

TasAgFuture

WHERE IS TASMANIA'S AGRIFOOD SECTOR
HEADING AND HOW WILL WE GET THERE?

TasAgFuture: Final Research Report and Discussion Paper

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Acronyms

ABARES - Australian Bureau of Agricultural and Resource Economics
ABS - Australian Bureau of Statistics
ACIAR - Australian Centre for International Agricultural Research
ARC - Australian Research Council
ARWU - Academic Ranking of World Universities
ATO - Australian Taxation Office
CSIRO - Commonwealth Scientific and Industrial Research Organisation
DPIPWE - Department of Primary Industries, Parks, Water and Environment
FAO - Food and Agriculture Organization
GMO - Genetically modified organism
GPS - Global Positioning System
GSP - Gross State Product
HQ - Head Quarters
HR - Human Resources
IPES - International Panel of Experts on Sustainable Food Systems
IT - Information Technology
JVA - Joint Venture Agreement
MLP - Multi-Level Perspective
MONA - Museum of Old and New Art
MSA - Meat Standards Australia
NE - North East
NGO - Non-Governmental Organisation
NRM - Natural Resource Management
PV - Photovoltaics
RD&E - Research, Development and Extension
RDC - Research and Development Corporations
SDT - Self-Determination Theory
SME - Small and Medium-Sized Enterprises
TAB - TIA Advisory Board
TAFE - Technical and Further Education
TAPG - Tasmanian Agricultural Productivity Group
TFGA - Tasmanian Farmers and Graziers Association
TIA - Tasmanian Institute of Agriculture
TIAR - Tasmanian Institute of Agricultural Research
TLT - TIA Leadership Team
UN - United Nations
US - United States
UTAS - University of Tasmania
WET - Wine Equalisation Tax
WWOOF - Willing Workers on Organic Farms

Glossary of terms

Boutique market: A small, specialised market for products that command a premium price

Commodity market: A large/global market for undifferentiated products

Family farm: Family farms include any farm organised as a sole proprietorship, partnership, or family corporation, and exclude farms organised as non-family corporations or cooperatives, as well as farms with hired managers (decision makers) (USDA). Farms owned and managed by member(s) of a family, primarily or exclusively

Identity: An understanding of the self as a social product, for example intergenerational farmers, processors, niche food producers or innovators etc. within the context of agrifood systems. Identity is situational or contextual in nature.

Innovation: The implementation of a new or significantly improved product (good or service) or process, a new marketing method or a new organisational method in business practices, workplace organisation or external relations (OECD and Eurostat 2005).

Co-innovation: Collaborative innovation.

Governance innovation: Innovation in the organisational structure of agrifood businesses.

Market innovation: Developing or entering into new markets, including the development of radical new products to create new markets

Market segments: The broad categories of or groupings within a market. In the case of this report the main groupings described are commodity, niche and boutique segments.

Process innovation: Changes in processes used to produce, market and distribute products and execute other organisational activities

Product innovation: Development of new products, and new product features, forms or presentation for an existing or new market

Institutions: Formal and informal social organisations and their rules, habits, constitutions, laws and conventions that shape human interactions and incentives

Narratives: People's stories of the past, present and future discourse

Niche Market: A specialised market or defined segment of a larger market

Norms: Standards of proper or acceptable behaviour. A widespread or usual practice, procedure, or custom

Pathways: The particular direction in which interacting social, technological and environmental systems co-evolve over time (Leach et al. 2010)

Qualitative: Approaches to research that usually emphasise use of words (texts) rather than numbers in the collection and analysis of data

Quantitative: Approaches to research that emphasise use of numbers in the collection and analysis of data

Social license: The demands and expectations that affect a business and emerge through the interactions of that business with various societal stakeholders (Gunningham et al. 2004)

Supply chain innovation: Developing new sources for inputs, creating more efficient and coordinated supply chains or increasing the consumer focus of supply chains

Vertically integrated: A firm can be described as vertically integrated if it involves in or controls more than one stage of its supply chain. For example, producer engaging in packaging, processing or marketing function to add value in its product line

Table of Contents

Acronyms.....	2
Glossary of terms.....	3
Executive Summary.....	6
Aims and scope	6
Context and background	6
The approach.....	7
Key findings	8
Conclusions	14
Recommendations	17
Acknowledgements	21
1. Introduction.....	22
1.1. The purpose and structure of this report, and how to use it.....	23
2. Background and context.....	25
2.1. What is the agrifood sector?.....	25
2.2. How is Tasmania’s agrifood sector changing?	29
2.3. TIA and its roles within the state agrifood sector	36
2.4. The policies and priorities of TIA’s key partners and stakeholders	39
3. Methodology.....	42
3.1. Cross-cutting concepts for informing this research.....	42
3.2. Aspirations, capacity, actions and expectations	43
3.3. Methods	52
3.4. Participants and respondents: sampling and recruitment considerations.....	60
3.5. Project monitoring and evaluation	70
4. Results and analysis.....	72
4.1. Goals and motivation	72
4.2. Actions and innovation	96
4.3. Capacity: enablers and constraints	113
4.4. Expectations	142
5. Discussion and synthesis: pathways for the Tasmanian agrifood sector.....	159
5.1. Narratives as sectoral and regional pathways	159
5.2. Cross-cutting themes for innovation, capacity and future pathways	167
6. Limitations	177

6.1. Limitations in in-depth interviews and analysis177

6.2. Limitations in survey and analysis178

6.3. Key lessons for future research.....179

7. Conclusions.....180

8. Recommendations.....185

9. References.....191

10. Appendices 199

Executive Summary

Aims and scope

Aspirations in Food and Agriculture (TasAgFuture) was funded by the Tasmanian Institute of Agriculture (TIA) to serve four broad goals:

1. To better understand diversity of farmers and food manufacturers in their own terms.
2. To help define agrifood goals for the state in broad terms, and how TIA can work with others to achieve these goals.
3. To inform TIA's strategic direction based on sound evidence and analysis.
4. To inform setting of priorities and policy across the Tasmanian agrifood sector.

TIA's leadership commissioned this research in recognition of the importance of occasionally stepping back and taking a big picture view of the agriculture and food sectors that TIA serves. Rather than do this through an analysis of existing data, TIA wanted to hear directly from its key constituents – people working in Tasmania's food and agriculture sectors. TIA did not seek external funding as it wanted the work to focus on Tasmania's agrifood sector as a whole.

