Agribusiness

- Rationale 3
- Key concepts 4
  - Body of knowledge 6
- Connections 7
  - Strands and curriculum structure 8
  - Key skills and competencies 11
- Māori Agribusiness 13
- Pedagogy 15
- Learning programme design 16
- Assessment 19
  - AS 91865 24
  - AS 91866 25
  - AS 91867 26
  - AS 91868 27
  - AS 91869 28
  - AS 91870 29
  - AS 91871 30
  - Examples of assessing level 2/3 programmes of learning using Agribusiness achievement standards 31
  - Examples of assessing level 2/3 programmes of learning using re-contextualised achievement standards 35
- Resources 37
  - Key terms 38

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What is Agribusiness about?

Agribusiness is defined as a course of study that integrates all the primary industries and businesses that comprise primary production. Primary industries comprises a group of sectors including:

- agriculture
- aquaculture
- dairy manufacturing
- equine
- forestry
- horticulture
- seafood
- sports turf

These 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.

Agribusiness curriculum guide content

Use the links below to access the sections of this guide. To navigate through the guide's web pages, select from the section and sub-section menu in the left-hand navigation.

- Rationale
- Key concepts
- Connections
- Māori Agribusiness
- Pedagogy
- Learning programme design
- Assessment
- Resources

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To print individual pages, select the 'Print' button at the top right of each page.

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Rationale

New Zealand’s primary industry is a multi-billion dollar business. It is the backbone of our economy. The industry is not what it used to be, and it is changing every day. New technologies and innovation help produce more products to satisfy an ever-increasing population however, the level of scrutiny over the management of our natural resources intensifies. Today’s agribusinesses are sophisticated multi-million dollar businesses with people who have many skills that are required to run these enterprises.

Why study Agribusiness?

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. Agribusiness is the understanding that the ability to produce primary products is not sufficient to make primary producers succeed and that there are many other external factors, which are also important.

Students 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, such as human resources, strategic management, marketing, policy, financial planning, economics, and natural resources.

Key concepts in Agribusiness

Key concepts are the big ideas and understandings that will remain with our students long after they have left secondary school. The key concepts are:

- growing value
- future proofing
- sustainability

Growing value

New Zealand agribusinesses need to add value to their products and services by focusing on becoming the smorgasbord of the Southern Hemisphere and not just its food bowl. Growing value looks at the possibility of diversification of products and services specific to agribusinesses and encourages investigation along the whole supply chain for opportunities to increase value. This may not be just a product, it could be an alternative use of land or a service such as developing a brand, delivering excellent service, product features and benefits, and offering convenience. Growing value is about building a platform that will consistently create and capture value for our agribusinesses. It encourages innovation and enterprise. Capturing more value from the product or service is important to agribusinesses to ensure their survival, their global, national or regional importance and growing New Zealand's economy.

Future proofing

There are many issues and influences affecting the New Zealand agribusiness sector and its future, such as economic, environmental, political, cultural, social, ethical, technological, biological, scientific and legal. Future proofing is having the foresight to limit impacts from influences within issues, such as climate change, food safety, biosecurity, technology disruptions, concerns over animal welfare, debt, pollution levels, legislation, market changes, or the emerging need to manipulate information from agri-tech-automation and smart data devices. These issues and influences must take priority and it is vital that our young people have an understanding of these challenges on our agribusinesses and how we might look to overcome, predict, prevent, limit, minimise, or correct them in order to make good business decisions to ensure long-term viability.

Sustainability

New Zealand is a country whose wealth depends mainly on the animal and plant products derived from its primary production. Agribusinesses need to have an understanding of the long term effects management practices have not only on the environment but also ethically, culturally, scientifically, technologically, economically, and politically on society. Agribusinesses need to show leadership by example and to contribute to collective decision making that will lead to actions for a sustainable future. Every agribusiness has a responsibility for ensuring our future, by sharing their knowledge, skills, and viewpoints and to generate the fresh thinking needed to solve New Zealand's challenges and to ensure long-term viability of our industry.

These key concepts are integrated throughout the Agribusiness programme as they are relevant to all achievement standards.

- Body of knowledge

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

By pulling a body of knowledge from existing curriculum learning areas it allows:

- Rigour
- Cross curricular material, avoiding a ‘silo’ based approach
- The encouragement of team teaching and utilisation of staff strengths
- The encouragement of a STEM approach where multidisciplinary strands run across a programme of work. Including social sciences where inquiry is also informed by approaches originating from such contributing disciplines as history, geography, and economics.

Agribusiness itself comprises four key strands that would weave through the three curriculum learning areas as identified above. It is essential to note that Agribusiness is seeking a balance across learning areas not a focus on a particular learning area as what is important is the equal nature of the business. For example, both the technology and science behind the subject.

For more information on the Agribusiness body of knowledge and matrix of outcomes, refer to this document:

Agribusiness body of knowledge and matrix of outcomes (PDF, 96 KB)

Return to previous page

Connections across the curriculum

Agribusiness is a cross-curricular programme that connects learning across science, technology, mathematics and statistics, social sciences, business studies, economics, and geography to understand how producers choose to use technical 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.

Contexts for learning will be chosen by schools for their relevance and utility, and their teaching will be focussed on long-term, valued outcomes, particularly desired outcomes of many employers in the agribusiness sector.

