. For example, BBFAW found that 60% of companies covered by the 2013 Benchmark provided at least some information on the welfare assurance schemes that their animals are reared, grown, transported and slaughtered under (Sullivan et al, 2016).

How my visit addresses those key questions

My visit highlights the role that SPCA can play in improvement of farmed animal welfare by engaging with the agricultural sector outside of New Zealand. Outcomes from my travel to Australia to visit the various agricultural industries may lead to extension and facilitation of workshops held by SPCA regarding animal-based measures specific for welfare improvements on farm and how to implement positive experiences into farming practice. This leads into an opportunity for the agricultural industry to ensure inclusion of 'sentience' within their farming standards, thereby addressing and acknowledging the inclusion of animals as sentient within the Animal Welfare Act (1999). It is a key component of ensuring New Zealand's reputation regarding animal welfare is prioritised for better animal welfare outcomes and developing skills of those at the forefront of animal welfare is of importance. This is highly relevant to specific sectors, such as the beef and dairy sectors, and potentially supports a competitive advantage in being proactive in on-farm animal welfare.

Better knowledge and understanding around the benchmarking process for animal welfare and how this will benefit New Zealand agriculture, considering our status as a primary export country.

For example, SunPork the largest pig processor in Australia, was one of the first pig producers in Australia to voluntarily remove sow stalls from their production. In addition, they have their own research and development arm, in which research has been completed regarding sow contentment. Understanding how this large pig processing company has moved forwards in terms of animal welfare would go some way in working with New Zealand pig farmers around sow contentment and introducing the concept of animal-based measures within the industry. By further developing the relationship with SunPork via my visit to the research facility and speaking with the researchers, this opens a variety of new areas in which SPCA NZ and SunPork may work together in the future, supporting research directions with the NZ pork industry.

Value of the experience

This collaboration and opportunity to develop additional skills was extremely valuable not just to me, but also for SPCA in terms of further developing the SPCA farm animal welfare accreditation programme currently being re-developed. In addition, SPCA input into future Codes of Welfare will benefit from my learnings regarding animal-based measures. The development of independent, voluntary animal welfare standards – underpinned by science - helps ensure consumers and the community have confidence in making purchases concerning animal products. This is especially relevant for New Zealand as a major food exporter to the world, and the growing concern around farmed animal welfare, and consumer perception.

The opportunity to work with such a diverse group of researchers and large-scale commercial partners support my development of knowledge around animal-based measures, including how these can be incorporated into programmes on-farm ensuring continuous improvement, as well as providing opportunities for clearer transparency within the industry that improvements are being achieved.

I also believe a strong collaboration between SPCA science department and the agricultural and research industries in Australia would help strengthen linkages between animal welfare groups and the farming community in New Zealand.

Application of learnings

Opportunities for the New Zealand agricultural industry

There are overseas assurance programmes currently used by both the US and Canadian supply chain, which include New Zealand farm suppliers, specifically those in the sheep industry. If a standard framework for animal-based measures could be implemented across sectors and regions, such as Australia and New Zealand, and formally recognised as being underpinned by scientific principles - this would support a recognised assurance scheme, relevant to our conditions, which all farmers could be involved with. This would also address issues from the government in terms of ensuring welfare as priority in the agricultural sector. This makes assurance schemes easier, more understandable by internal and external customers, and especially more recognisable overseas, thereby addressing concerns of the overseas market in terms of animal welfare, the environment and sustainability issues in New Zealand. In New Zealand, from October 1, many painful husbandry procedures conducted on farmed animals, such as disbudding and dehorning cattle are prohibited under the law without the use of appropriate and effective pain relief (<https://www.dairynz.co.nz/animal/welfare/animal-welfare->

[regulations/](#)). This change reflects a growing understanding of an animal’s ability to feel pain, however there is still quite a wide understanding of the level of pain for certain procedures, what the benefits may be and what the cost is of using pain relief on farm actually is.

I plan to support the science team at SPCA to engage with the New Zealand agricultural industry with a view to discussing some of the concepts my research in Australia has opened up. One particular example is to continue engagement with the beef and lamb industry to discuss investigating some of the



alternative methods of pain relief that are currently being developed and discussed in Australia at the moment. This would include the new research tool, NumNuts, which was developed for lamb castration and tail docking (<https://www.theland.com.au/story/6226409/numnuts-officially-launches-to-producers/>). Its development was the result of a partnership between Meat & Livestock Australia and a product design and engineering firm to drive animal welfare improvements.

Development of a Trans-Tasman poultry hub

Poultry Hub Australia (PHA) is an initiative of the Poultry CRC in Australia and was developed to share everything regarding “commercial poultry production”. Poultry Hub Australia brings together diverse parties who have a similar interest in all things regarding commercial poultry and supports Australian research projects ensuring they are industry relevant, impact driven and designed to benefit the poultry industry. The research is particularly focused on ensuring that deliverables of research projects are targeted and support solving some of the challenges

in the poultry industry, ensuring applied poultry research is funded. For example, previously funded research has included detection of Spotty Liver Disease in chickens. Another example where the Poultry Hub helps to support the poultry industry in Australia is that they help fund and facilitate for researchers to spend time on farm or in a specific part of the poultry industry in order to encourage research and industry working together to develop research projects that address industry challenges more directly and specific to the actual industry, *Researcher in Industry grant*. This can help the researcher to gain a more comprehensive overview of the issues that impact that industry. Researchers who are in tune with industry concerns and challenges can only be beneficial and help to resolve challenges, and along the way improve growth in the industry.