The research lays a foundation for focused discussions about options, opportunities and challenges in a rapidly changing and evolving sector. It lays important foundations for informed discussions that can link directions for Research, Develop and Extension (RD&E) with education, policy and industry priorities.

Context and background

Tasmania's agrifood sector is becoming larger, and more diverse and complicated. This is in line with global trends. Change is amplified by new access to water, an excellent environment for growing and making high quality products, and increasing capability to produce a greater variety of products. Successive Tasmanian governments have expressed a strong commitment to growth in the sector, with the current government's Agrivision 2050 platform aiming for a greater than five-fold increase in farm-gate value to \$10 billion by 2050.

Australia's agriculture sector is among the least subsidised or trade protected through tariffs in the developed world. We have very high labour and transport costs, and as a result depend on innovation and technology adoption.

TIA is Tasmania's leading research organisation working on agriculture and food, and was recently ranked 39th in the world for agricultural science. TIA sits in the College of Science and Engineering at the University of Tasmania (UTAS). Within TIA, a Joint Venture Agreement (JVA) between UTAS and the State Government provides a framework to focus on RD&E and industry development for the benefit of the state. TIA's campuses and farms across the state aim to serve local needs for RD&E and education, and combine this local mandate with commitments to international research and teaching excellence.

The approach

TasAgFuture is a social research project with strong elements of communications and engagement with industry groups and other stakeholders. The research focused on farmers, and manufacturers of food and beverages - the main intended beneficiaries of much of TIA's RD&E. Through in-depth interviews and a broadscale survey the project focused on four topics:

1. **Aspirations:** Long-term goals and motivations of food producers and processors, to clarify plausible and desired future directions for the agriculture and food sector.
2. **Innovation and action:** Work people have done to achieve their goals, for a clearer picture of how people are innovating across the sector.
3. **Capacity:** Things that constrain and enable businesses in achieving their goals, to identify opportunities and leverage points for RD&E, and potentially for education, policy and industry priorities.
4. **Expectations:** How businesses see the future – their hopes and concerns, to plan and ensure TIA's RD&E is forward-looking and fit for purpose.

The project had five overlapping phases (Figure 1). Methodological development, contextual analysis and stakeholder engagement were followed by 100 in-depth interviews with a very diverse selection of farmers, food manufacturers and processors across the state¹. These interview participants were identified through diverse networks. The third phase involved a 10 minute online and paper-based survey, developed from early analysis of interviews to cover the topics above. Survey distribution through intermediary organisations led to 630 surveys being completed. These provide quantitative data to complement the in-depth qualitative interviews.

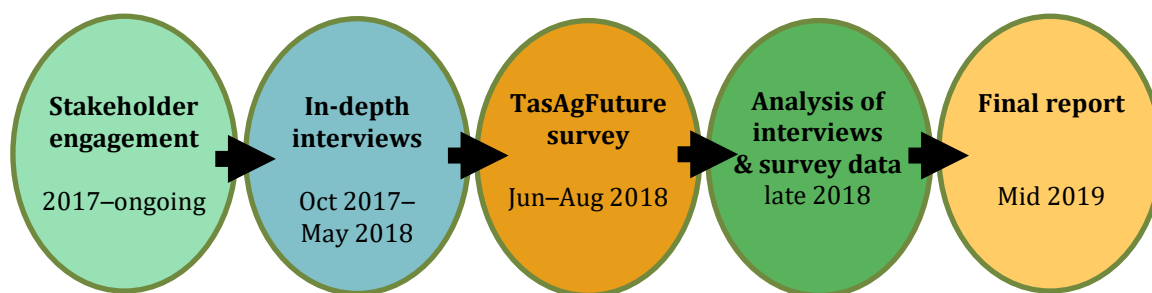


Figure 1.: Overview of the process of the TasAgFuture project timeline.

The interviews and surveys cover diverse businesses across sectors as well as market segments. In this research, market segments are defined as follows:

Commodity: A large/global market for undifferentiated products.

Niche: Specialised market or defined segment of a larger market.

Boutique: A small, specialised market for products that command a premium price.

¹ This does not include seafood, marine farming or forestry.

Key findings

From the detailed analysis of interview and survey data presented in this report, key insights and patterns were identified across topic areas.

Goals and motivations

Long-term goals and motivations are cohesive and interactive. People had many goals in common. Social, economic and environmental goals were usually talked about together. Sustainability was most often related to looking after the land, or passing it on in good condition, taking care of people and animals and making enough profit to keep the business afloat, especially in hard times. Many people also had a deep passion for their work, whether this was working with stock, creating premium products, or providing unique experiences.

Interview quote

“Looking after the land – and putting back into it what you’re taking out – so that you ensure that it remains profitable and productive for years to come and for generations to come.”

Goals are different across business types. For family farmers economic goals were usually means to achieving social and environmental ends, such as looking after the land for future generations. In larger companies (both farm and manufacturing businesses) social and environmental goals were often means to achieving economic ends. For many niche and boutique food manufacturers, a primary goal was to make remarkable products with attention to detail.

Different goals and motivations underpin different forms of innovation. Commodity producers often talked about the cost-price squeeze as a financial push to grow their businesses and holdings, with key goals around efficiency and scaling up. Innovations tended to be process and product focused, particularly on labour saving technology. Niche and boutique producers were more concerned about diverse qualities of their products, and how to better understand what their customers are looking for.

Motivations are based on much more than money. Profit is essential in any business, but when participants talked about deeper motivations, answers could mostly be classified into three themes. Firstly, **autonomy** was about being one’s own boss and making one’s own decisions and actions. Secondly, **relatedness** was expressed as being part of something bigger than oneself – a family, a team, a community, and the history of a place. Thirdly, **competence** was expressed as satisfaction from doing things well: growing a good crop, producing food of the highest quality, or running a successful business. Many people talked about their identity as farmers or makers, or their passions - from improving nutrition to nurturing biodiversity.

Especially in commodity focused businesses, innovation was mostly incremental, through the adoption or adaption of techniques and technologies. Many suggested that approaches needed to be ‘proven’ before they would risk adopting them. In some corporate businesses, risky decisions or changes were often trialed in-house. A key exception to incremental change is the rapid rollout of irrigation, which is resulting in major changes at business and landscape scales. This has the potential to transform the sector, not just through increases in productivity but through dramatically changing the innovation environment. Such change does not come without challenges, not least in adjusting the risk profiles of businesses. In some smaller businesses, especially in niche segments, radical innovation spanned multiple forms (see Table 1).

