



Assessing the value of the Animal Health Industry to New Zealand



Agcarm

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Dear Mark

Animal Health Industry Report

Thank you for the opportunity to assist you in assessing the value of the animal health industry (either "Animal Health Industry" or the "Industry") to New Zealand. At KPMG, we pride ourselves on our contribution and commitment to our agri-food industries and New Zealand's prosperity.

The Animal Health Industry is comparatively small if valued on total revenues and the number of employees alone. However, the industry makes a significant impact by enabling the productivity and extent of export revenues of the downstream production animal industries it supports.

The Industry also provides several less tangible forms of value to New Zealand due to the interconnection of animal health to both human health and the health of our environment and ecosystems.

The Industry's contribution is significant, but somewhat of an underappreciated value to the overall New Zealand economy. To maximise future value, the Industry must collaborate, innovate, educate and tell its story of its value in order to address its own challenges and those of its customers.

Please find enclosed the final report.

Ngā mihi, nā

Gavin Holley

Partner, Private
Enterprise

Ian Proudfoot

KPMG Global Head
of Agribusiness

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Purpose, Industry definition and our method to value the Industry

Agcarm engaged KPMG to assess the value of the Animal Health Industry to New Zealand.¹ This is the first time a report of this nature has been produced on the Animal Health Industry.

Purpose of this report

The Animal Health Industry's contribution is significant, but of underappreciated value to New Zealand.

This report showcases the importance and value of the Animal Health Industry to the wider industries it supports. The Animal Health Industry is complex, with interconnected and interdependent components that need to be considered when determining the value and potential of the Industry.

We also highlight other intangible forms of value and benefits that the Animal Health Industry provides to New Zealand.

Defining the Animal Health Industry

We define the Animal Health Industry in this report as the industry in New Zealand providing products that support the health and welfare of production animals, elite sports animals, service animals, and companion animals.

The Industry does this by providing a range of animal medicines (such as antibiotics, vaccines, worm, flea and parasite treatments, painkillers and diabetic treatments) and nutritional additive products. Products such as animal feed and fertilisers fall outside our definition of the industry.

The Ministry for Primary Industries (MPI) is the main government agency that oversees the Animal Health Industry, particularly through its Agricultural Compounds and Veterinary Medicines (ACVM) team and the ACVM Act and Regulations¹.

Data limitations

There are limited sources of data available that document forms of value of the Industry to New Zealand. There is limited robust publicly available data on the Industry, and it is often not possible to disaggregate Industry data from generally available data. This report provides an important baseline for future research to quantify the economic, social and environmental value and importance of the Industry.

The Animal Health Industry is complex, with interconnected and interdependent components that need to be considered when determining the value and potential of the Industry

¹ The New Zealand Animal Health Industry is primarily regulated by the Agricultural Compounds and Veterinary Medicines (ACVM) Act and the Hazardous Substances and New Organisms (HSNO) Act. The ACVM Act specifies animal medicines and veterinary pharmaceuticals that must be registered, with several products exempted from registration by the ACVM Act and ACVM Regulations.

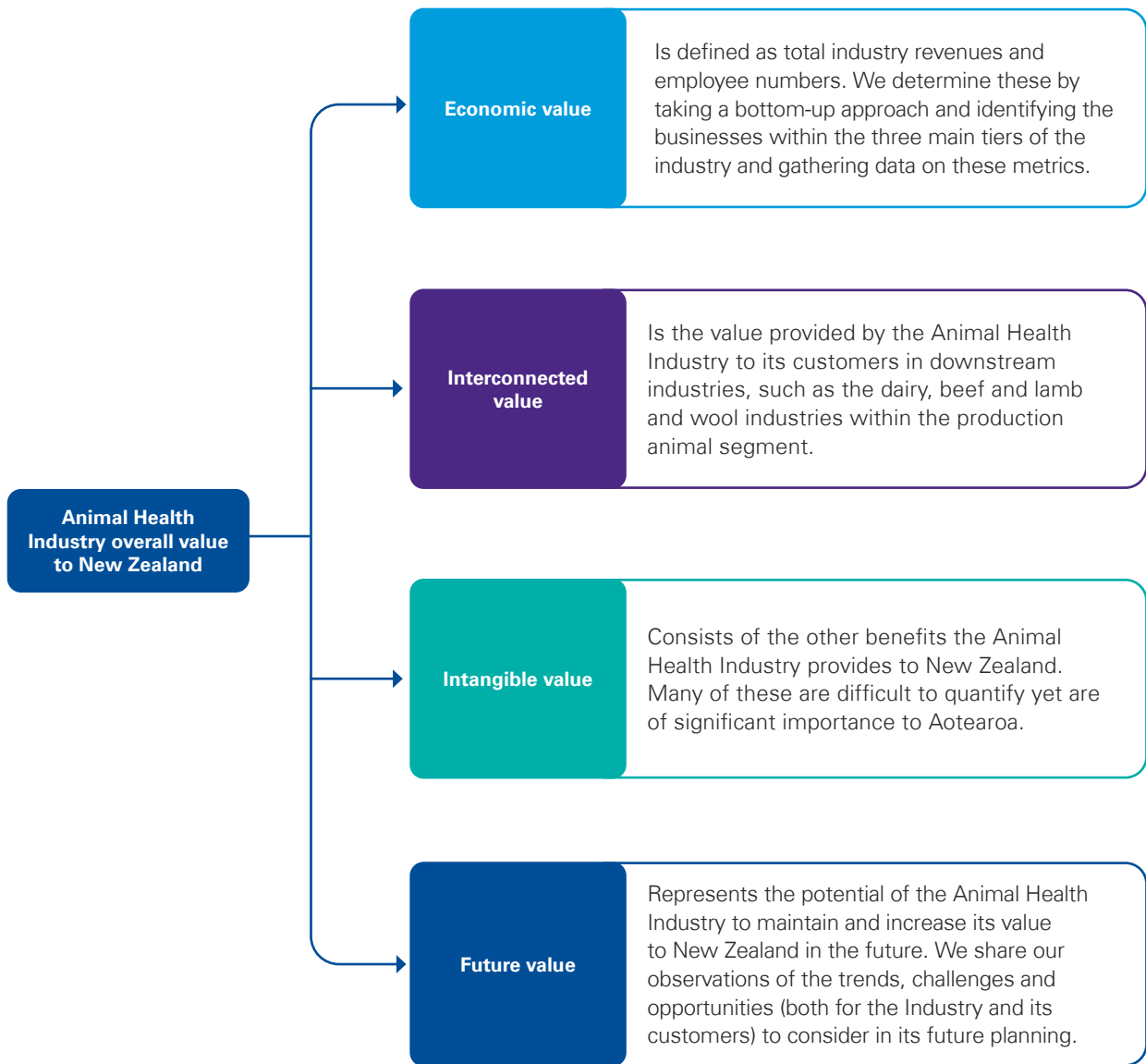
This report assesses the value of the Animal Health Industry to New Zealand.

