

THE NEW ZEALAND AGRITECH SECTOR

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Executive Summary

New Zealand has a long agricultural history with global success across many agricultural sectors, with particular strength in pastoral farming. The agricultural sector contributes over 50 percent of New Zealand's total exports, or some NZ\$30 billion in 2013.

New Zealand has strong capabilities across the entire agribusiness supply chain. However the area of agritechnology, or agritech, has previously been poorly defined, limiting any detailed analysis of this major sector.

This research remedies this situation by:

1. defining the trade codes (HS codes) that represent the agritech sector,
2. using the refined sector classifications to analyse New Zealand's key agritech export markets to develop an overview,
3. identifying significant areas of growth, and
4. providing a comparison with key competitor countries (Israel, Ireland and the USA).

The research provides a detailed analysis of the current size, value, and future potential of New Zealand's agritech sector.

Defining agritech

Eleven categories make up the agritech sector:

1. Breeding & animal genetics
2. Seeds and plant genetics
3. Animal feed and nutrition
4. Animal health products
5. Fertiliser
6. Agri-chemicals
7. Fencing supplies and equipment
8. Farm tools & other hardware
9. Pumping, water & irrigation
10. Machinery & systems, & parts, and
11. Farm vehicles, cultivators

These categories represent on-farm products and equipment that add value to pastoral agri-business. However the products traded within each code vary in their relevance to agritech. This is one of the unavoidable limitations of using trade codes. Codes described as "predominantly agritech" include 80% or more of farm based value-add products. Those described as "partial" represent between 20% to 80% agritech related products.

Growing exports

New Zealand's agritech export portfolio is robust. Exports are worth approximately **NZ\$1.2b** (US\$980m)¹ in 2013 within the potential range of NZ\$653m and NZ\$1.8b (US\$535m to \$1.5b).

The entire sector grew at **4%** per annum compounded annual growth rate over the past five years (CAGR², 08-13). Within the sector however, "predominantly agritech" grew at 9% while "partially agritech" products grew at 1%.

The key stand out category, in terms of the size of export market, is "Animal Health³" products, at NZ\$311m (US\$255m). New Zealand's disease status make medicaments sourced from New Zealand globally desirable. Following closely are "Fencing supplies and equipment" and "machinery and systems", each with NZ\$307m (US\$252m) worth of export sales.

Key growth categories are animal genetics, a NZ\$48m (US\$39m) category growing annually at 32% (CAGR); a result of recent live cow exports to China. Plant genetics are a NZ\$233m (US\$191m) category growing at 10% per annum (CAGR), including grass seeds and vegetables for sewing. Machinery and systems are growing at 8% (CAGR).

1. US\$ used document unless stated otherwise (USD to NZD converted at 1.22); 2. CAGR Compound Annual Growth Rate; 3. Contains some human medicaments (unable to remove at source at 6 digit level)

Comparing successful categories with those struggling to maintain their business identified five indicators for success:

1. difficult to replicate,
2. use of sophisticated technology,
3. protection by patents or IP,
4. a well-established and integrated skill set and
5. consumer willingness to pay a premium for quality.

By contrast, products and categories likely to struggle involve simple systems and manufacturing processes, unsophisticated technologies, or are low margin products.

Active Companies

New Zealand supports a broad range of agritech companies with varying degrees of export sales and markets. For example, New Zealand specialist seed companies AgriSeed and Carr Group grow and export seeds globally. Gallagher and Tru-Test export a broad range of fencing and monitoring systems. Simcro specialise in drench guns and injectors working closely with animal health companies and Waikato Milking Systems export milking systems, to name a few.

Agritech is an active industry. Companies are continuing to acquire new firms and make new investments. Five key drivers were behind these acquisitions:

1. the need to grow in scale,
2. to move into new products and product areas,
3. to adopt new technologies,
4. provide a wider offer to farmers, and
5. to enter new markets.

For example Tru-Test acquired Radian Technologies (the developer of MilkHub) to expand into the integrated dairy automation sector. GEA acquired Milfos, recognising New Zealand's strong position in dairy.

The need to maintain a comparative advantage by solving on-farm business problems is driving continued major investments in R&D. New products and technologies benefit New Zealand farmers with improved efficiencies and productivity, while decreasing costs. These solutions are also exported to the world.

An example is PGG Wrightson's new perennial ryegrass available with the AgResearch endophyte for insect resistance, thereby preventing grass staggers in sheep. Another example is Gallagher's ring top post that reduces tangling and therefore time spent moving stock. With farmers' continued willingness to spend money solving fundamental problems, the investment in R&D is likely to continue.

Expanding markets

New Zealand's agritech exports are heavily weighted to the Western markets of Europe, North America and Australia. These countries take about three quarters of all exports across the full gambit of categories.

Of these Western markets, NZ\$488m (US\$400m) (28%) is exported to Australia, NZ\$260m (US\$213m) is exported to the USA, and NZ\$89m (US\$73m) to the Netherlands (major entry point into Europe).

The USA market includes a significant volume of machinery and systems, in addition to fencing supplies. By contrast exports to Europe are mainly plant seeds. Another significant export market is China, with NZ\$90m (US\$74m) of mainly animal stock exports.

New Zealand's exports are growing, following a post-GFC fall. Exports to Canada stand out at an annualised growth rate of 24% (CAGR, 08-13), followed closely by China at 23% (CAGR), and South Korea 22% (CAGR). Exports to Saudi Arabia are growing at 10% (CAGR) predominantly within the animal feed category .

Strong competitor countries

A comparison between New Zealand's agritech exports and its key competitors (defined as Israel, Ireland and the USA) shows New Zealand is underperforming in size but is showing good growth. For example, Israel, a tiny desert state the size of the West Coast, exports approximately 10 times as much agritech as New Zealand.

The performance of key competitors in various exports markets points to four broad lessons on where New Zealand can drive more export value.

1. Rich, developed countries can be successful in agritech exports. The comparison with peers suggests a growth upside potential of 5-10 times the current value.
2. New Zealand's market mix is reasonably balanced, albeit weighted to Australia. Europe and North America stand out as having capability to take significantly more exports.
3. New Zealand is achieving good agritech export growth rates relative to peers, and appears to be 'on a roll' with agritech.
4. New Zealand has a robust product mix and most areas stand out as having strong growth potential.

Opportunities exist across a wide range of markets. Overall Europe, China and South America stand out as future growth potential. The removal of the dairy quota system opens up new opportunities across Europe. The constant need to increase farm efficiencies in South America drives export growth from New Zealand. The China-New Zealand Free Trade Agreement, plus China's sizable demand for meat and dairy products provides New Zealand agritech firms with a significant opportunity to be the "go-to" agritech solutions provider.

Background & Objectives

Definition of Agritech

Overview of export markets

Investigation of key growth areas

Overview of key competitive countries

Appendix 1 - Agritech HS code database

Appendix 2 - Brief profiles of key New Zealand agritech firms

Appendix 3 - Detailed category by country export data

Project background and objectives

BACKGROUND	OBJECTIVES
<ul style="list-style-type: none">- New Zealand has a long agricultural history based primarily on pastoral farming. Early Europeans cleared the land and grazed sheep, beef cattle and dairy cows. NZ's climate, soils and heritage results in NZ being the #1 global dairy supplier, and #2 sheep meat supplier. Pastoral farming is the focus of this report.- This is a system wide success story. New Zealand has strong capabilities across the entire Agribusiness supply chain: input providers, manufacturers of machinery and devices, scientists, educators, farmers, processors, retailers and agricultural services.- To maintain a comparative advantage in pastoral farming the industry is constantly looking to improve efficiencies and productivity while decreasing costs. Many companies provide on-farm products and services to support farmers and contribute to on-farm improvements. These companies range from genetics, to fencing solutions, from pasture monitoring sensing equipment to complete automatic milking solutions.	<p>For the purposes of this research we investigate products and companies that support the <u>on-farm</u> activities of <u>pastoral farming</u>.</p> <ul style="list-style-type: none">a) This report is not a strategy its key objective is to provide a <u>base set of data</u> and analysis to size NZ's Agritech export sector and to track its performance over time. To develop a <u>definition</u> for the NZ Agritech sector.<ul style="list-style-type: none">- Previous analysis used four digit trade codes- These had broad and sweeping coverage- As a result they captured significant amounts of non-agritech exports- Therefore a more refined sector classification was requiredb) Analyse New Zealand's key export markets.c) Understand and assess the Agritech global trade data with an indepth trade data assessment of three key competitor markets (Israel, Ireland and USA). Identify trends and potential opportunities for NZ companies.d) Understand global best practice using three case studies (CRV, GEA & DeLaval) to identify potential lessons and directions for NZ companies. Assess each companies history, key markets, patterns and growth trends (separate document).

There are known limitations to using the HS trade code

LIMITATIONS	HS CODES
<ul style="list-style-type: none">- Agritech is a cross-cutting sector, primarily agricultural, but can cross into other sectors. For example, NDA fabricate stainless steel for the dairy industry, as well as the oil and gas industries. Gallagher produce containment/security systems for farm stock as well as safari animals and prisons.- There is no defined sector called "Agritech" globally or nationally. There are no universally used trade codes (HS codes) or ANZSIC codes. Statistics New Zealand (SNZ) do not collect employment numbers, revenues or number of enterprises etc. for the sector.- Under New Zealand legislation company level New Zealand Customs data is <u>not publicly available</u> as a result we are <u>not able to directly match export values to particular companies</u>.- By combining NZ export data with company feedback we can determine which trade codes are within the defined universe. Some codes contain products 100% within our definition (e.g. dairy machines) and others will be somewhat relevant to Agritech (e.g. sprayers).- Service trade data is essentially <u>non-existent</u> at a detailed level and can not be analysed at the cross-country level.- The Netherlands is a major port for products into Europe, therefore its often the largest EU export destination, but not necessarily the end destination for the products. There is no way to track the movement of goods within the EU.- When comparing between countries US\$ are used.	<ul style="list-style-type: none">- Global trade is recorded and measured using the "Harmonized Commodity Description and Coding System", shortened to Harmonized System (HS).- This system came into effect in 1988 and is maintained by the World Customs Organization in Brussels, Belgium.- Codes are common globally at the 2, 4 and 6 digit level; beyond this individual countries can set their own sub-codes at the 10 digit level.- Sending country and receiving country trade codes are the same up to the 6 digit level, but will vary at the 10 digit level.- Therefore global trade can be compared at the 2, 4 or 6 digit trade code level, but not at the 10 digit level.- The codes are semi-regularly revised; products that did not exist (at any scale) when the codes were developed are generally caught in "catch-all" <u>other codes</u>, generally including the text nes (Not Elsewhere Specified); these nes codes are excellent markets for innovative products.- Often the values exported from a country <u>do not match</u> the importing country figure for a number of well understood reasons (either regulatory, tariff or competitive reasons or simply a mistake when setting them up).
	<h3>OUT OF SCOPE</h3> <ul style="list-style-type: none">- Off-farm industries (e.g. milk processing facilities, and factories).- Non-pastoral farming (e.g. horticulture, viticulture, aquaculture).- Interviews with companies exporting less than \$10m.

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PART 1 – DEFINITION OF AGRITECH

OBJECTIVE

Define agritech such that New Zealand's exports of these products can be measured and analysed

KEY OUTPUT(S)

List of trade codes that can be:

- Analysed individually to measure sector performance
- Analysed to identify key markets
- Analysed to identify trends
- Aggregated to provide a total "headline number" for the value of New Zealand's agritech exports

METHODOLOGY

- Analysis of detailed trade codes at global (HS6) and New Zealand specific level (HS10) level
- Analysis of trade data to scale relative size and importance
- Interviews with key industry participants to identify trade codes used by product category
 - CEO/MD for context
 - Logistics/export manager for detail

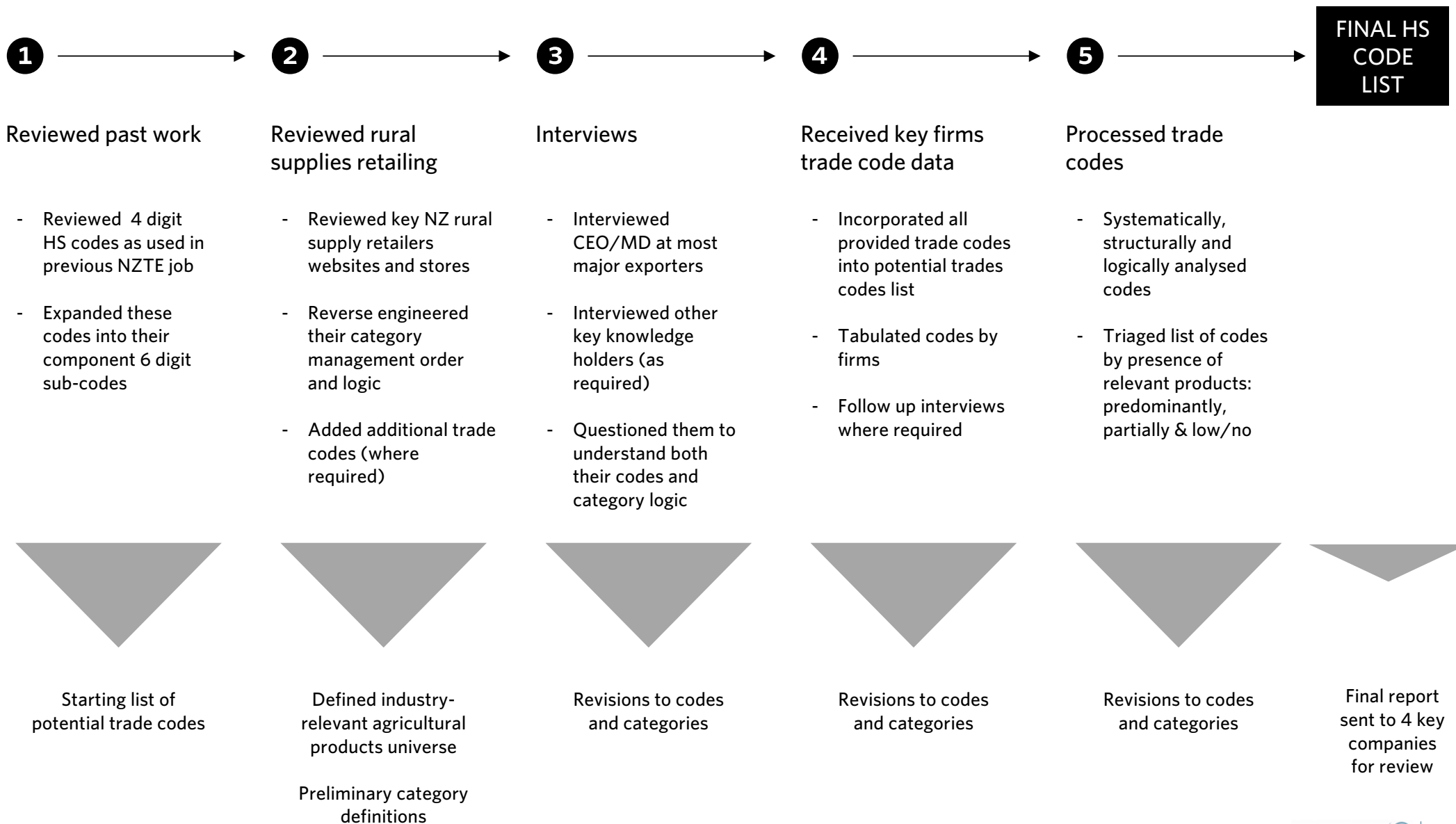
CHALLENGES/LIMITATIONS – HS CODES

- Global trade is recorded and measured using the "Harmonized Commodity Description and Coding System", shortened to Harmonized System (HS); this system was primarily driven by the US and Europe and came into effect in 1988 and is maintained by the World Customs Organization in Brussels, Belgium.
- Codes are common globally at the 2, 4 and 6 digit level; beyond this individual countries can set their own sub-codes at the 10 digit level. Sending country and receiving country trade codes are the same up to the 6 digit level, but will vary at the 10 digit level. Therefore global trade can be compared at the 2, 4 or 6 digit trade code level, but not at the 10 digit level.
- The codes are semi-regularly revised; products that did not exist (at any scale) when the codes were developed are generally caught in "catch-all" other codes, generally including the text nes (Not Elsewhere Specified) or nec (not elsewhere classified); these nes codes are excellent markets for innovative products.
- Products are classified by type and form (e.g. steel pipe) not specific use (e.g. irrigation) and certainly not end consumer usage (e.g. on a farm, in a restaurant, at a school). It is not a perfect system and was designed to assist in the application of tariffs not measure agritech (or any other industry for that matter).
- New Zealand legislation protects the privacy of firms export data. New Zealand export data can not be viewed or analysed at the individual firm level by anyone (not even NZTE).

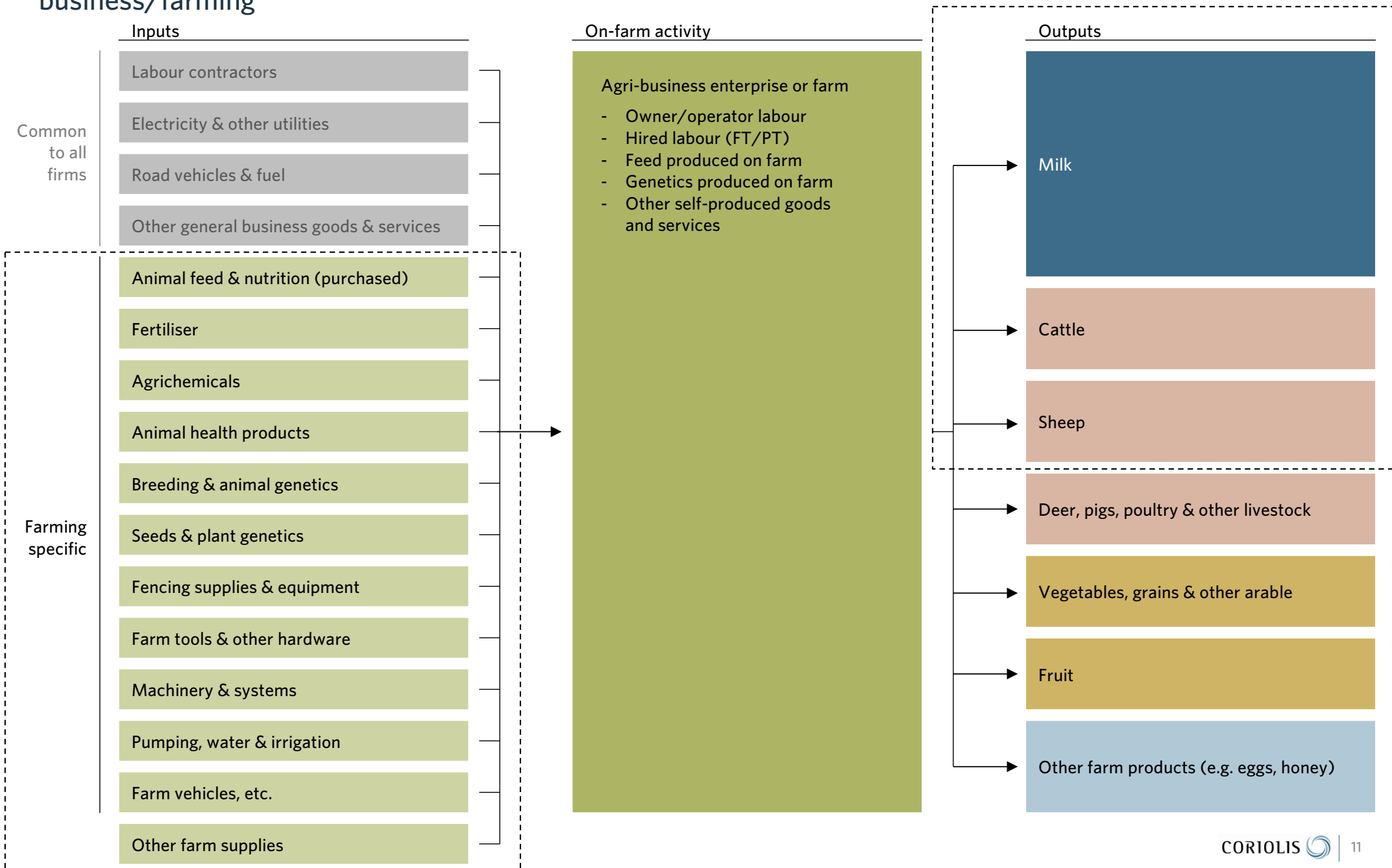
THEREFORE...

- Trade codes are defined at the six digit level as this is the lowest level that can be compared globally.
- As some trade codes include significant non-agritech exports:
- Trade codes where we believe 80%+ of the exports are non-agritech, are excluded. For example "HS490110 Brochures, leaflets and similar, in single sheets" is not defined as agritech.
- Trade codes where we believe 20-60% the category is agritech are included (though classified as partial). For example "HS842390 Weighing machine parts of weighing machinery" is classified as partially agritech.
- Trade codes classified as containing significant amounts of products used in agritech for New Zealand may not be primarily or predominantly agritech for other countries.
- All trade data should be read with extreme caution, particularly when drawing significant conclusions from non-NZ data.

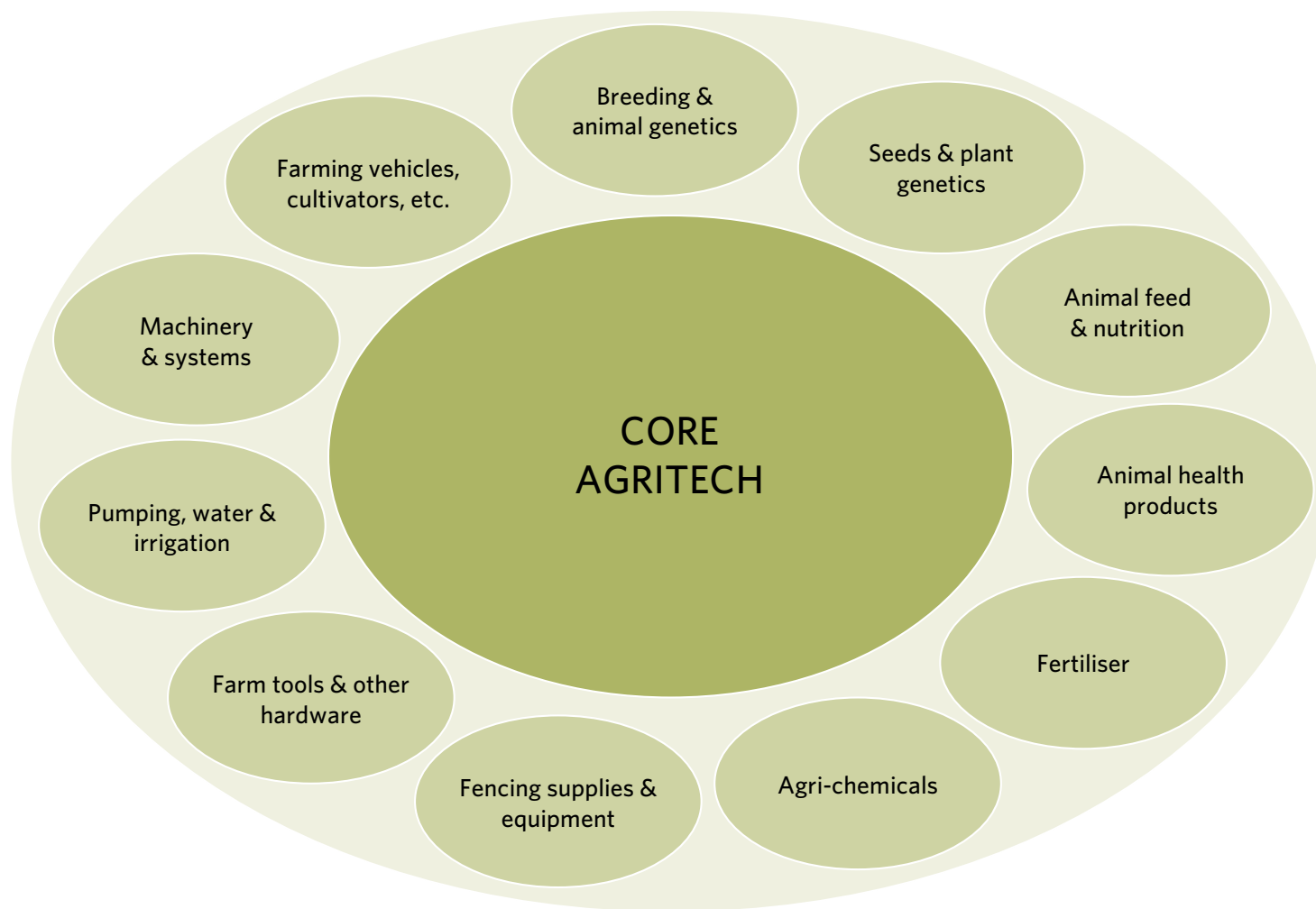
The final list of trade codes defined for use in this project were developed using the following process/methodology



This project is focused on looking at the farming-specific inputs that add value to pastoral agri-business/farming



At the “big picture” level, this project defines agritech as the following eleven broad categories of products



These eleven agritech categories are defined as follows...