Interview quote

“If you just sit on your hands, you don’t really get anywhere in this game. You have to be constantly improving and getting more out of your ground.”

Some participants reported expanding operations across different areas of the value chain for products (e.g. moving into processing or extending operations to include bees for pollination). There was a stronger tendency for businesses in niche markets to work with other businesses, or to co-innovate. Co-innovation can include any forms of innovation in Table 1, but is distinguished by effective collaboration across the value chain, either within a business or across two or more businesses (Bonney et al. 2007).

Co-innovation was enabled by relationships and understanding of customers and consumers, especially in niche and boutique businesses, and constrained by traditional focus on individual business-level efficiency, individualism and relative isolation from customers and consumers. It was much less apparent in commodity segments and among large farmers who saw their roles as primarily focused on production rather than value adding, marketing or understanding consumers.

Table 1.: Forms of innovation, adapted from Schumpeter (1934), as expressed among interview participants. There can be overlaps between forms of innovation.

Forms of innovation	Definition	Presence in commodity sectors	Presence in niche /boutique sectors
Process innovation	Changes in processes used to produce, market and distribute products and execute other organisational activities	Diverse but most commonly as application of technology as means to increase efficiency	Diverse but driven by focus on quality and shared knowledge among communities of practice
Product innovation	Development of new products, and new product features, forms or presentation for an existing or new market	Incremental change often driven by customers or corporate head quarters	Diverse based on trials and experimentations, market research and proximity to customers
Market innovation	Developing or entering into new markets, including the development of radical new products to create new markets	Some differentiation through branding and attempts to develop new markets	Branding and focus on identities and qualities
Supply chain innovation	Developing new sources for inputs, creating more efficient, and coordinated supply chains or increasing the consumer focus of supply chains	Common focus on supply chain in large processing businesses	Based on links with retailers or consumers directly, links with tourism
Governance innovation	Innovations in the organisational structure of agrifood businesses	Minimal development of new investment models.	Some partnerships and co-innovation across value chains

Capacity

Constraints and enablers are diverse, but similar sets exist across market segments. Key constraints and enablers are things that affect the ability of businesses to achieve their goals, negatively or positively. There are large differences between boutique, niche and commodity market segments, as well as between large and small businesses. From the interviews, constraints and enablers were organised using a capitals framework, with the most commonly expressed issues are summarised in Table 2.

Table 2.: The most common constraints and enablers raised in interviews, organised by associated capitals as briefly defined in column 1.

Capital	Constraints	Enablers
Financial: Economic assets, such as income sources, investment funds, and loans	High investment risks - large investments required	Incremental change
		Planning, including market research, profit/cost analysis, debt management
	Limited financing options for uncommon businesses and young people	Alternative financing, e.g. family loans, partnerships, share-farming
	High costs of operation and variable cashflow	Tax rebates, subsidies, grants
Physical: Human-produced or built resources, technologies and infrastructure	Unreliable irrigation - supply and storage	Expansion of irrigation options, including reuse water and improved storage
	Unreliable Internet connectivity to support precision agriculture and tourism ventures	Precision agriculture
		Mechanisation/automation To reduce labour requirements
		Improved breeds/varieties
High transport costs and limited options E.g. no direct flights	Freight equalisation scheme and for some, good service	
Human capital: Traits of individuals such as skills, education, and health	Limited access to good quality labour High costs, competition with other sectors/regions, poor work attitude, low motivation to stay in rural areas	Strategies to attract and retain good employees
	Stricter immigration regulations reduce pool of potential workers	Government programs to foster employment/capacity in the sector
	Limited skills for certain tasks, and lack of time for upskilling	Formal and informal training opportunities
	Constant training of new employees	
Social capital- Institutional: Relates to rules and norms	Short timeframes of political decision-making	Some helpful local councils
	Poor integration across sectors and government agencies	
	Red-tape	
	Low trust in government	
Social capital- Markets Relates to the functioning of markets	Commodities - price-takers	Niche/boutique - greater control of value
	Low competitiveness	High quality products - differentiated in global market
	Risks to Tasmania's brand	Reputation of Tasmania's brand
	Unwanted consequences of increased tourism, e.g. costs of accommodation	Increasing tourism
	Unfair intermediaries/supply chain	Vertical integration and fairer value-chains
	Succession planning	Support from family/community/peers
Social capital – Networks Relates to the social linkages among people	Subjectivity in family business decisions	Family heritage
	Biased perceptions based on gender, age or race	Communities of practice as socialising, learning hubs
	Limited representation for some	Satisfactory influence through representative bodies/regional groups
	Negative perceptions of agriculture	Approaches to reconnect general public with farming
Natural capital natural resources and environmental services	Slow production (and in some cases processing) over winter	Favourable land characteristics and high place attachment
	Weather extremes risks	Advantages of changing climate
	Impending biosecurity hazards	Isolation from certain pests and diseases
	Wild animals (native and non-native)	

These enablers and constraints do not occur in isolation, but there are intricate connections between them.

Regional decline is a major concern. Drivers of decline included short timeframes and limited integration across government policies, portfolios and tiers of government. There are few incentives for young people to stay in rural areas. Low trust in government, a general feeling of low empowerment to influence decisions and limited financing options are constraints. A variety of things are identified as helping to address regional decline including: high social capital, representative bodies and other stakeholders with central roles in rural networks, and the opportunity to capitalise on the Tasmanian brand through tourism and other strategies. Improving regional development and stemming decline needs to be tackled by many relevant stakeholders working together. This in turn requires overcoming barriers to collaboration, noted in Table 2.

While labour challenges have many facets, there is a need for greater focus on providing good work environments and cultures. Related to issues of rural decline, capable staff are not easy to find in rural areas, and potential workers often lack the skills, or the right attitude and motivation to develop a successful career in agriculture. On the other hand, employers sometimes lack the skills to manage staff well, to inspire them, and to provide a satisfactory work environment. These demand-side drivers have major financial consequences related to high turnover of personnel, and low public perception about jobs in the sector. Beyond addressing well-known skill shortages, it is increasingly necessary to build skills in human resource management and leadership within the sector. This can be accomplished through recruiting good managers as well as supporting education, training and advice for existing business managers.

