Agribusiness programmes at Levels 2 & 3

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Agribusiness programmes at level 2 and 3

Agribusiness is defined as a course of study that integrates all the primary industries and businesses. Primary industries comprises a group of sectors including; agriculture, aquaculture, dairy manufacturing, equine, forestry, horticulture, seafood, and sports turf that form the basis of modern primary production.  Primary industry businesses often called agribusinesses include companies that are involved along the whole value chain including the manufacture, production operations, storage, processing, distribution of product and supplies, marketing of primary products and items made from them, along with support industries such as fertiliser companies, veterinarians, rural consultants and accountants.

Through the focused learning of Agribusiness, students engage in future and innovative thinking and develop problem-solving strategies and lifelong skills. They build knowledge of the whole operation, and are encouraged to find innovative solutions to challenging operational issues. They will learn the economic, physical/climatic, political, environmental, technological, historical, social, ethical, and cultural influences on agribusinesses and the interrelationships of science, business, technology, society, and the environment.

Agribusiness looks at how humans choose to use science and technological knowledge and limited resources such as land, labour, capital and management to produce primary and secondary products and distribute them for consumption to different people over time.   Agribusiness is the understanding that the ability to grow primary products is not sufficient to make growers succeed and that there are many other elements, which are also important, such as human resources, strategic management, marketing, policy, financial planning, economics, and natural resources.

Agribusiness body of knowledge

Although Agribusiness is not a stand-alone learning area in the New Zealand Curriculum it is drawn from and does have clear connections to three learning areas and that its body of knowledge sits across these three areas as an overarching structure. These are:

* Technology
* Science
* Social sciences

It is important for teaching, learning and assessment that a combination of all three learning areas can be explored simultaneously. Agribusiness itself comprises four key strands that weave through the three curriculum learning areas.

Learning programmes in Agribusiness aim to build:

* understanding of the scientific, economic and technological principles used in Agribusiness that ensure economic, social, ethical, cultural and environmentally sustainable primary production systems and secondary products and services linked to the primary sector
* the ability to apply economic, social, ethical, cultural and environmental considerations to primary and secondary production systems to ensure marketable, environmentally sustainable products and services
* the skills of planning, investigating, designing, drawing, model making and capabilities in using digital tools and processes
* creativity, logic, knowledge and problem solving to find innovative solutions to real-life problems, necessary for New Zealand to remain competitive in local, regional and international markets.

Key skills and competencies developed through Agribusiness

Agribusiness programmes at levels 7 or 8 are based around realistic and practical contexts and provide students with the opportunity to develop skills and concepts to explore agribusiness issues and to communicate their ideas to others. The New Zealand Curriculum identifies five key competencies: thinking, using language, symbols, and texts, managing self, relating to others, and participating and contributing.

Thinking.

Agribusiness students need to be able to understand agribusiness theory with scientific concepts and technological knowledge. The ability to be able to think creatively, critically and problem solve is important to future proof agribusinesses. These skills can be applied to shape actions, make decisions, and construct knowledge, to ensure students are able to capitalise on market opportunities that come along or to ensure that they are challenging current assumptions and perceptions. Students who are able to think outside the square, critically analyse, reflect, and evaluate decisions will be better equipped to be able to cope with any challenge in their enterprises that the future may hold.

Using language, symbols and texts.

Agribusiness uses language and subject specific terminology from a range of areas, such as mathematical, scientific, technological and commerce, to communicate ideas, information and experiences. Students need to be able to use the appropriate language in the given situation to ensure they are able to communicate effectively, solve problems, create processes, and manage day-to-day operations, as this will improve their success in Agribusiness. Having cultural intelligence will also ensure that agribusiness and scientific or technological research are done successfully within different cultures.

Managing Self.

Agribusiness will provide the opportunity for students to be able to enhance their personal growth. Qualities such as being enterprising, self-sufficient, reliable, and resilient are required if they are going to be successful in an agribusiness. Through the provision of strategies and experience, students are able to set goals, high standards and gain motivation to ensure that they are able to future proof, meet challenges, act independently and be a part of successful agribusinesses.

Relating to others.

The ability to be able to relate to other people is essential in agribusiness, science and technology and across the whole chain in the primary industry. Agribusiness students need to be able to communicate with diverse groups of people, in different contexts and situations, both nationally and internationally. By developing the ability to actively listen, recognise different people’s point of view, negotiate and share ideas, they will be able to effectively cooperate and work together to determine their agribusiness success and that of others.

Participating and contributing.