Summary of key defined categories of Agritech 2014				
Category	Definition	Example firms	Major sub-categories	Overview of trade codes
Breeding & animal genetics	<ul style="list-style-type: none"> - Animals and semen used to create more animals - Genetics that provide higher animal productivity or yield 	<ul style="list-style-type: none"> - LIC (semen) - CRV (semen) - PGGW (live) - Elders (live) - Fonterra (live) 	<ul style="list-style-type: none"> - Breeding stock - Semen 	<ul style="list-style-type: none"> Parts of HS01 (live animals) Parts of HS05 (semen)
Seeds & plant genetics	<ul style="list-style-type: none"> - Plants and seeds used to produce more plants - Genetics that provide higher productivity or yield 	<ul style="list-style-type: none"> - PGG Wrightson Seeds - Agriseeds - Canterbury Seeds 	<ul style="list-style-type: none"> - Pasture - Cropping - Maize 	<ul style="list-style-type: none"> Parts of HS06 (live plants) Parts of HS07 (vegetables) Parts of HS10 (seeds) Parts of HS12 (seeds)
Animal feed & nutrition	<ul style="list-style-type: none"> - Purchased food for feeding to farm animals - Nutritional supplements for animals - Excludes horses or pets 	<ul style="list-style-type: none"> - NRM - Nutritech 	<ul style="list-style-type: none"> - Feed grains and seeds - Pig and poultry feed - Calf and dairy feeds - Liquid feeds - Salt blocks & minerals 	<ul style="list-style-type: none"> Parts of HS12 (fodder) Parts of HS23 (animal feed)
Animal health products	<ul style="list-style-type: none"> - Medicines used on farms to treat sick animals - Precautionary/preventative treatments used to prevent illness 	<ul style="list-style-type: none"> - Argenta - Simcro - Schering-Plough 	<ul style="list-style-type: none"> - Drench, dips, - Vaccines and penicillin - Endectocides 	<ul style="list-style-type: none"> Parts of HS 29 (antibiotics) Parts of HS30 (pharmaceuticals) Parts of HS40 (Gauze, etc.) Parts of HS9018 (Syringes)
Fertiliser	<ul style="list-style-type: none"> - Natural and synthetic soil additives used to increase fertility - Pure compounds and mixtures 	<ul style="list-style-type: none"> - Ballance - Ravensdown 	<ul style="list-style-type: none"> - Nitrogenous - Phosphatic - Potassic - Mixtures, blends, other 	<ul style="list-style-type: none"> All of HS31 (fertiliser)
Agri-chemicals	<ul style="list-style-type: none"> - Chemical products used predominantly in agriculture 	<ul style="list-style-type: none"> - Syngenta - Bayer CropScience - Donaghys 	<ul style="list-style-type: none"> - Glyphosates - Herbicides for pasture, crop and brushweeds - Other farm-targeted chemicals 	<ul style="list-style-type: none"> Parts of HS29 (chemicals)

These eleven agritech categories are defined as follows... *continued*

Summary of key defined categories of Agritech 2014				
Category	Definition	Example Agritech firms	Major sub-categories	Overview of trade codes
Fencing supplies & equipment	<ul style="list-style-type: none"> - Equipment used to construct on-farm fencing, either electric or not - Fixed or mobile units and structures - Excludes wooden fence posts 	<ul style="list-style-type: none"> - Gallagher - Tru-Test - Jenquip 	<ul style="list-style-type: none"> - Wire, tape & cable - Reels, parts, standards - Gates, etc. 	Parts of HS 39/56 Parts of HS72 (Iron/steel wire) Parts of HS85 (Electrical supplies) Parts of HS90 (Measuring equip.)
Farm tools & other hardware	<ul style="list-style-type: none"> - Wide range of farm tools and equipment - Excludes predominantly non-farm use products (e.g. hammer) - Excludes large machines or systems 	<ul style="list-style-type: none"> - Simcro - TePari - ISL - ZeeTags 	<ul style="list-style-type: none"> - Drench guns, applicators - Shearing equipment 	8201 (Hand tools, spades, etc.) 8203 (Files, rasps, etc.) 820559 (Other hand tools) 901831 (Drench guns, etc.)
Pumping, water & irrigation	<ul style="list-style-type: none"> - Parts and equipment used to create and maintain on-farm water systems - Excludes human toilet, bath and plumbing where possible 	<ul style="list-style-type: none"> - Williams - TePari - Technipharm - RXP - Hanes/ Anka 	<ul style="list-style-type: none"> - Commercial irrigation systems - Metal pipe fencing - Pipes and hoses - Valves and fittings - Culverts, troughs and tanks 	Parts of HS 39 (Tubes, pipes, etc.) Parts of HS 40 (Gaskets, washers) Parts of HS73 (Tanks, etc.) Parts of HS 82 (Tools, etc.) Parts of HS84 (Pumps)
Machinery & systems, & parts	<ul style="list-style-type: none"> - Large/complex on-farm machinery - Complete farming systems - Includes weigh machinery, sprayers - Dairy machines, equipment & systems - Excludes generic business equipment (e.g. photocopier) 	<ul style="list-style-type: none"> - Waikato Milking Systems - Milfos (GEA) - CSL - C-Dax - i-conix 	<ul style="list-style-type: none"> - Dairy systems - Weigh machines - Other 	Parts of HS84 (Machinery/systems)
Farm vehicles, cultivators, etc.	<ul style="list-style-type: none"> - Tractors and other farming vehicles - Cultivators, harvesters, seeders, spreaders, etc. - Excludes road cars, utes, motorcycles and quad bikes 	<ul style="list-style-type: none"> - Reese - Giltrap - Robertson - Rata 	<ul style="list-style-type: none"> - Cultivating - Planting & seeding - Harvesting - Sprayers - Hay and forage 	Parts of HS84 (Spreaders, etc.) Parts of HS87 (Tractors, etc.)

In deciding what was in and out in terms of a definition of agritech, trade codes were triaged into three broad categories defined as follows



	PREDOMINANTLY AGRITECH	PARTIALLY AGRITECH	NOT AGRITECH
DETAILS	<ul style="list-style-type: none"> - Trade code definition is fully in line with a common type of agritech - Product description may use phrase agriculture - Estimated 80% plus of items traded under code will be agritech 	<ul style="list-style-type: none"> - Trade code encompasses a large class of agritech (for New Zealand) - Estimated 20-80% of items traded under code will be agritech 	<ul style="list-style-type: none"> - Trade code is broad and encompasses numerous non-agritech products - Estimated less than 20% plus of items traded under code will be agritech
EXAMPLES	<ul style="list-style-type: none"> - 310310 Superphosphates - 380830 Herbicides - 842111 Cream separators - 843240 Manure spreaders and fertiliser distributors - 843410 Milking machines - 051110 Bovine semen 	<ul style="list-style-type: none"> - 294190 Other antibiotics not elsewhere specified (animal and human) - 392690 Other articles of plastic not elsewhere specified - 722300 Wire of stainless steel - 842320 Scales for continuous weighing of goods on conveyors - 901831 Syringes, w/wo needles - 903031 Other instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device, multimeters 	<ul style="list-style-type: none"> - 321000 Other paints and varnishes - 840220 Super-heated water boilers - 847180 Automatic data processing machine units (excl. of 8471.50-5471.70) - 853610 Electrical fuses, for < 1,000 volts

See Appendix 1 for complete Agritech HS code database

AGRITECH HS CODE DATABASE			
HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
292211	Monoethanolamine and its salts	PARTIALLY	Agri-chemicals
292212	Diethanolamine and its salts	PARTIALLY	Agri-chemicals
292213	Triethanolamine and its salts	PARTIALLY	Agri-chemicals
292229	Amino-naphthols and -phenols, etc... one oxygen	PARTIALLY	Agri-chemicals
292231	Amino-aldehydes, amino-ketones and amino-quinones; other than those containing more than one kind of oxygen function; salts thereof	PARTIALLY	Agri-chemicals
292242	Glutamic acid and its salts	PARTIALLY	Agri-chemicals
292249	Amino-acids and their esters, not >1 oxygen fun	PARTIALLY	Agri-chemicals
292250	Amino-alcohol/acid-phenols; amino-compounds wit	PARTIALLY	Agri-chemicals
293890	Glycosides and their salts, ethers, esters and	PARTIALLY	Agri-chemicals
230990	Animal Feed Supplement	PARTIALLY	Animal feed
121300	Cereal straw and husks	PREDOMINANTLY	Animal feed
121410	Lucerne (alfalfa) meal and pellets	PREDOMINANTLY	Animal feed
121490	Other forage products, nes	PREDOMINANTLY	Animal feed
230210	Brans, sharps and other residues of maize	PREDOMINANTLY	Animal feed
230230	Brans, sharps and other residues of wheat	PREDOMINANTLY	Animal feed
230240	Brans, sharps and other residues of other cerea	PREDOMINANTLY	Animal feed
230400	Oil-cake and other solid residues, of soya-bean	PREDOMINANTLY	Animal feed
230620	Oil-cake and other solid residues of linseed	PREDOMINANTLY	Animal feed
230641	Oil-cake & oth. solid residues, whether or not ground/in pellets, from extr ...	PREDOMINANTLY	Animal feed
230650	Oil-cake and other solid residues of coconut or	PREDOMINANTLY	Animal feed
230690	Oil-cake and residues, of other vegetable fats	PREDOMINANTLY	Animal feed
230800	Vegetable mats./waste/residues/by-prods., whether or not in pellets, of a kind used in animal feeding, n.e.s.	PREDOMINANTLY	Animal feed
10210	Live pure-bred breeding bovine animals	PREDOMINANTLY	Animal genetics
10410	Live sheep	PREDOMINANTLY	Animal genetics
51110	Bovine semen	PREDOMINANTLY	Animal genetics
294190	Other antibiotics, nes	PARTIALLY	Animal health
300290	Human and animal blood; microbial cultures; tox	PARTIALLY	Animal health
300339	Veterinary medicine (not put up in measured doses or in packings for retail sale)	PARTIALLY	Animal health
300390	Veterinary Products (Misc)	PARTIALLY	Animal health
300410	Medicaments cont. penicillins/derivs. thereof with a penicillanic acid structure/streptomycins/their derivs., put up in measured doses/forms/packings for R	PARTIALLY	Animal health
300420	Medicaments cont. oth. antibiotics (excl. of 3004.10), put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300431	Medicaments cont. insulin, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300432	Medicaments cont. corticosteroid hormones, their derivs. & structural analogues, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300439	Medicaments cont. hormones/oth. prods. of 29.37 but not cont. antibiotics, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300440	Medicaments cont. alkaloids/derivs. thereof but not cont. hormones/oth. prods. of 29.37/antibiotics, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300450	Medicaments cont. vitamins/oth. prods. of 29.36 (excl. of 3004.10-3004.40), put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300490	Medicaments (excl. of 30.02/30.05/30.06) consisting of mixed/unmixed prods. for therapeutic/prophylactic uses..., put up in measured doses/forms/packin	PARTIALLY	Animal health
300510	Adhesive dressings..., for medical... purposes	PARTIALLY	Animal health
300590	Wadding, gauze, etc with pharmaceutical substan	PARTIALLY	Animal health
401490	Hygienic or pharmaceutical articles of vulcaniz	PARTIALLY	Animal health
901831	Syringes, with or without needles	PARTIALLY	Animal health
300210	Antisera and other blood fractions	PREDOMINANTLY	Animal health
300230	Vaccines for veterinary medicine	PREDOMINANTLY	Animal health
391910	Self-adhesive tape, plates, strip..., in rolls,	PARTIALLY	Farm tools & other hardware
391990	Other self-adhesive plates, tape, strip, foil..	PARTIALLY	Farm tools & other hardware
392321	Sacks and bags (incl. cones) of polymers of eth	PARTIALLY	Farm tools & other hardware
392690	Other articles of plastics, nes	PARTIALLY	Farm tools & other hardware
401610	Articles of vulcanized rubber of cellular rubbe	PARTIALLY	Farm tools & other hardware
401691	Floor coverings and mats of vulcanized rubber,	PARTIALLY	Farm tools & other hardware
401699	Articles of vulcanized rubber, nes	PARTIALLY	Farm tools & other hardware
732619	Articles of iron or steel, forged or stamped, b	PARTIALLY	Farm tools & other hardware
732620	Articles of wire, iron or steel, nes	PARTIALLY	Farm tools & other hardware
732690	Articles, iron or steel, nes	PARTIALLY	Farm tools & other hardware
820310	Files, rasps and similar tools	PARTIALLY	Farm tools & other hardware
820320	Pliers (including cutting pliers), pincers, twe	PARTIALLY	Farm tools & other hardware

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PART 2 – ANALYSIS OF EXPORT STATISTICS

OBJECTIVE

Analyse New Zealand agritech export statistics to develop an overview of export markets

KEY OUTPUT(S)

- Analysis of trade data to provide export figures and growth rates (5 years)
- Identification/commentary on key trends
- Identification of major companies exporting over \$10m
- Acquisitions in the sector (3 years); commentary on acquisitions
- Commentary on key R&D areas as indicators for future growth

METHODOLOGY

- Detailed data analysis of defined agritech trade codes at HS6 level (as defined in part 1)
- Review of industry trade press, published articles and other sources
- Interviews with key industry participants (CEO/MD) to:
 - Support trend identification and analysis
 - Identify acquisitions

CHALLENGES/LIMITATIONS – HS CODES (Same as part 1)

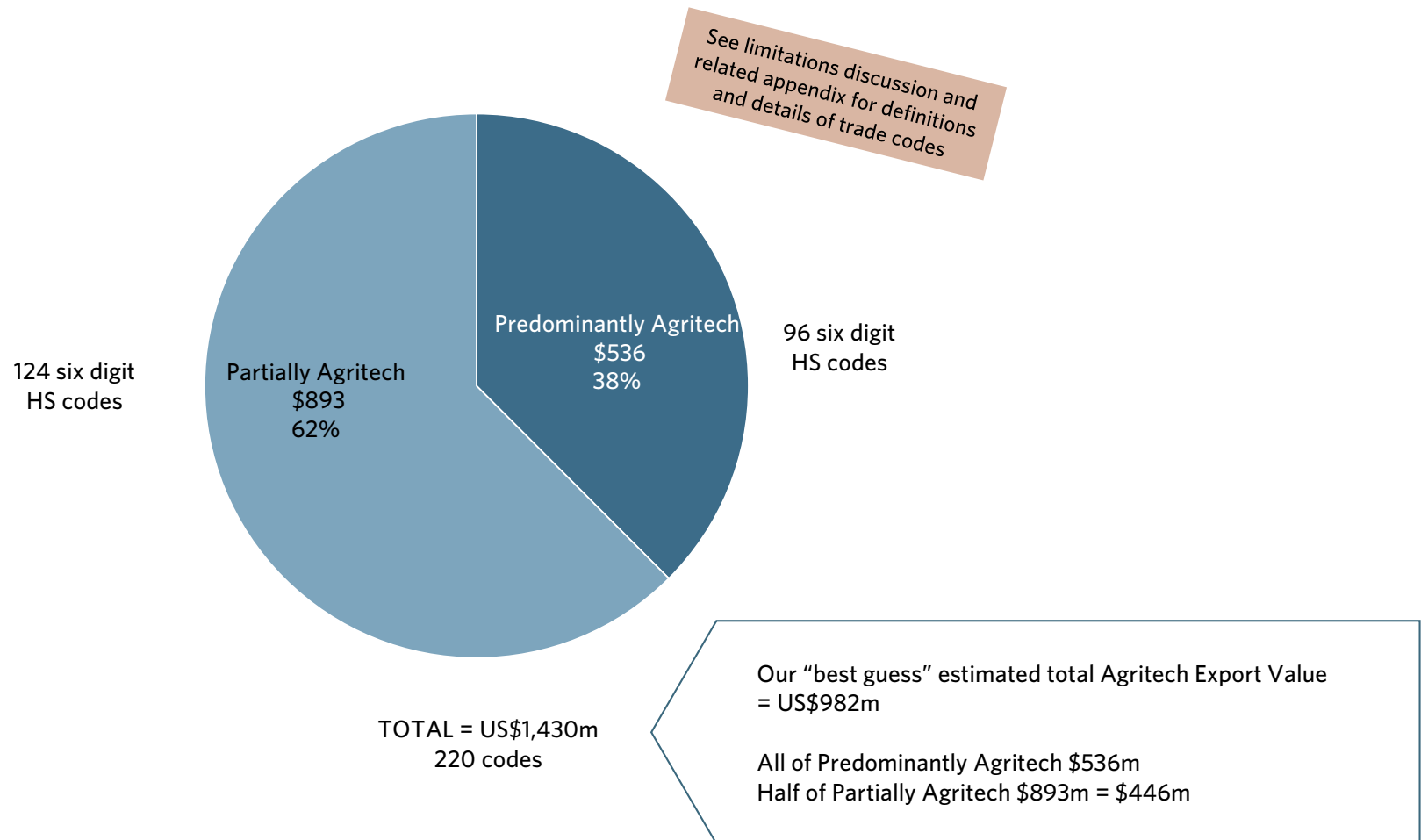
- Global trade is recorded and measured using the “Harmonized Commodity Description and Coding System”, shortened to Harmonized System (HS); this system was primarily driven by the US and Europe and came into effect in 1988 and is maintained by the World Customs Organization in Brussels, Belgium.
- Codes are common globally at the 2, 4 and 6 digit level; beyond this individual countries can set their own sub-codes at the 10 digit level. Sending country and receiving country trade codes are the same up to the 6 digit level, but will vary at the 10 digit level. Therefore global trade can be compared at the 2, 4 or 6 digit trade code level, but not at the 10 digit level.
- The codes are semi-regularly revised; products that did not exist (at any scale) when the codes were developed are generally caught in “catch-all” other codes, generally including the text nes (Not Elsewhere Specified) or nec (not elsewhere classified); these nes codes are excellent markets for innovative products.
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- New Zealand legislation protects the privacy of firms export data. New Zealand export data can not be viewed or analysed at the individual firm level by anyone (not even NZTE).

THEREFORE... (Same as part 1)

- Trade codes are defined at the six digit level as this is the lowest level that can be compared globally.
- As some trade codes include significant non-agritech exports:
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- Trade codes where we believe 20-60% the category is agritech are included (though classified as partial). For example “HS842390 Weighing machine parts of weighing machinery” is classified as partially agritech.
- Trade codes classified as containing significant amounts of products used in agritech for New Zealand may not be primarily or predominantly agritech for other countries.
- All trade data should be read with extreme caution, particularly when drawing significant conclusions from non-NZ data.

Interviews and data analysis identified a total of 220 codes as containing significant agritech exports; these were classified into products that were predominantly (80%+) agritech and partially (20-80%) agritech

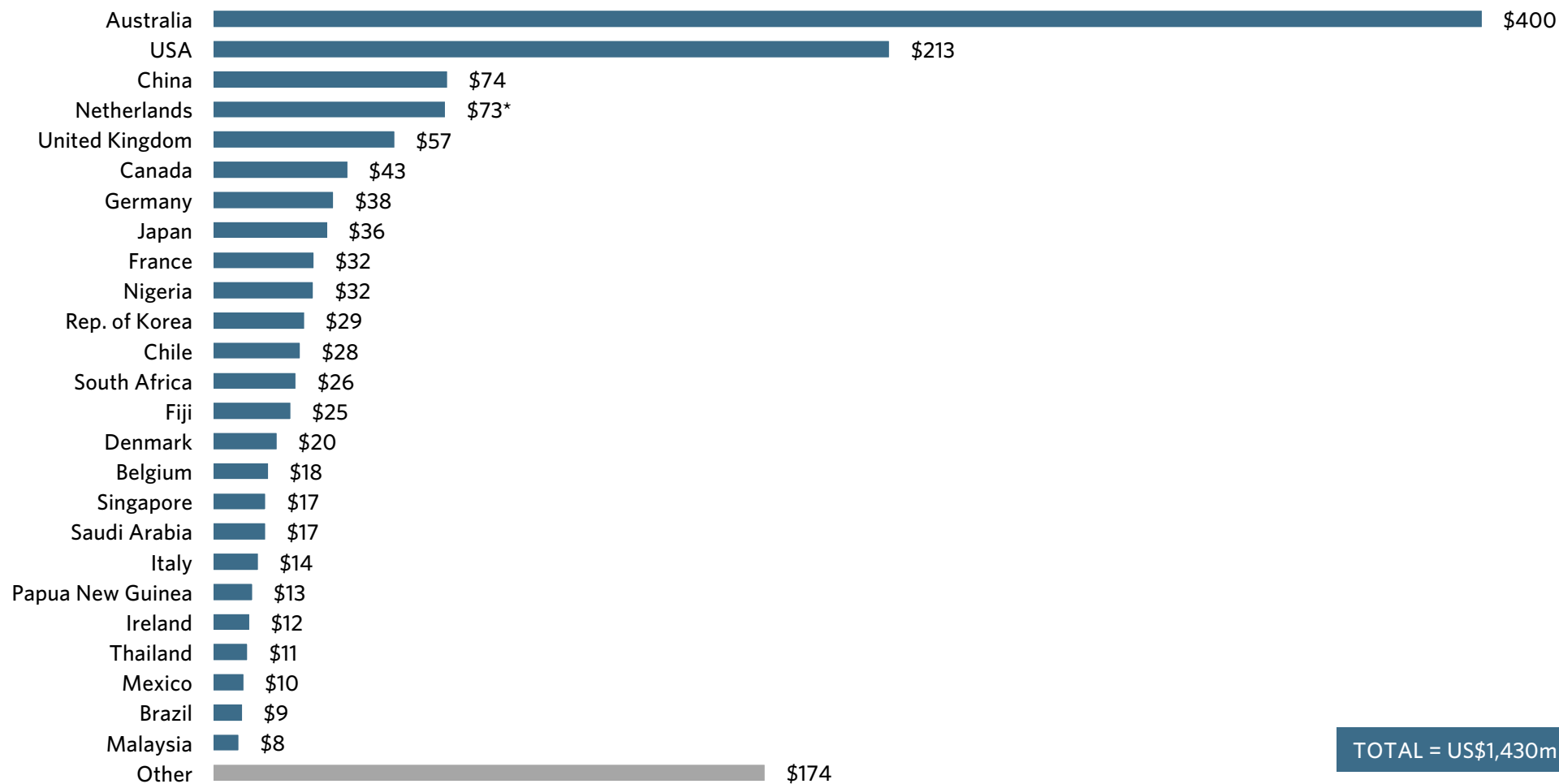
New Zealand agritech exports by type of HS trade code
US\$m; FOB; 2013



Australia and the USA lead the top 25 markets for New Zealand agritech exports in terms of value

Top 25 country destinations for defined agritech exports from New Zealand

US\$m; FOB; 2013



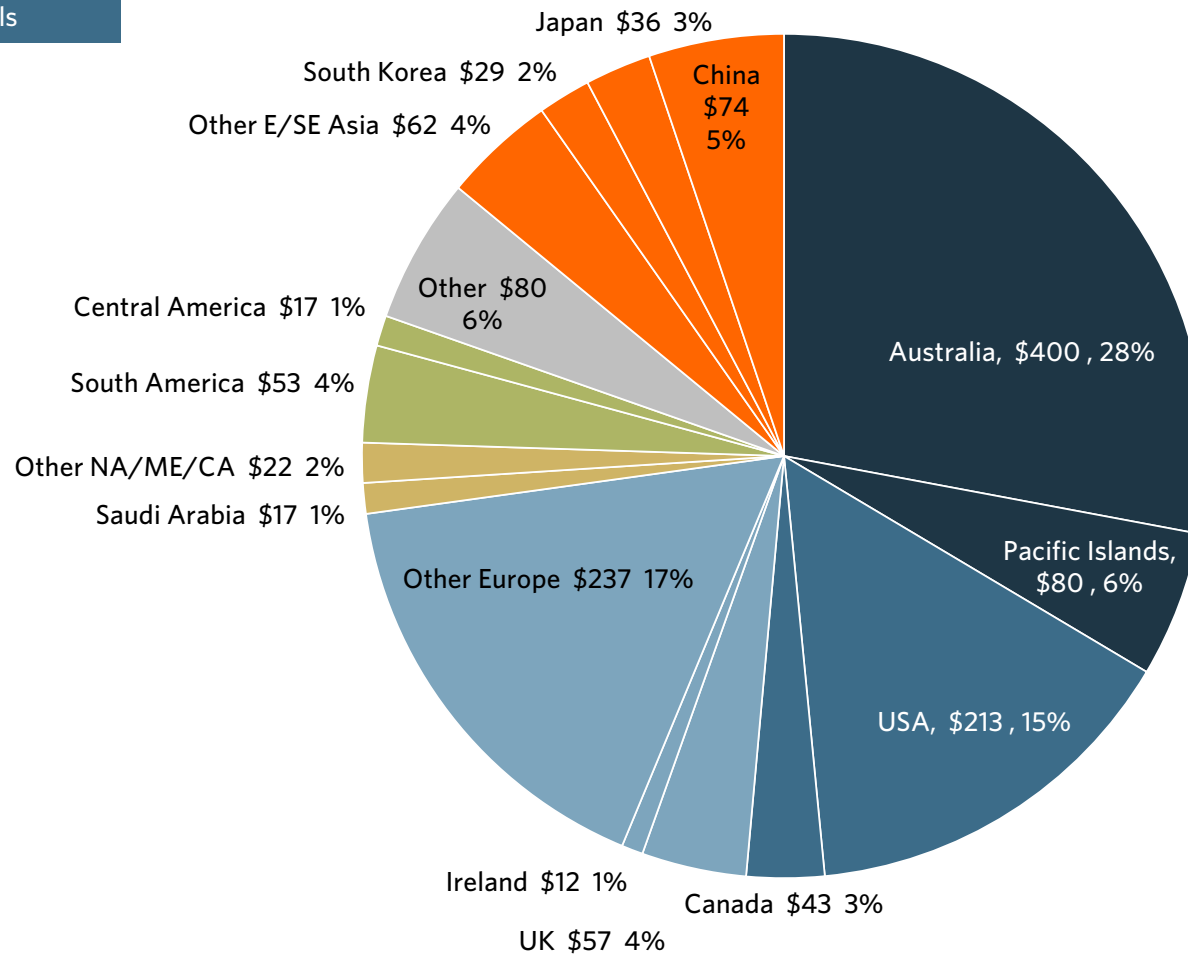
* Netherlands is a major port for products into Europe, therefore it's often the largest EU export destination but not necessarily the end destination for the products; however the movement of goods within the core Continental EU is opaque and difficult to track; Source: United Nations Comtrade database; Coriolis classifications and analysis