New Zealand lacks a “Poultry Hub”. The above example is one that could be utilised in New Zealand through a Trans-Tasman Poultry Hub. As a member of the New Zealand World Poultry Science Association my goal is to present a paper at the next New Zealand conference (Oct 2020) that discusses the idea of a Poultry Hub – Across the ditch. This Trans-Tasman Poultry Hub would use the Australian experience and develop the concept for both the New Zealand and Australia poultry industry to engage in and develop as a group. The basic premise of the paper will give an introduction of what Poultry Hub is, and how it can help the poultry industry in New Zealand, as well as give demonstrable examples of where Poultry Hub has supported the Australian poultry industry (e.g. Researcher in Industry). Additionally, the opportunity to invite the current Director of Poultry Hub, Dr Tamsyn Crowley to give an overview of the Australian Poultry Hub model would be beneficial. Another benefit of presenting this paper at the conference, and being more involved with the Australian poultry industry, is that this would encourage additional stakeholders to engage on the important issue of poultry welfare in New Zealand. I believe for a system to work, it needs to work, and in a collaborative manner.

Poultry Hub Australia brings together diverse parties who have a similar interest in all things regarding commercial poultry, and a Trans-Tasman Poultry Hub could build on this successful organisation with a slightly larger scope by including New Zealand.

Trans-Tasman animal-based welfare outcome measures for accreditation programmes

I intend to continue to engage with Australian researchers regarding establishment of an animal-based welfare outcome framework for other species, such as chickens, in conjunction with other animal welfare scientists, potentially including facilitation of a workshop with stakeholders to gauge interest in development of the framework.

These various engagement opportunities will support increased engagement from industry partners wanting to know more regarding the animal-based measures and how these might be implemented on-farm and within their assurance programmes. This would feed into opportunities to conduct workshops around specific examples from Australia and how the frameworks and models might work in our industry with our production systems.

By being invited to the table to discuss on-farm animal welfare with major food retailers would also show and drive home some of the benefits by participating in these projects.

At this point I would then like to drive home the importance of animal welfare and how animal-based measures might be used to heighten confidence of consumers when selecting animal products. I am extremely passionate about the agricultural industry, in particular in developing ways to improve how we farm the animals that we eat and ensuring their welfare. I want to ensure that the general public understand the challenges for this sector, but also ensure that the sector also understands that consumers and the general public want to know that the food they eat is humanely farmed and well cared for. However, there is a cost to ensure this high welfare, therefore everyone along the chain needs to understand their role in the cycle.

Conclusion

Always asking questions

What are they doing? How do we do this? Why do we do it this way? Is there a better way?

The area of farmed animal welfare is rapidly changing and bringing with it, new challenges which will have to be met in order to retain a commercial, competitive edge. I would say that with all of the conversations I had, I was always left with a racing pulse with my mind stretching beyond original thought to other concepts and trying to build solutions to those challenges, as well as to whether those solutions would suit the constraints and challenges that we have in New Zealand in relation to our agricultural goals.

Staff

Everywhere I went, the same theme rose regarding staff and how hard it is to keep and retain good staff that is able and willing to work in the agricultural industry. This is common across agriculture both in New Zealand and in Australia, and possibly something that could be considered as a joint project moving into the future to solve this challenge.

Women in Agriculture

It was encouraging for me to see that many of the researchers and industry people I engaged with were women. This has not been the case for me in the past. I have been involved in the agricultural industry throughout my whole career and generally found primarily more males in the industry with many higher positions being filled by men. However, during my trip to Australia, the number of women in the agricultural industry was quite significant. Many of the researchers I engaged with are also in more senior positions, which was fantastic to see - more

women in higher positions in agriculture. A recent post in Agricultural Appointments (<https://www.agri.com.au/are-more-women-being-employed-in-the-agricultural-sector/>) pointed out that there has been a dramatic change in the gender makeup of students in the agricultural and veterinary courses in Australia in the last 25 – 30 years, and perhaps this forms part of what I have seen in the agricultural industry during my Fellowship trip. However, analysis of the sector found that actual employment levels for women in the agricultural sector was still relatively low (14.6% compared with 56% employment by males) in agriculture. Perhaps this indicates a significant talent pool that is yet untapped, and something that could still be addressed in New Zealand, specifically in our agricultural sector. Perhaps in New Zealand this is already being reflected as for the first time ever, two women are in the final of the 2019 Young Farmer of the Year contest (<https://www.newshub.co.nz/home/rural/2019/04/women-s-importance-in-agriculture-sector-growing.html>).



Often what you expect to get out of something is not always what occurs. However, what is important is to take responsibility for the time given, be pro-active and take responsibility for your own learnings in a flexible manner.

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