We assess the overall value to New Zealand of the Animal Health Industry by considering four forms of value.

The first three relate to the current value of the industry:

We showcase specific examples of these three forms of value through five case studies, including both production animal and companion animal examples, before considering the potential future value of the Industry.

While this report focuses primarily on the products that support the health and welfare of animals it is important to recognise the relationship with the veterinary industry. Veterinarians provide skills and expertise in diagnosing and controlling animal diseases, treatment of sick and injured animals, and the management of animal health and welfare, that contribute significantly to the interconnected value of the Animal Health Industry and so all estimates of interconnected value are inclusive of value added by the veterinary industry.



Executive Summary



A dynamic high-tech industry delivering broad benefits to New Zealand

Key findings on value:

- The Animal Health Industry is relatively small but punches above its weight when the significant impact and contribution it makes to New Zealand is identified.
- The economic value of the Animal Health Industry is conservatively estimated to be \$430m in revenue and approx. 1100 employees, but importantly, the Industry underpins the production of many interconnected industries that collectively generate the majority of New Zealand's export revenue.
- The Industry indirectly supports human health in New Zealand and beyond through the nutrition provided by the food and protein outputs of the production industries and by protecting humans from animal diseases.
- By improving the health of companion animals, the Industry also contributes to the mental and physical human health benefits pets provide, as well as the roles and impact working animals provide to society, such as biosecurity, police, disability and guiding services.
- In addition, the Animal Health Industry contributes many intangible benefits to New Zealand. These are valuable to many of the country's goals, such as achieving its climate change aspirations, reducing the risk of antibiotic resistance and preserving high levels of public health.
- There are many opportunities for the Animal Health Industry to maintain and grow its value to the country in the future.

Complications:

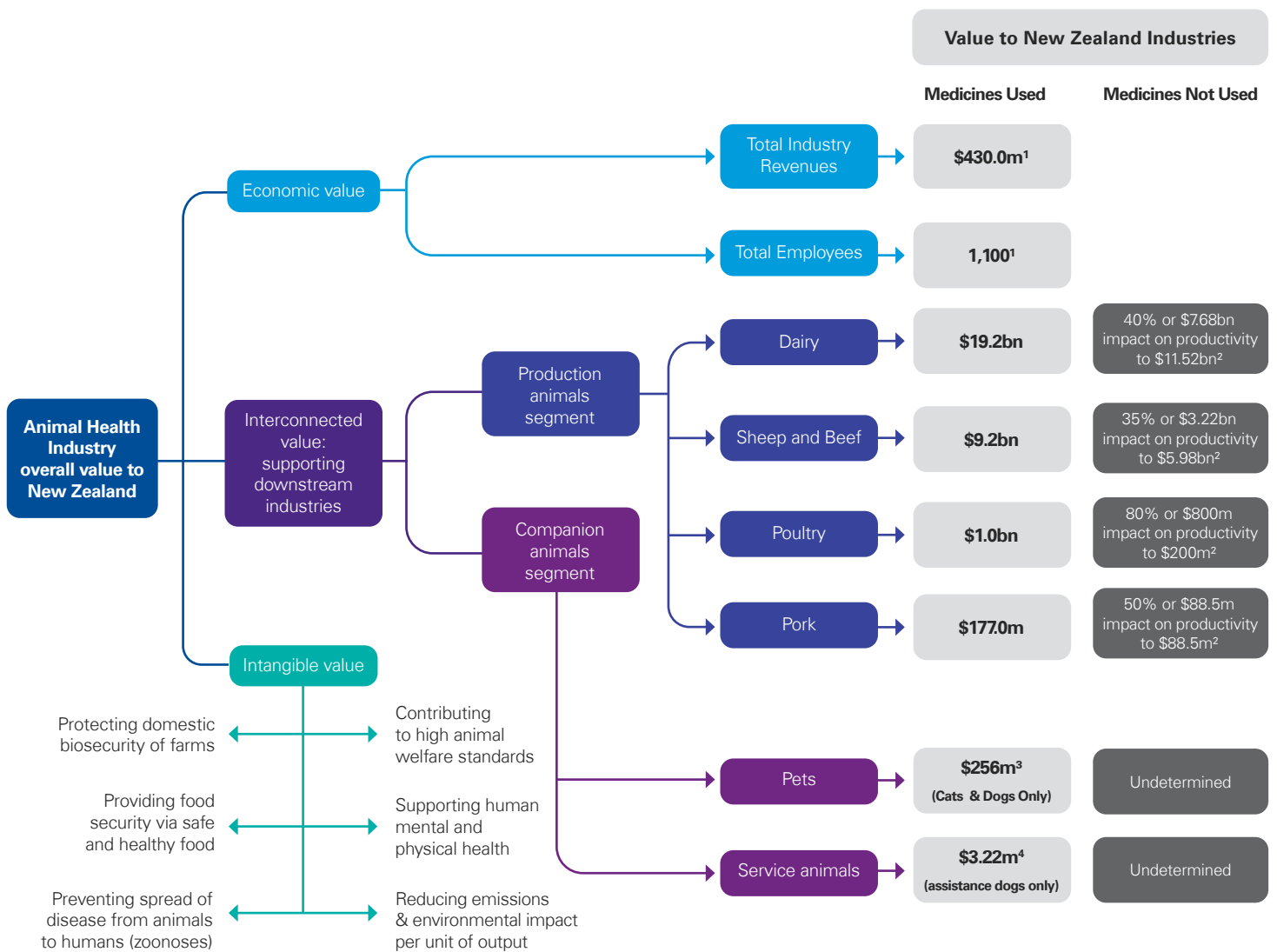
- The Industry faces and perceives many challenges that negatively impact revenues and increase costs:
 - The challenge of antimicrobial resistance has emphasised the need for proactive stewardship of antimicrobial products to ensure their availability for use in humans and the long-term sustainability of interdependent industries.
 - New Zealand risks being a low priority market for branches of multinational companies, including those that are the largest players in the New Zealand Industry.
 - This could lead to lower innovation and fewer solutions to our specific problems, particularly in pastoral agriculture. Smaller New Zealand businesses may not be able to afford the large R&D and registration costs and timeframes to make significant leaps forward on true new product development (beyond adapting or combining existing medicines for new purposes).
 - The Animal Health Industry is not well understood – many interviewees (both internal and external) felt there was low awareness and therefore perception of the industry and the value it adds.
- However, many of these challenges present opportunities for the Industry to add more value to New Zealand.
- Taking action on these opportunities may have some negative impacts on businesses, which are outweighed by the long term benefits to the Industry, agricultural sector, economy and environment.