New Zealand sends agritech exports worldwide, though with particular strength in Australia, the Pacific Islands, North America and Europe

Destinations for defined agritech exports from New Zealand by select key country and region

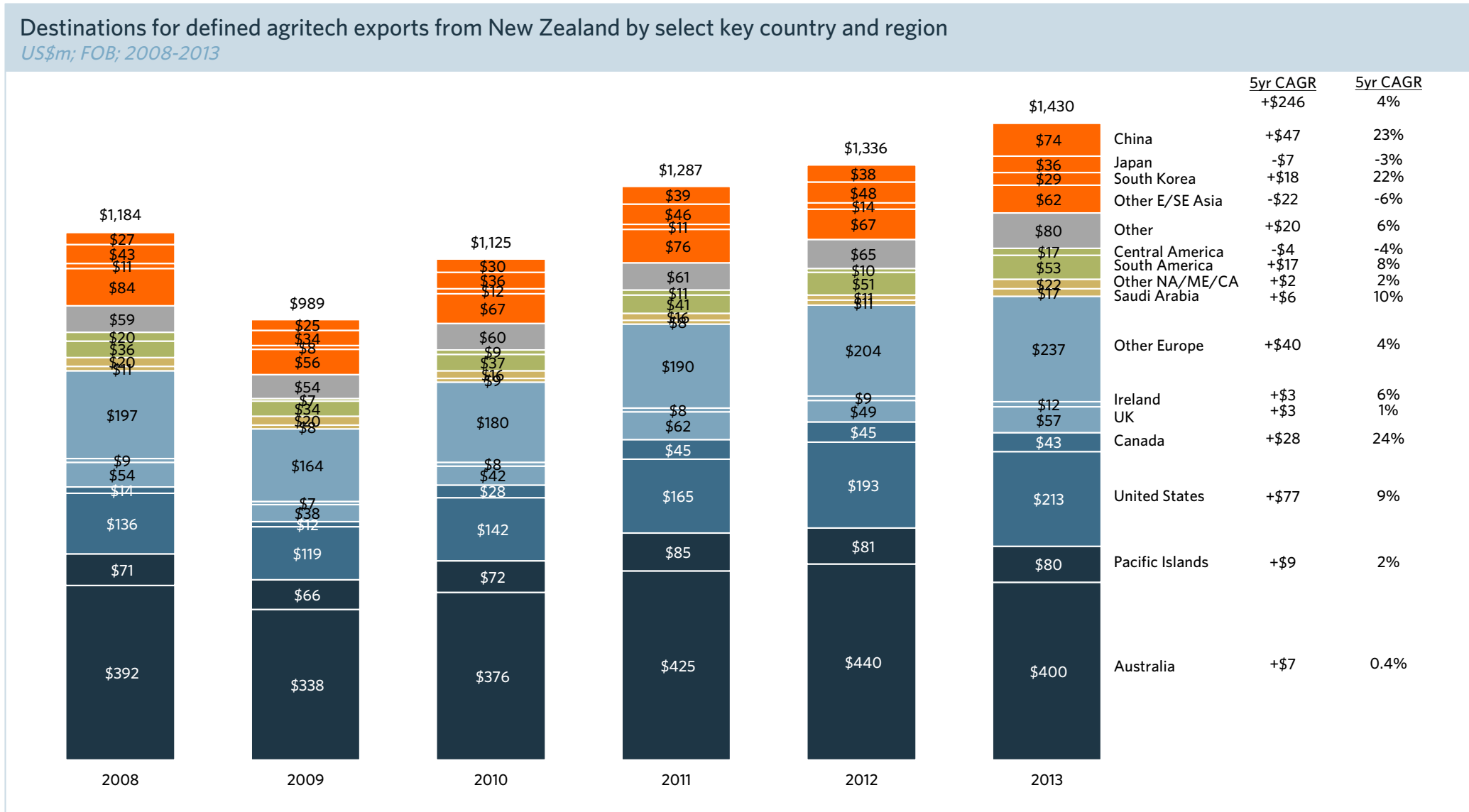
US\$m; FOB; 2013

See previous page for country details



TOTAL = US\$1,430m

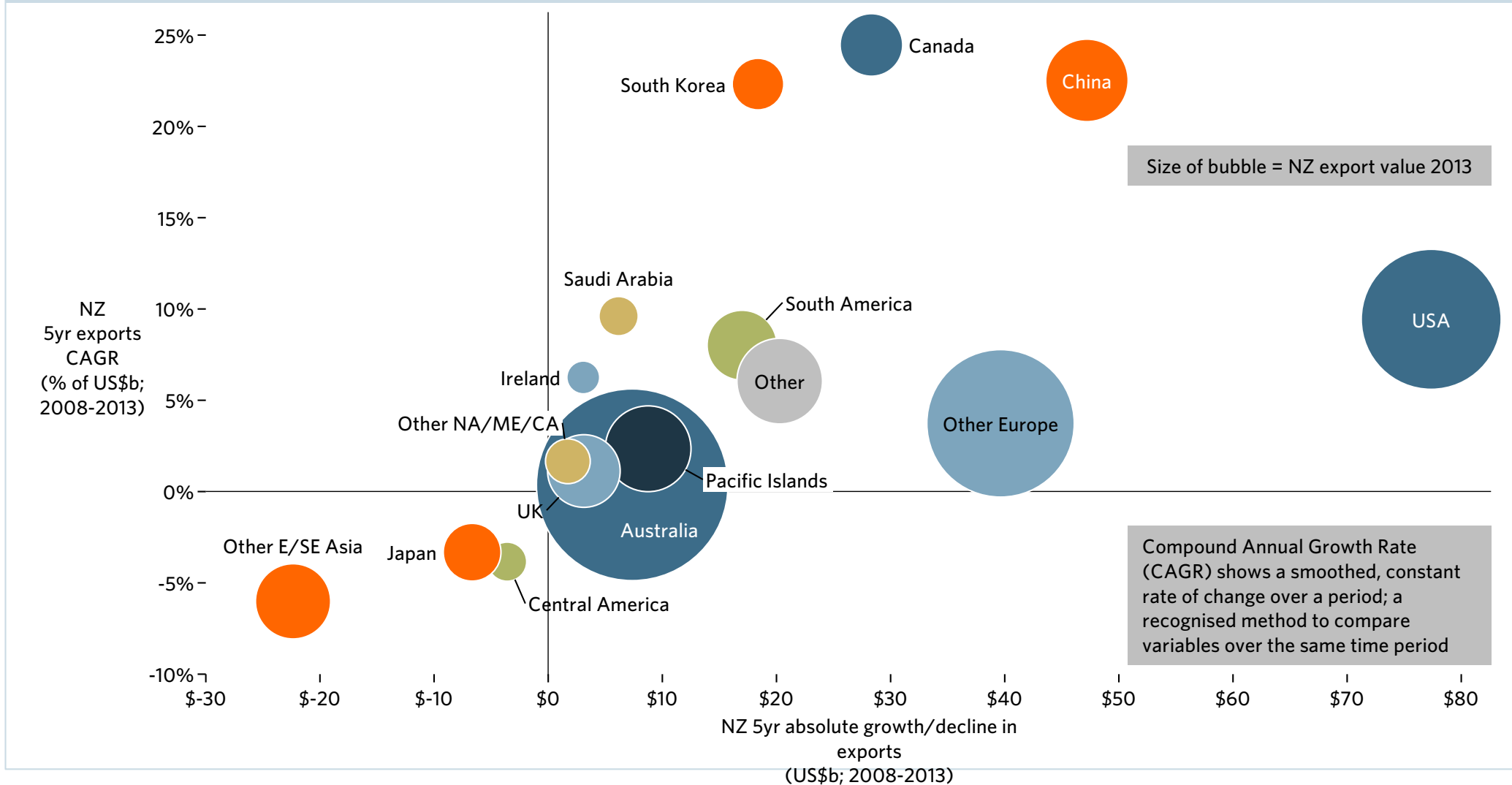
Following a post-GFC fall, New Zealand's agritech exports are now growing across a range of markets



Note: NA/ME/CA = North Africa/Middle East/Central Asia; Source: United Nations Comtrade database; Coriolis classifications and analysis

Growth is coming from North America, Europe, South Korea, China, Saudi Arabia and South America

EXPORT GROWTH MATRIX: New Zealand's 5y absolute export value growth vs. 5y CAGR¹ export value growth vs. export value in 2013
 US\$b; 2008 vs. 2013



Note: NA/ME/CA = North Africa/Middle East/Central Asia; Source: United Nations Comtrade database; Coriolis classifications and analysis













Opportunities exist across a wide range of markets, however Europe and South America stand out

Identified key agritech market trends

2014

Region	Overall	Situation	Opportunity	Challenges
Australia	5	Temperate climate pastoral farming with similar systems to New Zealand; moving towards intensive barn/feedlot systems. Sales across a broad base of products.	<ul style="list-style-type: none"> - Treat as a single market with New Zealand - Continue to grow and build - Technology-based integrated systems 	<ul style="list-style-type: none"> - Mature , highly competitive market - At New Zealand systems and technology - Strong domestic and European competition
Europe	0	Traditionally small herds and small scale farming using barn systems; high technology throughout farm, driven in part by subsidies. Highly regulated in terms of animal welfare, waste management, energy use, etc. Major changes to quota system coming in 2015 create opportunities.	<ul style="list-style-type: none"> - Removal of CAP quota system - Likely scale up and production increases in some areas, particularly in Ireland & Northern Europe - Difficulties in getting on-farm labour leading to increased automation - Willing to pay for high quality products - Food safety a hot button issue - New Zealand has a very positive reputation in EU 	<ul style="list-style-type: none"> - Highly regulated - Distance to market - Very strong domestic competition - Mostly not using true NZ -style pastoral system
South America	0	Large regions in some countries are highly suited to New Zealand style pastoral systems. Low general level of development, but changing quickly. Strong sales in machinery and rye seeds.	<ul style="list-style-type: none"> - Growth in corporate farming - Leading firms adopting global best practice - Highly suited to New Zealand pastoral systems - First mover advantage to position NZ as leader 	<ul style="list-style-type: none"> - Political and economic instability - Lacks robust, highly developed farming system - Price sensitive driven by relatively low returns
North America	0	Northern and Western regions using large scale feedlot systems; some Southern regions suits pastoral systems. Large, sophisticated and competitive market. Strong existing sales across a broad category base (e.g. electric machines and parts, agricultural machinery, blood, static converters, plastics)	<ul style="list-style-type: none"> - Large market can absorb high volumes - Easy to do business (legal, language, etc.) - Specific niche areas with differentiated NZ product - Will pay premium for quality 	<ul style="list-style-type: none"> - High sales/service level expectations across large geography; expectations of local presence - Competitive and price driven due to large firms producing and importing/exporting at scale
East Asia/China	5	Handful of large feedlot farms at global scale; vast majority of farms tiny, sub-scale and low sophistication; still widespread subsistence agriculture. NZ sending live cows for breeding to China. Seeds and static converters to South Korea.	<ul style="list-style-type: none"> - Continued growth of Chinese large scale agriculture - New Zealand's free trade agreement with China - Potential reform of Japanese agriculture 	<ul style="list-style-type: none"> - Price sensitive and highly competitive - Not traditional dairy and pastoral farmers - Many markets are high regulated
Middle East	5	Rich countries operating highly sophisticated, energy intensive feedlot/barn based systems. Other countries low scale/sophistication traditional systems. High volumes of animal feed.	<ul style="list-style-type: none"> - Food security a hot button issue in many countries - Improving efficiency and cost competitiveness 	<ul style="list-style-type: none"> - Political and economic instability
Other	\	Wide range of small markets exist worldwide, though most are not in the temperate climate zone, and so use tropical or arid farming systems	<ul style="list-style-type: none"> - Small unsophisticated markets can be highly profitable (albeit at low volumes) with a low cost to serve and strong distributors 	<ul style="list-style-type: none"> - Increases complexity and cost with low sales volumes

New Zealand Agritech firms are operating domestically and exporting globally

Agritech exporting firms in New Zealand				
<i>NZ\$m; 2013 or as available</i>				
Firm	Export (NZ\$m)	% Export	Turnover (NZ\$m)	Business description
	~\$200-220	~20%	\$1,130	Private company (NZ/Sing); 40% sales in retail (supplying range of products and services), significant seeds & grains, stock, irrigation, wool operations . Operate also in AU and Latin America
	\$150	80%*	\$187	Private NZ owned company, agriculture 60% sales, covering broad range of farming equipment, but specialise in electric fencing & gates, security systems, petrol pumps, tools, electronic weighing /ID
	\$75	70%	\$107	Public unlisted NZ agritech business providing a range of on-farm tools, technology and services (weighing and ID systems, milk meters, dairy auto'n and online herd mngt, milk cooling sol'ns, fencing
	\$60-70*	80%*	\$85	Owned by Barenbrug (Netherlands) a global seeds company operating across 16 countries
	\$40-\$55*	50-70%*	\$77m	Division of Merck & Co. (\$US20b pharmaceutical Co). Manufactures vaccines in NZ incl. "Coopers"
	\$20-\$30*	30-50%*	\$63	Private NZ company: Animal Health, drug development and production, operations in NZ and USA
	\$26	3%	\$878	Farmer owned Co-operative (18,500 members); fertiliser manufacturer, plus animal feed and AgHub technology
	\$20 ¹	~20%	\$280-\$300	Private NZ owned company, diversified agriculture covering imports (Lely milking machines), plus grain, seed production (recent acquisition of Elders NZ), farm machinery, honey, wool, property etc.
	\$19	90%	\$21	USA PE investors and NZ individuals operate the Animal health delivery systems company (drench guns, injectors)
	\$18	15-20%	\$80-100	Iwi owned NZ company; specialise in automatic and manual milking systems and associated dairy equipment
	\$14	7%	200	Farmer owned Co-op, exports primarily semen (+ dairy products to UK, Ireland)
	\$14	18%	\$50-100	Privately owned company pasture management, animal health, rope and cordage, packaging
	\$800-\$900m		~\$3b	

The New Zealand agritech sector is experiencing an ongoing series of acquisitions...

Identified acquisitions in the New Zealand agritech sector

2012 - mid 2014

Acquirer	Target	Price	Date	Details
Carr Group	Elders Rural Service	n/a	June 2014	- Wool and livestock, farm supplies & rural insurance from Elders Australia, including 50% share of Elders Primary Wool
Datamars	Zee Tags	n/a	Mar 2014	- Datamars global Swiss Company - supplier of RFID-based solutions, employing 700 people, #2 globally in tags acquires Zee Tags (Auckland)
LIC	Dairy Automation Limited (DAL)	n/a	Mar 2014	- DAL manufactures sensor technology for the real time (on farm) analysis of milk. Complementary service to LIC herd testing and farm automation and tracking products
Iwi and others	Waikato Dairy Systems	n/a	Mar 2014	- 32% each NgaiTahu, Tainui & Pioneer Capital, 4% Management - Iwi upstream investments into manufacturing; supporting their new dairy farm investments
Farmlands Coop	NRM Feeds	n/a	Sept 2013	- Farmlands buys feed company; manufactures bulk and bagged feed from feed mills throughout NZ. Fit into Farmlands animal health strategy; ABB bought NRM in 2009 for A\$32m
Ballance Agri-Nutrients	SealesWinslow	n/a	2013	- Acquire remaining 49% share (taking share to 100%), of feeds and nutrition company
PGGWrightson	Alfalfare	n/a	2013	- Fully acquired JV vertically integrated seeds partner in Argentina
The Riverside Company	Simcro	Sales \$24m	Jul 2013	- Riverside a global Private Equity company acquired 75% Simcro - Waikato based, animal health delivery system company, 80 staff
Tru-Test Group	Dairy Technology Services (from NDA Group)	\$73m	Feb 2013	- Tru-Test acquired milk cooling and storage business DTS integrating specialised stainless steel manufacturing with nationwide install, service and support capabilities
Tru-Test Group	Radian Technologies	n/a	Dec 2012	- Milk Hub dairy automation and technology platform; Acquisition provides integrated support for dairy farmers
GEA Farm Technology GEA Group Aktiengesellschaft (Germany)	Milfos International Gp	~\$15m	Nov 2012	- Dairy: milking, cooling, stalling and automation solutions company; precision stainless steel manufacturing and into electronics, plastics and mild steel products. - Milfos export to 20 countries, 100 employees
Ballance Agri-Nutrients	Farmworks Systems Ltd/Ag Hub	n/a	2012	- Acquires 100% (after acquiring 51% in 2011) of precision agriculture technology company Ag Hub; enables complete management of nutrients on farm + measure, control and monitor water, irrigation, effluent, soil moisture and weather conditions
CRV Ambreed	Liberty Genetics	Sales \$1.7m	Jul 2012	- Increases share to 100% - CRV International acquire niche Holsten and Jersey breeding company

Source: various annual reports; various published articles; interviews; Coriolis analysis

The New Zealand agritech sector is experiencing an ongoing series of acquisitions... *continued*

Identified acquisitions in the New Zealand agritech sector

Late 2009 - 2011

Acquirer	Target	Price	Date	Details
Ravensdown	Aerial Sewing Ltd	n/a	Sept 2011	- Further 25% stake in shares taking holding to 100%, 2 top dressing planes
Ravensdown	Taumaraunui Aerialcoop	\$3.2	Jun 2011	- 2 topdressing planes
PGG Wrightson	Southedge Seeds	n/a	May 2011	- Tropical pasture and seed growers, harvestors, dryers, cleaning Co.
Ballance Agri-Nutrients	Seales Ltd + Winslow Feeds and Nutrition	n/a	May 2011	- Created SealesWinslow 51% ownership by Ballance, 49% shareholders of the two companies
Ravensdown	C-Dax	\$5.3m+	2011	- Nutrient company added C-Dax with its control equipment the "smart controller" and ATV accessories to portfolio to assist in pasture management
TePari	Racewell	n/a	2011	- Acquired "Racewell" the stockyard handling systems company following acquisition of Donalds Woolpress in 2004
Ravensdown	Cropmark	\$6.2m (over 4 yrs)	2011	- 25% investment, strategic partnership Ravensdown wanting to be involved with farm inputs that contribute to pasture performance
GEA Farm Technology GEA Group Aktiengesellschaft (Germany)	FIL (Farmers Industries Ltd)	\$7.5m	Aug 2010	- Acquired its subsidiary - Chemicals and Consumables agricultural company (dairy sprays, detergents, tailpaints) - Aim to use network to accelerate international sales of FIL
PGG Wrightson	Corson Maize	n/a	2010	- Acquired maize business from Corson Grain Ltd based in Gisborne (sources maize and corn seed)
PGG Wrightson	Keith Seeds Ltd	n/a	2010	- Seed supplier based in South Australia (global exports)
Agria Singapore Pte (NZSE:GRO) (Agria Corp, 81%, New Hope Gp 12%, Ngai Tahu 7%)	PGG Wrightson	~\$36m ~\$140m	Oct 2009 Feb 2011	- 13% stake in PGGW - Increase share to 50.2% in 2011 for ~\$140m - Aim to increase share in seed market - PGGW operations in China, NZ and Australia)

Agritech acquisitions are being driven by a range of forces

Forces driving acquisitions in the agritech sector and commentary on these

2014

Type	Detail	Key driver(s)	Examples
Growing scale	Increase scale of existing business	<ul style="list-style-type: none"> - Seeking economies of scale - Reducing costs by spreading fixed costs and overhead - Increasing capacity utilisation 	<ul style="list-style-type: none"> - Ballance buying SealesWinslow - GEA buying Milfos & FIL - Winslow buying Elders NZ - CRV buying Liberty Genetics - Ravensdown acquiring sewing planes - Tru-Test buying DTS
New products & categories	Move into new products and product areas	<ul style="list-style-type: none"> - Diversify away from low growth (but often highly profitable) core activities - Move into new, emerging high growth categories 	<ul style="list-style-type: none"> - Tru-Test buying DTS - LIC buying Dairy Automation Ltd (increase automation capabilities)
Acquire technology	Buy critical or important technologies	<ul style="list-style-type: none"> - Product or industry change leading to increased role of new technologies - Key technologies for growth protected by patents or other IP (or just difficult to do well) 	<ul style="list-style-type: none"> - Tru-Test buying Radian - LIC buying Dairy Automation - Ballance acquiring Farm Works Systems
Widen offer/complementary categories	Make a more complete offer to consumers	<ul style="list-style-type: none"> - Buyers seeking "one-stop-stop" solutions - Desire to be full service provider to customers - Category increasing integration and complexity 	<ul style="list-style-type: none"> - Ravensdown buying C-Dax - Farmlands buying NRM
Entry or expansion into new markets	Move into new geographic markets	<ul style="list-style-type: none"> - Diversify away from low growth (but often highly profitable) core markets - Move into new, emerging high growth countries or regions 	<ul style="list-style-type: none"> - Datamars (Swiss) buying Zee Tags (NZ) - PGGW acquiring Alfalfare (Argentina) - Argenta acquires

Firms involved in the New Zealand agritech sector continue to make major investments in growth

Identified major investments in the New Zealand agritech sector

Late 2010 - 2013

Acquirer	Investment	Date	Region	Details
LIC	\$18m	2013	NZ	- Software automation products
Ballance Agri-Nutrients	\$2m	2013	NZ	- Annual investment in R&D
Ravensdown	\$12m	2013	Sth Isl, NZ	- R&D to develop precision fertiliser application for hill country farmers (\$5.1m from Govt as part of PGP)
Ravensdown	\$40.5m	2013	Sth Isl, NZ	- Acquisition of property, plant and equipment (AR2013) - e.g. Awatoto acid plant invested \$10.7m in replacing equipment
AsureQuality	n/a	2013	China	- Collaborative framework agreement signed with COFCO and Mengniu Dairy Company- investigating China NZ Agribusiness service
SealesWinslow (Ballance)	n/a	Aug 2013 opened	Wanganui	- New milling site (#3), revamped August 2013, capable of 12-15t/hr - Mill in Morrinsville in 2007 Cap val \$16m), - Further investment in mill 2009 \$1.6m to grow capacity 30%
LIC	\$10m	2011	NZ	- Loaned Agria Singapore \$10m in support of further acquisition of PGGW (aim to improve grass seeds for NZ farmers)
Argenta	\$500k	Aug 2011	USA	- New animal health R&D facility at Kansas City Animal Health Corridor, \$500,000 in investment in equipment
Giltrap Engineering Ltd	n/a	2010	NZ	- Upgraded factory to 5,500m ²
Ballance Agri-Nutrients	\$2m	2013	NZ	- Annual investment in R&D
Ravensdown	\$12m	2013	Sth Isl, NZ	- R&D to develop precision fertiliser application for hill country farmers (\$5.1m from Govt as part of PGP)
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The agritech sector is constantly launching new products that are the result of extensive research and development activities



“EXTREME™ perennial ryegrass is available with the AgResearch endophyte AR37. AR37 offers to EXTREME™ the benefits of superior insect protection compared with any other current commercially available endophyte. Through inoculation with AR37, EXTREME™ pastures will have resistance against Argentine Stem Weevil, Black Beetle, Pasture Mealy Bug, Root Aphid and Porina.”

PGG Wrightson Seeds website



“Features
 ELIMINATE SHORTING AND PREVENT WEARING THROUGH Super tough over-moulded GF nylon head
 SIGNIFICANTLY REDUCED TANGLING Unique head centred over shaft with no protrusions or trapping points
 STRONG SHAFT AND SHOCK PREVENTION Long insulation sections strengthen shaft and provide insulation when handling
 TOUGH, UNBENDABLE FOOT PLATE Over-moulded GF nylon foot design will not bend or deform. Can withstand 200 kg of pressure
 EASY TO USE Blade design prevents rotation and eases install in hard ground as well as minimising tangling points. Flat section holds wire/tape down when crossing fence”

Gallagher website



“Visible and audible heat detection support for better mating results

Worried about empty cows and extended calving? Does the idea of additional ‘eyes’ to help identify heats and improve submission rates appeal?

Tru-Test’s MilkHub Heat Detection module offers peace of mind that you are getting it right and your breeding programme is on track.

Using proven overhead scanning technology and self adhesive reflective rub-patches, the automated heat detection system will significantly help by alerting you to standing heat signs in your cows.

MilkHub Heat Detectors also work as a standalone visual aid for heat detection.”