Due to the complexity and multi-layered nature of agribusinesses, students need to be able to participate, contribute and be actively involved in their communities. This provides a sense of belonging and support, which is required to ensure resilience to meet future local, national or global challenges. Agribusiness students need to be able to understand and balance the rights, roles and responsibilities of all people involved, to have social responsibility and to contribute to the quality and sustainability of social, cultural, physical, and economic environments.

Agribusiness strands

An agribusiness teaching and learning programme involving aspects of all four key strands, as they are all essential to the understanding of Agribusiness.

The four strands are outlined below:

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| **Innovation** | **Science and technology** |
| The innovation strand will create opportunities to develop knowledge and understanding of innovative solutions and strategies for future proofing agribusinesses in current and/or future issues; such as food safety, climate change, loss of biodiversity, global economic trends, over exploitation of natural resources, food losses and waste, the social importance of transforming individual poverty to community wealth, the power of social media to spread knowledge and ideas rapidly, and the globalization of trade.  The impact of outside influences on agribusinesses need to be predicted, prevented, limited, minimised, or corrected to ensure that they meet present needs, remain viable, protect the environment without compromising the ability of future generations to meet their needs, and maintain New Zealand’s reputation. | The science and technology strand understands the importance of scientific concepts, skills and knowledge and recognises its need to apply these to agribusinesses to meet consumer and producer future and current needs, resolve their issues, develop new markets and provide consumers with safe, convenient and/or nutritious end products.  New Zealand is a country whose economy depends predominantly on the animal and plant products derived from its primary production.  For New Zealand to remain competitive in the local and international markets, new products, production and processing methods and new technologies must continually be developed through science, along the value chain. |
| **Management and finance** | **Marketing** |
| The management and finance strand will examine the decision-making by agribusinesses, the economics of producing and selling products and services and the way they interact in specific sectors and markets.  It focuses on the future rather than the past; attempting to predict and mitigate what will happen if some action is taken.  Agribusinesses are affected by two features that make them distinct from all others. One is the cyclic nature of primary production due to physical and biological factors; and the second one is price instability caused by changes within the markets for primary products and the actual physical primary product.  Agribusinesses need to have an understanding of the cause and effect relationships for them to succeed. | The marketing strand will explore the concepts of marketing and growing value within agribusinesses. The ability to make informed decisions that enhance and add value to any primary products and secondary products or services derived from primary products. Having an understanding of the whole value chain ensures present and future agribusinesses being able to sell products or services for higher return.    Capturing more value and marketing the product is important to agribusinesses to ensure their survival, their global, national or regional importance and growing New Zealand’s economy.  Students will develop understanding of the effects marketing has on an agribusiness in the short and long term and how to provide current and future focussed marketing and delivery practices. |

Progression in Agribusiness

Agribusiness addresses the same concepts at levels 7 and 8. The development of conceptual understanding is cumulative as students return to the same concepts in different contexts throughout their learning. As students’ progress through levels 7 – 8, they demonstrate their increasing understanding as they:

* make connections between the strands
* make connections between the range of learning areas including Science, Technology, Social Sciences, and Mathematics and Statistics
* use more complex and abstract Agribusiness concepts
* apply and transfer their understandings to different agribusinesses and to more complex and distant contexts, as well as to those that are familiar
* problem solve and future proof in increasingly sophisticated and innovative ways
* advocate for sustainable policies and methodologies in all agribusinesses, and
* take responsible actions and make informed decisions that are based on their new understandings.