Learning programmes in Agribusiness aim to build:

- an 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 value added products and services.

By Agribusiness being cross-curricular ensures that conceptual understanding is gained, is more relevant, and is able to be linked better to other learning areas, ensuring a well-rounded educated student.

Progression in agribusiness

Agribusiness addresses the same concepts at levels 7 and 8 of the NZC. 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.

- Strands and curriculum structure
- Key skills and competencies

Strands and curriculum structure

Agribusiness has four strands. A balanced teaching and learning programme would include aspects of all four strands.

Agribusiness strands

Innovation

The innovation strand develops knowledge and understanding of future proofing the primary industries in current and/or future issues that affect the viability of an identified business 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 globalisation of trade. Students will understand what external factors affect agribusinesses such as economic, physical/climatic, political, environmental, technological, historical, social, ethical, and cultural. Students will provide innovative solutions and strategies for future proofing the primary industries from these external factors. The impact of external factors 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.

Science and Technology

New Zealand is a country whose economy depends predominantly on the use of organisms derived from its primary production. For New Zealand to remain competitive in local and/or international markets, the industry needs to be able to make use of new organisms, develop new products, alter production and processing methods and use new technologies with existing organisms to meet future needs. The science and technology strand develops understanding of the importance of new organisms and their continual development through scientific and technological concepts, skills and knowledge of the primary industry. Students will recognise the 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.

Management and Finance

The primary industry is affected by its cyclic nature of production due to physical and biological factors and 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 relationship for them to succeed such as consumer demand and supply, exchange rates on cash flow forecasting and be aware of revenue and expenditure and how they interrelate as it affects profit and viability of the business. The management and finance strand examines the decision-making by agribusinesses in the primary industry, such as their chosen business structure, predicting cash flow forecasting and analysing capital strategic expenditure. It is concerned with the future rather than the past, attempting to predict and mitigate what will happen if external factors come into play and what action could be taken.

Marketing

The marketing strand explores the concepts of marketing and growing value within the primary industry, 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 that market needs have on an agribusiness in the short and long term and how current and future focussed innovation within the value chain provides greater value to the business.

Curriculum structure

Learning objectives

Through learning in these strands, students will gain knowledge, skills, and experience to:

Strand	Level 7	Level 8
Innovation	7-1 Examine the impact of influences on agribusinesses to meet present and future needs, viability, and protection of the environment.	8-1 Critically examine innovative solutions and strategies for future proofing agribusinesses to meet current and/or future needs.
Science and Technology	7-2 Examine how scientific principles, concepts and knowledge are applied in agribusinesses to ensure present and future primary and secondary production.	8-2 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.
Management and Finance	7-3 Examine decision-making by agribusinesses in the primary industries in determining their business structure and carrying out cash flow forecasting to meet their strategic needs or keeping their businesses viable.	8-3 Critically examine strategic decision making by agribusinesses when making strategic capital expenditure decisions to meet their strategic needs or keeping their businesses viable.
Marketing	7-4 Examine decisions in agribusinesses that enhance and sustain local and/or national production and enterprise.	8-4 Critically examine how agribusinesses capitalise on opportunities to grow

		the value and sustainability of their products globally.

Return to previous page

Key skills and competencies

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.

Agribusiness students develop the skills of planning, investigating, designing, drawing, model-making and capabilities in using digital tools and processes. They use 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.

Learning programmes in Agribusiness aim to build the knowledge, skills, and experience that underpin economic and environmental sustainable primary production systems, through the understanding of scientific and technological principles to ensure marketable primary and secondary products and services.

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 know-how. 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.

For further detailed information on alignment and links with the New Zealand Curriculum and other learning areas download:

Alignment and Links with the New Zealand Curriculum and other Learning Areas (PDF, 141 KB)

Return to previous page

Māori Agribusiness

About 1.4 million hectares of New Zealand land is Māori freehold land, the Māori economy is estimated to total $40 billion and is almost exclusively made up of primary sector assets. As a result, Māori own and operate many agribusinesses.

A Māori agribusiness is a business that identifies itself as a Māori agribusiness. It will have strong Māori culture, values, tradition and tikanga which underpins land management and utilisation and will employ modern primary and secondary production practices and technologies. These include multiple owner, collectively owned trusts and incorporations and sector service providers. It will be owned by Māori, may be predominately staffed by Māori and te reo may often be used in workplace interactions. Part of its kaupapa may be to support the Māori community using other priorities apart from economic such as social, cultural, environmental, spiritual and philanthropic. This is often called the "multiple bottom line" and is an important distinction in the way Māori agribusinesses make their decisions and to achieve the goals and objectives of the owners as a collective. These businesses are measured against multiple goals, not just financial or economic. These are integrated aspects to a Māori agribusiness, and is vital to understand if students are going to be working in Māori agribusinesses.

The subject Agribusiness will have particular emphasis on future proofing, the concepts of land and water value, kaitiakitanga and the relationship of these kaupapa Māori-based systems to agribusinesses. Students will develop an understanding of Māori resource issues and the relevance of Te Tiriti o Waitangi to Māori agribusiness and present day legislation. There are some laws that are only applicable to Māori businesses and these will need to be adhered to such as the Māori Fisheries Act (2004) and fishing quotas.