Tru-Test website

R&D and new product development in agritech is being driven by farmers being willing to spend money on solving their business problems; the fundamental nature of the problems means this is unlikely to change

Business problems that are driving agritech firms R&D and new product development activities				
<i>Model; 2014</i>				
Business problem		New product R&D development objective	Driver: Farmers will spend money as they are seeking to...	Examples
Constant competitive pressure on prices in the market		Better farm management	Make better decisions faster Have a system that is easy and works Not spend time dealing with problems Use technology to be more efficient	Farm mapping systems
Time pressures; desire for farming to be a "9-to-5" job		Control and minimise on-farm overheads	Keep non-essential costs under control Not spend too much time on paperwork	Handheld system replacing paper
Difficulty in getting on-farm labour; aging workforce		Reduce labour requirements	Do more work with less labour Get more done in their day	Robotic milking systems
New and more resistant diseases and other animal health issues		Constantly increase yields	Produce more from the same area Stay competitive in world markets Monitor performance and react	Improved cattle genetics
New/introduced pests and parasites; increased resistance		Manage and minimise effluent	Be a good "corporate" citizen Meet government requirements	Better effluent spreaders
Increasing expectations and regulations around effluent disposal		Stock health management	Minimise down time; control losses Administer right amount Reduce waste by over-dosing	Faster mastitis detection
Growing retailer and market requirements for trackability		Track-and-trace requirements	Fulfill government requirements Have answers right at hand	Rapid NAIT tag application
Consumer food safety fears leading to more and new regulation				

AgHub is an example of on-farm information used to assist farmers manage their farms more efficiently

EXAMPLE: AgHub Farm Management Systems Partners

Model

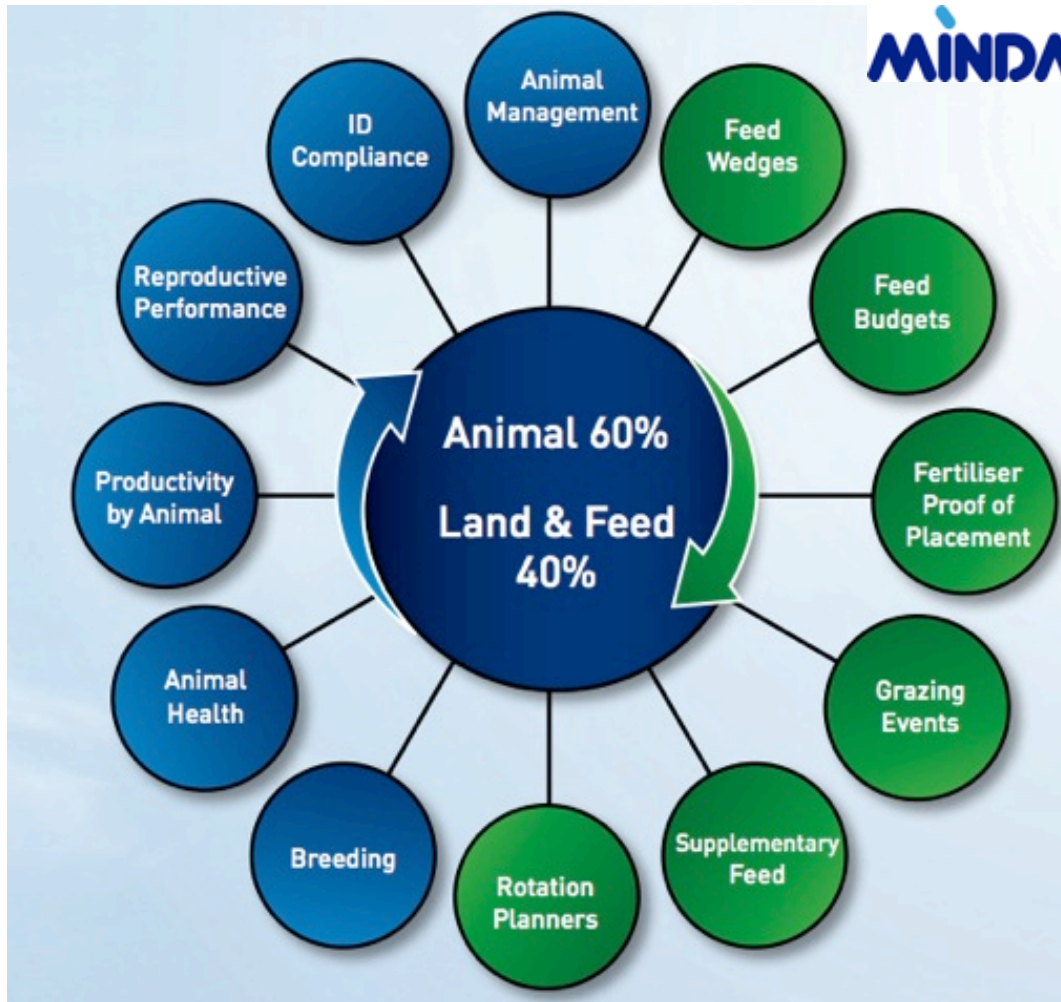


Solutions for managing...



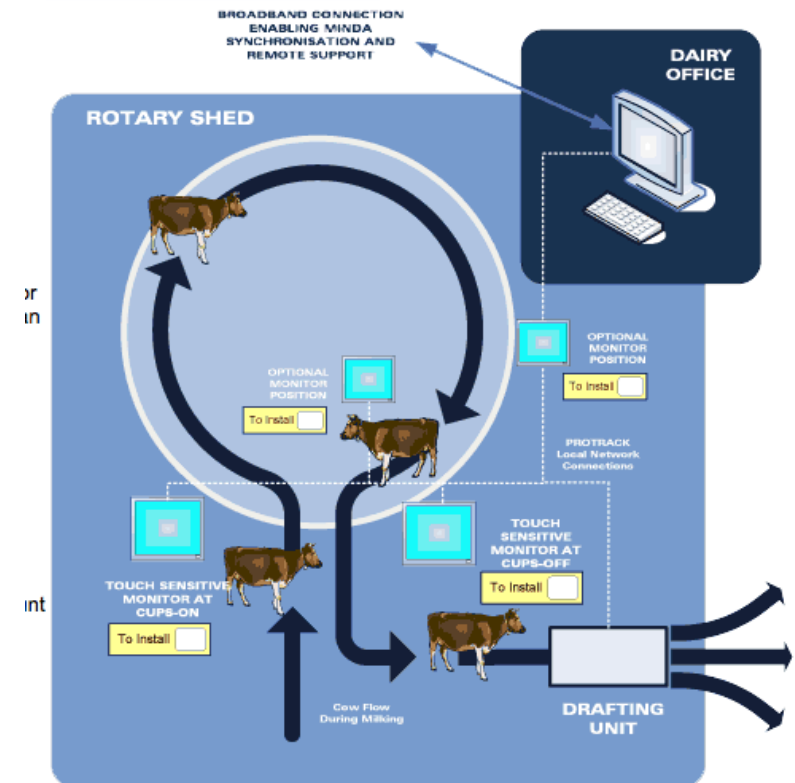
LIC's Minda and Protrack are web based platforms and technology products that integrate and automate activity on the farm, and within the herd to assist in management decisions

Milk solid productivity gains - Minda monitors and tracks the following categories



"We have really seen the integrated system take off in the last 4-5 years. We see a huge potential in integrated and automated systems." *Wayne McNee, LIC CEO*

Protrack Vantage



Background & Objectives

Definition of Agritech

Overview of export markets

Investigation of key growth areas

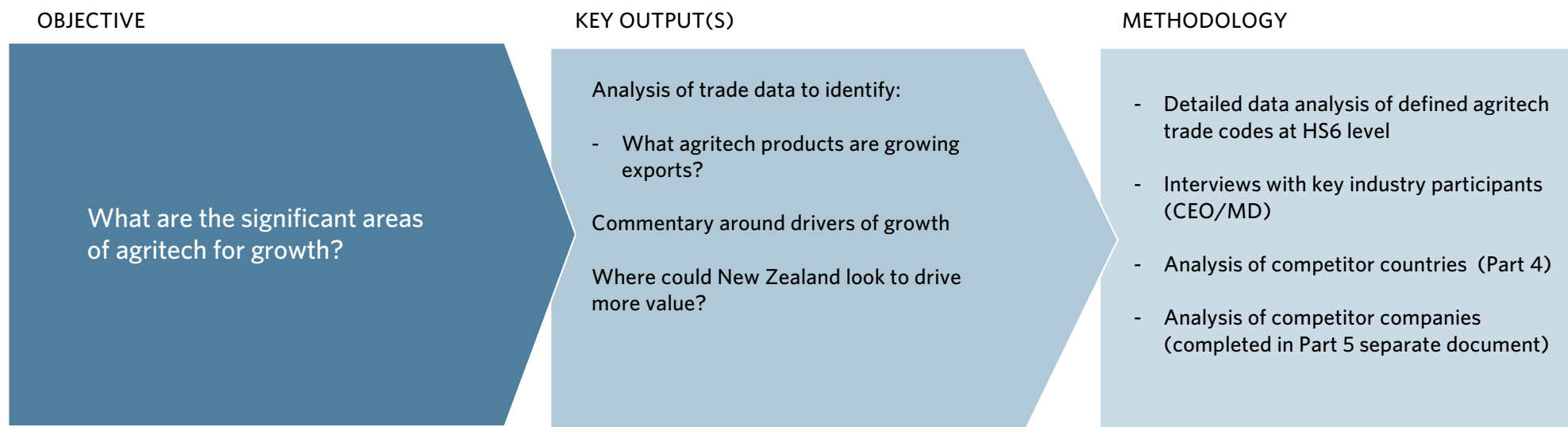
Overview of key competitive countries

Appendix 1 - Agritech HS code database

Appendix 2 - Brief profiles of key New Zealand agritech firms

Appendix 3- Detailed category by country export data

PART 3 - INVESTIGATION OF KEY GROWTH AREAS



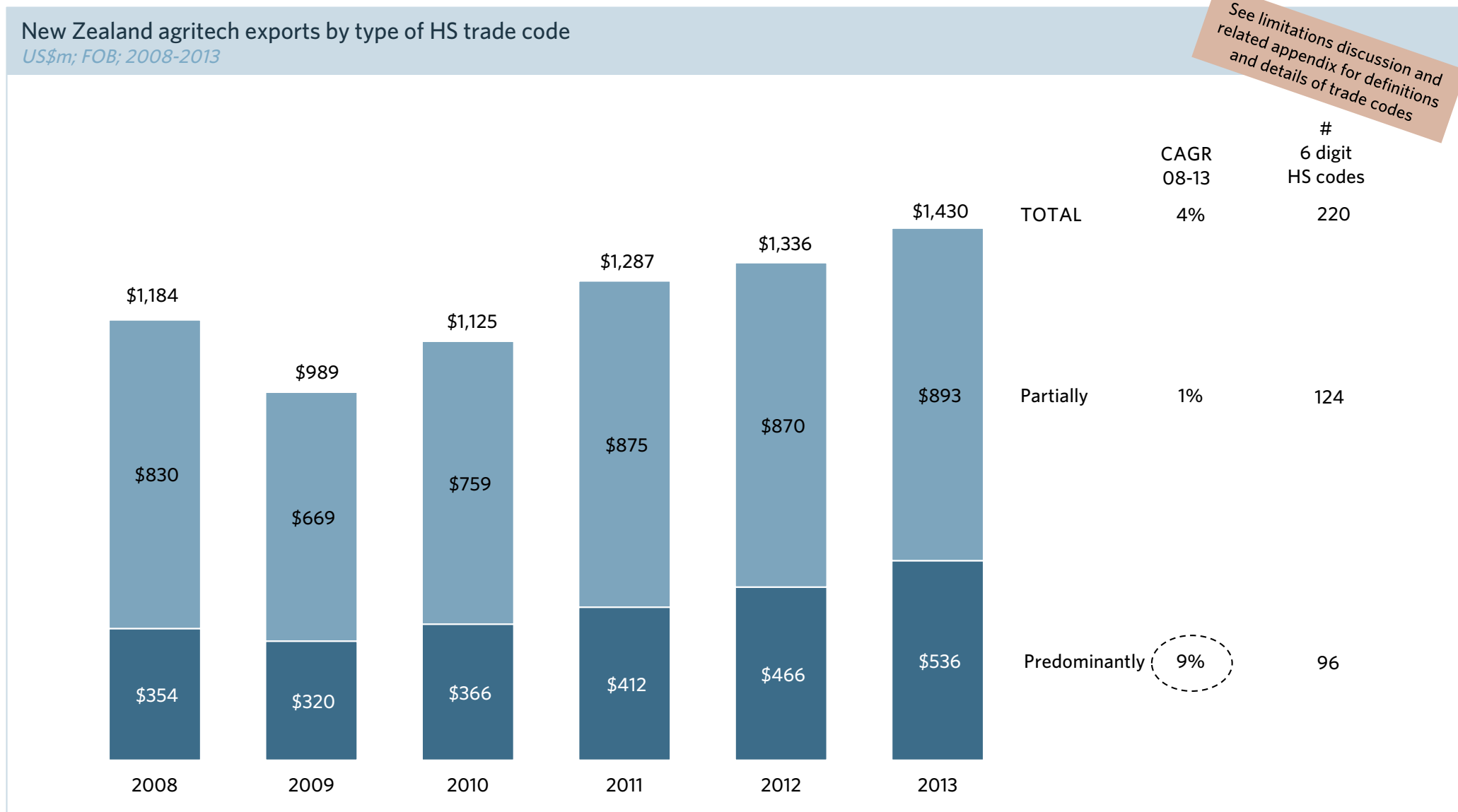
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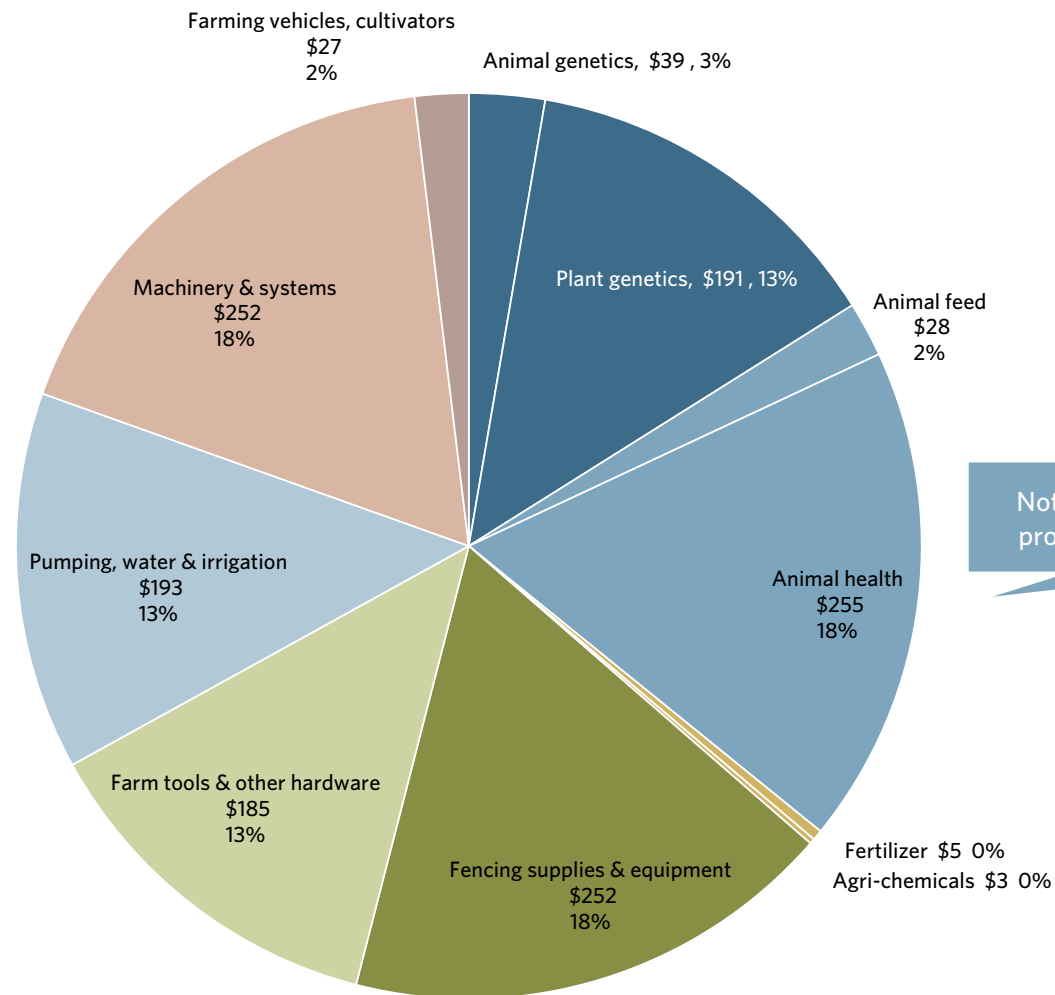
The 96 Predominantly agritech codes (80%+ products agritech) have grown at 9% (CAGR) over the last 5 years reaching over half a billion US dollars



New Zealand has a robust agritech export portfolio across a wide range of categories






















Defined agritech exports from New Zealand by category

US\$m; FOB; 2013



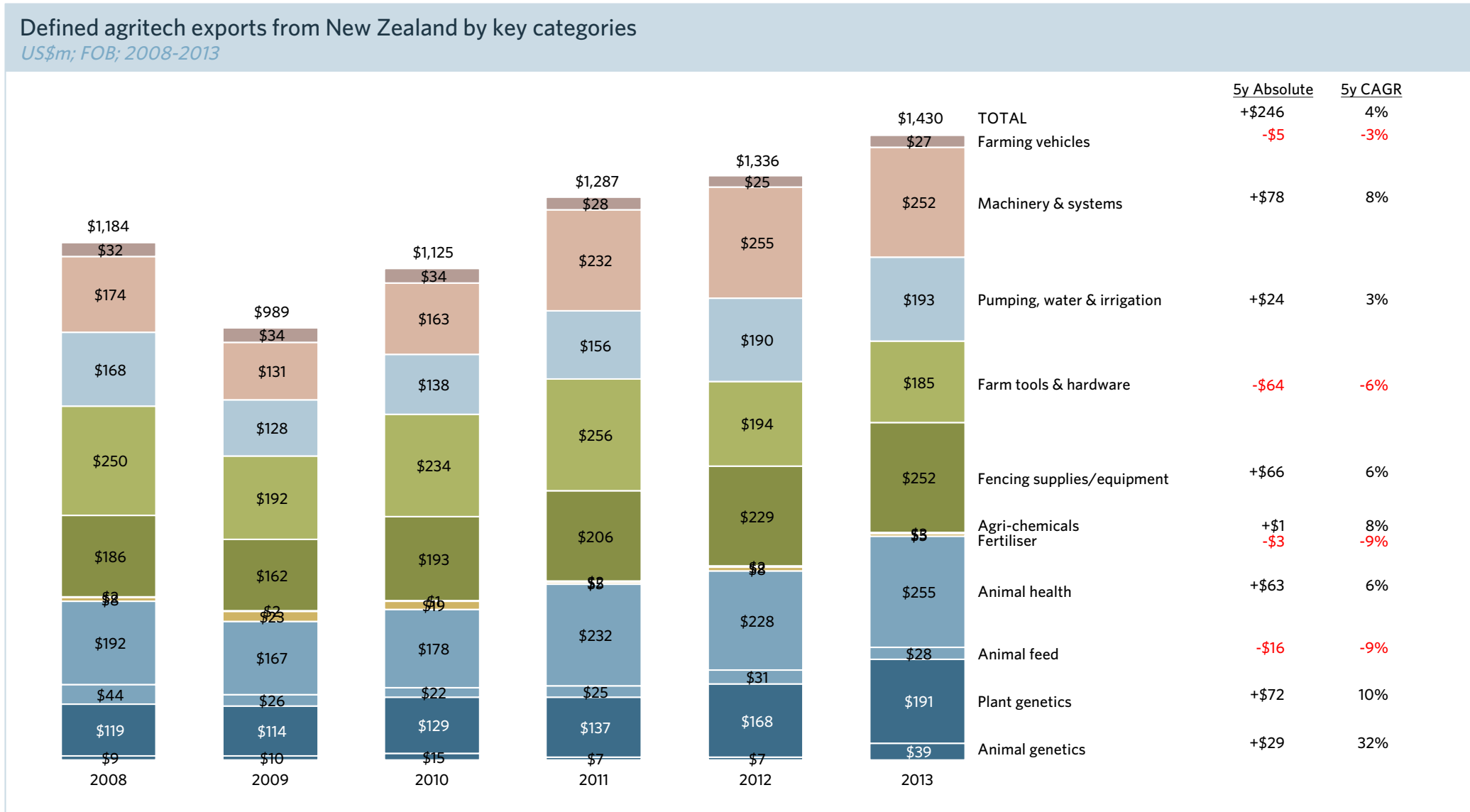
The following are examples of companies we believe could be exporting under the various defined categories

New Zealand legislation prevents us from knowing firm level export activity

Estimated key Agritech companies exporting under defined categories <i>2013; US\$m</i>		
Category	Total NZ Exports (US\$m)	Example firms
Breeding & animal genetics	\$39m	   
Seeds & plant genetics	\$191	    
Animal feed & nutrition	\$28	 
Animal health products*	\$255	   
Fertiliser	\$5	 
Agri-chemicals ('ides)	\$3	 
Fencing supplies & equipment	\$252	 
Farm tools & other hardware	\$184	       
Pumping, water & irrigation (includes metal fencing)	\$193	     
Machinery & systems	\$252	       
Farm vehicles, cultivators, etc.	\$27	   

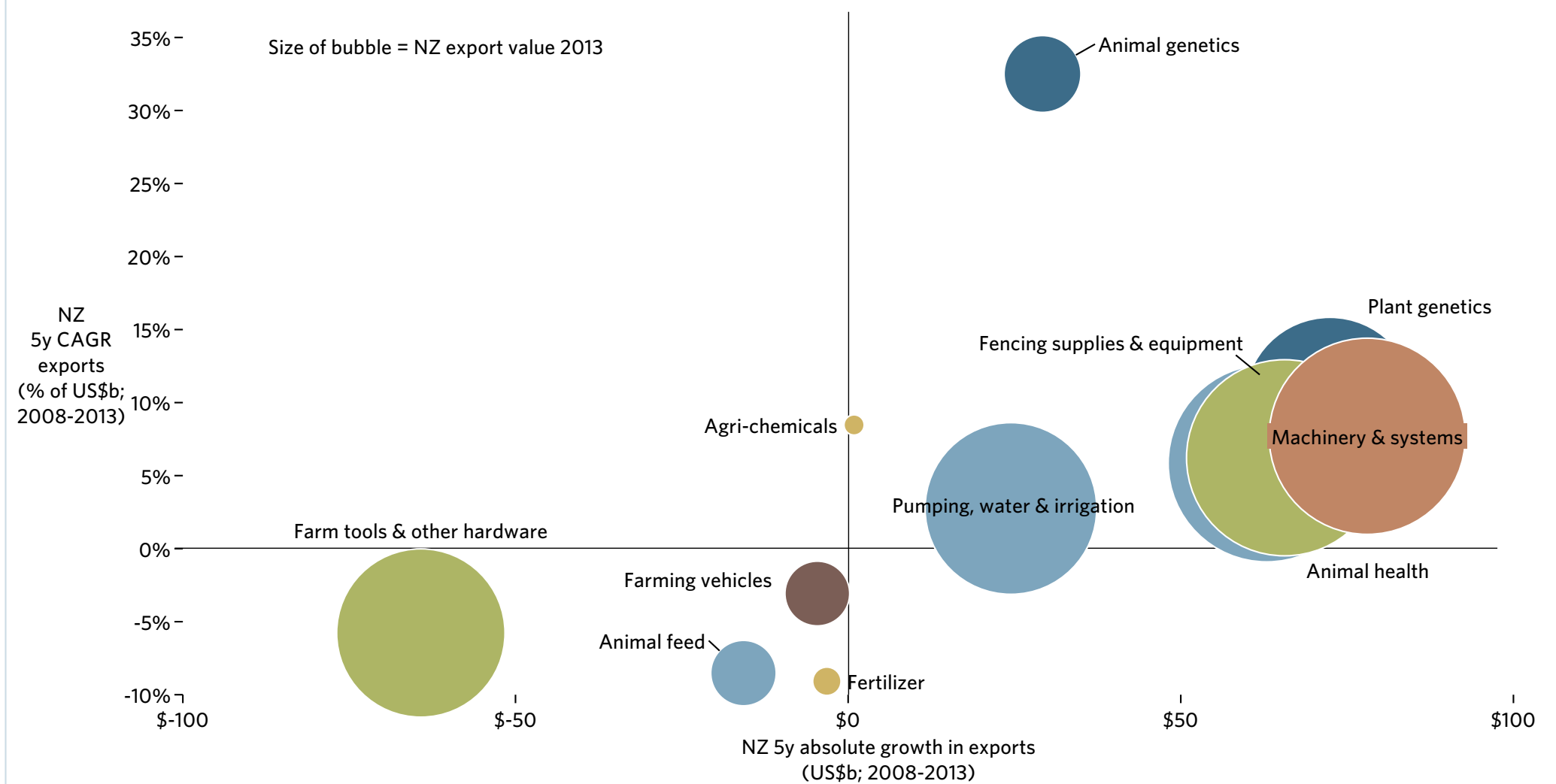
* Contains significant non-animal pharmaceutical products, unable to remove from codes; Source: Interviews, Coriolis

Following a post-GFC fall, New Zealand's agritech exports are now growing across a range of products



Growth is coming from genetics, machinery & systems, animal health, fencing supplies and pumping water & irrigation

Export Growth Matrix: New Zealand 5y absolute export value growth vs. 5y CAGR export value growth vs. export value in 2013
US\$b; 2008 vs. 2013



Based on our research, we propose the following indicators for why categories are successful or struggling

Indicators of Successful Categories

- Complex systems difficult to replicate
- Using sophisticated technology
- Protected by patents or IP
- Well established and integrated skill set
- Willingness to pay premium for quality

"We focus on our proprietary products, that's where the growth is; constantly improving yields." *Manager, Seed Co., June 2014*

"NZ are known as leaders in pastoral agricultural equipment and farmers are willing to pay for our high quality standards." *Manager, Fencing supplies Co., June 2014*

"We have some great new biotechnologies under way, with two new patents being developed, they will be worth tens of millions." *Manager, Biochemistry Co., June 2014*