Further considerations:

- Agcarm as the peak industry association for the Animal Health Industry is regarded as the natural leader when it comes to industry collaboration in telling the animal health story and influencing regulation.
- The Animal Health Industry should be supported, encouraged and enabled to grow the value it provides to New Zealand, despite the commercial headwinds the Industry faces.
- A science-based approach to regulation will enable the Animal Health Industry to deliver further value to the animal production industries by encouraging innovation. This would increase both the Industry's economic value and interconnected value.
- There is opportunity and value in conducting more detailed research and studies into the direct and indirect economic value of the industry. This could include econometric analysis of the industry's direct, indirect and interconnected value, such as assessing the economic impact of animal disease through both financial cost and productivity impacts on all of New Zealand's key production animal industries.

A \$430m industry contributing towards an estimated \$12bn of economic value in New Zealand

While the Animal Health Industry is comparatively small it makes a big impact via the industries it supports – together these represent the majority of New Zealand’s exports. The Industry also provides additional intangible benefits to New Zealand that should not be discounted when considering the importance of the industry.



¹ The values estimated in this report are based on an analysis of data sourced from Agcarm, 'IBIS World Veterinary Pharmaceutical and Medicinal Product Manufacturing in New Zealand 2020 Report' and 'Agcarm Member Survey conducted by KPMG 2021'.

² The 'values' represent the potential impact and a reduction in productivity should animal medicines not be used within each industry. These values have been determined based on qualitative interviews with experts of each respective industry.

³ New Zealand has 4.35m companion animals according to the Companion Animals in New Zealand 2020 Report. The value illustrated above is representative of cats and dogs only, with estimates to be cats 41% or 1.2m and dogs 34% of 852,000 of all house hold pets. Annual vet costs are estimated to be \$125 per animal.

⁴ Service animals include patrol, detector, therapy, assistance and disability dogs with assistance dogs being used as a sample at 43 dogs with a cost of \$75,000 breed, raise, train and match a dog.

⁵ The value of animal medicines not being used with companion animals has not been determined based on feedback obtained in interviews with veterinarians who highlighted that while mortality rates could be estimated as a result of animal medicines not being available, it was not appropriate to do so as it does not adequately reflect the effect on animal owner's or their well-being, so for this reason it has been categorised as 'undetermined'.



Assessing the Value of the Animal Health Industry to New Zealand

Industry overview: A moderately concentrated Industry producing a wide range of products

The Animal Health Industry supports the productivity, health and welfare of production and companion animals by providing a range of animal medicines and products. The Industry is moderately concentrated – a significant majority of market share is held by seven businesses, whilst the last 10% of the market is highly fragmented between smaller businesses.

A moderately concentrated industry

- Approximately 85% of the Animal Health Industry market share is held by seven multi-national companies, with much of this share split between the four largest.
- The second tier of 10 businesses hold an estimated 5% market share between them.
- The remaining 10% is highly fragmented between a wide range of smaller companies; including veterinary businesses or small offices of global organisations and specialist companies.

That supports both production and companion animals

- Approximately 75-80% of the value of the Industry's products are applied to production animals such as cattle, sheep, chickens, pigs and deer. Demand from this segment is flat or in slight decline.

- The remaining 20-25% value of products are provided to companion animals (pets and working animals). This segment is growing and is an opportunity for the Industry.

By producing a wide range of products.

- The Industry makes products that improve animal health by illness and disease prevention, diagnosis, treatment and surveillance.
- The Industry's customers appear to be focusing more on preventing disease than treatment, as shown by the growth of prevention products and decline of treatment products in the product table (these trends are by both total sales as well as the split of industry revenues).
- The value of antibiotics is expected to continue declining due to New Zealand's strategies to reduce the risk of anti-microbial resistance¹ and the Veterinary Association's goal to no longer need antibiotics for maintaining animal health and wellness by 2030.

The value of antibiotics is expected to continue declining due to New Zealand's strategies to reduce the risk of anti-microbial resistance

¹ Ministry of Health and Ministry for Primary Industries. 2017 'New Zealand Antimicrobial Resistance Action Plan' and Wormwise Strategy 2018-2021 (updated August, 2018)



Product type	Primary use	% of New Zealand Industry revenues in 2020 ²	Compounded average growth rate 2018-2020 ²
Internal parasiticides	Treat animals for internal parasites (i.e. within animal digestive system)	25%	-0.47%
Vaccines & antisera	Prevent viral and bacterial infections in animals by stimulating or spreading passive immunity	21%	4.43%
Antibiotics	Treat animals for microbial (e.g. bacterial and fungal) infections	19%	-2.98%
External parasiticides	Treat animals for external parasites	12%	-2.92%
Nutrition & metabolism	Enhance animal nutrition and metabolism through feed additives	12%	8.66%
Other (e.g. dermatological or musculoskeletal products)	Range of uses such as for diagnosis, surveillance or other specific uses (e.g. treat skin or muscle conditions)	11%	0.36%

² Agcarm. These percentages are generated from Agcarm data representing approximately 80-85% of the New Zealand Animal Health Industry and are assumed to be reasonable estimates for indicative purposes of the full Industry in New Zealand.

Interconnected value: The Animal Health Industry is complex with interconnected components & supports many large downstream industries

New Zealand's animal health industry has been estimated to have a conservative value of **\$430m**.

\$430m however does not highlight the significant **interconnected** value with other primary industries, such as sheep-and-beef, pork, poultry or dairy for example.

It has been estimated through qualitative interviews with industry leaders of organisations in each industry that animal medicines are critical for their industries to function.

In the event animal medicines were not available it is estimated to cost their industries a combined **\$12.68bn** or close to **30 times** that of the animal medicines industry itself.