Māori values important to Māori Agribusiness

The concepts below underpin the Māori worldview and value system and drive Māori agribusiness behaviour.

Tikanga

The concept of tikanga refers to Māori ethics and customary values and practices such as whakapapa – honouring your genealogy. The tikanga of Māori agribusinesses will have a strong influence on the general conduct of day to day affairs and in the balancing of values in management decisions.

Kaupapa

Kaupapa refers to principles, policies and ideas which act as a base or foundation for action. An agribusiness kaupapa is a set of values, principles and plans which people have agreed on as a foundation for their actions within the business.

Kaitiakitanga

Kaitiakitanga is the guardianship and stewardship of mahinga kai (food sources), land and waterways. Māori view themselves as kaitiaki (guardians, protectors) of the land for the benefit of

future generations. For Māori agribusinesses, in particularly those that are of intergenerational nature, this is a key focus of the business and generally decisions made are on long term stability rather than short term gain.

Manaakitanga

Manaakitanga is hospitality, kindness, support and care for others. Policies written within the agribusiness will protect and nurture their people, ensure a progression plan through their business or in the industry and assigning a mentor for each person to support learning and life within that agribusiness.

Whānaungatanga

Whānaungatanga is about attaining, maintaining and caring for whānau through relationships. Opportunities are provided within Māori agribusinesses to make real changes to people's lives and to the lives of their whānau, through strengthening relationships and ties between one another and providing responsibilities as whānau.

Rangatiratanga

Rangatiratanga is the Māori people's right to participate in making decisions about their agribusinesses and to decide how primary sector services might be provided for their benefit. It enables whānau, hapū, iwi to exercise control over their own assets and agribusinesses, as well as the direction and shape of their own institutions, communities and development as a people.

Pedagogy

Developing Agribusiness programmes of learning

Agribusiness is a multidisciplinary subject, which has strong connections with other learning areas. Opportunities exist for links to be made between Agribusiness and other learning programmes. Agribusiness contexts offer opportunities to integrate learning, concepts and achievement objectives from a range of different subjects or learning areas including Science, Technology, Social sciences and Mathematics and statistics. Integrated learning can be planned for by Agribusiness teachers joining with other teachers from other curriculum areas to jointly plan learning; or teachers in other curriculum areas teach Agribusiness related learning as part of their regular programme.

Due to the flexibility of the New Zealand Curriculum many learning areas have aspects of the Agribusiness learning objectives and indicators. It is therefore possible to not only develop a teaching and learning programme using the Agribusiness learning area but to also use other learning areas such as Education for Sustainability and Geography, much like the Vocational Pathways.

Social inquiry process

Through social inquiry, students ask questions, gather information, and examine the background to important societal ideas and events. They are able to explore and analyse values and perspectives relating to these ideas and events; and develop understandings about issues and the ways that people make decisions and participate in social action.

The resource Approaches to Social Inquiry is part of the Building Conceptual Understandings in the Social Sciences (BCUSS) series. It describes a social inquiry approach to teaching and learning and gives examples of how this approach can be applied in the classroom. These examples illustrate the social inquiry approach in more detail. Teachers can select from and adapt the ideas to develop their own social inquiry process in their Agribusiness teaching and learning programmes that use a social inquiry approach. Guiding questions are included that will support teachers as they do this.

Learning programme design

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.

Agribusiness students develop the skills of planning, investigating, designing, drawing, model-making and capabilities in using digital tools and processes. They use 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.

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.

There are three ways in which teachers could develop their programme of learning or to make up their level 2 and 3 Agribusiness courses:

1. Teach the complete Agribusiness learning area in a level 2 and/or 3 Agribusiness programme as standalone courses.
2. Teach individual unit of works from the level 2 and/or 3 Agribusiness learning area within their own existing courses.
3. Teach individual unit of works from other domains (that is, Geography, Science, Accounting etc) that have been re-contextualised into new Agribusiness contexts into an Agribusiness programme or in to their own existing courses.

Example of a level 2 programme of learning using Agribusiness achievement standards

Strand	Level 2
Innovation	Demonstrate understanding of future proofing in business.
Science and Technology	Conduct an inquiry into the use of organisms to meet future needs.
Management and Finance	Demonstrate understanding of cash flow forecasting for a business. Demonstrate understanding of a primary industry business structure that meets the strategic needs of a business.
Marketing	Conduct market research for a new or existing product.

Example of a level 3 programme of learning using Agribusiness achievement standards

Strand	Level 3
Innovation	Analyse future proofing strategies to ensure long-term viability of a business.
Science and Technology	Demonstrate understanding of food science in an agribusiness context.
Management and Finance	Analyse the effect of a strategic capital expenditure decision on a business.
Marketing	Analyse how a product meets market needs through innovation in the value chain. Develop a marketing plan for a new or existing product.

Example of a level 2 programme of learning using re-contextualised achievement standards

Strand	Level 2
Innovation	Demonstrate understanding of the nature of technological outcomes.
Science and Technology	Explain how human activity in a biophysical environment has consequences for a sustainable future. Demonstrate understanding of how management practices influence plant growth and development in NZ commercial production.
Management and Finance	Demonstrate understanding of a contemporary accounting issue for decision-making.
Marketing	Conduct market research for a new or existing product.