"We are constantly looking forward to see what farmers will need in the future." *CEO, Machinery & Equipment Co., June 2014*

Indicators of Struggling Categories

- Simple systems and manufacturing processes
- Unsophisticated technology, easy to replicate at scale at a lower cost of production (e.g. simple plastic items)
- Low margin products (particularly vulnerable to currency fluctuations)

"We are moving our manufacturing offshore, not all of it, just the products that are much cheaper to produce overseas." *CEO, Farm Equipment Co., June 2014*

"We feel like the last company standing down here. So many of the manufacturers have closed their doors; they just can't compete with China. You are in deep trouble if you are outside dairy." *MD, Farm Vehicles Co., June 2014*

"Half of our products I feel we are exporting for love, the US\$ is killing us." *CEO, Farm Equipment Co., June 2014*

"We have pulled back our exports and just supporting the local market which is growing well." *CEO, Chemical Co., June 2014*

Background & Objectives

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Overview of key competitive countries

Appendix 1 - Agritech HS code database

Appendix 2 - Brief profiles of key New Zealand agritech firms

Appendix 3 - Detailed category x country export data

PART 4 - OVERVIEW OF KEY COMPETITIVE COUNTRIES

OBJECTIVE

What is the situation in agritech in key competitor countries (defined as Israel, Ireland and the USA)

KEY OUTPUT(S)

Analysis of trade data from Israel, Ireland and USA to identify:

- Growth
- Key trends

METHODOLOGY

- Detailed data analysis of defined agritech trade codes at HS6 level for three defined competitor countries
- Review of industry trade press, published articles and other sources

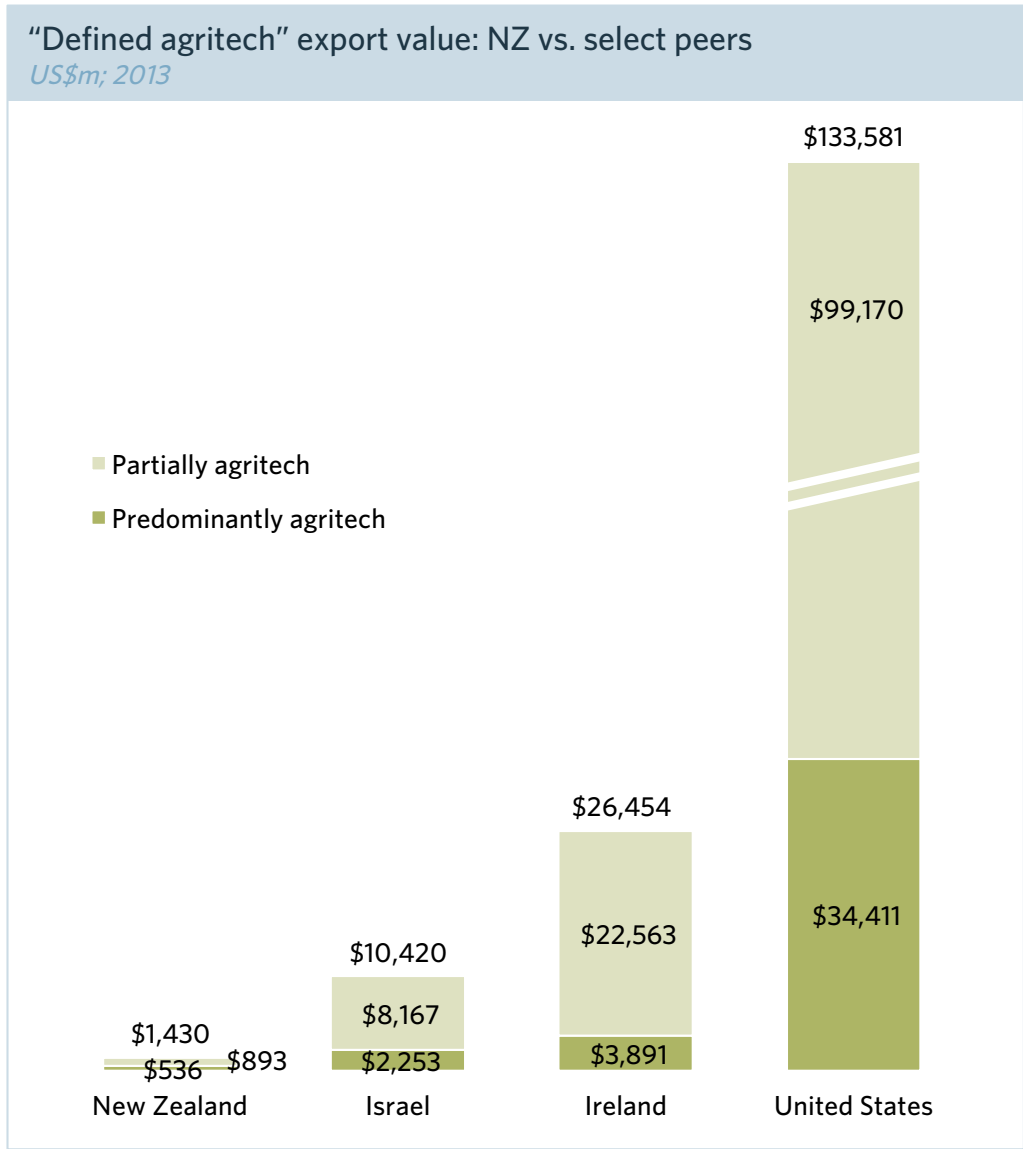
CHALLENGES/LIMITATIONS - HS CODES (Same as part 1)

- Global trade is recorded and measured using the "Harmonized Commodity Description and Coding System", shortened to Harmonized System (HS); this system was primarily driven by the US and Europe and came into effect in 1988 and is maintained by the World Customs Organization in Brussels, Belgium.
- Codes are common globally at the 2, 4 and 6 digit level; beyond this individual countries can set their own sub-codes at the 10 digit level. Sending country and receiving country trade codes are the same up to the 6 digit level, but will vary at the 10 digit level. Therefore global trade can be compared at the 2, 4 or 6 digit trade code level, but not at the 10 digit level.
- The codes are semi-regularly revised; products that did not exist (at any scale) when the codes were developed are generally caught in "catch-all" other codes, generally including the text nes (Not Elsewhere Specified) or nec (not elsewhere classified); these nes codes are excellent markets for innovative products.
- Products are classified by type and form (e.g. steel pipe) not specific use (e.g. irrigation) and certainly not end consumer usage (e.g. on a farm, in a restaurant, at a school). It is not a perfect system and was designed to assist in the application of tariffs not measure agritech (or any other industry for that matter).
- New Zealand legislation protects the privacy of firms export data. New Zealand export data can not be viewed or analysed at the individual firm level by anyone (not even NZTE).

THEREFORE... (Same as part 1)

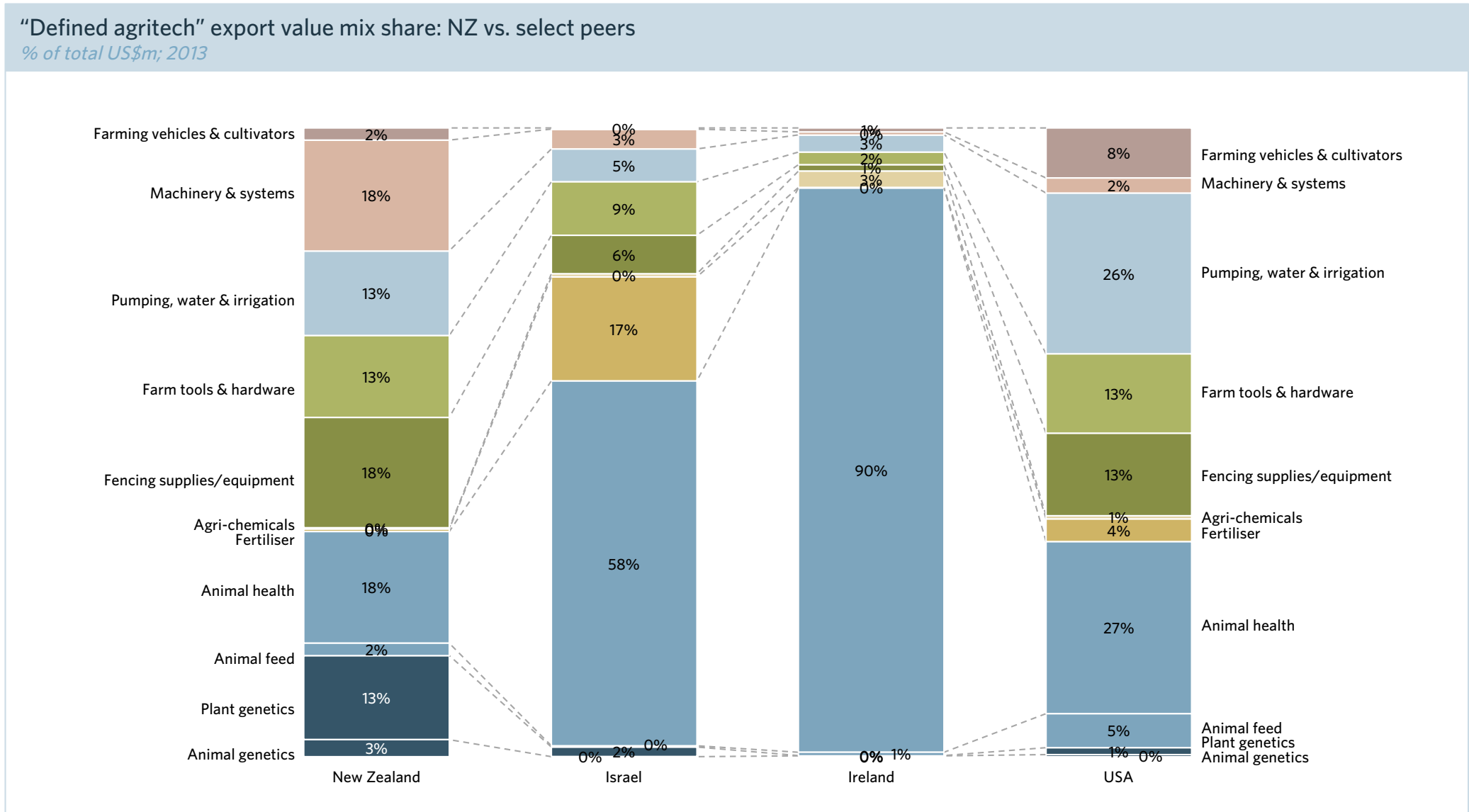
- Trade codes are defined at the six digit level as this is the lowest level that can be compared globally.
- As some trade codes include significant non-agritech exports:
- Trade codes where we believe 80%+ of the exports are non-agritech, are excluded. For example "HS490110 Brochures, leaflets and similar, in single sheets" is not defined as agritech.
- Trade codes where we believe 20-60% the category is agritech are included (though classified as partial). For example "HS842390 Weighing machine parts of weighing machinery" is classified as partially agritech.
- Trade codes classified as containing significant amounts of products used in agritech for New Zealand may not be primarily or predominantly agritech for other countries.
- All trade data should be read with extreme caution, particularly when drawing significant conclusions from non-NZ data.

Comparing agritech exports of competitor countries show New Zealand is underperforming in size but showing good growth

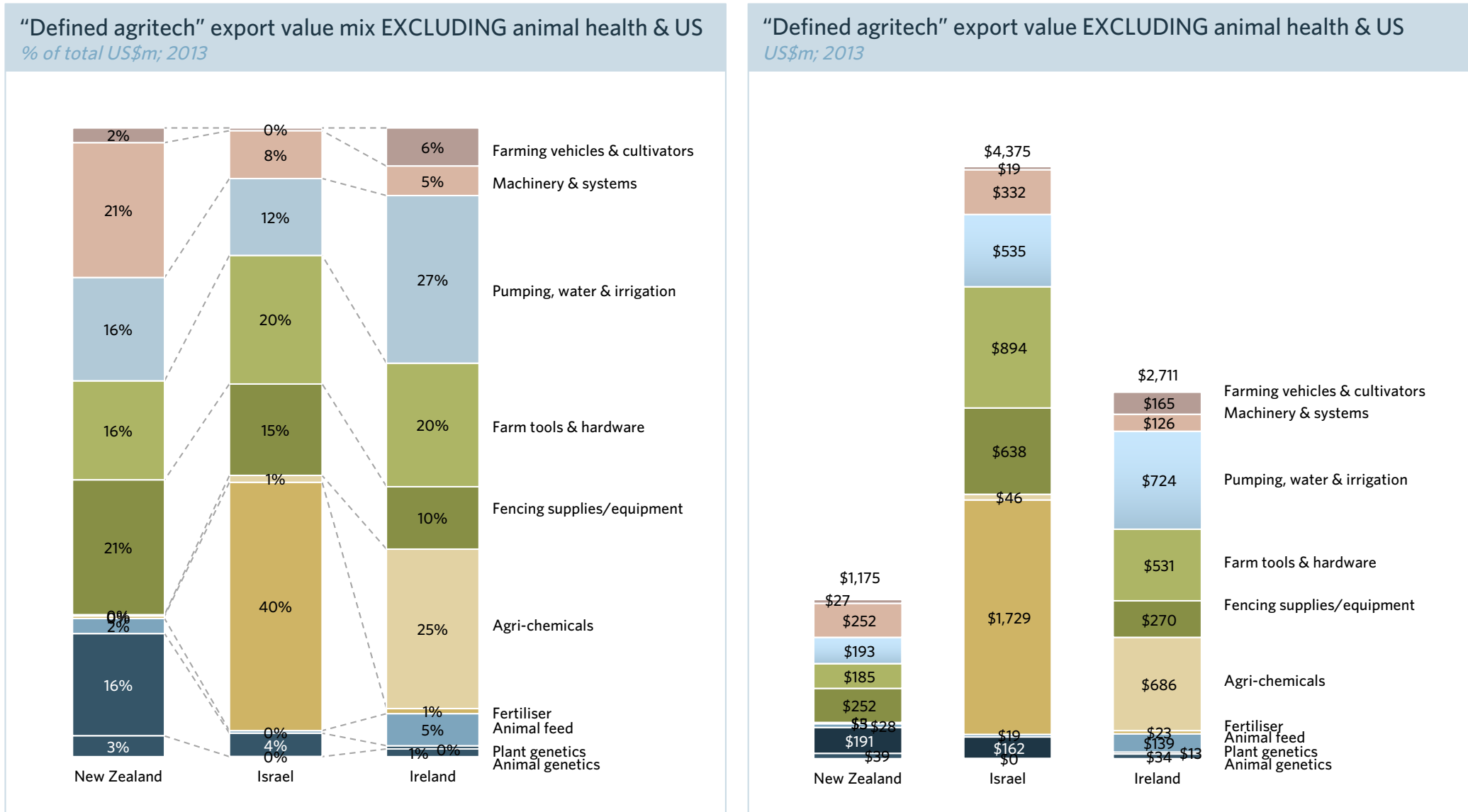


1. Declining exports over the 5 year period; further details in this section; Source: United Nations Comtrade database; Coriolis classifications and analysis

Comparing the “defined agritech” product category mix across the four countries highlights strong variations in mix



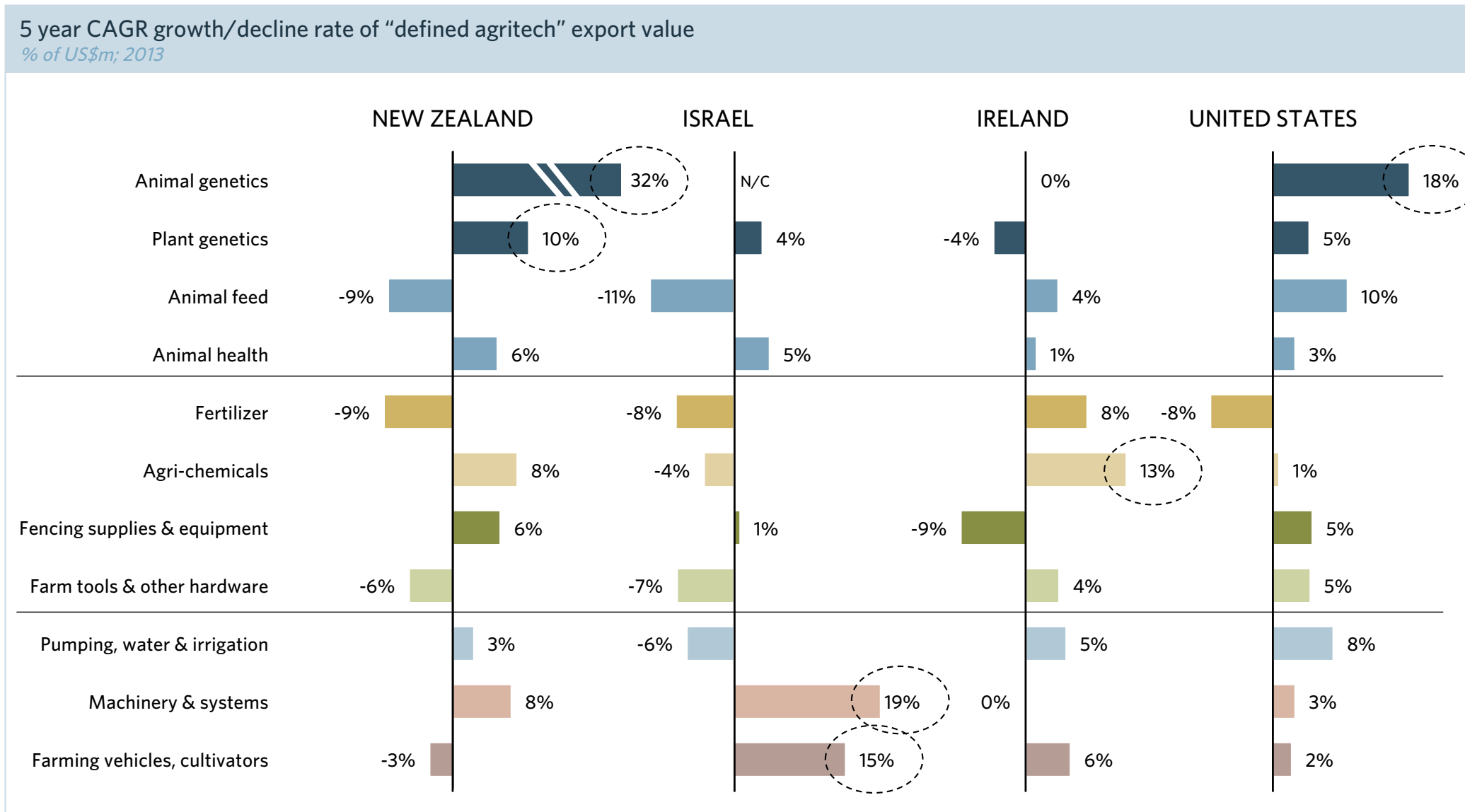
Removing the United States and “animal health” (which contains significant human health*) provides a more focused and relevant comparison



* Inseparable at source (in many cases animal and human medicines are the exact same compound or substance)

Source: United Nations Comtrade database; Coriolis classifications and analysis

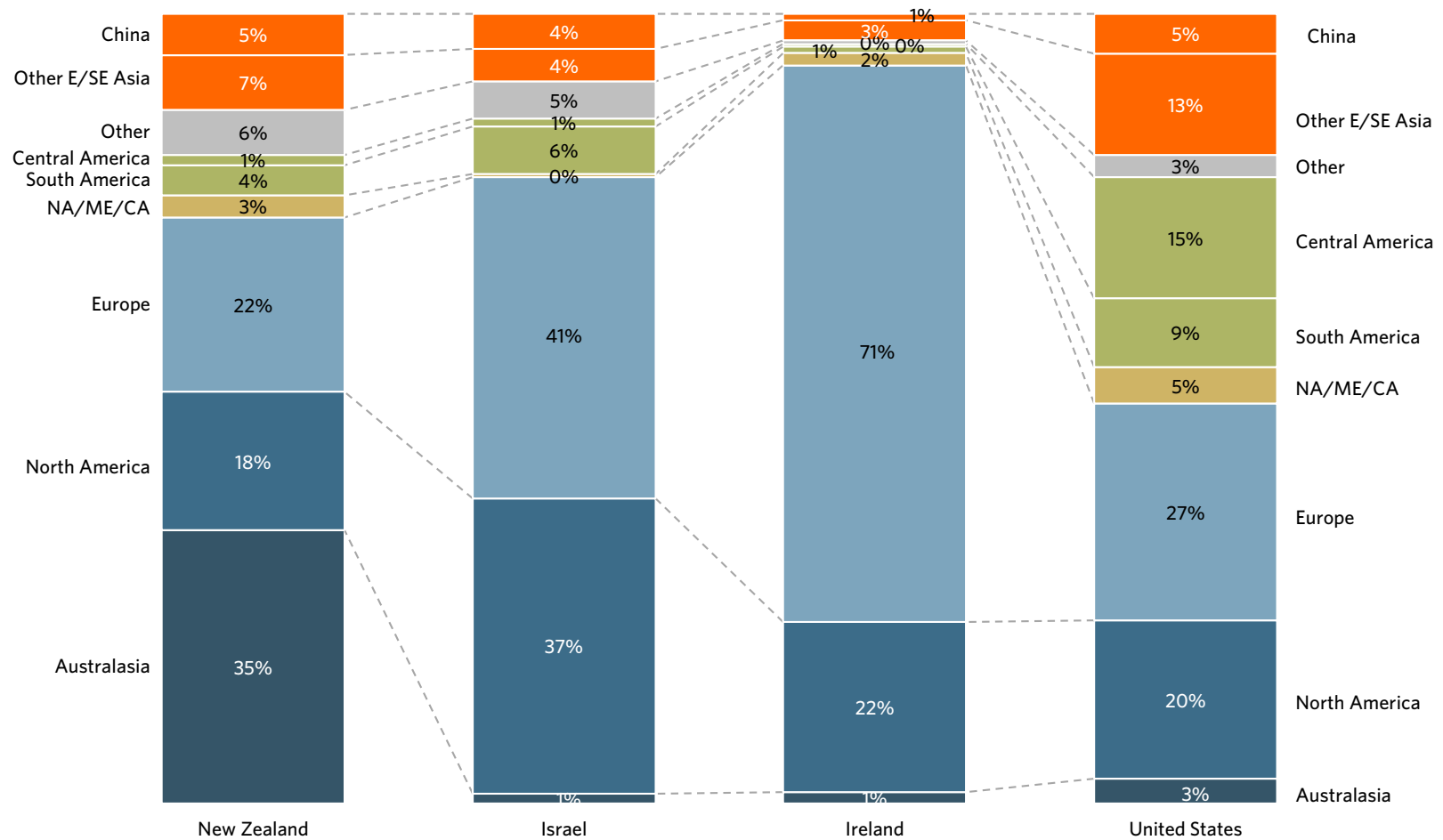
Five year compound annual growth rate (year on year rate of change) has varied by category across the four countries



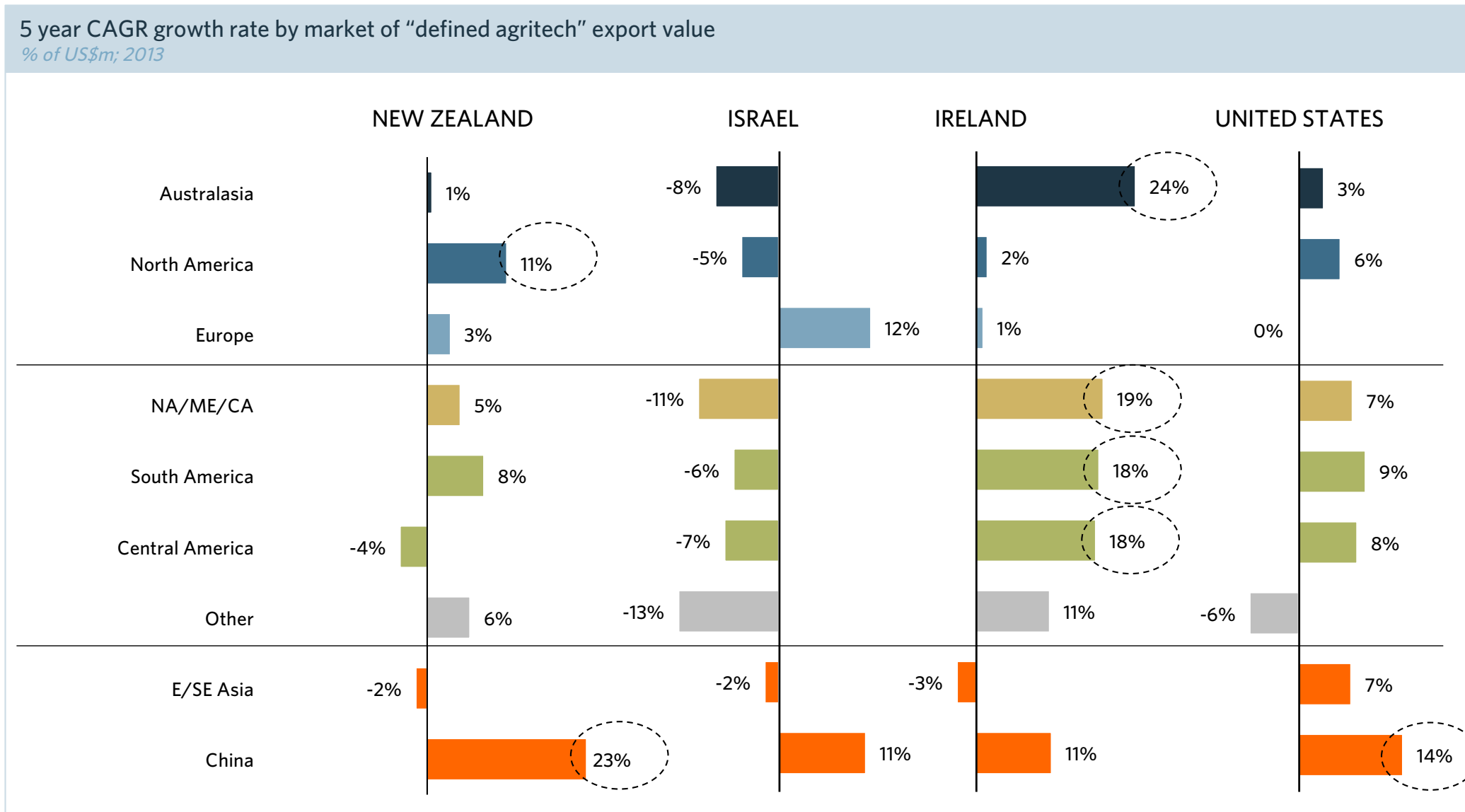
Comparing the “defined agritech” market mix across the four countries highlights strong variations in mix