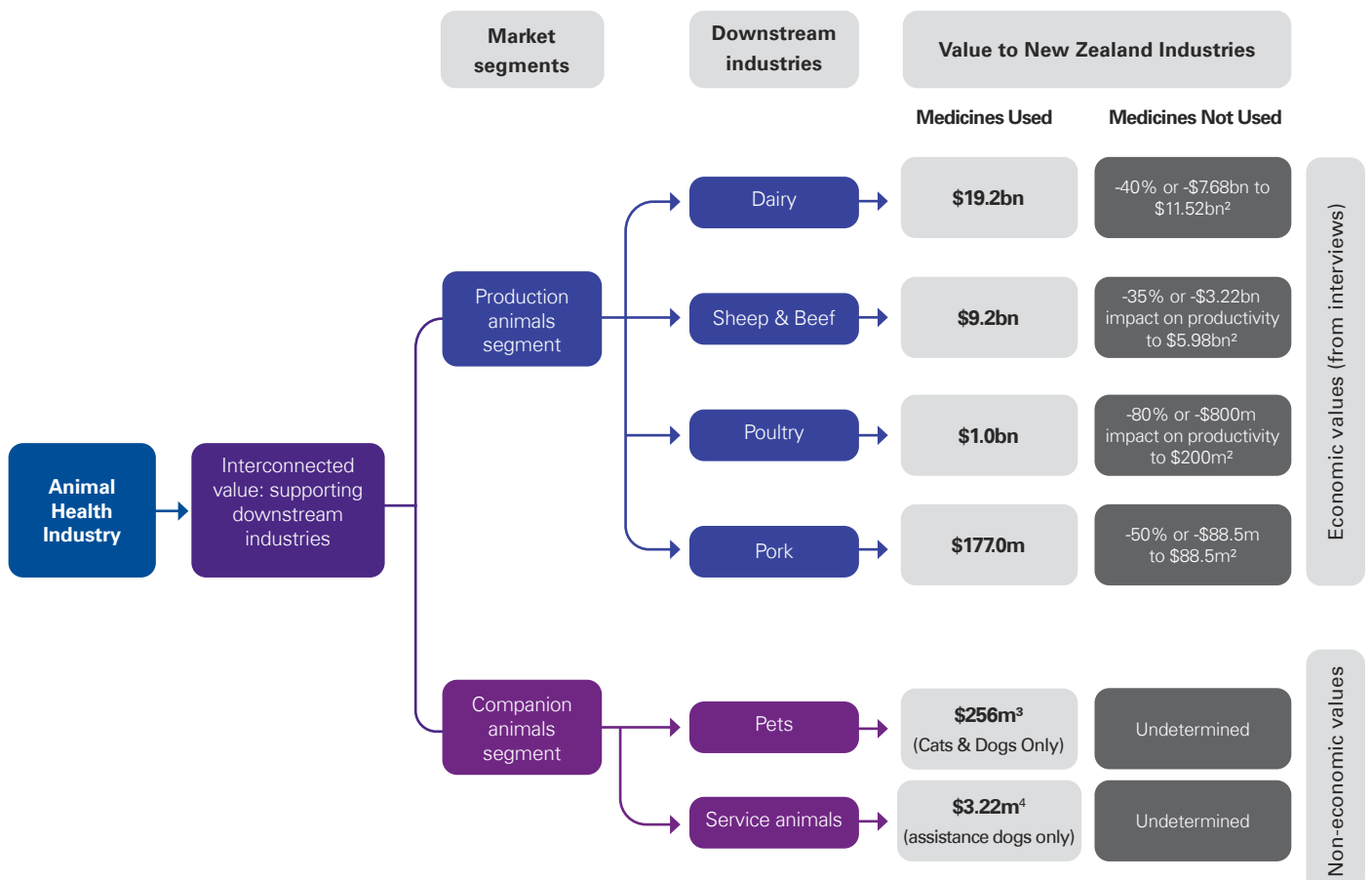
It is critical to note that during interviews **'animal welfare'** was the most discussed aspect when determining 'value'.

Second was the effect on **'mental health'** or **'wellbeing'** of caretakers of animals.

It is best illustrated in a quote "if you do not allow farmers to have the tools to care for their animals it is the 'despair' that gets them when the animals die".

These 'tools' vary, with dehorning, velveting, or treatment to support birthing or weaning or overall wellbeing similar to humans.

For companion animals, interviewees considered it was not appropriate to determine a 'value' solely on an impact to productivity, or in this case, mortality as to do so does not adequately reflect the effect of an owner's well-being as they seek to treat a pet who is unwell.



Intangible value: The Industry delivers value in many less tangible forms to human, animal and environmental health

The Industry provides other vital yet less tangible forms of value to New Zealand that must not be overlooked when assessing its importance. The Industry:

Intangible value to human health:

Provides safe and healthy food to New Zealand and export markets

- Supports food security through plentiful protein for affordable domestic consumption and exports

Managing antimicrobial resistance to protect human health

- The industry supports prudent use of antibiotics in animals to reduce the risk of AMR
- Without antimicrobials, mortality rates in humans would increase significantly because many infections would not be treatable

Prevents the spread of disease from animals to humans (zoonoses)

- Provides preventative vaccines to keep humans safe from the transmission of disease from animals, such as leptospirosis
- The virus causing Covid-19 is a timely and well-known example of a zoonotic disease

Improves human mental health through healthy companion animals

- Alleviates feelings of loneliness, stress, anxiety and depression due to social isolation and poor mental health
- Encourages social contact through healthy pets and working therapy animals

Supports a strong start to life through healthy pets

- Reduces the risk of children developing allergies by supporting the health of pets
 - Encourages early development of social skills by enabling children to grow with healthy animals in their families
-

Intangible value to animal health:

Protects the domestic biosecurity of farms	<ul style="list-style-type: none"> • Helps farmers protect their stock from unwanted diseases from other farms or sources within the country by providing preventative vaccines • Provides quarantine drenches to prevent parasites being transferred or spread to other farms
Extends the lifetime of pets and working animals	<ul style="list-style-type: none"> • Provides vaccines to prevent illnesses and treatments for acute illness or disease • Delivers good return on training investment for working animals such as detector dogs
Supports high animal welfare standards	<ul style="list-style-type: none"> • Ensures all animals have high welfare by preventing, diagnosing and treating disease • Gives consumers confidence in the integrity of New Zealand's brand by showing their purchases came from livestock that lived a good life
Reduces antimicrobial and anthelmintic resistance risk for treating animal diseases	<ul style="list-style-type: none"> • Takes responsibility for the future of antimicrobials and anthelmintic product use for production and companion animals • Educates users on their judicious product use, even though it may negatively impact sales
Helps animals adapt to a changing environment	<ul style="list-style-type: none"> • Develops products that improve animal resilience, comfort and strength to fight disease as they adjust to increasingly warmer and drier climates

Intangible value to environmental health:

Reduces environmental impact per unit of output	<ul style="list-style-type: none"> • Allows animals to attribute maximum energy to growth and reproduction, without the challenge of disease or mineral deficiency • Healthier animals produce more units of output per inputs such as energy, water, land use and space
Develops greener products with lower residues in the environment	<ul style="list-style-type: none"> • Continually reduces product residues in protein and fibre and on pasture and other environments • Develops products that have high uptake and low bioaccumulation having passed through the animal
Supports efficient livestock and reduce biogenic methane	<ul style="list-style-type: none"> • Healthier animals grow faster and spend less time producing methane • Researches and develops potential methanogens, feed additives and other solutions to reduce the amount of methane produced per animal
Enables uptake of more sustainable farm systems	<ul style="list-style-type: none"> • As farming systems change, the Industry can provide different products to respond to different diseases in those systems • Free-range chickens experience different diseases compared to colony chickens
Facilitates uptake of Te Taiao and the Fit For A Better World roadmap	<ul style="list-style-type: none"> • Embraces the principles of Te Taiao to enable faster progress towards the Primary Sector's vision with increased action towards productivity, sustainability and inclusiveness

Case studies



Animal Health Industry is crucial to New Zealand's production animal industries

The Animal Health Industry contributes significant value to the dairy and poultry industries by supporting efficient production, animal welfare and preventing disease spread from animals to humans.

Case Study 1 – Dairy Industry

The Landscape

The dairy industry is New Zealand's largest exporter, with over \$20 billion in export revenues in 2020. It employs over 40,000 workers and paid \$2.4 billion in wages in 2016.

Did you know that the Animal Health Industry contributes to the value of the dairy industry by:

1. The Animal Health Industry provides preventative vaccines and mastitis treatments to keep animals and humans safe from disease.

- The Industry helps prevent mastitis through providing teat sealant and antibiotic dry cow therapy solutions, as well as antibiotics for the treatment of clinical cases. The cost of mastitis in New Zealand has been estimated at \$180 million per year.
- Mastitis – infection of the udder - is a common ailment in the New Zealand dairy industry and is one of the most economically important animal health issues. Udder health is vital to the production of high quality, healthy milk and a happy cow.

2. Keeping New Zealanders safe by reducing spread of disease from cows to humans

- The Industry manufactures and distributes vaccines that

prevent Leptospirosis in dairy cows. Leptospirosis is a disease which affects livestock and humans - the disease is passed to humans through direct or indirect contact with urine from an infected animal.

- In 2015, there were 63 notified cases of Leptospirosis in humans in New Zealand, of these 44 were hospitalised (but up to five times more cases are suspected due to underreporting). Farmers accounted for 36 of these cases. New Zealand has one of the highest incidences of Leptospirosis in humans in the developed world.
- Whole herd vaccination programmes are vital for protecting the health of cows and humans. During the 1970's human cases averaged 488 per year (11 per 100,000). In the 1980's when a vaccination programme for dairy cattle was introduced, a reduction in human cases followed to 4.5 per 100,000 people.

3. Reducing environmental impact per unit of output & supporting New Zealand's climate goals

- The Industry will have a key role to play in helping New Zealand reach its 2050 target for greenhouse gas emissions. One comparative study assessed

the New Zealand dairy industry to have the world's lowest carbon footprint - 48% less than the average of 18 countries studied (accounting for 55% of global milk production).

- Efficient milk production is the key driver underpinning the small footprint. The Industry has contributed to an increase in per cow milk production by providing solutions to keep cows healthy year-round, ensuring that milk production and cow health is not negatively impacted for prolonged periods. In the 2018-19 season, cow numbers decreased 0.9% relative to the previous season and total milk solids (kgMS) processed by dairy companies increased 2.4%.

The Value

- The Animal Health Industry supports the dairy industry to produce milk efficiently and cost effectively, driving the \$7.8 billion dollar contribution to New Zealand's GDP.

The Animal Health Industry has supported the dairy industry to increase per cow milk production, allowing the industry to decrease cow numbers. This has a positive impact of methane emissions.



Case Study 2 – Poultry Industry

The Landscape

- Chicken is the preferred protein of New Zealanders, consuming over 40kg per capita in 2020 (more than double the amount of pork and approximately four times the amount of beef and veal). New Zealand is free of the three major exotic avian diseases, making it one of the best places in the world to raise chickens. However, a 2019 outbreak of infectious bursal disease virus (IBDV) in two Otago farms led to suspended exports to key markets such as Australia and decreased production.

Did you know that the Animal Health Industry contributes to the value of the poultry industry by:

1. Feeding New Zealand with affordable, safe chicken:

- Without the Animal Health Industry, it could be impossible to produce enough affordable, high quality safe chicken to meet the appetites of New Zealanders.
- Without vaccines or other preventatives for coccidiosis, chicken farming systems would be uneconomic and chicken broilers would require vast increases in space per chicken, much larger farms to maintain current productivity with less-intensified farming systems to counter disease spread and culling.
- This would have flow-on effects to the availability of chicken and the price the consumer pays, affecting a huge number of people – chicken breast is New Zealand's second-most affordable source of protein according to Poultry Industry Association analysis in late 2020.

2. Preventing high mortality rates:

- The biggest risk to chicken health in New Zealand is the parasitic disease coccidiosis - mortality rates can increase to 10% in an outbreak.

- The value to the poultry industry of preventing the parasitic disease coccidiosis is conservatively estimated to be at least between \$4.8m to \$12m based on cost alone, not including any productivity increases.
- The cost component of the preventative programme is based on 4-10c per bird for an estimated 120 million birds in New Zealand.

3. Supporting the shift to free-range by treating rare diseases:

- The Animal Health Industry provides solutions for some of the worms, parasites and diseases which are new or haven't been an issue in the poultry industry for 20 years but are back on the rise during the shift towards less intense systems.
- As the industry phases out battery cages for animal welfare reasons (no longer will be used after 2022) in favour of colony cages, barn or free-range systems, the types of diseases and ailments effecting birds are changing.
- There is also potential for the Animal Health Industry to work with the poultry industry to develop solutions that enable more birds to live a free-range life. This is particularly prevalent given increasing consumer demand for free-range eggs.

The Value

- The Animal Health Industry supports the poultry industry to produce meat efficiently and cost effectively by providing preventative vaccines. Without vaccines and coccidiostats, the industry could not produce poultry at scale to satisfy New Zealanders' appetites for chicken.
- The Animal Health Industry ensures that New Zealanders have access to safe, high quality and affordable chicken.