Example of a level 3 programme of learning using re-contextualised achievement standards

Strand	Level 3
Innovation	Investigate a technological innovation in New Zealand agribusiness.
Science and Technology	Demonstrate understanding of food science in an agribusiness context.

Management and Finance	Present a agribusiness strategy and pitch to produce and sell an agri-innovation product.
Marketing	Analyse a significant agrimarketing event.

Assessment

Agribusiness is a multidisciplinary subject, which has strong connections with other learning areas.

Opportunities exist for links to be made between Agribusiness and other learning programmes. Due to the flexibility of the New Zealand Curriculum many learning areas achievement standards have aspects of the Agribusiness learning objectives and indicators. It is therefore possible to not only assess using the Agribusiness Achievement Standards but to also assess using other learning areas with existing achievement standards, much like the Vocational Pathways.

There are three ways in which teachers could assess their course:

1. Assess the complete Agribusiness learning area in a level 2 and/or 3 Agribusiness programme as standalone courses.
2. Assess individual unit of works from the level 2 and/or 3 Agribusiness learning area within their own existing courses.
3. Assess individual unit of works from other domains (that is, Geography, Science, Accounting etc) that have been re-contextualised into new Agribusiness contexts into an Agribusiness programme or in to their own existing courses.

Using the Agribusiness achievement standards

The Agribusiness learning area could be assessed using the Agribusiness achievement standards. This could be done in two ways:

1. Assess the complete Agribusiness learning area using the level 2 and/or 3 Agribusiness achievement standards as standalone courses.
2. Assess individual unit of works from the level 2 and/or 3 Agribusiness learning area within their own existing courses.

Agribusiness achievement standards matrix

Strand	Level 2	Level 3
Innovation	AS91865 Demonstrate understanding of future proofing influences that affect business viability. 4 credits; Internal	AS91869 Analyse future proofing strategies to ensure long-term viability of a business. 4 credits; Internal
Science and Technology	AS91866 Conduct an inquiry into the use of organisms to meet future needs. 4 credits; Internal	
Management	AS91867 Demonstrate	AS91870 Analyse the

and Finance	understanding of a primary industry business structure that meets the strategic needs of a business. 3 credits; Internal	effect of a strategic capital expenditure decision on a business. 4 credits; Internal
	AS91868 Demonstrate understanding of cash flow forecasting for a business. 4 credits; Internal	
Marketing		AS91871 Analyse how a product meets market needs through innovation in the value chain. 4 credits; Internal
	15 credits	12 credits

Agribusiness achievement standards in the Business Studies matrix

Level 2	Level 3
AS90843 – 2.1 Demonstrate understanding of the internal operations of a large business. 4 credits; External	AS91379 – 3.1 Demonstrate understanding of how internal factors interact within a business that operates in a global context. 4 credits; External
AS90844 – 2.2 Demonstrate understanding of how a large business responds to external factors. 4 credits; External	AS91380 – 3.2 Demonstrate understanding of strategic response to external factors by a business

	that operates in a global context. 4 credits; External
AS90845 – 2.3 Apply business knowledge to a critical problem(s) in a given large business context. 4 credits; External	AS91381 – 3.3 Apply business knowledge to address a complex problem(s) in a given global business context. 4 credits; External
AS90846 – 2.4 Conduct market research for a new or existing product. 3 credits; Internal	AS91382 – 3.4 Develop a marketing plan for a new or existing product. 6 credits; Internal
AS90847 – 2.5 Investigate the application of motivation theory in a business. 3 credits; Internal	AS91383 – 3.5 Analyse a human resource issue affecting businesses. 3 credits; Internal
AS90848 – 2.6 Carry out, review and refine a business activity within a	AS91384 – 3.6 Carry out, with consultation, an innovative and sustainable business activity.

community context with guidance. 9 credits; Internal	9 credits; Internal
AS91865 – 2.7 Demonstrate understanding of future proofing influences that affect business viability. 4 credits; Internal	AS91385 – 3.7 Investigate the exporting potential of a New Zealand business in a market, with consultation. 3 credits; Internal
AS91866 – 2.8 Conduct an inquiry into the use of organisms to meet future needs. 4 credits; Internal	AS91869 – 3.8 Analyse future proofing strategies to ensure long term viability of a business. 4 credits; Internal
AS91867 – 2.9 Demonstrate understanding of a primary industry business structure that best meets the strategic needs of a business. 4 credits; Internal	AS91870 – 3.9 Analyse the effect of a strategic capital expenditure decision on a business. 4 credits; Internal
AS91868 – 2.10 Demonstrate understanding of	AS91871 – 3.10 Analyse how a

cash flow forecasting for a business. 4 credits; Internal	product meets market needs through innovation in the value chain. 4 credits; Internal

Agribusiness achievement standards

Internal achievement standard assessment resources can be found here.

Level 2

- AS 91865 - Agribusiness 2.7
- AS 91866 – Agribusiness 2.8
- AS 91867 – Agribusiness 2.9
- AS 91868 – Agribusiness 2.10

Level 3

- AS 91869 – Agribusiness 3.8
- AS 91870 – Agribusiness 3.9
- AS 91871 – Agribusiness 3.10

Examples of assessing level 2 and 3 programmes of learning

- Assessing level 2/3 programmes of learning using Agribusiness achievement standards
- Assessing level 2/3 programmes of learning using re-contextualised achievement standards

Achievement Standard 91865 – Agribusiness 2.7

Demonstrate understanding of future proofing influences that affect business viability.