Public involvement and best practices are needed to build social license. Agricultural impacts on the environment, animal welfare and human health are increasingly raised as concerns by consumers and citizens. At the same time, urban residents have become isolated from food production. To build social license, the perceptions and knowledge of different groups need to be addressed. Current enablers can aid this process. Options include: farm-based initiatives to authentically reconnect the general public with farming; consumer movements to support local farmers and best practice, and; R&D which can ensure practices and claims about it are credible.

Expectations

When asked about the future, participants often described what they *hope* will happen, as well as what needs to be done. These perspectives provide insight into current and future hopes, concerns and opportunities, that can be summarised as follows:

Tasmania's brand and its qualities are a widely appreciated 'intangible asset' that many want to build on and protect. Some, especially niche producers, are interested in developing sub-regional brands.

Climate change was a major concern highlighted by many participants, especially with respect to unreliable rainfall patterns. These issues were associated with the importance of irrigation development and infrastructure. For some, irrigation created new challenges as a driver of financial stress and debt, and various risks associated with intensification.

Technological change was usually seen as positive, inevitable, valuable, and necessary to remain productive and competitive. However, it was broadly acknowledged that diverse technologies are changing the sector entirely and rapidly. They provide control yet can increase costs and debt. They reduce labour costs but create demand for staff who are highly skilled and better paid. Automation, sensing and communications technologies were seen as game-changers on the near horizon.

Strategies to maintain profitability will continue to rely on some combination of technology-driven efficiency, quality-oriented differentiation, and value chain competition through vertical integration. In commodity sectors, participants saw small farms becoming less and less viable. Some businesses operating in niche segments were value-adding or diversifying because their once-sizeable family farm could no longer compete in commodity production. Trends towards consolidation of farm land, companies expanding along supply chains and creating value through qualities that address consumer values seem to be driving forces in the sector. Figure 2 shows whether the most commonly raised issues were generally discussed in positive, negative or neutral/ambivalent terms. The most positive responses were related to brand, market, provenance and technological change. The most negative were associated with costs of production, changing scale of operations, climate change, regulation, biosecurity issues, labour, animal welfare and water.

Participants' descriptions of the future*

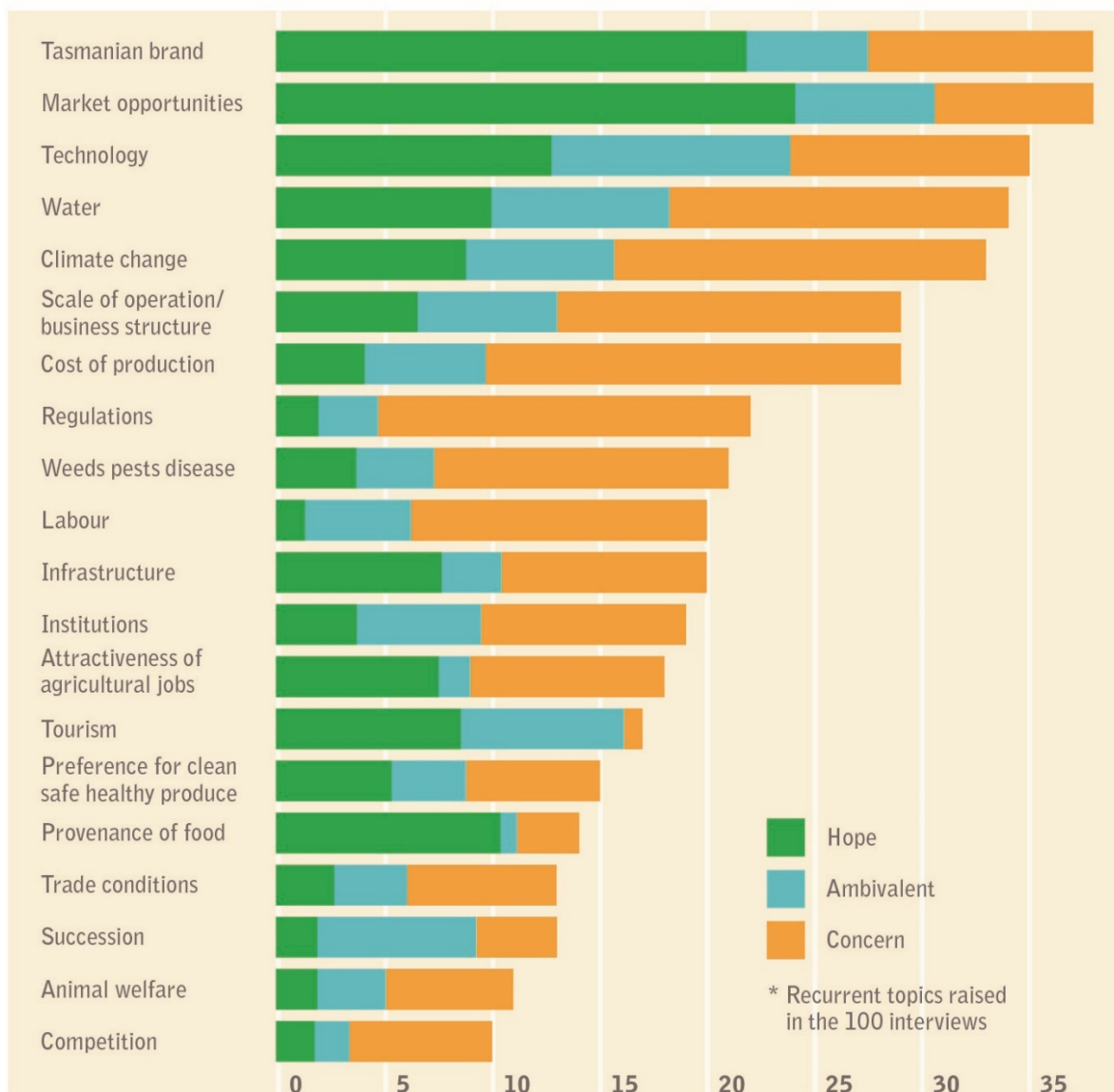


Figure 2.: Recurrent topics raised in interview participants' descriptions of the future and the number of participants who raised them in different ways (N=100).