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| **Strand – Innovation**  The innovation strand creates opportunities to develop knowledge and understanding of innovative solutions and strategies for future proofing agribusinesses in current and/or future issues. For example, food safety, climate change, loss of biodiversity, global economic trends, over exploitation of natural resources, food losses and waste, the social importance of transforming individual poverty to community wealth, the power of social media to spread knowledge and ideas rapidly, and the globalisation of trade.  The impact of these outside influences need to be predicted, prevented, limited, minimised, or corrected to ensure that they meet present needs, remain viable, protect the environment without compromising the ability of future generations to meet their needs, and maintain New Zealand’s reputation. | |
| **Overarching description:**  Develop knowledge and understanding of innovative solutions and strategies for future proofing agribusinesses in current and/or future issues focusing on primary and secondary production. | |
| **Level 7**  Examine the impact of influences on agribusinesses to meet present and future needs, viability, and protection of the environment | **Level 8**  Critically examine the impact of influences, innovative solutions and strategies for future proofing agribusinesses to meet current and/or future needs |
| **Innovation indicators – level 7** | **Innovation indicators – level 8** |
| **Students can:**  **Communicate:**   * Identify, examine and predict (current and potential) influences on an agribusiness * Evolving attitudes and values in an agribusiness context * Understand and explain how influences can be mitigated, prevented, limited, minimised and corrected to ensure agribusinesses meet current and future needs and protect reputation * Use creative thinking and apply this to adopting new innovations, ideas and techniques in the production and future of agribusinesses focusing on sustainable practices   **Evaluate:**   * Costs and benefits of primary sector development (including secondary production) on environments and communities * Short and long term impacts on production and profitability * Traditional and new management practices and associated technologies in an agribusiness and the impact of influences | **Students can:**  **Communicate:**   * Develop and critically examine strategies and solutions for future proofing agribusiness challenges to meet current and future needs * Inquire and evaluate examples of innovations and future proofing outcomes * Examine and critique the role of technology, commerce and/or science as an intervention and explain the impacts and implications   **Evaluate:**   * Inquire and evaluate examples of innovations and evaluate future proofing outcomes * Identify, justify and analyse future proofing solutions and influences and the effects this has on an agribusiness production and profitability * Critically examine future proofing solutions and understand which has a bigger role/impact on the business * Deliberate how an agribusiness operates in a global context and responds strategically to future proofing influences |

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| **Strand: Science and technology**  The science and technology strand develops and understands the importance of scientific concepts, skills and knowledge of agribusinesses and recognises its need to apply these to their agribusinesses to meet consumer and producer future and current needs, resolve their issues, develop new markets and provide consumers with safe, convenient and/or nutritious end products.  New Zealand is a country whose economy depends predominantly on the animal and plant products derived from its primary production.  For New Zealand to remain competitive in the local and international markets, new products, production and processing methods and new technologies must continually be developed through science along the value chain. | |
| **Overarching descriptor**  Develops and understand scientific concepts, skills and knowledge of the primary industries and their value chain to meet consumer and producer future and current needs, resolve issues, develop new markets and provide consumers with safe, convenient and/or nutritious end products. | |
| **Level 7**  Examine how scientific principles, concepts and knowledge are applied in agribusinesses to ensure present and future primary and secondary production. | **Level 8**  Critically examine how scientific principles, concepts and knowledge in agribusinesses are used to meet consumer and producer needs, resolve their issues and develop new agri-technological advances. |
| **Science and technology indicators – level 7** | **Science and technology indicators – level 8** |
| **Students can:**  **Communicate:**   * The development of scientific ideas and adaptations to explore the potential of current or future crop / stock species and their use in food products or production; for example classification, morphology, development and responses to the environment. * Identifies composition and nutritive value of food products produced and marketed by agribusinesses to grow their value e.g. health, convenience, gourmet / niche market and sustainability. * Understand that for New Zealand to remain competitive in local and international markets, ‘new’ products must continually be developed. * Scientific knowledge or processes to answer socio-economic questions on an agribusiness.   **Evaluate:**   * The role of science to develop new ideas, processes and techniques to alleviate potential influences. * Science knowledge, principles and concepts and understands their impact on production in an agribusiness. * Changing market demands of current and/or future plant/animal species or cultivars in an agribusiness. * Understand the importance and possible uses of ‘new’ organisms in primary and secondary production; for example entomology and microorganisms   **Act:**   * Develop tools, techniques, products, systems or services to meet needs, increase yield, minimise inputs, reduce environmental impacts or ensure sustainability of agribusinesses. | **Students can:**  **Communicate:**   * Discusses the impact that new end products have on consumption, market acceptability, market value, how they meet consumer and producer needs and wants and add value to agribusinesses. * Presents a scientific solution to a future proofing issue in an agribusiness. * Distinguishes the scientific, ethical and/or social implications when decision making in an agribusiness. * Scientific evidence to formulate and make informed decisions in an agribusiness.   **Evaluate:**   * Critically examine decisions that enhance and sustain end product production in an agribusiness, including meeting needs and wants, resolve their issues and develop new markets and/or agri-technologies. |