This achievement standard relates to achievement objective 7-1 Examine the impact of influences on agribusinesses to meet present and future needs, viability, and protection of the environment.

Students will gain knowledge, skills, and experience to explain future proofing influences and how these influences could affect the viability of an identified business.

Context for learning

An example of a learning context could be any business that future proofs due to an awareness of potential and/or actual influence that could affect the businesses ability to continue to meet current and future needs. For example, a cheese producer that is required to consider factors for future proofing because they have to think of ethical influences such as sourcing appropriate raw materials from ethical sustainable farmers so that they can be assured of a continuous business to meet their increasing number of ethically conscious consumers.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- future proofing
- influences on a business
- business viability

Return to previous page

Achievement Standard 91866 – Agribusiness 2.8

Conduct an inquiry into the use of organisms to meet future needs.

This achievement standard relates to achievement objective 7-2 Examine how scientific principles, concepts and knowledge are applied in agribusinesses to ensure present and future primary and secondary production.

Students will gain knowledge, skills, and experience to be able to understand the importance of adapting, changing, manipulating and use of organisms to meet our future needs through the social inquiry process.

Context for learning

An example of a learning context would be to find out whether a manipulated organism has the potential to meet the future needs of New Zealanders by mitigating the impact an external factor has and to predict what the short and long term impacts of the use of this organism would be. For example, student could conduct an inquiry into whether the use of dung beetles for effluent decomposition will meet New Zealand's future needs for sustainable agricultural production. The inquiry would take into account the differing points of view, values and perspectives, whether dung beetles had the potential to improve the external influence and provided a prediction of the short and long term impacts of the introduction of this beetle to New Zealand's pasture production.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- the inquiry process
- different views, values and perspectives
- New Zealand's future need

Return to previous page

Achievement Standard 91867 – Agribusiness 2.9

Demonstrate understanding of a primary industry business structure that best meets the strategic needs of a business.

This achievement standard relates to achievement objective 7-3 Examine decision-making by agribusinesses in the primary industries in determining their business structure and carrying out cash flow forecasting to meet their strategic needs or keeping their businesses viable.

Students will gain knowledge, skills, and experience to explain a primary industry business structure that best meets the strategic needs of a business.

Context for learning

An example of a learning context could be to look at primary industry business and their business structure to find out whether this best meets the strategic needs of the business, taking into consideration the long and short term implications. For example using Ballance Agri-Nutrients which is a fertiliser cooperative, students would need to evaluate their primary industry business structure and see if it best meets the strategic needs of the business comparing it to other business structures that they have learnt about. Students will then evaluate whether the business structure of a cooperative is still a relevant business structure for Ballance Agri-Nutrients given the strategic needs of the business or whether another structure may be more relevant taking into consideration the short and long term implications.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- primary industry business
- business structure (ownership and/or governance)
- strategic needs
- short and long term implications

Return to previous page

Achievement Standard 91868 – Agribusiness 2.10

Demonstrate understanding of cash flow forecasting for a business.

This achievement standard relates to achievement objective 7-3 Examine decision-making by agribusinesses in the primary industries in determining their business structure and carrying out cash flow forecasting to meet their strategic needs or keeping their businesses viable.

Students will gain knowledge, skills, and experience to use software to prepare a cash flow forecast, show the effect of a variation of an external factor on the cash flow forecast and explain the effect of variation of an external factor on the business.

Context for learning

An example of a learning context could be any business that is affected by an external factor. For example, a kiwifruit orchard affected by the marmorated stink bug (a biosecurity risk). This will allow students to look at the cash flow forecast that they prepared for the kiwifruit orchard, and then add in the variation due to this biological factor. Students are then required to justify their response that the kiwifruit orchard could make to this biological factor, which would require students to make changes to the original cash flow forecast prepared.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- cash flow forecasting (receipts and payments)
- cash flow spreadsheeting
- external factors (for example, price, exchange rates, costs, financing, environmental conditions)
- business response to external factors

Return to previous page

Achievement Standard 91869 – Agribusiness 3.8

Analyse future proofing strategies to ensure long term viability of a business.

This achievement standard relates to achievement objective 8-1 Critically examine innovative solutions and strategies for future proofing agribusinesses to meet current and/or future needs.

Students will gain knowledge, skills, and experience to analyse innovative solutions and strategies for mitigation of current and/or future issues that best meets future needs of an identified business to ensure long term viability.

Context for learning

An example of a learning context could be any business that requires future proofing strategies to ensure that they best meet future needs of an identified business to ensure long term viability. For example, due to the discovery of Mycoplasma bovis cattle disease in the South Island, Livestock Improvement – a livestock genetics co-operative needs to ensure their farmer customers that their bull genetics do not have this disease. Possible future proofing strategies need to be put forward, with students recommending, evaluating and justifying an appropriate strategy that best meets future needs of Livestock Improvement to ensure long term viability of their business to this possible threat to their business.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- future proofing strategies
- business viability
- future needs of a business

Return to previous page

Achievement Standard 91870 – Agribusiness 3.9

Analyse the effect of financing options of a strategic capital expenditure decision on a business.