Conclusions

The goals of this research were to:

1. Better understand diversity of farmers and food manufacturers in their own terms.
2. Help define agrifood goals for the state in broad terms, and how TIA can work with others to achieve these goals.
3. Inform TIA's strategic direction based on sound evidence and analysis.
4. Inform setting of priorities and policy across the Tasmanian agrifood sector.

These conclusions integrate the findings detailed, addressing the first and second goals above. The findings provide a big picture view of the agrifood sector, and feed directly into recommendations which address the third and fourth aims above.

Many issues that Tasmanian agriculture faces are well-known, such as the cost of freight, labour, and challenges associated with biosecurity, and these were widely discussed. While these issues are important, they are not the central focus here. This is because interviews largely re-emphasise their importance rather than clarify new strategies or directions.

The seven broad conclusions of this research are:

1. **The complexity of the state’s food and agriculture sector creates both strengths and challenges.** It will be important to build additional capacity across RD&E, government and industry to manage these in an integrated fashion. Many of the challenges and opportunities require elements of industry leadership, government policy or support and integrated RD&E to ensure big decisions do not back-fire.
2. **Common sets of goals and motivations provide directions that can help focus interventions across the agrifood sector.** The goals, motivations and associated innovative actions can be synthesised into four distinct but interactive ‘directions’ for the sector (see Table 3). Taken together these can help define intended outcomes of RD&E and other interventions, who they benefit, and how they should be undertaken. These directions are not different types of businesses, but rather core drivers of success within the sector. They interact strongly and, depending on how they are fostered, all seem likely to be important into the future.

Table 3.: Interacting ‘directions’ of the Tasmanian agrifood sector developed from interviews.

The Farm – place-based autonomy	The Character – delight consumers	The Business – efficient and professional	The Passion – identity and ideals
A focus on efficiency and profitability through farm-scale innovation, development and adaptation of technologies. The ultimate goals are to pass the land on in good condition, or (for family farmers) pass a viable business on to the next generation.	A focus on the qualities of products, especially in niche markets. Value is created through high standards and an ethos of excellence that often links products with places, services, identities, and brands.	Large agrifood businesses achieve economic goals by social means, finding and keeping good people and teams. They work across value chains, using capital, their in-house R&D, and often global networks to develop opportunities and address challenges.	People are passionate about their work in food and agriculture. Some passions align well with public good work to advance sustainability in food and agriculture and to do excellent research to support innovation.

3. **Different forms of innovation result in different opportunities and risks for Tasmania.** Across the sectors there is currently a strong focus on technological (process) innovation and product innovation. There is less market, value chain and governance innovation, although these forms of innovation appear to be more prevalent in niche market segments. A lot of current innovation is reactive or problem driven rather than goal or value driven, and tends to have short time horizons. Innovation among firms across supply chains (co-

innovation) is in its infancy and where it is occurring it is often creating substantial value for and within the state. Irrigation is fostering substantial innovative action. Further research is needed to understand the relative economic and social value of different market segments (as opposed to sectors). This is because R&D contribution to innovation are very different across market segments (i.e. commodity or niche/boutique) than they are across commodity sectors. The former can benefit from marketing, value chain and R&D focusing on product qualities. The latter rely primarily on increased technical efficiency and credible research to underpin sustainability and other public benefits and risks and ensure these are accountable and traceable.

- 4. Long term goals and motivations suggest a bottom-up means of defining sustainability for the sector.** Across sectors and market segments there were differing ways of thinking about sustainability. Family farmers reflect classic sustainability goals of ‘intergenerational equity’ through common commitments to ‘passing the land on in good condition’. Among larger corporate businesses, economic goals are widely expressed as being achieved through looking after people, animals and the land. In both, a strong emphasis was placed on the connection between economic, environmental and social goals. However, these goals tended to focus tightly on the businesses or the farm, and do not necessarily mesh with changing societal goals or expectations about regional and larger scale environmental outcomes, animal and social welfare or other issues. Where wider-scale implications of management were raised this was often as concern about ‘social license’ or the reputation of the sector. This was often expressed as concern that people in the city don’t understand farming, which might justifiably be turned around to say that farmers don’t understand people in cities – i.e. their consumers. Social license, corporate social responsibility, profitability, and custodianship provide avenues for advancing integrative approaches to sustainability at different scales.
- 5. Leadership and social capital need to be further developed to address challenges in regions, sectors and to achieve broader social goals such as sustainability and social license.** Addressing many of the emerging and large-scale challenges in the agrifood sector requires sustained leadership and social capital from within the sector – especially strong connections and working relationships within and among groups. While social capital is strong in agriculture and food, it could be oriented more strongly towards creating common value, and supporting innovation through proactive measures. Leadership and social capital are increasingly essential to ensure the agrifood sector responds to changing societal values and resulting consumer demands.
- 6. Leadership and management skills within food and farm businesses are as essential as training and education in addressing labour shortages.** Among interview participants there were divergent ways of talking about labour issues. Some have great staff and invest a lot of time and energy to ensure they are happy and productive; others expressed substantial concern about the quality, attitude and availability of staff. We suggest the challenge for agriculture is not just ‘attracting more young people to agriculture’ through skills and training, or even improving the attitude of people looking for work. An

equally important task is 'making agriculture attractive' through developing excellent leaders and leadership.

7. Substantial opportunities exist to advance sectoral and regional (industry)

development. Regional and sectoral development and capacity building initiatives are variable across the agrifood sector. Successful programs such as dairy benchmarking are founded on trust among businesses to 'collaborate locally to compete globally', while being globally networked. This idea is a foundation for diverse forms of innovation in both regional and sectoral development.

Recommendations

The recommendations in this section address the practical goals of the research:

- Inform TIA's strategic direction based on sound evidence and analysis.
- Inform setting of priorities and policy across the Tasmanian agrifood sector.

The overarching recommendation is that Tasmania's agrifood sector will be best enabled by industry, research and government groups working together effectively, efficiently and proactively in ways that are transparent and accountable. This stems from a clear finding that many of the challenges and opportunities that the sector faces require collective action. We need to 'collaborate locally to compete globally', as well as drawing on global networks in business, research and policy innovation. Groups also need to engage effectively and authentically with consumers and citizens, and be equipped to do so in markets and societies that are increasingly fast-paced and competitive.