Case Study 3 – Sheep Industry

The Landscape

There are 27.4 million sheep in New Zealand (30th June 2019). The industry generates \$2.3billion in revenue and contributes \$198.9m in wages to the local economy.

Did you know that the Animal Health Industry contributes to the value of the sheep industry by:

- Protecting sheep from invasive and painful flystrike
- The Industry provides products for the prevention and treatment of flystrike in sheep. Flystrike is when blowflies lay eggs on the skin of sheep and eggs develop into maggots, which invade the skin of the animal.
- Flystrike is a significant animal welfare issue in New Zealand and is widespread in its occurrence. It is estimated that 1.3-2.3 million sheep are infected with flystrike each year and 250,000 lambs die. Flystrike can cause death if not identified and treated – this is challenging on extensive farms. When treated, flystrike can still cause live weight loss and have a recovery period of 6 weeks.
- The preventative treatment of flystrike is an important management tool for farmers to reduce the incidence of flystrike.

Ensuring healthy, growing animals and quality meat

- The Industry provides drenches and educational programmes to support the management of internal parasites in sheep. Internal parasites cause sheep to lose condition and to scour.
- Internal parasites cost the sheep industry \$270 million annually, including drench costs and lost production due to parasitism.

- The animal health industry provides educational support to vets and farmers on the efficient and best practice use of drenches through the 'wormwise' programme

Saving lambs lives by preventing abortion

- The Industry provides important vaccines to protect sheep against Campylobacter and Toxoplasmosis which cause the premature abortion of lambs.
- The New Zealand abortion rate sits on average at around 1 and 2%, however an 'abortion storm' can cause abortions to occur in 25-40% of ewes in a single flock. This has a significant economic and health impact.
- Vaccination programmes are critical to protecting the health of ewes and their unborn lambs.

The Value

- The Animal Health Industry provides vaccines that protect lambs from premature abortion and care for the welfare of sheep.
- Parasite treatments provide further care for the welfare of sheep while also protecting farmers income and exports.

Animal Health Industry protects the health of working animals and family pets

The Animal Health Industry contributes significant value to the lives of pets and working animals, as well as their owners.

Case Study 4 – Companion Animals - Cats

The Landscape

- Cats are New Zealand's most popular pet - we own over 1.2 million of them. That is an average of 1.7 cats per home (41% of households own a cat).
- The main reason we own cats is for companionship, love and affection. Cat owners spent \$747 million on their cats in 2015 - equating to \$670 per cat.
- The rising uptake of pet insurance has increased demand for veterinary services and an associated increase in veterinary pharmaceuticals – the rate of pet insurance almost doubled from 2011 to 2016, when 10% of cat owners purchased pet insurance for their cats.

Did you know that the Animal Health Industry contributes to the value of the companion animal industry through:

Co-habiting in comfort and health

- The Animal Health Industry allows cats and humans to co-habit comfortably by providing convenient at-home treatments for owners to administer for the treatment of fleas and worms.

- 83% of cats live both indoors and outdoors in New Zealand, transferring diseases and parasites into our homes.
- Fleas are a common household pest in New Zealand, causing discomfort for both cats and humans. However, fleas not only bite humans, they also carry tapeworm and are a vector for rickettsial diseases.

Protecting families from heartbreak

- The Animal Health Industry keeps family cats protected from common diseases such as feline immunodeficiency virus (FIV) by providing a vaccination programme.
- Cats are much loved members of New Zealand families - 49% of cat owning families have children aged nine to seventeen.
- FIV infects 14% of the New Zealand domestic cat population, attacking the immune system of the cat and causing wasting. There is no cure for cats that contract FIV.

Longer living pets

- The Animal Health Industry plays an important role in providing veterinarians with

the medicines and supplies needed to treat and care for cats into their old age.

- Those who own cats outlined they did so for companionship, love and affection – advising that as owners it is important to them to ensure their cat enjoys a long and happy life.

The Value

- The Animal Health Industry provides flea and worm treatments which allow New Zealanders and their cats to live together comfortably and healthily.
- The Industry provides vaccines and parasite treatments to keep cats safe from disease and to ensure they live a long and happy life.



Case Study 5 – Working Animals - Dogs

The Landscape

- New Zealanders love dogs, so much so that we have 850,000 of them. A third of households own at least one dog.
- Dogs have many important jobs in our communities - supporting people with disabilities, in the Police force, protecting our biosecurity and helping move stock on farms.
- These dogs are highly specialised experts at their jobs, taking on average two years to train and considerable financial investment.

Did you know that the Animal Health Industry contributes to the health of working dogs through:

Protecting a significant investment in training disability assistance dogs

- The Animal Health Industry produces vaccines to prevent disability assistance dogs contracting diseases which cause severe illness or death, such as canine parvovirus, canine distemper and kennel cough.
- The cost of training and placing an assistance dog is estimated at \$75,000.
- Disability assistance dogs are a special part of our communities – they have been granted legal rights to access public places to support people with neuro disabilities and mobility issues.
- 90% of these clients are children under 12 years old with autism and neuro disabilities. The dogs provide the children with a loving companion, emotional support and assistance, significantly improving their quality of life and happiness.

Supporting the health of detector dogs and Police dogs

- The Industry provides immunisations for detector

dogs that provide valuable services in biosecurity for MPI, Customs, Department of Conservation, Corrections and search and rescue.

- Police dogs respond to over 30,000 incidents per year with their handlers. Some of these incidents end badly, with Police dogs requiring emergency surgery and care.
- The Animal Health Industry provides medicines that veterinarians can use to help save the dogs' lives and give them the best chance at recovery.

Keeping farm dogs at work

- Over 200,000 dogs are working on New Zealand's 25,000 sheep and beef farms.
- The Animal Health Industry keeps these dogs healthy and at work by providing vaccines which prevent disease and medicines to help them recover to recover quickly and in full when accidents happen on the farm.
- Dogs have a very important role to play on farms; not only are they much loved companions and family pets, they help farmers to shift stock between paddocks and handle them in stockyards.

The Value

- The Animal Health Industry provides important vaccines and parasite treatments to keep New Zealand's working dogs safe from disease, and to protect the significant financial investment made in training them.
- The Industry also provides crucial medical supplies needed to save the dogs' lives when accidents happen.

Potential for
the Animal
Health Industry
to deliver
future value to
New Zealand



Global & local trends will impact the Industry's potential future value

Global trends are expected to have a significant impact on New Zealand due to the high level of globalisation and multi-nationals having a 85%+ New Zealand market share.