This achievement standard relates to achievement objective 8-3 Critically examine strategic decision making by agribusinesses when making strategic capital expenditure decisions to meet their strategic needs or keeping their businesses viable.

Students will gain knowledge, skills, and experience to analyse the effect of financing options of a strategic capital expenditure decision and the consequence(s) on a business.

Context for learning

An example of a learning context could be any business that requires finance to fund strategic capital expenditure, for example, a logging firm needing a new logging truck. Students are required to investigate financing options available that the firm could use to purchase the truck and then choose and justify which financing option is the best taking into consideration, financial and non-financial information, the consequences and impacts for the firm of this option.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- capital expenditure
- strategic decision versus routine decision
- financing options
- consequences to the business of financing options
- financial and non-financial information

Return to previous page

Achievement Standard 91871 - Agribusiness 3.10

Analyse how a product meets market needs through innovation in the value chain.

This achievement standard relates to achievement objective 8-4 Critically examine how agribusinesses capitalise on opportunities to grow the value and sustainability of their products globally.

Students will gain knowledge, skills, and experience to analyse how a product meets the market through innovation in the value chain.

Context for learning

An example of a learning context could be any value chain that has added or could add innovation to a product, for example, the mozzarella cheese value chain. The student is required to explain the innovation that has or may occur in the value chain, for example the time to make mozzarella cheese has dropped from 3 months to 6 hours due to a patented technology process. The student needs to explain how the innovation, reducing the time to make mozzarella cheese, meets market needs taking into consideration how the innovation adds or will add greater value to the entire value chain and the impact and consequences of the “new innovative” value chain to meet future needs.

Agribusiness knowledge, concepts, and content

Students are expected to demonstrate understanding of the following agribusiness knowledge, concepts, and content:

- a value added product
- the value chain
- the market needs
- innovation

Return to previous page

Examples of assessing level 2/3 programmes of learning using Agribusiness achievement standards

Level 2

Course Offers Endorsement (subject to NZQA criteria being met).

No.	I/E	Level	Credits	Standard Title
AS91865	I	2	4	Agribusiness – Demonstrate understanding of future proofing influences that affect business viability.
AS91866	I	2	4	Agribusiness – Conduct an inquiry into the use of organisms to meet future needs.
AS91867	I	2	4	Agribusiness – Demonstrate understanding of a primary industry business structure that best meets the strategic needs of a business.
AS91868	I	2	4	Agribusiness – Demonstrate understanding of cash flow forecasting for a business.
AS90844	E	2	4	Business Studies – Demonstrate understanding of how a large business responds to external factors.

Level 3

Course Offers Endorsement (subject to NZQA criteria being met).

No.	I/E	Level	Credits	Standard Title
AS91382	I	3	6	Business Studies – Develop a marketing plan for a new or existing product
AS91869	I	3	4	Agribusiness – Analyse future proofing strategies to ensure long term viability of a business.
AS91870	I	3	4	Agribusiness – Analyse the effect of financing options of a strategic capital expenditure decision on a business.
AS91871	I	3	4	Agribusiness – Analyse how a product meets market needs

				through innovation in the value chain.
AS91382	E	3	5	Agricultural and Horticultural Science – Demonstrate understanding of how marked forces affect supply of and demand for NZ primary products.

Possible existing achievement standards that could be used for assessing some aspects of Agribusiness

Strand: Innovation

Learning objective: 7-1: Examine the impact of influences on agribusinesses to meet present and future needs, viability, and protection of the environment.

- AS91361 Generic Technology 2.8. Demonstrate understanding of sociocultural factors, and how competing priorities are managed, in technology (4 credits) Internal.
- AS91362 Generic Technology 2.9. Demonstrate understanding of the nature of technological outcomes (4 credits) Internal.
- AS91363 Generic Technology 2.10. Demonstrate understanding of sustainability in design (4 credits) External.
- AS90811 Education for Sustainability 2.2. Explain how human activity in a biophysical environment has consequences for a sustainable future (4 credits) Internal.
- AS90814 Education for Sustainability 2.6. Demonstrate understanding of aspects of sustainability in different contexts (4 credits) External.
- AS90844 Business Studies 2.2. Demonstrate understanding of how a large business responds to external factors (4 credits) External.
- AS90845 Business Studies 2.3. Apply business knowledge to a critical problem(s) in a given large business context (4 credits) External.
- AS91298 Agricultural and Horticultural Science 2.10. Report on the environmental impact of the production of a locally produced primary product (4 credits) Internal.

Learning objective: 8-1: Critically examine innovative solutions and strategies for future proofing agribusinesses to meet current and/or future needs.

- AS91610 Generic Technology 3.3. Develop a conceptual design considering fitness for purpose in the broadest sense (6 credits) Internal.
- AS91615 Generic Technology 3.8. Demonstrate understanding of consequences, responsibilities and challenges involved in technology (4 credits) Internal.
- AS91735 Education for Sustainability 3.2. Evaluate measures that may be taken to sustain and/or improve a biophysical environment (4 credits) Internal.
- AS90831 Education for Sustainability 3.4. Analyse the impact that policies have on a sustainable future (5 credits) External.
- AS90832 Education for Sustainability 3.5. Develop a strategy for an organisation that will contribute to a sustainable future (5 credits) Internal.
- AS91380 Business Studies 3.2. Demonstrate understanding of strategic response to external factors by a business that operates in a global context (4 credits) External.