This overarching recommendation means that the recommendations outlined below are more a set of principles, challenges and opportunities that need to be addressed through various forms of engagement, dialogue and negotiation among relevant parties. While some are targeted to TIA (e.g. 1.3. and 1.5.), others suggest industry leadership is necessary (e.g. 2.1.). Most require that specific initiatives are developed by different groups working together. These will vary among different areas and sectors and will need to be advanced in ways that are fit-for-purpose.

1. Regional and Sectoral Development and Supporting RD&E

1.1. Sectoral industry development should be underpinned by longer term programs and partnerships. Industry, government and TIA should develop 8-10 year commitments to a specific minimal level of targeted industry development activity that can then be supplemented through additional projects and programs.

1.2. Regional development should be fostered through targeted collaborative projects, programs and partnerships to enable specific communities to more effectively develop food and agricultural enterprises and identities. This research highlights that Tasmania's regions are both connected and on differing trajectories, and suggests that regional communities have the

potential to differentiate on the basis of specific food and farming foci. TIA's potential roles in such development range widely from R&D on sustainable value chains, to water governance, and development of food innovation incubators.

1.3. TIA should clarify how it will work with key influencers and in RD&E programs and projects to foster sectoral outcomes. TIA can be better connected with private providers and industry in some sectors especially. Many avenues for linkages exist, including more targeted industry development (see Recommendation 1.1 above), annual 'knowledge exchange' events, and incentives for joint projects or programs.

1.4. Industry, TIA and government should consider the development of innovation platforms (or working groups) to support innovation and industry development. These should drive innovation and RD&E agendas for the state. Each should have a well-defined focus. For such groups to be successful they should encourage industry leadership and representation from research, government and civil society (where appropriate). Their mandate would be to identify agrifood and innovation development priorities within a specific sector or area.

1.5. TIA should consider why and how it partners with businesses and firms, and seek to strategically develop partnerships and platforms to support innovation and extension. Recognition that public value is increasingly the concern of private businesses, large and small, creates avenues for partnerships that help private firms to credibly achieve and document public benefits. Some examples relate to increasing consumer and societal demands to account for sustainability, but others relate to being able to rapidly identify and respond to opportunities.

1.6. Consider the development of a platform to foster business level and community experimentation and radical innovation. This research has highlighted that many small agrifood businesses in Tasmania are innovating, often in radical ways that contribute to public benefits (e.g. sustainability, community development, public education). TIA should consider how it can facilitate productive interaction and innovation across university researchers, civil society, SMEs and NGOs to contribute to such radical innovation.

1.7. TIA should work with the Department of Primary Industries, Parks, Water and Environment (DPIPWE) and the Australian Bureau of Statistics (ABS) to better understand the value of agrifood market segments (not just sectors). While this research identifies clear differences in how innovation occurs across market segments (commodity, niche and boutique), further research is required to evaluate these segments. Improved understanding of the economic status of market segments, their growth trajectories and contribution to employment and wellbeing would helpfully inform TIA's development RD&E and education portfolios.

2. Skills, Capacity and Education

2.1. Leadership skills should be developed among managers within farm and food businesses. Attracting young people to careers in agriculture, skills and training, are well known issues currently being targeted by government and industry initiatives. This recommendation shifts the emphasis from ‘attracting young people to food and agriculture’ to ‘making the sector attractive’. Industry leaders and education organisations need to consider how leadership and human resource management are being developed in current and future managers in the sector.

2.2. Develop targeted and flexible short courses, either within the University of Tasmania (UTAS), Technical and Further Education (TAFE) or through private providers. The interviews suggest that the growing demands of technical knowledge and ability to manage technology requires continual upskilling within many businesses. Another area for potential development is in co-innovation to provide skills, training and resources for developing formal partnerships, cooperatives and other means of collaborating, especially across supply chains. Growing demands for technological and technical support within the sector are likely to be increasingly important into the future.

2.3. Industry focused travel bursaries and scholarships should be considered as a way to build leadership and capacity, by giving individuals or groups the opportunity to learn from changing practice and experience around the world. Bursaries and scholarships should be fostered to enable leaders in Tasmanian agrifood to keep abreast with rapid changes in the agrifood sector globally. These should foster development of leaders and ambassadors for Tasmanian food and agriculture. Study trips will often have a clear private benefit, but should be designed to ensure there is wider benefit to Tasmania.

3. Social License and Sustainability

3.1. Building social license should be led by industry and enabled by targeted RD&E. There is growing demand and awareness of the need for authentic, transparent, credible and accountable schemes for linking the processes of production and manufacture to values and demands of consumers and/or communities. Improving connections between the agrifood sector and the wider society will rely on practice change, not just communication to ‘tell the story better’. It will therefore often require integrated RD&E.

3.2. RD&E related to integrated social, environmental and economic aspects of sustainability should form a growing priority for TIA, especially through partnerships with a purpose. Tasmania has an opportunity to become a global leader in sustainable agriculture and land management through excellent practice, use of technologies, and a strong foundation of RD&E. This effort is central to building and maintaining brand value and access to premium markets, as well as to ensuring rural communities are viable and even vibrant into the future. Opportunities to build excellence in sustainable agriculture and food production appear especially through partnerships between credible university-based researchers and:

1. Large companies who are interested in authentically pursuing joint sustainability and social license outcomes in Tasmania and across value chains, and;
2. Smaller businesses operating in niche segments who have a strong interest in their sustainability and other credentials, and incorporating these in their brands and/or products.

4. Future Focused Research to Inform and Support Policy-Making

4.1. Policy and economic analysis should be undertaken to understand and respond to changing risk environments for the Tasmanian agrifood sector. Research could be better utilised to understand and respond to changes in the sector and associated emerging risks, opportunities, costs and benefits. For example, this project has identified shifting of farm-level risk from climate risk to financial risk (for example, through irrigation rollout), and associated human and social pressures on farm businesses. Regular and/or targeted analyses would enable more proactive management of risks and opportunities.