“Defined agritech” export value mix share by market: NZ vs. select peers

% of total US\$m; 2013



Five year CAGR has varied by market across the four countries



Note: NA/ME/CA = North Africa/Middle East/Central Asia; Source: United Nations Comtrade database; Coriolis classifications and analysis

Four broad lessons can be drawn from the three identified competitive peer group countries on where New Zealand can look to drive more export value growth

Lessons for New Zealand from competitive countries from comparative analysis of trade data <i>Model; 2014</i>		
Lessons	Opportunity	Challenges
Rich, developed countries can be successful in agritech exports; New Zealand's absolute export value is low; peers suggest 5-10x export growth upside possible	<ul style="list-style-type: none"> - This is not a battle to the bottom against China - All three peers export significantly more agritech than New Zealand; rich, developed countries can compete - Israel (a tiny desert state the size of the West Coast) exports ~10x as much agritech as New Zealand (a lush paradise the size of Italy) 	<ul style="list-style-type: none"> - New Zealand arriving relatively late "to the party" - Large parts of agritech are relatively mature - New Zealand is a long way from key regions of innovation - Key competitors have large firms at scale; many New Zealand agritech firms lack scale
New Zealand's market mix is reasonably balanced; however, Europe and North America stand out as having capability to take significantly more exports	<ul style="list-style-type: none"> - New Zealand is overweighted to Australasia (~35%) relative to peers (1-3%); opportunities to diversify - Israel and Ireland export significantly more to Europe and North America (as a % and in total value); 71% of Ireland's exports are to Europe and 37% of Israel's exports are to North America - The United States highlights strong opportunities in South America 	<ul style="list-style-type: none"> - North America and Europe require in-market support and high levels of service - New Zealand farming systems and related technology only highly relevant in some parts of these markets
New Zealand is achieving good agritech export growth rates relative to peers	<ul style="list-style-type: none"> - New Zealand achieved a good 5y CAGR of 9% (08-13), beating Israel and the US and only beat by Ireland - New Zealand appears to be "on a roll" in agritech and moving in the right direction 	<ul style="list-style-type: none"> - Still small in an absolute sense, so growing strongly off a low base - Ireland suggests that New Zealand could be growing twice as fast
New Zealand has a robust product mix and most areas stand out as having strong growth potential	<ul style="list-style-type: none"> - New Zealand agritech export mix is as varied as peers and there are no obvious high level gaps or deficiencies - Peer group data suggests all New Zealand categories have strong growth upside potential 	<ul style="list-style-type: none"> - New Zealand has limited comparative advantage or leverage in agri-chemicals or fertiliser

COMPETITOR SUMMARY – ISRAEL

COUNTRY AGRITECH PROFILE – ISRAEL									
<i>2013 or as available</i>									
Variable	Value	Country	Exports US\$m; 13	5y ABS	5y CAGR	Category	Exports US\$m; 13	5y ABS	5y CAGR
Area	22,770 km ²	USA	\$3,727	-\$1,019	-5%	Agri-chemicals	\$46	-\$10	-4%
Arable land	3,115 km ²	United Kingdom	\$2,244	\$2,012	57%	Animal feed	\$19	-\$15	-11%
Irrigated land	2,250 km ²	Netherlands	\$587	\$187	8%	Animal genetics	-	-	N/C
Permanent crops	840 km ²	Brazil	\$518	-\$239	-7%	Animal health	\$6,045	\$1,240	5%
Total renewable water	1.8 cu km/year	China	\$460	\$193	11%	Farm tools & other hard.	\$894	-\$424	-7%
Population	7.8m	India	\$328	-\$427	-15%	Farming vehicles, cultiv.	\$19	\$10	15%
Pop growth rate	1.46%	Germany	\$229	\$16	1%	Fencing supplies & equip.	\$638	\$26	1%
% pop in cities	92%	Canada	\$172	-\$97	-9%	Fertilizer	\$1,729	-\$841	-8%
GDP (PPP)	US\$273.2b	Russia	\$171	\$44	6%	Machinery & systems	\$332	\$195	19%
GDP growth rate	3.3%	Spain	\$168	-\$30	-3%	Plant genetics	\$162	\$27	4%
GDP/capita	\$36,200	Italy	\$159	-\$77	-8%	Pumping, water & irrig.	\$535	-\$201	-6%
Agriculture as a % of GDP	2.4%	France	\$136	\$1	0%				
Key agricultural products		Australia	\$113	-\$74	-10%	TOTAL	\$10,420	\$7	0%
Citrus		Turkey	\$105	-\$123	-14%				
Vegetables		Viet Nam	\$102	\$61	20%				
Cotton		Other	\$1,202	-\$422	-6%				
Beef		WORLD	\$10,420	\$7	0%				
Poultry									
Dairy products									

COMPETITOR SUMMARY - IRELAND

COUNTRY AGRITECH PROFILE - IRELAND									
<i>2013 or as available</i>									
Variable	Value	Country	Exports US\$m; 13	5y ABS	5y CAGR	Category	Exports US\$m; 13	5y ABS	5y CAGR
Area	70,273 km ²	Belgium	\$6,509	-\$2,463	-6%	Agri-chemicals	\$686	\$318	13%
Arable land	10,618 km ²	USA	\$5,375	\$224	1%	Animal feed	\$139	\$26	4%
Irrigated land	11 km ²	Germany	\$3,206	\$1,793	18%	Animal genetics	\$34	\$0	0%
Permanent crops	70 km ²	United Kingdom	\$2,452	\$456	4%	Animal health	\$23,744	\$1,582	1%
Total renewable water	52 cu km/year	France	\$1,535	\$405	6%	Farm tools & other hard.	\$531	\$102	4%
Population	4.8m	Italy	\$960	\$13	0%	Farming vehicles, cultiv.	\$165	\$41	6%
Pop growth rate	1.2%	Spain	\$871	-\$39	-1%	Fencing supplies & equip.	\$270	-\$153	-9%
% pop in cities	62%	Netherlands	\$710	\$292	11%	Fertilizer	\$23	\$7	8%
GDP (PPP)	US\$190.4b	Switzerland	\$629	\$87	3%	Machinery & systems	\$126	-\$1	0%
GDP growth rate	0.6%	Canada	\$336	\$229	26%	Plant genetics	\$13	-\$3	-4%
GDP/capita	\$41,300	Australia	\$330	\$223	25%	Pumping, water & irrig.	\$724	\$165	5%
Agriculture as a % of GDP	1.6%	Denmark	\$226	\$76	8%				
Key agricultural products		Portugal	\$219	\$32	3%	TOTAL	\$26,454	\$2,083	2%
Barley		China	\$214	\$88	11%				
Potatoes		Japan	\$208	-\$40	-3%				
Wheat		Other	\$2,677	\$706	6%				
Beef		WORLD	\$26,454	\$2,083	2%				
Dairy products									

COMPETITOR SUMMARY - UNITED STATES

COUNTRY AGRITECH PROFILE - UNITED STATES									
<i>2013 or as available</i>									
Variable	Value		Exports US\$m; 13	5y ABS	5y CAGR	Category	Exports US\$m; 13	5y ABS	5y CAGR
Area	9,826,675 km ²	Canada	\$26,874	\$6,317	6%	Agri-chemicals	\$702	\$27	1%
Arable land	1,600,765 km ²	Mexico	\$17,693	\$6,130	9%	Animal feed	\$7,283	\$2,719	10%
Irrigated land	266,440 km ²	China	\$6,702	\$3,181	14%	Animal genetics	\$402	\$226	18%
Permanent crops	25,550 km ²	Japan	\$5,803	\$1,326	5%	Animal health	\$36,485	\$4,850	3%
Total renewable water	3,069 cu km/year	Belgium	\$4,974	\$882	4%	Farm tools & other hard.	\$16,857	\$3,590	5%
Population	318,892,103m	Germany	\$4,836	-\$2,229	-7%	Farming vehicles, cultiv.	\$10,626	\$1,210	2%
Pop growth rate	0.77%	Brazil	\$4,745	\$1,902	11%	Fencing supplies & equip.	\$17,465	\$3,889	5%
% pop in cities	82%	United Kingdom	\$4,741	-\$313	-1%	Fertilizer	\$4,853	-\$2,608	-8%
GDP (PPP)	US\$16,720b	Netherlands	\$4,709	-\$774	-3%	Machinery & systems	\$3,261	\$436	3%
GDP growth rate	1.6%	Australia	\$3,802	\$563	3%	Plant genetics	\$1,525	\$316	5%
GDP/capita	\$52,800	Rep. of Korea	\$3,719	\$1,713	13%	Pumping, water & irrig.	\$34,122	\$10,817	8%
Agriculture as a % of GDP	1.1%	France	\$3,027	\$380	3%				
Key agricultural products		Spain	\$2,487	-\$53	0%	TOTAL	\$133,581	\$25,471	4%
Wheat, corn and other grains		Singapore	\$2,352	\$405	4%				
Fruits		Switzerland	\$2,280	-\$403	-3%				
Vegetables		Other	\$34,838	\$6,443	4%				
Cotton		WORLD	\$133,581	\$25,471	4%				
Beef, pork and poultry									
Dairy products									

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AGRITECH HS CODE DATABASE

HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
292211	Monoethanolamine and its salts	PARTIALLY	Agri-chemicals
292212	Diethanolamine and its salts	PARTIALLY	Agri-chemicals
292213	Triethanolamine and its salts	PARTIALLY	Agri-chemicals
292229	Amino-naphthols and -phenols, etc... one oxygen	PARTIALLY	Agri-chemicals
292231	Amino-aldehydes, amino-ketones and amino-quinones; other than those containing more than one kind of oxygen function; salts thereof	PARTIALLY	Agri-chemicals
292242	Glutamic acid and its salts	PARTIALLY	Agri-chemicals
292249	Amino-acids and their esters, not >1 oxygen fun	PARTIALLY	Agri-chemicals
292250	Amino-alcohol/acid-phenols; amino-compounds wit	PARTIALLY	Agri-chemicals
293890	Glycosides and their salts, ethers, esters and	PARTIALLY	Agri-chemicals
121300	Cereal straw and husks	PREDOMINANTLY	Animal feed
121410	Lucerne (alfalfa) meal and pellets	PREDOMINANTLY	Animal feed
121490	Other forage products, nes	PREDOMINANTLY	Animal feed
230210	Brans, sharps and other residues of maize	PREDOMINANTLY	Animal feed
230230	Brans, sharps and other residues of wheat	PREDOMINANTLY	Animal feed
230240	Brans, sharps and other residues of other cerea	PREDOMINANTLY	Animal feed
230400	Oil-cake and other solid residues, of soya-bean	PREDOMINANTLY	Animal feed
230620	Oil-cake and other solid residues of linseed	PREDOMINANTLY	Animal feed
230641	Oil-cake & oth. solid residues, whether or not ground/in pellets, from extr ...	PREDOMINANTLY	Animal feed
230650	Oil-cake and other solid residues of coconut or	PREDOMINANTLY	Animal feed
230690	Oil-cake and residues, of other vegetable fats	PREDOMINANTLY	Animal feed
230800	Vegetable mats./waste/residues/by-prods., whether or not in pellets, of a kind used in animal feeding, n.e.s.	PREDOMINANTLY	Animal feed
230990	Animal Feed Supplement	PARTIALLY	Animal feed
10210	Live pure-bred breeding bovine animals	PREDOMINANTLY	Animal genetics
10410	Live sheep	PREDOMINANTLY	Animal genetics
51110	Bovine semen	PREDOMINANTLY	Animal genetics
294190	Other antibiotics, nes	PARTIALLY	Animal health
300210	Antisera and other blood fractions	PREDOMINANTLY	Animal health
300230	Vaccines for veterinary medicine	PREDOMINANTLY	Animal health
300290	Human and animal blood; microbial cultures; tox	PARTIALLY	Animal health
300339	Veterinary medicine (not put up in measured doses or in packings for retail sale)	PARTIALLY	Animal health
300390	Veterinary Products (Misc)	PARTIALLY	Animal health
300410	Medicaments cont. penicillins/derivs. thereof with a penicillanic acid structure/streptomycins/their derivs., put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300420	Medicaments cont. oth. antibiotics (excl. of 3004.10), put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300431	Medicaments cont. insulin, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300432	Medicaments cont. corticosteroid hormones, their derivs. & structural analogues, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300439	Medicaments cont. hormones/oth. prods. of 29.37 but not cont. antibiotics, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300440	Medicaments cont. alkaloids/derivs. thereof but not cont. hormones/oth. prods. of 29.37/antibiotics, put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300450	Medicaments cont. vitamins/oth. prods. of 29.36 (excl. of 3004.10-3004.40), put up in measured doses/forms/packings for RS	PARTIALLY	Animal health
300490	Medicaments (excl. of 30.02/30.05/30.06) consisting of mixed/unmixed prods. for therapeutic/prophylactic uses..., put up in measured doses/forms/packings for RS [see complete text #28]	PARTIALLY	Animal health
300510	Adhesive dressings..., for medical... purposes	PARTIALLY	Animal health
300590	Wadding, gauze, etc with pharmaceutical substan	PARTIALLY	Animal health
401490	Hygienic or pharmaceutical articles of vulcaniz	PARTIALLY	Animal health
901831	Syringes, with or without needles	PARTIALLY	Animal health

AGRITECH HS CODE DATABASE

HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
391910	Self-adhesive tape, plates, strip..., in rolls,	PARTIALLY	Farm tools & other hardware
391990	Other self-adhesive plates, tape, strip, foil..	PARTIALLY	Farm tools & other hardware
392321	Sacks and bags (incl. cones) of polymers of eth	PARTIALLY	Farm tools & other hardware
392690	Other articles of plastics, nes	PARTIALLY	Farm tools & other hardware
401610	Articles of vulcanized rubber of cellular rubbe	PARTIALLY	Farm tools & other hardware
401691	Floor coverings and mats of vulcanized rubber,	PARTIALLY	Farm tools & other hardware
401699	Articles of vulcanized rubber, nes	PARTIALLY	Farm tools & other hardware
732619	Articles of iron or steel, forged or stamped, b	PARTIALLY	Farm tools & other hardware
732620	Articles of wire, iron or steel, nes	PARTIALLY	Farm tools & other hardware
732690	Articles, iron or steel, nes	PARTIALLY	Farm tools & other hardware
820110	Spades and shovels	PREDOMINANTLY	Farm tools & other hardware
820130	Mattocks, picks, hoes and rakes	PREDOMINANTLY	Farm tools & other hardware
820140	Aces, bill hooks and similar hewing tools	PREDOMINANTLY	Farm tools & other hardware
820150	Secateurs and similar one-handed pruners and sh	PREDOMINANTLY	Farm tools & other hardware
820160	Hedge shears, two-handed pruning shears and sim	PREDOMINANTLY	Farm tools & other hardware
820190	Scythes, sickles and oth hand tools used in agr	PREDOMINANTLY	Farm tools & other hardware
820310	Files, rasps and similar tools	PARTIALLY	Farm tools & other hardware
820320	Pliers (including cutting pliers), pincers, twe	PARTIALLY	Farm tools & other hardware
820330	Metal cutting shears, tinmen's snips and oth me	PARTIALLY	Farm tools & other hardware
820340	Pipe-cutters, bolt croppers, perforating punche	PARTIALLY	Farm tools & other hardware
820840	Knives and blades for agricultural, horticultur	PREDOMINANTLY	Farm tools & other hardware
842481	Mech appl for proj/disp or spraying liquids or	PARTIALLY	Farm tools & other hardware
842489	Mech appl (whether or not hand-op) for proj/dis	PARTIALLY	Farm tools & other hardware
842490	Pts of mech app (hand-op or not) for proj/disp	PARTIALLY	Farm tools & other hardware
851010	Shavers, with self-contained electric motor	PARTIALLY	Farm tools & other hardware
851020	Hair clippers, with self-contained electric mot	PARTIALLY	Farm tools & other hardware
851030	Hair-removing appls., with self-contained elec. motor	PARTIALLY	Farm tools & other hardware
851090	Parts of shavers and hair clippers, with self-c	PARTIALLY	Farm tools & other hardware
843210	Ploughs	PREDOMINANTLY	Farming vehicles, cultivators
843221	Disc harrows	PREDOMINANTLY	Farming vehicles, cultivators
843229	Scarifiers, cultivators, weeders and hoes	PREDOMINANTLY	Farming vehicles, cultivators
843230	Seeders, planters and transplanters	PREDOMINANTLY	Farming vehicles, cultivators
843240	Manure spreaders and fertiliser distributors	PREDOMINANTLY	Farming vehicles, cultivators
843280	Rollers, stone-removers and oth soil preparatio	PREDOMINANTLY	Farming vehicles, cultivators
843290	Parts for rollers and other soil preparation or	PREDOMINANTLY	Farming vehicles, cultivators
843311	Mowers, powered, lawn, with horizontal cutting	PREDOMINANTLY	Farming vehicles, cultivators
843319	Mowers, powered, lawn, nes	PREDOMINANTLY	Farming vehicles, cultivators
843320	Mowers for hay etc including cutter bars for tr	PREDOMINANTLY	Farming vehicles, cultivators
843330	Hay tedders and rakes and other haymaking machi	PREDOMINANTLY	Farming vehicles, cultivators
843340	Straw or fodder balers, including pick-up baler	PREDOMINANTLY	Farming vehicles, cultivators
843351	Combine harvester-threshers	PREDOMINANTLY	Farming vehicles, cultivators
843352	Threshing machinery nes	PREDOMINANTLY	Farming vehicles, cultivators
843359	Harvesting machinery nes	PREDOMINANTLY	Farming vehicles, cultivators
870110	Pedestrian controlled tractors	PREDOMINANTLY	Farming vehicles, cultivators
870120	Road tractors for semi-trailers (truck tractors	PREDOMINANTLY	Farming vehicles, cultivators
870130	Track-laying tractors (crawlers)	PREDOMINANTLY	Farming vehicles, cultivators
870190	Wheeled tractors nes	PREDOMINANTLY	Farming vehicles, cultivators

AGRITECH HS CODE DATABASE

HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
871620	Trailers for agricultural purposes	PREDOMINANTLY	Farming vehicles, cultivators
871631	Tanker trailers and semi-trailers	PARTIALLY	Farming vehicles, cultivators
870190	Wheeled tractors nes	PREDOMINANTLY	Farming vehicles, cultivators
871620	Trailers for agricultural purposes	PREDOMINANTLY	Farming vehicles, cultivators
871631	Tanker trailers and semi-trailers	PARTIALLY	Farming vehicles, cultivators
392520	Doors, windows and their frames and thresholds	PARTIALLY	Fencing supplies & equipment
392590	Builders' ware of plastics, nes	PARTIALLY	Fencing supplies & equipment
560500	Metallized yarn, being textile yarn, or strip,	PARTIALLY	Fencing supplies & equipment
721230	Flat rolled prod, i/nas, <600mm wide, o/w plate	PARTIALLY	Fencing supplies & equipment
721710	Wire of iron/non-alloy steel, not plated/coated, whether or not polished	PARTIALLY	Fencing supplies & equipment
721720	Wire of iron/non-alloy steel, plated/coated with zinc	PARTIALLY	Fencing supplies & equipment
721730	Wire of iron/non-alloy steel, plated/coated with oth. base metals	PARTIALLY	Fencing supplies & equipment
721790	Wire of iron/non-alloy steel, n.e.s. in 72.17	PARTIALLY	Fencing supplies & equipment
722300	Wire of stainless steel	PREDOMINANTLY	Fencing supplies & equipment
850431	Transformers electric power handling capacity n	PARTIALLY	Fencing supplies & equipment
850440	Static converters, nes	PARTIALLY	Fencing supplies & equipment
850490	Parts of electrical transformers, static conver	PARTIALLY	Fencing supplies & equipment
853540	Lightning arresters, voltage limiters and surge	PARTIALLY	Fencing supplies & equipment
853590	Electrical app for switching or protec elec cir	PARTIALLY	Fencing supplies & equipment
853610	Electrical apparatus; fuses, <1000 volts	PARTIALLY	Fencing supplies & equipment
854389	Other electrical machines & app., having individual functions, n.e.s. in Ch.85	PARTIALLY	Fencing supplies & equipment
854390	Parts of electrical machines & apparatus	PARTIALLY	Fencing supplies & equipment
854442	Insulated (including enamelled or anodised) wire, cable (including co-axial cable) and other insulated electric conductors, ... whether or not...// - Other electric conductors, for a voltage not exceeding 1,000 V : // -- Fitted with connectors	PARTIALLY	Fencing supplies & equipment
854460	Electric conductors, for a voltage exceeding 1,	PARTIALLY	Fencing supplies & equipment
854610	Electrical insulators of glass	PARTIALLY	Fencing supplies & equipment
854620	Electrical insulators of ceramics	PARTIALLY	Fencing supplies & equipment
854690	Electrical insulators, nes	PARTIALLY	Fencing supplies & equipment
902610	Instruments and apparatus for measure/checking	PARTIALLY	Fencing supplies & equipment
902620	Instruments and apparatus for measuring or chec	PARTIALLY	Fencing supplies & equipment
902680	Instruments & apparatus for measure/checking va	PARTIALLY	Fencing supplies & equipment
902690	Parts of inst and app for measure/checking vari	PARTIALLY	Fencing supplies & equipment
903180	Measuring or checking instruments, appliances a	PARTIALLY	Fencing supplies & equipment
310100	Animal or vegetable fertilizers	PREDOMINANTLY	Fertilizer
310210	Urea	PREDOMINANTLY	Fertilizer
310221	Ammonium sulphate	PREDOMINANTLY	Fertilizer
310229	Double salts and mixtures of ammonium sulphate	PREDOMINANTLY	Fertilizer
310230	Ammonium nitrate	PREDOMINANTLY	Fertilizer
310240	Mixtures of ammonium nitrate with inorganic non	PREDOMINANTLY	Fertilizer
310250	Sodium nitrate	PREDOMINANTLY	Fertilizer
310290	Mineral or chemical fertilizers, nitrogenous ,	PREDOMINANTLY	Fertilizer
310310	Superphosphates	PREDOMINANTLY	Fertilizer
310420	Potassium chloride	PREDOMINANTLY	Fertilizer
310430	Potassium sulphate	PREDOMINANTLY	Fertilizer
310490	Mineral or chemical fertilizers, potassic, nes	PREDOMINANTLY	Fertilizer
310510	Fertilizers... in packages of a gross weight =<	PREDOMINANTLY	Fertilizer
310520	Mineral or chemical fertilizers with nitrogen,	PREDOMINANTLY	Fertilizer

AGRITECH HS CODE DATABASE

HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
310560	Mineral or chemical fertilizers with phosphorus	PREDOMINANTLY	Fertilizer
310590	Other fertilizers, nes	PREDOMINANTLY	Fertilizer
842111	Cream separators	PREDOMINANTLY	Machinery & systems
842230	Mach for fil/clos/seal/etc.btle/can/box/bag/ctn	PARTIALLY	Machinery & systems
842240	Packing or wrapping machinery nes	PARTIALLY	Machinery & systems
842320	Scales for continuous weighing of goods on conv	PARTIALLY	Machinery & systems
842330	Constant weight scales, including hopper scales	PARTIALLY	Machinery & systems
842381	Weighing machinery having a maximum weighing ca	PARTIALLY	Machinery & systems
842382	Weighing machinery having a maximum weighing ca	PARTIALLY	Machinery & systems
842389	Weighing machinery, nes	PARTIALLY	Machinery & systems
842390	Weighing machine weights of all kinds; parts of	PARTIALLY	Machinery & systems
842420	Spray guns and similar appliances	PARTIALLY	Machinery & systems
843360	Machines for cleaning, sorting or grading eggs,	PREDOMINANTLY	Machinery & systems
843390	Parts of harvesting, threshing and oth agricult	PREDOMINANTLY	Machinery & systems
843410	Milking machines	PREDOMINANTLY	Machinery & systems
843420	Dairy machinery	PREDOMINANTLY	Machinery & systems
843490	Parts of milking machines and dairy machinery	PREDOMINANTLY	Machinery & systems
843510	Presses, crushers & sim mach used in the mfg of	PREDOMINANTLY	Machinery & systems
843590	Parts of presses, crushers & sim mach used in t	PREDOMINANTLY	Machinery & systems
843610	Machinery for preparing animal feeding stuffs	PREDOMINANTLY	Machinery & systems
843621	Poultry incubators and brooders	PREDOMINANTLY	Machinery & systems
843629	Poultry-keeping machinery, nes	PREDOMINANTLY	Machinery & systems
843680	Agri/hortic/forestry bee-keeping mach nes inc g	PREDOMINANTLY	Machinery & systems
843691	Parts of poultry-keeping machinery	PREDOMINANTLY	Machinery & systems
843699	Parts of agr/hort/forestry/bee-keeping mach nes	PREDOMINANTLY	Machinery & systems
60290	Plants live, mushroom spores	PREDOMINANTLY	Plant genetics
70110	Seed potatoes	PREDOMINANTLY	Plant genetics
71310	Dried peas, shelled	PREDOMINANTLY	Plant genetics
71350	Dried broad beans and horse beans, shelled	PREDOMINANTLY	Plant genetics
100111	Durum Wheat Seed	PREDOMINANTLY	Plant genetics
100410	Oats Seed	PREDOMINANTLY	Plant genetics
120590	Certified Rape Seed (for agricultural purposes)	PREDOMINANTLY	Plant genetics
120910	Sugar beet seed, of a kind used for sowing	PREDOMINANTLY	Plant genetics
120921	Lucerne (alfalfa) Seeds	PREDOMINANTLY	Plant genetics
120922	Clover seed, of a kind used for sowing	PREDOMINANTLY	Plant genetics
120923	Fescue seed, of a kind used for sowing	PREDOMINANTLY	Plant genetics
120924	Kentucky blue grass seed, of a kind used for so	PREDOMINANTLY	Plant genetics
120925	Rye grass seed, of a kind used for sowing	PREDOMINANTLY	Plant genetics
120929	Other seeds of forage plants, of a kind used fo	PREDOMINANTLY	Plant genetics
120930	Seeds of herbaceous plants, of a kind used for	PREDOMINANTLY	Plant genetics
120991	Vegetable seed, of a kind used for sowing	PREDOMINANTLY	Plant genetics
120999	Other seeds, fruit and spores, of a kind used for sowing, nes	PREDOMINANTLY	Plant genetics