- AS91381 Business Studies 3.3. Apply business knowledge to address a complex problem(s) in a given global business context (4 credits) External.
- AS91532 Agricultural and Horticultural Science 3.5. Analyse a New Zealand primary production environmental issue (5 credits) External.
- AS91411 Earth and Space Science 3.2. Investigate a socio-scientific issue in an Earth and Space Science context (4 credits) Internal.

Strand: Science and Technology

Learning objective: 7-2: Examine how scientific principles, concepts and knowledge are applied in agribusinesses to ensure present and future primary and secondary production.

- AS91163 Chemistry 2.3. Demonstrate understanding of the chemistry used in the development of a current technology (3 credits) Internal.
- AS91290 Agricultural and Horticultural Science 2.2. Demonstrate understanding of techniques used to modify physical factors of the environment for NZ plant production (4 credits) External.
- AS91292 Agricultural and Horticultural Science 2.4. Demonstrate understanding of how management practices influence plant growth and development in NZ commercial production (4 credits) Internal.
- AS91295 Agricultural and Horticultural Science 2.7. Demonstrate understanding of interactions between livestock behaviour and NZ commercial management practices (4 credits) Internal.
- AS91155 Biology 2.3. Demonstrate understanding of adaptation of plants or animals to their way of life (3 credits) Internal.
- AS91352 Processing Technologies 2.61. Demonstrate understanding of advanced concepts used in processing (4 credits) Interna.l

Learning objective: 8-2: 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.

- AS91389 Chemistry 3.3. Demonstrate understanding of chemical processes in the world around us (3 credits) Internal.
- AS91602 Biology 3.2. Integrate biological knowledge to develop an informed response to a socio-scientific issue (3 credits) Internal.
- AS91607 Biology 3.7. Demonstrate understanding of human manipulations of genetic transfer and its biological implications. (3 credits) Internal.
- AS91619 Technology 3.14. Demonstrate understanding of the application of a technical area to a specific field (4 credits) Internal.

Strand: Management and finance

Learning objective: 7-3: Examine decision-making by agribusinesses in the primary industries in determining their business structure and carrying out cash flow forecasting to meet their strategic needs or keeping their businesses viable.

No suitable achievement standards to assess Agribusiness concepts such as cash flow forecasting or governance and management structure which is the focus of this Agribusiness learning objective. However, possible standards could be:

- AS91481 Accounting 2.5. Demonstrate understanding of a contemporary accounting issue for decision making. (4 credits) Internal.
- US2784 Generic Computing. Create and use a computer spreadsheet to solve a problem (3 credits) Internal.

Learning objective: 8-3: Critically examine strategic decision making by agribusinesses when making strategic capital expenditure decisions to meet their strategic needs or keeping their businesses viable.

No suitable achievement standards for operational and strategic decisions in agribusinesses which is the focus of this Agribusiness learning objective. However, possible standards could be:

- AS91530 Agricultural and Horticultural Science 3.3. Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products (5 credits) External.
- US2785 Generic Computing. Create a computer spreadsheet to provide a solution for organisation use (5 credits) Internal.

Strand: Marketing

Learning objective: 7-4: Examine decisions in agribusinesses that enhance and sustain local and/or national production and enterprise.

- AS90846 Business Studies 2.4 Conduct market research for a new or existing product. (3 credits) Internal.

Learning objective: 8-4: Critically examine how agribusinesses capitalise on opportunities to grow the value and sustainability of their products globally.

No suitable achievement standards for assessing how agribusinesses capitalise on the opportunities to grow the value of their products round the globe. However, possible standards could be:

- AS91428 Geography 3.3. Analyse a significant contemporary event from a geographic perspective (3 Credits) Internal
- AS91382 Business Studies 3.4. Develop a marketing plan for a new or existing product. (6 credits) Internal.
- AS91384 Business Studies 3.6. Carry out, with consultation, an innovative and sustainable business activity (9 credits) Internal.

Return to previous page

Examples of assessing level 2/3 programmes of learning using re-contextualised achievement standards

Using re-contextualised achievement standards

The Agribusiness learning area could be assessed using other domains (that is, Geography, Science, Accounting etc.) Achievement standards that have been re-contextualised into Agribusiness contexts in their Agribusiness programme or in to their own existing courses.

Agribusiness programmes integrate concepts and learning from achievement objectives in biology, science, economics, geography, and technology. For this reason, learning can be assessed using achievement standards from a range of subjects as well as those from agribusiness. Teachers have considerable scope to select standards that will assess valued learning and engage their students.

Learning described by this objectives could be assessed using any one of these achievement standards.

Level 2

Course Offers Endorsement (subject to NZQA criteria being met).