Acknowledgements

Many people have contributed to this project, most importantly the 100 interview participants and 630 survey respondents. We would like to give special thanks to the numerous individuals and organisations who helped us reach a very wide network of farmers and food manufacturers across the state. We also couldn't have reached so many survey participants without the help of 15 intermediary organisations: Tasmanian Farmers and Graziers Association, Tasmanian Agricultural Productivity Group, Brand Tasmania, Fruit Growers Tasmania, NRM North, NRM South, Cradle Coast NRM, Rural Business Tasmania, Tasmanian Government Private Land Conservation Program, Wine Tasmania, DairyTas, Tasmanian Women in Agriculture, Sprout, Enterprize, Launceston Harvest Market, Rural Youth, Roberts and TP Jones. Various groups within TIA also helped distribute the survey through their lists. The survey was also boosted through a promotional video, and we are very grateful for the volunteers who gave their time to be filmed for this: Sadie Chrestman, Matthew Evans, Chris Read, Andrew Bevan, Angela Turvey, Alistair Turvey, Kate Hill and Erich Hanhert.

The project benefited from early input and feedback from people in many of these organisations, as well as from the members of the TIA Advisory Board, staff from DPIPWE, and our colleagues in TIA and the University of Tasmania, especially from Michael Lockwood and Aidan Davison. We also thank Mary Bennett (DPIPWE) who provided data for the project's background analysis.

Earlier members of the team made important contributions: Russell Warman (research design and context/stakeholder analysis), Maria Richter (project managers) and Stefanie Cahalan (comms planning). Megan Woods provided a great deal of valuable advice of qualitative analysis and team organisation, and Bruce Tranter provided advice on the design and application of the survey questionnaire. Project steering committee have been consistently helpful, critically constructive and supportive: James Stronach (Chair), Holger Meinke, Sue Hinton, Bruce Tranter and Andrew Harwood. The TIA Leadership Team have consistently supported the project idea as an innovative approach to better understand the Tasmanian agrifood sector, and provided valuable input. We also thank the work of two peer-reviewers, Associate Professors Vaughan Higgins and Catherine Allan, who provided critical feedback on the final draft of this report, and validation of the methodological approach used in this research.

1. Introduction

This research report details the findings and recommendations of the Aspirations for Food and Agriculture Project (TasAgFuture). The project was funded by the Tasmanian Institute of Agriculture (TIA) across the calendar years 2017 - 2018, with the primary aim of informing TIA's strategic direction based on analysis of information from TIA's core constituency of people working in the state's food and agriculture sectors. The project draws on literature and qualitative and quantitative social research. The focus was on Tasmanian farmers and manufacturers of food and beverages. The focal issues and the reasons for examining them were:

1. Long-term goals of food producers and processors, to clarify plausible and desired future directions for the agriculture and food sector.
2. Work people have done to achieve their goals, for a clearer picture of how people are innovating across the sector.
3. What constrains and enables businesses in achieving their goals, to identify opportunities and leverage points for Research, Development and Extension (RD&E), and potentially for education, policy and industry priorities.
4. How businesses see the key challenges and opportunities, to plan and ensure TIA's RD&E is forward-looking and fit for purpose.

The project was designed to advance four broad goals:

1. To better understand diversity of farmers and food manufacturers in their own terms.
2. To help define agrifood goals for the state in broad terms, and how TIA can work with others to achieve.
3. To inform TIA's strategic direction based on sound evidence and analysis.
4. To inform setting of priorities and policy across the Tasmanian agrifood sector.

Having RD&E directed by constituency goals is complicated for at least two reasons:

- 1) RD&E does not directly serve the needs of farmers and food producers. Many of the 'next users' of TIA's research are other researchers, or agronomists, consultants, policy-makers or other people working outside farm and food businesses. TIA's overarching goal is to contribute to a profitable and sustainable agriculture and food sector. The recognition that TIA contributes, rather than achieving outcomes alone, suggests that TIA works with other organisations and individuals across the public and private sector to define and achieve common goals. The research reported here aims to help define such goals, in broad terms, and how TIA can work with others to achieve them. This understanding of contribution also means the report has implications well beyond TIA's strategic direction, with relevance for government and industry priorities and policy.
- 2) Goals and means of achieving them are varied and complex, and TIA cannot attend to all of them. Instead it must make well informed decisions to focus its RD&E on areas that need it most. The research reported here does not make these decisions, but provides a basis for being informed and deliberate in deciding on priority directions. This report

provides insight, analysis, conclusions and recommendations to inform future decisions. The decision making itself, both within TIA and by or with other parties is likely to be complex and involve prioritisation based on available resources.

While some comparison across sectors and regions is made in this report, the focus is broad. The scope is to understand Tasmania's agrifood sector and suggest large scale options for addressing challenges and making the best of opportunities. Some drivers and constraints are particular to certain sectors. Other patterns are more relevant to the scale of business operations or geographical regions. Furthermore, some relate to structural characteristics of industries, or particulars of certain commodity markets. This means that the report is not organised to focus sequentially on different sectors or regions. Instead the analysis draws on the four main topics (goals and motivations, actions and innovation, capacity, expectations), to distill key issues, conclusions and recommendations at the agrifood sector level.

This statewide focus reflects the mandates of TIA and the University of Tasmania as place-based and globally-connected research organisations. In some instances, the research helps to clarify the extent and importance of challenges and opportunities, and the degree to which they are seen as priorities for action, but not the detail of what needs to be done to achieve specific outcomes. Recommendations for issues such as managing biosecurity risks or adapting to climate change are thus general, recognising that addressing these issues effectively will require a different group, skill-sets and focus to those of the research team. In other instances, especially relating to the central focus of this research - TIA's future RD&E priorities - our recommendations are more specific and targeted.

1.1. The purpose and structure of this report, and how to use it

This report is a major research output of TasAgFuture. Its primary purpose is to inform TIA's leadership, staff, and TIA's key partners and stakeholders, and those with an interest in Tasmania's agrifood sector about the project findings and recommendations. These recommendations are developed to foster debate and discussion about whether outcomes, investments and other changes are worth pursuing. Decisions about these matters will necessarily include consideration of current policy, funding, and institutional, cultural and structural settings and priorities. It is *not* the task of this report to make such judgements but rather to identify issues and options based on empirical findings.

The report can be read in two ways. The most informative way is to read it from beginning to end. However, the results section is necessarily long, as it reflects 100 in-depth interviews and wide diversity. The executive summary can be used to find sections of interest or to back-track from specific conclusions and recommendations. To enable back-tracking, we have indicated how conclusions and recommendations were derived from specific analysis of survey or interview data, and these in turn track back to methods and background.