AGRITECH HS CODE DATABASE

HS6 TRADE CODE	CODE DESCRIPTION	AGRITECH CLASSIFICATION	DEFINED CATEGORY
391721	Tubes, pipes and hoses, rigid, of polymers of e	PARTIALLY	Pumping, water & irrigation
391722	Tubes, pipes and hoses, rigid, of polymers of p	PARTIALLY	Pumping, water & irrigation
391723	Tubes, pipes and hoses, rigid, of polymers of v	PARTIALLY	Pumping, water & irrigation
391729	Tubes, pipes and hoses, rigid, of other plastic	PARTIALLY	Pumping, water & irrigation
391731	Flexible tubes, pipes and hoses, with a burst p	PARTIALLY	Pumping, water & irrigation
391732	Tubes, pipes and hoses, not reinforced, without	PARTIALLY	Pumping, water & irrigation
391733	Tubes, pipes and hoses, not reinforced, with fi	PARTIALLY	Pumping, water & irrigation
391739	Other tubes, pipes and hoses, nes	PARTIALLY	Pumping, water & irrigation
391740	Fittings, for tubes, pipes and hoses, of plasti	PARTIALLY	Pumping, water & irrigation
392510	Reservoirs... and similar containers, capacity	PARTIALLY	Pumping, water & irrigation
401693	Gaskets, washers and other seals, of vulcanized	PARTIALLY	Pumping, water & irrigation
730610	Pipe,line,i or s,welded,riveted or sim closed,n	PARTIALLY	Pumping, water & irrigation
730630	Tubes,pipe&hollow profiles,iron or nas,welded,o	PARTIALLY	Pumping, water & irrigation
730640	Tubes,pipe&hollow profiles,stainless steel,weld	PARTIALLY	Pumping, water & irrigation
730650	Tubes, pipe & hollow profiles,al/s,(o/t stain)	PARTIALLY	Pumping, water & irrigation
730660	Tubes, pipe & hollow profiles, i/s, welded, of	PARTIALLY	Pumping, water & irrigation
730690	Tubes, pipe & hollow profiles, iron or steel, w	PARTIALLY	Pumping, water & irrigation
730890	Structures...& parts of structures...of iron/steel (excl. of 7308.10-7308.40); plates, rods...and the like, prepd. for use in structures, of iron/steel [see complete text #129]	PARTIALLY	Pumping, water & irrigation
730900	Reservoirs, tanks, vats & sim. conts. for any mat. other than compressed/liquefied gas, of iron/steel, of a cap. >300 l, whether or not lined/heat-insulated but not fitted with mech./thermal equip.	PARTIALLY	Pumping, water & irrigation
732599	Articles of iron or steel, cast, nes	PARTIALLY	Pumping, water & irrigation
841319	Pumps fitted or designed to be fitted with a me	PARTIALLY	Pumping, water & irrigation
841320	Hand pumps nes, o/t those of subheading No 8413	PARTIALLY	Pumping, water & irrigation
841350	Reciprocating positive displacement pumps nes	PARTIALLY	Pumping, water & irrigation
841360	Rotary positive displacement pumps nes	PARTIALLY	Pumping, water & irrigation
841370	Centrifugal pumps nes	PARTIALLY	Pumping, water & irrigation
841381	Pumps nes	PARTIALLY	Pumping, water & irrigation
841382	Liquid elevators	PARTIALLY	Pumping, water & irrigation
841391	Parts of pumps for liquid whether or not fitted	PARTIALLY	Pumping, water & irrigation
841392	Parts of liquid elevators	PARTIALLY	Pumping, water & irrigation
841410	Vacuum pumps	PARTIALLY	Pumping, water & irrigation
841420	Hand or foot-operated air pumps	PARTIALLY	Pumping, water & irrigation
841430	Compressors of a kind used in refrigerating equ	PARTIALLY	Pumping, water & irrigation
841440	Air compressors mounted on a wheeled chassis fo	PARTIALLY	Pumping, water & irrigation
841480	Air or gas compressors, hoods	PARTIALLY	Pumping, water & irrigation
841490	Parts of vacuum pumps, compressors, fans, blowe	PARTIALLY	Pumping, water & irrigation
848110	Valves, pressure reducing	PARTIALLY	Pumping, water & irrigation
848120	Valves for oleohydraulic or pneumatic transmiss	PARTIALLY	Pumping, water & irrigation
848130	Valves, check	PARTIALLY	Pumping, water & irrigation
848140	Valves, safety or relief	PARTIALLY	Pumping, water & irrigation
848180	Taps, cocks, valves and similar appliances, nes	PARTIALLY	Pumping, water & irrigation
848190	Parts of taps, cocks, valves or similar applian	PARTIALLY	Pumping, water & irrigation

Background & Objectives

Definition of Agritech

Overview of export markets

Investigation of key growth areas






Overview of key competitive countries

Appendix 1 - Agritech HS code database








Appendix 2 - Brief profiles of key New Zealand agritech

Appendix 3 - Detailed category by country export data










New Zealand researches and exports select animal genetics and live animal exports for breeding purposes

EXAMPLE list of the firms in the New Zealand Animal Genetics sector + Live animal exports for Breeding				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$199.5m (13)	#1 Dairy genetics (\$85m) and testing services (\$25m), FarmKeeper (Minda) (\$43m), Dairy Automation (DTS) (\$12m) - export 7% revenue, primarily semen.	Co-operative (NZ) 10,500 dairy farmer members	www.lic.co.nz
	\$28.4m (12)	Dairy genetics company	CRV Limited Co-operative; 50,000 members : CRV Ambreed CRV Holdings BV: Netherlands	www.crv4all.co.nz
	-	Cattle, sheep deer breeding program	Focus Genetics Management Landcorp Pastoral 67%, Rissington Breedline 33%	www.focusgenetics.com
	\$98m livestock sales	Live cattle, dairy and sheep exports to South East Asia, China and Mexico (export 5-20% in good years)	PGG Wrightson Ltd 50% Agria (Singapore), 50% public	www.pggwrightson.co.nz/Services/LiveExport
	\$121m (12)	Live dairy cattle exports (includes, wool, seeds etc.)	Elders Rural Holdings (\$121m) Carr Agricultural Group (\$280-\$300m group) Private: Carr Family	www.elders.co.nz/elders-livestock.html









New Zealand has a strong plant genetics and seed industry; predominantly based in the South Island

EXAMPLE list of the firms in the New Zealand in the Plant Genetics and Seeds sector				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
 PGG Wrightson Seeds	\$1.13b (seeds \$307m)	Supply seed to 20 countries - using global production base (AU, Sth America, NZ) 400 staff, 20 receiving sites in AU and NZ	PGG Wrightson Ltd 50% Agria (Singapore), 50% public	www.pggwrightson.co.nz
 AGRICOM Pastures for Profit	-	Researches, develops and markets pasture and forage seeds - JV with Grasslands Innovation	PGG Wrightson Ltd 50% Agria (Singapore), 50% public	www.agricom.co.nz www.pggwrightson.co.nz
 agriseeds BARENBRUG	\$85.4m	Plant genetics (seeds), multiplication in NZ; includes Heritage Seeds; global seeds company operations in 16 countries producing 70m kg of seed	NZ Agriseeds Ltd 100% Royal Barenbrug Group (Netherlands)	www.agriseeds.co.nz www.barenbrug.com
 CROPMARK SEEDS	-	Forage and Pasture breeding and seed production	30% Cameron; 25% Public: Ravensdown Fertiliser Co-operative Ltd, 45% others	www.cropmarkseeds.com www.ravensdown.co.nz
 MIDLANDS HOLDINGS LIMITED	-	Property, contracting, seed production (arable, vegetable, peas clover), apiaries, oil seed extraction across Canterbury and Tasmania	Midlands Holdings Ltd Private NZ: Green/Storrier/Argyle/Sparrow, Davidson	www.midlands.co.nz
 CANTERBURY SEED winslow Carr GROUP	-	Seed production and marketing company based in Canterbury (pea, forage & vegetable seeds); grow in NZ, Oregon and Hungary and export to 40 countries	Canterbury Seed Company - part of Winslow Ltd, 100% owned by Carr Group	www.canseed.co.nz www.winslowltd.co.nz www.elders.co.nz
 Carr GROUP	\$280-\$300m	Own Winslow, Canterbury Seed, Winseed Lely Centre, The Honey Company, Zealanda Farms, Apitech, Elders Rural Services (wool, sheep seeds)	Carr Agricultural Group Private: Carr Family	www.winslowltd.co.nz www.elders.co.nz





Many companies specialise or operate across the feed, nutrients, fertiliser and agri-chemical sectors

EXAMPLE list of the firms in the New Zealand agri-tech Feed, Nutrients, Fertilizer and Agri-chemical sector				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$1,130m (\$13m feeds)	Large retailer to the rural agricultural sector, also sales of livestock, wool, irrigation, seed and grains, feeds & real estate	PGG Wrightson Ltd 50% Agria (Singapore), 50% public	www.pggwrightson.co.nz
	\$878m	Ballance is a fertiliser manufacturer (3 plants), also operates SealesWinslow (animal feed), AgHub (technol company) and SuperAir (top dressing)	Ballance Agri-Nutrients Ltd NZ Public: Farmer owned Co-operative (18,500)	www.ballance.co.nz www.aghub.co.nz www.sealeswinslow.co.nz
	\$1,014m	Ravensdown is an agrochemical, seed, fertiliser, animal health & nutrition company operating in NZ (exited AUS), across three sites	Ravensdown Fertiliser Co-operative Ltd NZ Public: Farmer owned Co-operative	www.ravensdown.co.nz
	\$1,924.71 (Gp)	#1 Animal nutrition company, plants in NZ (Wiri, Levin etc.) manufacture bulk and bagged feed; ~20% dairy	NRM NZ Public: 100% Farmlands Co-operative	www.nrm.co.nz/
	\$10-20*	Animal health and nutrients, pasture nutrients; 2 factories (CHCH, Akld)	Nutritech International Ltd NZ Private: 51% Manning, 28%Waters, others	www.nutritech.co.nz
	\$50-100 18% X (non AT)	Pasture management supplements, dairy shed chemicals, animal health , range of plastic covers, wraps, (imported) bale net, twine, rope and cordage	Donaghys Ltd Private NZ: Silva/Evatt/McGuinness/Phillips/others	www.donaghys.com
	\$51.7m* (09)	Animal health, agrichemicals human healthcare products (NZ Group Revenue \$184m 2013)	Bomac family sold to Bayer NZ Ltd in 2011, Bayer AG Germany, Bomac Australia liquidation	www.bayeranimal.co.nz
	\$29.3m (13)	Agribusiness company that markets seeds and agrochemicals; R&D in NZ	Syngenta Crop Protection Public: Swiss Syngenta AG Swiss	http://www3.syngenta.com/
	\$59.8m (13)	FIL - hygiene, animal health (teat), markers, nutrition	GEA Group Aktiengesellschaft Public Germany: Listed	www.fil.co.nz www.milfos.com








Specialised companies operate in animal health products and health delivery products

EXAMPLE list of the firms in the New Zealand agri-tech Animal health sector				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$63m* (12)	Animal Health, drug development and production, operations in NZ and USA	Argenta Ltd Private NZ: 50% Joseph Wallace, 45% Doug Cleverly & Family, 5% others	www.argenta.co.nz
	\$51.7m* (09)	Animal health, agrichemicals human healthcare products (NZ Group Revenue \$184m 2013)	Bomac family sold to Bayer NZ Ltd in 2011, Bayer AG Germany, Bomac Australia liquidation	www.bayeranimal.co.nz
	\$76.7m (Schering Plough)	Schering Plough Animal Health Division in NZ, manufacture vaccines, antibiotics and animal health products (Coopers Brand)	Schering Plough Animal Health owned by Merck Sharp and Dohme Public USA (NYSE:MRK)	www.msd-animal-health.co.nz/
	\$10-20*	Animal health and nutrients, pasture nutrients; 2 factories (CHCH, Akld)	Nutritech International Ltd NZ Private: 51% Manning, Waters 28%, Nielsen 16%, others	www.nutritech.co.nz
	\$50-100 18% X (non AT)	Pasture management supplements, dairy shed chemicals, animal health , range of plastic covers, wraps, (imported) bale net, twine, rope and cordage	Donaghys Ltd Private NZ: Silva/Evatt/McGuinness/Phillips/others	www.donaghys.com
	\$25m	Wholesalers and manufacturers in Cambridge, animal husbandry and vet products tail trimmers, hoof pads/mats, splints, dehorner, branders, calf feeders (liquid and grains) etc. (NZ, AU, Chile)	Shoof International NZ Private: 100% Laurent	www.shoof.co.nz/
	\$24m (12)	Animal health delivery systems (drench guns, injectors)	Simcro Ltd USA PE: Riverside Asia Pacific; NZ Private: 19% William Rouse, 12% Walker, others	www.simcro.com
	-	Health delivery systems - Drench guns, injectors	ISL Animal Health part of Forlong & Maisey NZ Private: Maisey/Bindon/Victor	www.islanimalhealth.com www.forlongmaisey.co.nz









New Zealand has strong established companies in the Fencing Supplies subsector

EXAMPLE list of the firms in the New Zealand agri-tech Fencing Supplies sector				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$187m (12)	Electric fencing & gates , security systems, petrol pumps, plastics, tools, electronic weighing and ID	Gallagher family	www.gallaghergroup.co.nz www.gallagher.co.nz
	\$107m (12)	Global agritech business: weighing and ID systems, milk meters , dairy automation and online herd mngt, milk cooling and storage solutions, electric and traditional fencing tools	20% KTT Limited Kestrel Capital (AU) Others	www.tru-test.com www.kestrelcapital.com.au
	-	Supplies and builds a range of unique, high quality products for use in the agricultural and horticultural sectors (electric fence equipment, electric pasture mangt tools)	NZ Agriworks Ltd T/A Jenquip Private NZ: 50% Verboeket, 50% McFadzean	www.jenquip.co.nz
	-	Manufacturing and exporter of fencing tools and fencing equipment	Robertson Engineering Ltd, Strainrite Ltd Private NZ: Gaskin/Wooster	www.strainrite.co.nz/










New Zealand has a number of farm tools and hardware firms across a wide range of products

EXAMPLE list of the firms in the New Zealand agri-tech Farm Tools and Hardware sector				
Firm	Turnover (NZ\$m; 12)	Business description	Ownership	Website
	\$187m (12)	Electric fencing & gates , security systems, petrol pumps, plastics, tools, electronic weighing and ID	Gallagher family	www.gallaghergroup.co.nz www.gallagher.co.nz
	\$107 (12)	Global agritech business: weighing and ID systems, milk meters , dairy automation and online herd mngt, milk cooling and storage solutions, electric and traditional fencing tools	20% KTT Limited Kestrel Capital (AU) Others	www.tru-test.com www.kestrelcapital.com.au
	\$25m	Wholesalers and manufacturers in Cambridge, animal husbandry and vet products tail trimmers, hoof pads/mats, splints, dehorners, branders, calf feeders (liquid and grains) etc. (NZ, AU, Chile)	Shoof International NZ Private: 100% Laurent	www.shoof.co.nz/
	\$24m (12)	Animal health delivery systems (drench guns, injectors)	Simcro Ltd USA PE: Riverside Asia Pacific; NZ Private: 19% William Rouse, 12% Walker, others	www.simcro.com
	\$10-20m*	Shearing and clipping engineers , clippers, lambing and calving supplies; manufacture, wholesale, export to AU, UK Falklands, Can, USA, France, Norw	Acto Agriculture NZ Ltd Private NZ: Waddell family	www.acto.co.nz
	\$20-50m*	Livestock fencing, weigh, EID machinery, animal husbandry, drench guns (NZ, AU + Ireland, UK, EU)	Te Pari Products Ltd Private NZ: Blampied Family	www.tepari.com
	\$26m (12)	Livestock identification tags and applicator devices Global operations	Zee Tags Ltd Datamars SA (Switzerland)	www.zeetags.co.nz www.datamars.com










New Zealand has a large number of plastic pumping, water and parts companies

EXAMPLE list of the firms in the New Zealand Pumping, water and irrigation sector (plastics)				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	Global E2.5b NZ\$174.5 m	RXP Manufacture K-Line irrigation products, pipe, water storage tanks and effluent dispersal systems NZ operations include plastics, piping, plumbing companies Marley, Dux, Dynex	RXP Plastics Ltd; New Zealand Investment Holdings Ltd; Aliaxis S.A Private: Belgium	www.rxplastics.co.nz/ www.aliaxis.com
	-	Design and manufacture of moulded and injected moulded plastic products for feeding (also contract pack) + playgrounds, tanks , drainage parts, pet food manufacturing	Stallion Plastics Ltd Private NZ: Allen/Baker	www.stallion.co.nz/
	-	Pipes, pipeline systems and fittings for rural use	C.E Crane NZ Holdings Parent - Public NZ: Fletcher Building Ltd	www.iplex.co.nz/
	-	Design and manufacture of float valves for water reservoirs, tanks and troughs, and plumbing	Apex Valves Ltd, Apex Group Private NZ: Breckon/Gracie/Cambell/Powrie	www.apexvalves.co.nz
	-	Pipe fittings and valves (polythene)	Anka Products Ltd Private NZ: McMahon family	www.ankaproducts.com
	-	Pipe fittings and valves, sprinklers (1,000 products)	Hansen Products NZ: Hansen Group Private NZ: Badham/Prosk/Hansen/Sharpe	www.hansenproducts.co.nz
	-	Manufacturer of float valves for the agricultural industry	Jobe Valves Ltd Private NZ: Jobe family	www.jobevalves.com
	-	Manufacture and market hand held pumps	NZ Pump Company Private NZ: Jenkinson-Johns family/ others	www.nzpump.com/

This sector also covers a range of metal-based irrigation companies and metal piping companies (e.g. gates fencing)






EXAMPLE list of the firms in the New Zealand Metal Pumping Irrigation and Metal fencing sectors				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	-	Effluent irrigation systems , exporting to US, UK, Mexico, Sth America, Sth Africa, Australia	Williams Engineering Private NZ: Williams family	www.williamsirrigation.com
	-	Irrigation water & effluent, pumps, manufactured in Ashburton	Rainer Irrigation Ltd Private NZ: Briggs	www.rainer.co.nz/
	-	Specialised agricultural products; dairy, beef and sheep; drafting, handlers, EID, weigh scales, pasture mangt, 3 production facilities (Akl, Rotorua, Bendigo (Au))	TechniPharm International Ltd Private NZ: Heesen	www.technipharm.co.nz
	-	Engineers of dairy sheds, backing gates, top gates, operations in Chile	Reporoa Engineering Ltd Private NZ: Perrin/Stanway/ Graham/Hill	www.herdflow.com
	-	Engineers of backing gates and controllers (steel fabrication, die casting, gear cutting)	K H McConnel Ltd Private NZ: 100% McConnel Family	www.mcconnel.co.nz
	-	Animal handling equipment (yards, drafters, weigh crates)	Prattley Industries Ltd Private NZ: Ward/others	www.prattley.co.nz
	-	Livestock fencing, weigh, EID machinery, animal husbandry (NZ, AU + Ireland, UK, EU)	Te Pari Products Ltd Private NZ: Blampied Family	www.tepari.com
	\$59.8m (13)	FIL - hygiene , animal health (teat), markers , nutrition	GEA Group Aktiengesellschaft Public Germany: Listed in the MDAX index (G1A, WKN 660200)	www.fil.co.nz www.milfos.com
	-	Feed systems & equipment for dairy feed, silo's, effluent, calf rearing, sheep jettors, poultry	PPP Industries Ltd Private NZ: Morison/Dance	www.pppindustries.co.nz

This sector covers large farm machinery, milking equipment, weigh machinery, sprayers




EXAMPLE list of the firms in the New Zealand agri-tech Machinery & Systems & Parts sector				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$80-100m (13)	Manufacture of milking equipment and systems	32% Tainui Group Holdings Ltd; 32% Ngai Tahu Capital Ltd; 32% Pioneer Capital; 4% Management	www.waikatomilking.co.nz
	\$59.8m (13)	Milfos International Gp- dairy milking systems , automation and components company (manuf stainless steel, electronics and plastics)	GEA Group Aktiengesellschaft Public Germany: Listed in the MDAX index (G1A, WKN 660200)	www.milfos.com/ www.gea-farmtechnologies.com/nz/en/
	-	Feed systems & equipment for dairy feed, silo's, effluent, calf rearing, sheep jettlers, poultry	PPP Industries Ltd Private NZ: Morison/Dance	www.pppindustries.co.nz
	-	Dairy Automation Solutions (milk flow, pumps, controllers) (NZ, UK, USA)	Corkill Systems Ltd 100% Corkill Family	www.corkillsystems.co.nz/
	-	Accessories to spray, spread, measure via GPS with "smart controller "; Goldline manufactured in NZ	Public NZ: Cooperative (Ravensdown Fertiliser Co-operative Ltd)	www.c-dax.co.nz www.ravensdown.co.nz
	-	Electronic weighing company manufacture indicators and loadbars across two sites in Palmerston Nth and Oamaru	Iconix NZ Ltd Private NZ: Russell	www.iconix.co.nz
	\$187m (12)	Electric fencing & gates, security systems, petrol pumps, plastics, tools, electronic weighing and ID	Gallagher family	www.gallaghergroup.co.nz www.gallagher.co.nz
	\$107m (12)	Manufacturer of livestock weigh scale indicators and dairy automation milk metering equipment; electric fencing and traditional fencing tools	20% KTT Limited Kestrel Capital (AU) Others	www.tru-test.com www.kestrelcapital.com.au
	-	Specialised products; EID, weigh scales etc.	TechniPharm International Ltd Private NZ: Heesen	www.technipharm.co.nz

New Zealand designs, engineers and exports a large range of farm vehicles and machinery

EXAMPLE list of the firms in the New Zealand agri-tech **Farm Vehicles, cultivators** sector

Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	-	Aitchison and Reese branded agricultural machines and equipment drills, rollers, spreaders, cultivators, drum and disc mowers, bale wrappers; export to 15 countries	Reese Engineering Ltd Private NZ: Simpson/Pedler/Baan	www.reesegroup.co.nz
	-	Engineers of sheds, gates, tip trailers, sprayers, bulk handling equip design and manufacture in Otorohanga +DC in Melb, AU; export markets in SEA, Africa & Sth America (imports componentry from EU)	Giltrap Engineering Ltd Private NZ: Mulgrew Family	www.giltrapeng.co.nz/
	-	Engineers of spreaders, tip trailers, feed out machines based in Hinds (mid Canterbury)	Robertson Manufacturing Private NZ: Robertson	www.robfarm.co.nz
	-	Design and manufacture spreaders, mowers, cultivators, loader attachments under Rata, Willett, Vogal & Paddon brands in Timaru and import the Sitrex brand	Rata Industries Group Private NZ: Walton Family	www.rataindustries.co.nz
	-	Specialist supplier of farm machinery e.g drills, rollers	Duncan Ag Ltd Private NZ: Duncan Family	www.duncanag.co.nz

Three key retailers dominate the agricultural retail space

EXAMPLE list of the firms in the New Zealand agri-tech Retailers				
Firm	Turnover (NZ\$m)	Business description	Ownership	Website
	\$1,924.71 (Gp)	National rural supplies retailer, own NRM feed; amalgamated with CRT Co-operative	NZ Public: 100% Farmlands Co-operative (merger of CRT and Farmlands)	www.farmlands.co.nz www.crt.co.nz
	\$1,130m (\$433m retail)	Large retailer to the rural agricultural sector, also sales of livestock, wool, irrigation, seed and grains, feeds & real estate	PGG Wrightson Ltd 50% Agria (Singapore), 50% public	www.pggwrightson.co.nz
	-	Supplier to dairy and agricultural sector	RD1 NZ Public: Fonterra Dairy Co-operative	www.rd1.com/

Services cross a broad range of activities in agriculture; education, certification, research etc.