No.	I/E	Level	Credits	Standard Title
AS90811	I	2	4	Education for Sustainability – Explain how human activity in a biophysical environment has consequences for a sustainable future.
AS91866	I	2	4	Agribusiness – Conduct an inquiry into the use of organisms to meet future needs.
AS91292	I	2	4	Agricultural and Horticultural Science – Demonstrate understanding of how management practices influence plant growth and development in New Zealand commercial production.
AS91481	I	2	4	Accounting – Demonstrate understanding of a contemporary accounting issue for decision-making.
AS91362	I	2	4	Generic Technology - Demonstrate understanding of the nature of technological outcomes.

Level 3

Course Offers Endorsement (subject to NZQA criteria being met).

No.	I/E	Level	Credits	Standard Title
AS91870	I	3	4	Agribusiness – Analyse the effect of financing options of a strategic capital expenditure decision on a business.
AS91735	I	3	4	Education for Sustainability – Evaluate measures that may be taken to sustain and/or improve a biophysical environment (4 credits) Internal.
AS91411	I	3	4	Earth and Space Science – Investigate a socio-scientific issue in an Earth and Space Science context.
AS91428	I	3	3	Geography – Analyse a significant contemporary event from a geographic perspective.
AS91382	E	3	5	Agricultural and Horticultural Science – Demonstrate understanding of how marked forces affect supply of and demand for NZ primary products.

Return to previous page

Resources and pathways

Key terms

The New Zealand Qualifications Authority (NZQA)

- Follow links to the National Qualifications Framework, NCEA, and subject achievement standards.

TKI assessment community – Assessment Online

This site is home to a considerable body of research and readings, online workshops, and new assessment tools and resources. For example, it provides links to asTTle (Assessment Tools for Teaching and Learning) and NEMP (the National Education Monitoring Project).

- The linked site Consider the evidence promotes evidence-driven decision making for secondary schools and supports secondary educators to make best use of evidence to improve student achievement.
- For a discussion of how changes in assessment practice can contribute to greater student ownership of learning and improved outcomes for students, see Directions for assessment in New Zealand, a report by Michael Absolum, Lester Flockton, John Hattie, Rosemary Hipkins, and Ian Reid (also available as a Word or PDF file).

Horticultural and Agricultural Teachers Association (HATA) website

- The Horticulture and Agriculture Teachers Association of New Zealand (HATA) is a subject association dedicated to improving the teaching and promoting the New Zealand secondary subject Horticulture and Agriculture nationally.
- HATA encourages, supports and shares information about curriculum, teaching and learning, through the running of biennial conferences, managing a website (hata.nz), publishing quarterly newsletters and regular communication with their members.

Young Enterprise Trust

- Young Enterprise Trust's principle objective is to promote an enterprise culture amongst New Zealand school students. A new website is being developed. Current areas focus on financial education and enterprise studies.

Key terms

Agribusiness: defined as a course of study that integrates all the primary industries and businesses that comprise primary production.

Business structure: refers to ownership or governance. Examples include: Māori and other trading trusts, board of directors, co-operatives, sole trader, partnerships, limited liability company, and non-profit organisations.

Cash flow forecasting: refers to predicting future cash flow (receipts and payments).

External factors: refers to outside influences that can impact on a business. Examples include: price, exchange rate, costs, financing and environmental conditions.

External influences: have an impact on the decision making process. Examples of influences include: economic, environmental, political, cultural, social, ethical, technological, biological, scientific and legal.

Future proofing: refers to understanding the influences on a business that could affect viability.

Future proofing strategies: refers to courses of action that influence a business and may that effect long term viability. The strategies could be innovative and revolutionary.

Influences: have an impact on the decision making process. Examples of influences include: economic, environmental, political, cultural, social, ethical, technological, biological, scientific and legal.

Innovation: refers to a new method, resource, idea or product that results in adding value. Examples include: transparent value chains, biosecurity methods, apps for digital devices, GPS trackers and drones for delivery, precision horticulture and business collaborations.

Kaitiakitanga: the responsibilities and kaupapa, passed down from the ancestors, of tangata whenua to take care of the places, natural resources, and other taonga in their area

Kotahitanga: unity, solidarity

Long term viability: refers to ensuring the continuity of a business in the future. Long term is dependent on the nature of the business.

Manaakitanga: respect given to visitors, sharing and caring

Organisms: all living things. Examples include: microorganisms (bacteria, fungi, viruses), marine organisms and insects.

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.

Product: refers to an idea, information, object, good, or service created as a result of a process and serves a need or satisfies a want.

Rangatiratanga: chieftainship or leadership

Strategic capital expenditure decision: this is a decision that requires a business to raise additional equity or finance to fund the capital expenditure. The capital expenditure is relevant to the business and the decision has a medium to long term impact.

Strategic needs: refer to strategic goals, succession planning and / or capital needs.

Tangata whenua: people of the land, Māori people

Taonga: valued resources, assets, prized possessions both material and non-material

Tikanga: meaning, custom, obligation.

Use: refers to an adaption, modification or manipulation of organisms to meet future needs.

Value chain: refers to a set of activities in a process in order to deliver a product or service to the market from producer to consumer. Examples include: processor/manufacturer, consumer distribution, market research, product research and development, promotion, and quality control.

Variation: refers to changes in income and/or expenses over a period of time as a result of an external factor influence in a cash flow forecasting budget.

Viability: refers to ensuring the continuity of a business to meet current and future needs.

Whanaungatanga: relationship, kinship.

Return to previous page