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| **Strand: Management and Finance** | |
| The Management and Finance strand will examine the decision-making by agribusinesses, the economics of producing and selling products and services and the way they interact in specific sectors and markets.  It is concerned with the future rather than the past; attempting to predict and mitigate what will happen if some action is taken.  Agribusinesses are affected by two features that make them distinct from all others. One is the cyclic nature of production due to physical and biological factors; and the second one is price instability caused by changes within the markets for primary products and the actual physical primary product.  Agribusinesses need to have an understanding of the cause and effect relationships for them to succeed. | |
| **Overachieving Descriptor**  Examine the decision-making by agribusinesses in relation to the production and sale of products and services, and their attempt to future-proof their activities. | |
| **Level 7**  Examine routine decision-making by agribusinesses in producing and selling a primary product and/or secondary products and services linked to the primary sector and the way they interact in specific sectors and markets | **Level 8**  Critically examine strategic decision making by agribusinesses in producing and selling a primary product and/or secondary products and services linked to the primary sector and the way they interact in specific sectors and markets |
| **Management and Finance Indicators – level 7** | **Management and Finance Indicators – level 8** |
| **Students can:**  **Communicate:**   * Identify the effect of, and responses to an external factor on the cash flow forecasting * Identify and examine a range of organisational and ownership structures of agribusinesses including succession planning * Identify and examine evolving attitudes and social tensions of different ownership and management models for agribusinesses in New Zealand.   **Evaluate:**   * Effective response(s) to an external factor on the cash flow forecast * Organisational and ownership structures of agribusinesses including succession planning * Evolving attitudes and social tensions of different ownership and management models for agribusinesses in New Zealand. | **Students can:**  **Communicate:**   * Critically examine the consequences of agribusiness decisions on society * Critically examine  the operations of agribusinesses that operate in a local, regional, national and/or global context and their responses to external factors   **Evaluate:**   * Financial and non-financial information for agribusiness for strategic decision-making purposes. * Strategic decision-making within a primary industry organisation or an agribusiness, including economic, ethical, environmental, social, and cultural, and justify outcomes |

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| **Strand – Marketing**  The Marketing strand will explore the concepts of marketing and growing value within agribusinesses. The ability to be able to make informed decisions that enhance and add value to any primary products and secondary products or services derived from primary products. Having an understanding of the whole value chain ensures present and future agribusinesses being able to sell products or services for higher return.  Capturing more value and marketing the product is important to agribusinesses to ensure their survival, their global, national or regional importance and growing New Zealand’s economy.  Students will develop understanding of the effects marketing has on an agribusiness in the short and long term and how to provide current and future focussed marketing and delivery practices. | |
| **Overarching description:**  Capturing more value and marketing products and services are important to agribusinesses to ensure their survival, their global, national or regional importance and growing New Zealand’s economy.  Understanding the value chain ensures present and future agribusinesses being able to sell products or services for higher return. | |
| **Level 7**  Examine decisions in agribusinesses that enhance and sustain local and/or national production and enterprise | **Level 8**  Critically examine how agribusinesses capitalise on opportunities to grow the value and sustainability of their products globally |
| **Marketing indicators – level 7** | **Marketing indicators – level 8** |
| **Students can:**  **Communicate:**   * Current and future-focused importance of agri-marketing and its national or regional importance * Inquire into the impact of an agribusiness event and its marketing strategy * Explore traditional agricultural, pastoral and industrial marketing opportunities and their evolving role * Identify and examine an agribusiness that is exploring a new marketing opportunity * Undertake a cost benefit and statistical analysis of a marketing opportunity   **Act:**   * Develop a marketing plan for an agribusiness product or service   **Evaluate:**   * Short and long term effects including sales and growth of an agri-marketing opportunity in an agribusiness context | **Students can:**  **Communicate:**   * Current and future-focused importance of agri-marketing and its national, regional and global importance * Examine ways in which an agribusiness can add value to their product, service or business and/or increase their market share * Critically examine the strategies and features of marketing for different types of agribusiness organisations   **Act:**   * Plan the launch of a product for a global market   **Evaluate:**   * Evaluate and justify alternative marketing strategies for an agribusiness in response to fulfilling customer needs |