EXAMPLE list of the firms in the New Zealand agri-tech Services sector

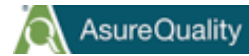
Universities



Applied Learning/Training



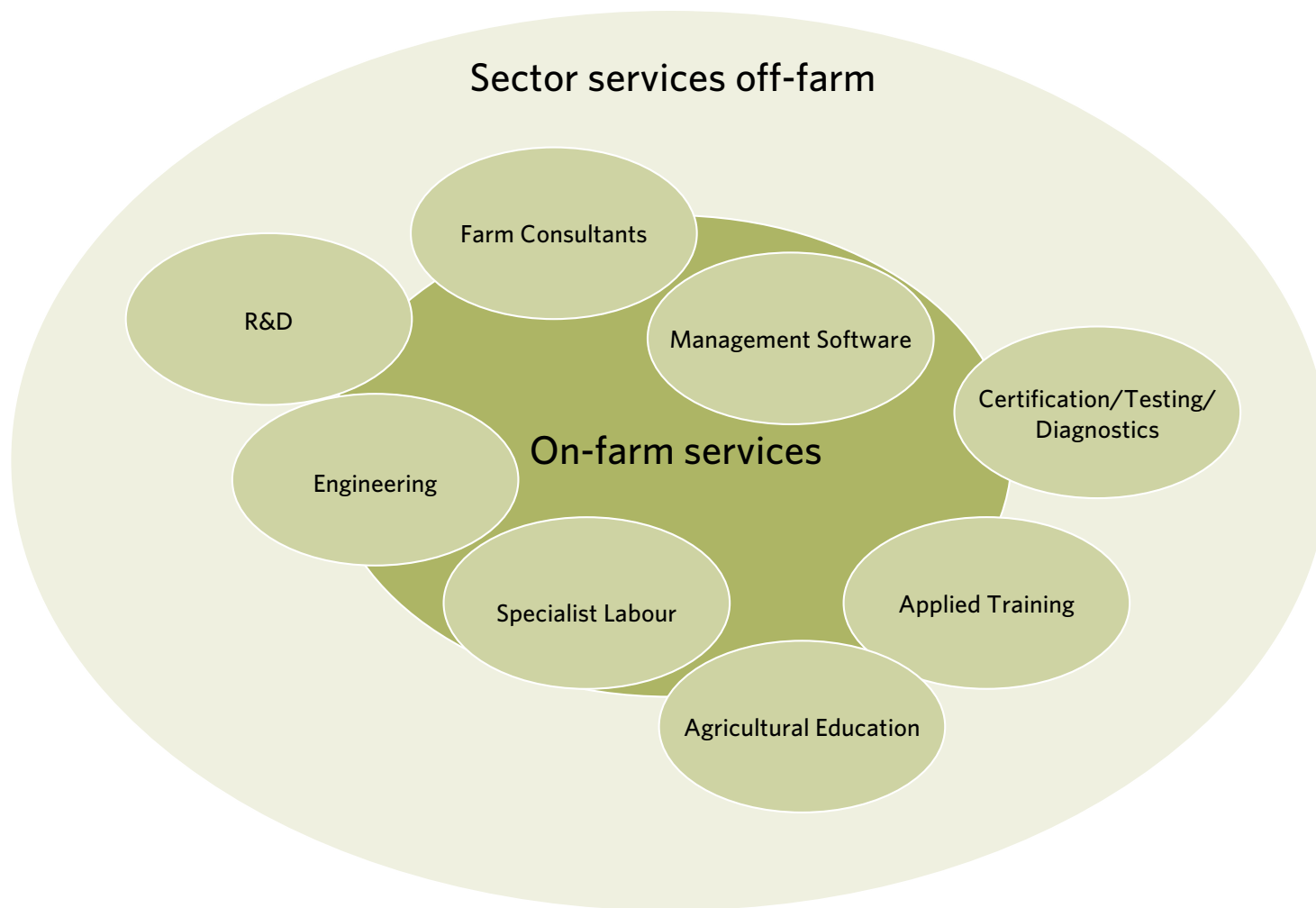
Testing/Certification/Monitoring



Research



Service companies and organisations support the agricultural sector both off and on-farm



Background & Objectives

Definition of Agritech

Overview of export markets

Investigation of key growth areas

Overview of key competitive countries

Appendix 1 - Agritech HS code database

Appendix 2 - Brief profiles of key New Zealand agritech

Appendix 3 - NZTE Research Brief

Appendix 4 - Detailed category by country export data

New Zealand Agritech Exports Research Brief

Market and Strategic Overview

Global Agribusiness is one of New Zealand Trade and Enterprise's (NZTE) High Impact Programmes (HIP).

The current global environment provides substantial opportunities for New Zealand agribusiness companies however no recent reports are available to quantify the total value of the market opportunity and the total value of New Zealand Agritech exports.

Role of the Research

The research aims to provide up to date analysis (quantitative) on agritech exports as well as qualitative evidence from New Zealand Agritech companies. The report will include a database of industry HS codes used by New Zealand Agritech companies when exporting to allow year on year comparisons.

Objectives

Business objective

The overall aim of the research is provide supporting documentation for the strategic direction of the High Impact Programme, have current information available to use internally at NZTE, and be available for Agritech companies (if requested).

Research objective

What we want to know	What will be required
Definition of Agritech (exports relating to livestock farming), and the HS codes the industry exports under (to allow year on year updates / reference comparisons);	QUANT: development of Agritech HS Code database; develop definition of sub-sectors QUAL: Engagement with Key Agritech companies; interviews,
Overview of all export markets: <ul style="list-style-type: none">- Export figures- Companies exporting to each market- Growth rates- Identification of key trends (last 5 years)	QUANT: Analysis of NZ export statistics (country, value, growth) / reconciliation with import statistics from key import countries; NZ Customs database etc QUAL: <ul style="list-style-type: none">- Identification of all companies exporting over \$10m

	<ul style="list-style-type: none"> - Commentary on trends - Commentary on acquisitions in the sector over last 3 years - Commentary on key R&D areas as indicator for future growth
Investigation of key growth areas	<p>QUANT: What are the significant areas of growth over the last 5 years? What does this mean?</p> <p>QUAL: Based on analysis of competitive countries (below), where could NZ look to drive more value?</p>
<p>Overview of key competitive countries</p> <ul style="list-style-type: none"> - Israel - Ireland - USA 	<p>QUANT: Utilize HS codes defined as per 'Definition of Agritech' to show growth, key trends of NZ's competitors.</p> <p>QUAL: Provide three case studies of Agritech multinationals and their growth in the last 5 years</p>

Suggested Approach & Research Target(s)

- One to One interviews with:
 - NZ Agritech companies (details provided by NZTE)

Reporting Requirements

Full report

Timing

By end of June

Existing research or other information

- 2006-2011 NZTE excel table of NZ Agritech exports

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New Zealand Agritech exports by product category by country in 2013

US\$m; 2013; Source: UN Comtrade database

	TOTAL	Agri-chemicals	Animal feed	Animal genetics	Animal health	Farm tools & other hardware	Farming vehicles, cultivators	Fencing supplies & equipment	Fertilizer	Machinery & systems	Plant genetics	Pumping, water & irrigation
World	\$ 1,429.8	\$ 2.7	\$ 28.0	\$ 38.7	\$ 254.5	\$ 185.4	\$ 27.4	\$ 251.8	\$ 5.3	\$ 251.9	\$ 191.2	\$ 192.8
Australia	\$ 399.6	\$ 1.5	\$ 3.7	\$ 0.6	\$ 72.3	\$ 107.5	\$ 12.3	\$ 77.0	\$ 0.7	\$ 43.1	\$ 19.0	\$ 61.9
USA	\$ 213.2	\$ 0.2	\$ 0.0	\$ 0.2	\$ 31.9	\$ 26.0	\$ 3.9	\$ 44.5	\$ 0.7	\$ 75.9	\$ 16.2	\$ 13.5
China	\$ 74.0	\$ 0.2	\$ 0.8	\$ 33.0	\$ 5.7	\$ 3.4	\$ 0.0	\$ 16.0	\$ 0.0	\$ 8.0	\$ 4.0	\$ 3.0
Netherlands	\$ 73.5	\$ 0.0	\$ 0.2	\$ 0.2	\$ 11.0	\$ 2.6	\$ 0.2	\$ 6.1	\$ 0.0	\$ 2.8	\$ 48.7	\$ 1.7
United Kingdom	\$ 57.4	\$ 0.0	\$ 0.1	\$ 0.4	\$ 24.5	\$ 7.2	\$ 2.5	\$ 3.0	\$ 0.3	\$ 7.3	\$ 9.5	\$ 2.7
Canada	\$ 42.6	\$ -	\$ 0.2	\$ 0.0	\$ 4.5	\$ 2.4	\$ 0.2	\$ 2.6	\$ 0.1	\$ 29.5	\$ 1.6	\$ 1.5
Germany	\$ 38.2	\$ -	\$ 0.1	\$ 0.0	\$ 6.3	\$ 3.1	\$ 0.3	\$ 5.0	\$ 0.1	\$ 6.2	\$ 16.2	\$ 1.0
Japan	\$ 36.2	\$ -	\$ 2.0	\$ 0.2	\$ 5.1	\$ 3.7	\$ 0.2	\$ 2.8	\$ -	\$ 1.9	\$ 8.8	\$ 11.5
France	\$ 32.0	\$ -	\$ 0.0	\$ -	\$ 10.9	\$ 0.5	\$ 0.5	\$ 2.6	\$ -	\$ 6.0	\$ 10.5	\$ 1.1
Nigeria	\$ 31.9	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ 31.8
Rep. of Korea	\$ 29.0	\$ 0.0	\$ 0.5	\$ -	\$ 1.1	\$ 0.6	\$ 0.0	\$ 16.4	\$ 0.0	\$ 0.4	\$ 7.3	\$ 2.6
Chile	\$ 27.7	\$ -	\$ 0.0	\$ 0.7	\$ 1.1	\$ 1.2	\$ 0.5	\$ 2.0	\$ 0.1	\$ 13.5	\$ 7.5	\$ 1.2
South Africa	\$ 26.4	\$ 0.3	\$ 0.0	\$ 0.8	\$ 4.6	\$ 0.5	\$ 0.7	\$ 4.5	\$ 0.3	\$ 8.6	\$ 4.8	\$ 1.2
Fiji	\$ 24.7	\$ 0.0	\$ 1.3	\$ 0.0	\$ 6.6	\$ 3.6	\$ 1.0	\$ 4.0	\$ 0.4	\$ 1.3	\$ 1.0	\$ 5.5
Denmark	\$ 20.4	\$ -	\$ -	\$ -	\$ 5.3	\$ 1.0	\$ 0.3	\$ 9.5	\$ -	\$ 1.4	\$ 2.8	\$ 0.2
Belgium	\$ 17.6	\$ -	\$ -	\$ -	\$ 12.7	\$ 0.7	\$ 0.0	\$ 0.1	\$ -	\$ 0.1	\$ 3.4	\$ 0.5
Singapore	\$ 16.9	\$ 0.0	\$ 0.4	\$ -	\$ 3.0	\$ 1.1	\$ 0.1	\$ 6.2	\$ 0.0	\$ 3.7	\$ 0.2	\$ 2.2
Saudi Arabia	\$ 16.8	\$ 0.0	\$ 10.9	\$ -	\$ 2.3	\$ 0.0	\$ -	\$ 0.6	\$ -	\$ 2.8	\$ -	\$ 0.1
Italy	\$ 14.4	\$ -	\$ -	\$ -	\$ 2.8	\$ 0.4	\$ 0.1	\$ 7.2	\$ 0.0	\$ 1.5	\$ 2.2	\$ 0.1
Papua New Guinea	\$ 12.6	\$ -	\$ 0.0	\$ -	\$ 2.0	\$ 1.8	\$ 0.2	\$ 4.1	\$ -	\$ 0.4	\$ 0.0	\$ 4.0
Ireland	\$ 11.7	\$ -	\$ 0.0	\$ 0.4	\$ 1.1	\$ 2.4	\$ 0.0	\$ 0.8	\$ 0.1	\$ 4.3	\$ 2.3	\$ 0.3
Thailand	\$ 11.2	\$ -	\$ 0.0	\$ 0.0	\$ 0.3	\$ 1.3	\$ 0.3	\$ 2.8	\$ -	\$ 0.5	\$ 3.8	\$ 2.2
Mexico	\$ 9.9	\$ -	\$ -	\$ -	\$ 0.5	\$ 0.4	\$ -	\$ 6.4	\$ -	\$ 2.3	\$ 0.1	\$ 0.1
Brazil	\$ 9.5	\$ -	\$ -	\$ 0.6	\$ 0.9	\$ 0.4	\$ 0.0	\$ 1.1	\$ -	\$ 6.0	\$ 0.1	\$ 0.4

Malaysia	\$	8.4	\$	0.1	\$	0.4	\$	0.0	\$	0.8	\$	0.5	\$	0.2	\$	2.6	\$	0.1	\$	1.3	\$	0.8	\$	1.6
Samoa	\$	8.1	\$	0.0	\$	1.0	\$	-	\$	1.3	\$	1.2	\$	0.4	\$	0.6	\$	0.1	\$	0.1	\$	0.0	\$	3.5
Hong Kong SAR	\$	7.8	\$	0.0	\$	1.0	\$	-	\$	3.8	\$	0.4	\$	0.0	\$	1.0	\$	0.0	\$	0.4	\$	0.9	\$	0.2
New Caledonia	\$	7.5	\$	0.0	\$	0.4	\$	-	\$	0.1	\$	1.2	\$	0.8	\$	2.4	\$	0.8	\$	0.1	\$	0.7	\$	1.0
UAE	\$	7.4	\$	-	\$	0.1	\$	-	\$	1.7	\$	0.8	\$	0.0	\$	1.3	\$	-	\$	0.7	\$	0.1	\$	2.7
Vanuatu	\$	7.0	\$	-	\$	0.2	\$	-	\$	5.0	\$	0.7	\$	0.1	\$	0.3	\$	0.0	\$	0.0	\$	0.0	\$	0.6
India	\$	6.8	\$	0.0	\$	0.0	\$	-	\$	0.0	\$	0.7	\$	0.0	\$	2.4	\$	0.0	\$	0.9	\$	2.0	\$	0.9
Czech Rep.	\$	5.5	\$	-	\$	0.0	\$	-	\$	0.0	\$	0.2	\$	0.0	\$	0.1	\$	-	\$	5.1	\$	0.0	\$	0.1
Cook Isds	\$	4.9	\$	0.0	\$	0.6	\$	-	\$	0.7	\$	0.8	\$	0.2	\$	0.3	\$	0.1	\$	0.1	\$	0.0	\$	2.0
Uruguay	\$	4.8	\$	-	\$	-	\$	0.5	\$	0.2	\$	0.4	\$	0.4	\$	0.3	\$	-	\$	1.4	\$	1.6	\$	0.1
Taiwan	\$	4.6	\$	-	\$	0.9	\$	-	\$	1.1	\$	0.2	\$	-	\$	1.1	\$	0.0	\$	0.3	\$	0.9	\$	0.2
French Polynesia	\$	4.5	\$	0.0	\$	2.0	\$	-	\$	0.4	\$	0.8	\$	0.1	\$	0.3	\$	0.3	\$	0.0	\$	0.1	\$	0.5
Poland	\$	4.2	\$	-	\$	0.0	\$	-	\$	0.2	\$	0.0	\$	0.0	\$	0.5	\$	-	\$	1.3	\$	2.1	\$	0.1
Viet Nam	\$	4.2	\$	-	\$	0.1	\$	-	\$	0.1	\$	0.4	\$	0.1	\$	1.2	\$	-	\$	0.2	\$	1.9	\$	0.1
Argentina	\$	4.1	\$	-	\$	-	\$	0.6	\$	1.0	\$	0.0	\$	-	\$	0.4	\$	-	\$	1.4	\$	0.1	\$	0.5
Indonesia	\$	3.8	\$	0.3	\$	0.1	\$	-	\$	0.3	\$	0.4	\$	0.2	\$	0.5	\$	-	\$	1.3	\$	0.3	\$	0.5
Spain	\$	3.7	\$	-	\$	-	\$	-	\$	1.9	\$	0.2	\$	-	\$	0.3	\$	-	\$	0.4	\$	0.8	\$	0.1
Tonga	\$	3.5	\$	-	\$	0.5	\$	-	\$	0.5	\$	0.4	\$	0.1	\$	0.5	\$	0.3	\$	0.0	\$	0.1	\$	1.0
Israel	\$	3.5	\$	0.0	\$	-	\$	-	\$	2.8	\$	0.1	\$	0.0	\$	0.1	\$	-	\$	0.4	\$	0.1	\$	0.0
Kenya	\$	3.4	\$	-	\$	-	\$	0.0	\$	0.0	\$	0.0	\$	-	\$	0.2	\$	0.3	\$	-	\$	0.1	\$	2.8
Switzerland	\$	3.4	\$	-	\$	-	\$	-	\$	2.5	\$	0.0	\$	0.0	\$	0.4	\$	-	\$	0.1	\$	0.2	\$	0.1
Sweden	\$	3.3	\$	-	\$	-	\$	-	\$	0.0	\$	0.1	\$	0.3	\$	0.4	\$	-	\$	1.6	\$	0.5	\$	0.4
Hungary	\$	3.0	\$	-	\$	-	\$	-	\$	0.0	\$	0.1	\$	-	\$	0.1	\$	-	\$	0.1	\$	0.1	\$	2.7
Slovenia	\$	2.9	\$	-	\$	-	\$	-	\$	-	\$	0.0	\$	-	\$	0.0	\$	-	\$	0.1	\$	-	\$	2.9
Turkey	\$	2.8	\$	-	\$	-	\$	-	\$	0.5	\$	0.2	\$	-	\$	0.2	\$	0.0	\$	0.3	\$	0.1	\$	1.6
Algeria	\$	2.8	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	0.0	\$	2.8	\$	-
Philippines	\$	2.7	\$	-	\$	-	\$	-	\$	0.1	\$	0.2	\$	0.0	\$	0.4	\$	0.0	\$	0.3	\$	0.5	\$	1.2
Jamaica	\$	2.7	\$	-	\$	-	\$	0.0	\$	0.1	\$	0.0	\$	-	\$	-	\$	-	\$	0.0	\$	-	\$	2.6
Tanzania	\$	2.7	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	0.2	\$	0.0	\$	-	\$	-	\$	2.5
Djibouti	\$	2.5	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	0.3	\$	-	\$	0.1	\$	-	\$	2.1
Pakistan	\$	2.4	\$	-	\$	-	\$	-	\$	0.1	\$	0.0	\$	0.1	\$	0.1	\$	-	\$	0.9	\$	1.1	\$	0.3
Malta	\$	2.3	\$	-	\$	-	\$	-	\$	2.3	\$	0.0	\$	-	\$	0.0	\$	-	\$	-	\$	-	\$	0.0

Solomon Isds	\$ 2.2	\$ 0.0	\$ 0.0	\$ -	\$ 0.4	\$ 0.3	\$ -	\$ 0.3	\$ -	\$ 0.0	\$ 0.0	\$ 1.2
Venezuela	\$ 2.2	\$ -	\$ -	\$ -	\$ 2.0	\$ 0.1	\$ -	\$ 0.1	\$ -	\$ 0.1	\$ -	\$ 0.0
Colombia	\$ 2.2	\$ -	\$ -	\$ 0.1	\$ 0.2	\$ 0.1	\$ 0.0	\$ 0.8	\$ -	\$ 0.6	\$ 0.2	\$ 0.1
Finland	\$ 1.9	\$ -	\$ -	\$ -	\$ 0.1	\$ 0.0	\$ -	\$ 0.3	\$ -	\$ 1.2	\$ 0.2	\$ 0.1
Bahrain	\$ 1.8	\$ 0.0	\$ 0.0	\$ -	\$ 0.2	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 1.3	\$ 0.0	\$ 0.2
Barbados	\$ 1.7	\$ -	\$ -	\$ -	\$ 1.7	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0
Greece	\$ 1.5	\$ -	\$ -	\$ -	\$ 0.3	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ 1.1
Morocco	\$ 1.5	\$ -	\$ -	\$ -	\$ 0.5	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ 0.9	\$ -
Russian Federation	\$ 1.3	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.2	\$ -	\$ 0.7	\$ -	\$ 0.3	\$ -	\$ 0.0
Ecuador	\$ 1.2	\$ -	\$ -	\$ 0.1	\$ 0.0	\$ 0.0	\$ -	\$ 0.3	\$ -	\$ 0.1	\$ 0.2	\$ 0.4
Austria	\$ 1.1	\$ -	\$ -	\$ -	\$ 0.8	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ 0.1	\$ 0.0
Egypt	\$ 1.0	\$ -	\$ -	\$ -	\$ 0.2	\$ 0.0	\$ 0.0	\$ 0.4	\$ -	\$ 0.3	\$ 0.0	\$ 0.0
Peru	\$ 1.0	\$ -	\$ -	\$ 0.0	\$ 0.1	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ 0.0	\$ 0.7	\$ 0.1
Norway	\$ 1.0	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.2	\$ -	\$ 0.4	\$ -	\$ 0.2	\$ 0.1	\$ 0.1
American Samoa	\$ 1.0	\$ -	\$ 0.2	\$ -	\$ 0.0	\$ 0.4	\$ -	\$ 0.1	\$ 0.0	\$ 0.0	\$ -	\$ 0.3
Qatar	\$ 1.0	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.6	\$ -	\$ 0.1	\$ 0.1	\$ 0.1
Niue	\$ 0.9	\$ -	\$ 0.1	\$ -	\$ 0.2	\$ 0.2	\$ 0.1	\$ 0.1	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.3
Sri Lanka	\$ 0.9	\$ -	\$ -	\$ -	\$ 0.1	\$ 0.2	\$ 0.0	\$ 0.1	\$ -	\$ 0.0	\$ 0.0	\$ 0.6
Kiribati	\$ 0.7	\$ -	\$ -	\$ -	\$ 0.1	\$ 0.1	\$ 0.0	\$ 0.1	\$ -	\$ 0.0	\$ -	\$ 0.4
Nauru	\$ 0.7	\$ -	\$ -	\$ -	\$ 0.2	\$ 0.0	\$ -	\$ 0.5	\$ -	\$ -	\$ -	\$ 0.0
Dominican Rep.	\$ 0.6	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ 0.5
Brunei Darussalam	\$ 0.6	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ 0.1	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.0
Mongolia	\$ 0.5	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.5	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ 0.0
Bangladesh	\$ 0.5	\$ 0.0	\$ 0.0	\$ -	\$ 0.1	\$ 0.0	\$ -	\$ 0.0	\$ 0.2	\$ -	\$ 0.1	\$ 0.1
Jordan	\$ 0.5	\$ -	\$ -	\$ -	\$ 0.3	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ 0.1	\$ 0.0
Portugal	\$ 0.5	\$ -	\$ 0.0	\$ -	\$ 0.3	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ 0.1	\$ -
Tuvalu	\$ 0.5	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ 0.0	\$ 0.4	\$ 0.0	\$ 0.0	\$ 0.0	\$ -	\$ 0.0
Lithuania	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.1	\$ -	\$ 0.0	\$ 0.3	\$ 0.0
Tunisia	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.4	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -
Luxembourg	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.3	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ -
Estonia	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ 0.3	\$ 0.0	\$ -	\$ -	\$ -	\$ 0.1
Mauritius	\$ 0.4	\$ -	\$ -	\$ -	\$ 0.3	\$ 0.1	\$ -	\$ 0.0	\$ -	\$ -	\$ 0.0	\$ 0.0

Zambia	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Bolivia (Plurinational Sta	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ -
Iceland	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Romania	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -
Wallis and Futuna Isds	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Honduras	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Ethiopia	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Guyana	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.1	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
FS Micronesia	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Palau	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Botswana	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Sudan	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Lao People's Dem. Rep.	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Slovakia	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.1	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Antigua and Barbuda	\$ 0.1	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ 0.0	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Malawi	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -
Tokelau	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ 0.0	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Latvia	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Seychelles	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Zimbabwe	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Guatemala	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Dem. Rep. of the Congo	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
N. Mariana Isds	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Serbia	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ 0.0
Belarus	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Namibia	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Nepal	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0
Niger	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -
Afghanistan	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Georgia	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Azerbaijan	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mozambique	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0

Coriolis is a boutique management consulting firm that focuses on food, consumer packaged goods, retailing and foodservice.

Coriolis advises clients on strategy, operations, organization, and mergers and acquisitions. We develop practical, fact-based insights grounded in the real world that guide our clients decisions and actions. Founded in 1999, Coriolis is based in Auckland, New Zealand and works on projects across the Asia Pacific region.

WHAT WE DO

We help our clients assemble the facts needed to guide their big decisions. We make practical recommendations. Where appropriate, we work with them to make change happen.

HOW WE DO IT

Our style is practical and down-to-earth. We try to put ourselves in our clients' shoes and focus on actions. We listen hard, but we are suspicious of the consensus. We provide an external, objective perspective. We are happy to link our fees to results.

WHO WE WORK WITH

We only work with a select group of clients we trust. We build long term relationships with our clients and more than 80% of our work comes from existing clients. Our clients trust our experience, advice and integrity.

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We help clients identify which countries are the most attractive - from a consumer, a competition and a channel point-of-view. Following this we assist in developing a plan for market entry and growth.

VALUE CREATION

We help clients create value through revenue growth and cost reduction.

TARGET IDENTIFICATION

We help clients identify high potential acquisition targets by profiling industries, screening companies and devising a plan to approach targets.

DUE DILIGENCE

We help organisations make better decisions by performing consumer and market-focused due diligence and assessing performance improvement opportunities.

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