Key insights

- New Zealand has a strong voice in international policy to support science-based regulation.
- New Zealand's animal health industry remains competitive on a global scale despite a flattening of revenues due to a drop in production animals and a decrease in the use of some medicines.
- These trends should be welcomed as part of a transition to more sustainable production systems:
 - Fewer production animals will help New Zealand to reach its greenhouse gas emission targets; and
 - Decreasing animal numbers in addition to the more efficient use of antimicrobials helps reduce AMR risk.
- The companion animal market in New Zealand is expected to grow over the next three years, while the production animal segment is forecast to plateau or slightly decline. In contrast, the global Animal Health Industry is forecast to grow in both the production animal and companion animal markets.
- The product segment ratios of New Zealand compared to globally are very different. The difference is due to the pasture

based systems, size and primary animal categories of the New Zealand production animal industries (cows and sheep are high but in long term decline in number, whereas globally pigs and chickens are the predominant growth animals).

- New Zealand risks not being a strategic market for multi-national investment in innovation because it is a small market with low forecast growth compared to the global industry. Opportunities for further innovation are explored in the next section of this report.
- Increasing industry consolidation may impact contributions to

Agcarm and thereby its ability to fulfil its role for the Industry.

- The Animal Health Industry in New Zealand is very exposed to fluctuations in downstream customer markets i.e. product sales to dairy farms increase when the price for milk solids is strong. The companion animal market is comparatively more stable and driven by the number of households and real household discretionary incomes.

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Metric/Ratio	Domestic Industry	Global Industry	Commentary
2015-2019 growth (CAGR) ¹	-1.9%	5.1%	New Zealand's declining CAGR is a result of decreasing production animal numbers and decreasing use of antibiotics and anthelmintics.
2020-2023 growth forecast (CAGR) ¹	1.5%	5.4%	The New Zealand Industry's expected growth from the companion animal segment will be partially offset by declining production animal numbers.
Market segment ratio ² Production : Companion animal	75%:25%	60%:40%	Agriculture is a significant component of New Zealand's GDP, hence the larger market share in production animals.
Product segmentation ratio ² Feed additives : Veterinary pharmaceuticals	12%:88%	62%:38%	Fewer feed additives are used in New Zealand due to the prevalence of pastoral farming systems over feedlot systems.

Industry trends and drivers

Expected growth in production animal segment over next three years	No	Yes	New Zealand production animal revenues are expected to decline due to decreases in herd size and lower sales of antibiotics.
Expected growth in companion animal segment over next three years	Yes	Yes	Increase in demand from companion animal segment due to increased pet insurance and humanisation of pets.
Rising threat of antimicrobial resistance (AMR)	Yes (NZ lead, low use)	Yes (heavier AM use)	New Zealand's animal production systems use lower volumes of antimicrobial and anthelmintic products. New Zealand has an active AMR strategy involving government and industry.
Increased consolidation of customers and distributors reduces Industry profit margins	Yes	Yes	Corporatisation of vet companies in New Zealand and growth in farm businesses that can negotiate deals is expected to increase their buying power and negatively impact Industry profit margins.
Increasing industry consolidation and partnerships	Yes	Yes	A recent example of consolidation with global and domestic impact is Elanco's 2020 acquisition of Bayer's animal health business.
Rise in technology-enhanced platforms	Yes	Yes	Technology is expected to increase precision animal management and treatment, and increase communication between vets and pet owners. Potential for technology to lead to business model innovation.

¹ The Business Research Company "Animal Medicine Investment Global Outlook 2020", IBISWorld. CAGR = Compound Annual Growth Rate.

² Agcarm – these metrics are approximate estimates from the Agcarm statistics that are assumed to represent approximately 80-85% of the New Zealand market. For the purposes of this report we have assumed these ratios are representative of the full New Zealand Animal Health Industry.

The Animal Health Industry can add more value in the future by addressing its own challenges and providing solutions to the industries it supports

While there are many challenges for the Animal Health Industry and the production animal industries it supports, many can be reframed as opportunities to add more value to New Zealand in the future. The Animal Health Industry should be supported and encouraged to deliver this potential value by both addressing challenges and seizing opportunities.

Production Animal Industries' Challenges

Maintaining a social license to operate underpins many of the challenges animal production industries face. Consumers are increasingly interested in how their food was produced and want confidence it was produced humanely, ethically and sustainably.

Farming sustainably is the biggest challenge and focus currently for all livestock production industries. Every industry is focusing on identifying and addressing the areas they can work on to operate more sustainably with less impacts on the environment and climate.

Animal welfare standards across all livestock production industries are coming under increasing scrutiny by regulators to ensure that high standards are in place and operators are adhering to those.

Profit margins continue to be squeezed with ongoing compliance and increased production costs being felt across the board. Animal health treatments are a fixed cost to a certain extent – costs are cut where possible when commodity pricing weakens.

Product safety and traceability of products is important, but the processes involved to record information can be inefficient and difficult.

Increase animal productivity and resilience so that production animals deliver improved outputs and adjust to a warming climate and increased or new disease pressure.

Animal Health Industry Challenges

Antimicrobial and anthelmintic resistance is a global issue, with the New Zealand Animal Health Industry taking a pro-active lead in reducing the risk of resistance. The short term cost to the industry of good product stewardship is reduced product use, impacting revenues and profits.

Reducing industry waste is a significant issue and cost for the Animal Health Industry because it generates large volumes of plastic waste each year.

The cost of new innovation risks becoming uneconomic for the large multi-national companies because our pastoral sheep, beef and dairy systems are less common globally. New Zealand is a small market and our intellectual property and data protection laws are perceived to be less supportive than other jurisdictions.

Product registration processes are perceived by some businesses as costly and time-consuming and when combined with research and development costs do not provide enough 'pay-back' incentive to innovate.

Low awareness and perception of the Animal Health Industry and the value it offers may contribute to lower revenues if customers are more likely to perceive the industry and its products as a cost instead of enabling value.

Opportunities for the Animal Health Industry

Work together to educate farmers and pet owners on the judicious use of products by partnering with MPI, New Zealand Vet Association and other key partner channels.

Increase ease of product use by providing tools and technologies that enable precision animal management, increased traceability and easier farm assurance.

Provide preventative products that help keep animals healthy and detect infection early, to reduce AMR risk and preserve profitability, even if total industry revenues decline.

Reduce waste by taking advantage of the economies of scale within the industry to find recyclable packaging options when ordering.

Collaboration between organisations to problem-solve a collective list of packaging issues with biodegradable, recyclable or circular-economic solutions

Innovate, generate and register new products to grow the companion animal segment and capitalise on the increase in pet ownership, humanisation and increasing health spend.