Possible Achievement Standards to assess Agribusiness

| **LEVEL 2** | | **STRANDS** | |
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| **Innovation**  ***L7 - Explore the impact of influences on agribusinesses to meet present and future needs, viability, and protection of the environment.*** | **Science and Technology**  ***L7 - Explore how scientific principles, concepts and knowledge are applied in agribusinesses to ensure present and future primary production.*** | **Management and Finance**  ***L7 - Explore the decision-making by agribusinesses in producing & selling a primary product &/or secondary products & services linked to the primary sector & the way they interact in specific sectors & markets.*** | **Marketing**  ***L7 - Explore decisions in agribusinesses that allow producers to enhance and sustain local and/or global primary production and enterprise.*** |
| 2.1 Demonstrate understanding of future proofing influences that affect business viability (I, 4) | 2.2 Conduct an inquiry into the use of organisms to meet future needs (I, 4) | 2.3 Demonstrate understanding of a primary industry business structure that meets the strategic needs of a business (I, 3) |  |
|  | AS91294 Agricultural and Horticultural Science **2.6** Demonstrate understanding of how NZ commercial management practices influence livestock growth and development (E, 4) | 2.4 Demonstrate understanding of cash flow forecasting for a business (I, 4) | AS90845 Business Studies 2.3 Apply business knowledge to a critical problem(s) in a given large business context (E-I, 4) |
| AS90844 Business Studies **2.2**  Demonstrate understanding of how a large business responds to external factors. (E,4) | AS91163 Chemistry **2.3**  Demonstrate understanding of the chemistry used in the development of a current technology. (I,3) | **AS91481 Accounting 2.5**  **Demonstrate understanding of a contemporary accounting issue for decision-making. (I,4)** | **AS90846 Business Studies 2.4**  **Conduct market research for a new or existing product. (I,3)** |
| AS90811 Education for Sustainability **2.2**  Explain how human activity in a biophysical environment has consequences for a sustainable future. (I,4) | AS91292 Agricultural and Horticultural Science **2.4** Demonstrate understanding of how management practices influence plant growth and development in NZ commercial production. (I,4) |  |  |
| AS91362 Generic Technology **2.9**  Demonstrate understanding of the nature of technological outcomes. (I,4) | AS91295 Ag and Hort Science **2.7**  Demonstrate understanding of interactions between livestock behaviour & NZ commercial management practices (I,4) |  |  |
|  | AS91189 Earth & Space Science **2.3** Investigate geological processes in a New Zealand locality. (I,4) |  |  |
|  | AS91298 Agricultural and Horticultural Science **2.10** Report on the environmental impact of the production of a locally produced primary product (I, 4) |  |  |

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| **LEVEL 3** | | **STRANDS** | |
| **Innovation**  ***L8 - Critically examine innovative solutions and strategies for future proofing agribusinesses to face current and/or future issues.*** | **Science and Technology**  ***L8 - Critically examine how scientific principles, concepts and knowledge in agribusinesses are used to meet consumer and producer needs, resolve their issues and develop new technological advances.*** | **Management and Finance**  ***L8 - Critically examine the operational and strategic decisions in agribusinesses and how they impact on the future direction of production and society.*** | **Marketing**  ***L8 - Critically examine how agribusinesses capitalise on the opportunities to grow the value of their products globally.*** |
| 3.1 Analyse future proofing strategies to ensure long term viability of a business (I, 4) | 91532 Agricultural and Horticultural Science 3.5 Analyse a New Zealand primary production environmental issue (E, 5) | 3.2 Analyse the effect of a strategic capital expenditure decision on a business (I, 4) | 3.3 Analyse how a product meets market needs through innovation in the value chain (I, 4) |
| AS91411 Earth and Space Science 3.2  Investigate a socio-scientific issue in an Earth and Space Science context. (I,4) | AS91389 Chemistry 3.3  Demonstrate understanding of chemical processes in the world around us. (I,3) | AS91530 Ag and Hort Science 3.3  Demonstrate understanding of how market forces affect supply of and demand for NZ primary products. (E,5) | AS91380 Business Studies 3.2  Demonstrate understanding of strategic response to external factors by a business that operates in a global context (E, 4) |
| AS91735 Education for Sustainability 3.2 Evaluate measures that may be taken to sustain &/or improve a biophysical environment (I,4) | AS91411 Earth and Space Science 3.2 Investigate a socio-scientific issue in an Earth and Space Science context (I,4) |  | AS91381 Business Studies 3.3  Apply business knowledge to address a complex problem(s) in a given global business context (E-I, 4) |
| AS91615 Generic Technology 3.8  Demonstrate understanding of consequences, responsibilities and challenges involved in technology. (I,4) | AS91735 Education for Sustainability 3.2  Evaluate measures that may be taken to sustain and/or improve a biophysical environment (I, 4) |  | AS91428 Geography 3.3  Analyse a significant contemporary event from a geographic perspective. (I,3) |
|  |  |  | AS91382 Business Studies 3.4  Develop a marketing plan for a new or existing product. (I,6) |
|  |  |  | AS91384 Business Studies 3.6  Carry out, with consultation, an innovative and sustainable business activity. (I,9) |