Solve issues specific to pastoral farming systems and license and export them to the rest of the world.

Create an industry brand to tell the story of how the industry delivers value to New Zealand and its commitment to supporting New Zealand.

Government initiatives can provide opportunities for the Industry to grow and deliver more value to downstream industries and New Zealand

Government initiatives and requirements can be perceived as significant hurdles or even threats by some in the Industry, however, they can also provide opportunities for growth and increased Industry value to New Zealand.

Observed initiative	How could the Industry respond to support growth?
The Climate Change Commission's Draft Report suggests that stock numbers will need to decrease and production per animal will need to increase using existing solutions.	<ul style="list-style-type: none">- Present itself as one of the providers of existing and potential future solutions to help farmers achieve more output with fewer animals and contribute to New Zealand achieving the country's goals.- Collaborate with Government agencies and research partners to invest in developing new solutions to climate change challenges that are specific to New Zealand's key production animals (such as cows and sheep). Protect intellectual property, license and export solutions to relevant markets throughout the world (instead of being a price-taker for other countries that may develop solutions)- Encourage the sale and development of products that increase animal productivity and efficiency.- Support optimisation through precision management tools that will provide the necessary data and evidence to help the industry tell its own story and engage in regulatory discussions.- Find ways to help animals adapt to a changing environment i.e. a warmer climate.
National Environmental Standards (NES) for Freshwater requirements for farms could be extended beyond nutrient application to also cover animal health products and their potential impacts on freshwater.	<ul style="list-style-type: none">- Research the effects of animal health products on the environment i.e. how much product passes through/off the animal into the soil and water, and whether actives/molecules are bioaccumulating in the environment.- Focus new product development on products with high animal uptake rather than high amounts passing through the animal.- This information could then be used to develop solutions and/or prove the safety and sustainability of the product.

Observed initiative	How could the Industry respond to support growth?
Increasing intellectual property protections or extending durations to encourage innovation.	Extending protections and durations would be highly positive for large industry players yet negative for importers and manufacturers of generic medicines.
Continued increases in ACVM resources to reduce product registration times, simplify processes and maintain high standards.	<p>Significant industry growth and confidence would result from investing in the industry's regulator to maintain high standards with shorter product registration timeframes and simpler processes.</p> <p>New Zealand could increase its comparative position globally as a market to develop and test new products with a leading regulator.</p>
Global efforts to harmonise registration standards for veterinary medicines and enhance the ease of product registration.	Increasing the ease of product registration, exports and imports would have a positive impact on the value of the Animal Health Industry through direct sales volumes and lower commercialisation costs and complexity.
Trend to regulate based on public perception as opposed to a science or risk-managed approach	<p>A science-based or risk managed considered risk management approach to regulation would most greatly support industry growth.</p> <p>Regulation based on public perception alone has the potential to negatively impact industry growth.</p>
Debate on GMO technology to enhance food security and safety while facing climate change and increasing population numbers.	<p>A balanced discussion of the legalisation of GMO would have the potential to support the development new products that could solve current and emerging issues for animal health and welfare.</p> <p>GMO could potentially open up new opportunities for New Zealand companies to develop products for export to countries that accept GMO solutions.</p>
Investment in environment or system specific production systems	<p>Assess how farm systems change may impact the spread and prevalence of different diseases, and shift focus to meet these changes.</p> <p>The Poultry industry is an interesting example: rare poultry diseases that haven't been observed for some time are increasing in prevalence as more free range systems are used instead of cages – while there may be less transmission due to reduced proximity and intensity, the nature of the system may expose chickens to other diseases that require different Industry products.</p>
Te Taiao, organic regulation, and shift to regenerative systems	<p>Research the effects of animal health products on the environment i.e. how much product passes through/off the animal into the soil and water, and whether actives/molecules are bioaccumulating in the environment.</p> <p>Focus new product development on products that will meet organic requirements while providing positive impacts on animal health</p>

Summary: A small Industry delivering value for the benefit of New Zealand

Key finding on value

- The Animal Health Industry is relatively small when compared with the significant impact and contribution it makes to New Zealand.
- While economic value is comparatively small at an estimated and conservative value of \$430m in revenue and approx. 1100 employees, importantly, the industry underpins the productivity of many interconnected industries that collectively generate the majority of New Zealand's export revenue.
- The Industry indirectly supports human health in New Zealand and beyond through the nutrition provided by the food and protein outputs of the production industries.
- By improving the health of companion animals, the Industry also contributes to the mental and physical human health benefits pets provide, as well as the roles and impact working animals provide to society, such as biosecurity, police, disability and guiding services.
- In addition, the Animal Health Industry contributes many intangible benefits to New Zealand. These are valuable to many of the country's goals, such as achieving its climate change goals, reducing the risk of antibiotic resistance and preserving high levels of public health.
- There are many opportunities for the Animal Health Industry to maintain and grow its value to the country in the future.

Complications

- The Industry faces and perceives many challenges that negatively impact revenues and increase costs:
- Antimicrobial resistance efforts and precision-use of products lead to reduced revenues, while product stewardship and reducing wastage may increase costs.
- New Zealand risks being a low priority market for branches of multinational companies, including those that are the largest players in the New Zealand Industry.
- This could lead to lower innovation and fewer solutions to our specific problems. Smaller New Zealand businesses may not be able to afford the large R&D and registration costs and timeframes to make significant leaps forward on true new product development (beyond adapting or combining existing medicines for new purposes).
- The Animal Health Industry is not well understood – many interviewees (both internal and external) felt there was low awareness and therefore perception of the industry and the value it adds.
- However, many of these challenges present opportunities for the Industry to add more value to New Zealand.
- Taking action on these opportunities may have some negative impacts on businesses, which are outweighed by the long term benefits to the Industry, agricultural sector, economy and environment.

Further Considerations

- Agcarm is the natural leader to bring the Animal Health Industry together to collaborate, tell the Industry's story as well as continue its existing role influencing regulation.
- The Animal Health Industry should be supported, encouraged and enabled to grow the value it provides to New Zealand, despite the commercial headwinds the Industry faces.
- A science-based approach to regulation will enable the Animal Health Industry to deliver further value to the animal production industries by encouraging innovation. This would increase both the Industry's economic value and interconnected value.
- There is opportunity and value in conducting more detailed research and studies into the direct and indirect economic value of the industry. This could include econometric analysis of the industry's direct, indirect and interconnected value, such as assessing the economic impact of animal disease through both financial cost and productivity impacts on all of New Zealand's key production animal industries.¹

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