This report provides a brief Background (Section 2) of Tasmania's agrifood sector. It details the Methodology of the project (Section 3), describes the data in some depth in the Results and

Analysis (Section 4), while the Discussion and Synthesis (Section 5) pull these together. After the Limitations (Section 6) of the project are considered, Conclusions (Section 7) are drawn, upon which Recommendations (Section 8) for future action are provided. The report is written to be accessible to a broad audience of people working or interested in agriculture and food. For this reason, methodology and theory underpinning the research are kept to a minimum. Where concepts from the academic literature are needed to understand recommendations or conclusions, they are introduced, mainly in Section 2 and 3, and made as accessible as possible.

This report does not include evaluation of TasAgFuture. A separate evaluation report will be completed after the project report has been finalised and TIA's Leadership Team and Advisory Board have had the opportunity to engage with and discuss its content and recommendations. The report will be supplemented by more detailed and specific analyses in the form of peer-reviewed academic publications in 2019. Such publications will reflect the project's contribution to national and international research debates and communities.

2. Background and context

This section provides a brief overview of both the historical and current economic and social trends in the Tasmanian agrifood sector, and the contribution of TIA in providing publicly subsidised RD&E. This section is a foundation for later analysis, conclusion and recommendations. We start by outlining three ways of looking at the agrifood sector.

2.1. What is the agrifood sector?

Recognising that taking different perspectives yields different results, we draw on three systems-based perspectives (or lenses) to examine the Tasmanian agrifood sector. These are not mutually exclusive. Taken together they add value and depth to later analysis. These are: 1) a value-chain perspective in which the focus is on value creation, and the people and businesses involved in it; 2) a spatial and place-based perspective in which the focus is on sustainability at different scales, and; 3) a focus on innovation, which highlights differing roles of RD&E within broader systems of knowledge, technology and innovation, as well as the potential to transition into more sustainable and profitable modes at different timescales.

Firstly, the value-chain perspective, depicted in Figure 2.1.1, highlights roles of various groups and their inter-relationships in creating value. It is important to note that while this value is mostly considered in economic terms, values can also be social and cultural such as the value people place on their relationships or beliefs (values are discussed more in Section 3.2.). While this project focuses largely on farmers, food producers and processors, there are many other groups that play a crucial role in the creation of value. Service providers contribute along the supply chain to affect the tangible or intangible aspects of value. Facilitators, like the media, can tell positive or negative stories that affect perceptions of value. RD&E can identify means of increasing value, and the efficiency of creating it. Government institutions at various levels have important influence in shaping the behaviour of all actors within the agrifood systems policy regulations, investment and service provisioning. Taken together, this structural representation of an agrifood system provides a useful view of the flow of resources, the roles of different actors and how power and knowledge are mobilised within a value network or chain.

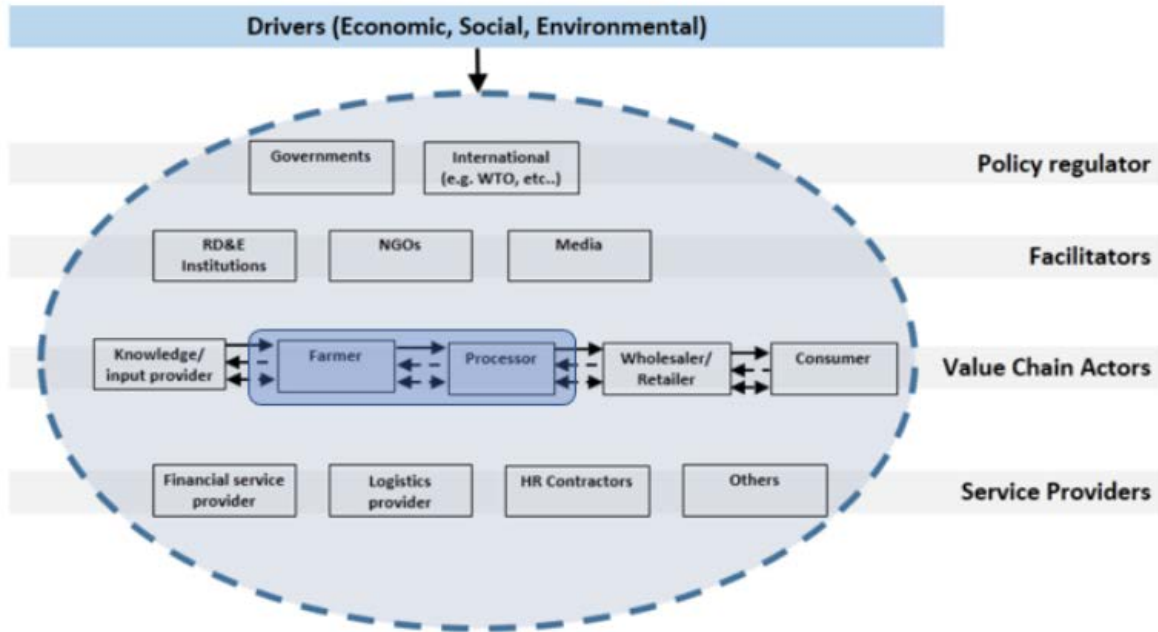
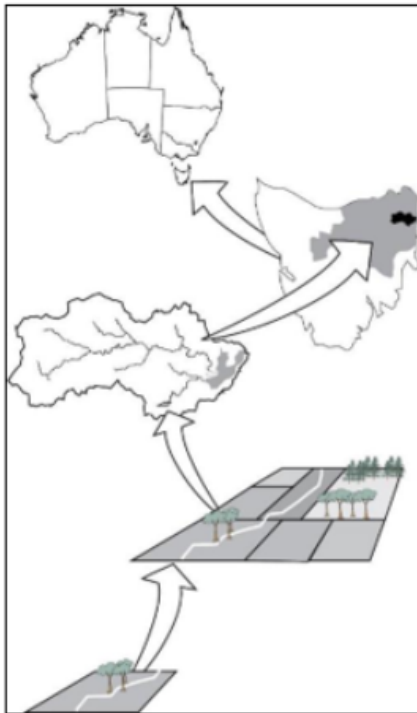


Figure 2.1.1.: A simplified depiction of a value chain view of agrifood system provides a lens to view actors' roles. More accurate depictions are of complex networks.

Secondly, the agrifood sector can be viewed from a hierarchical place-based perspective in which interactions and relationships between actors occur within a physical landscape and its associated jurisdictions. Following from Lowrance et al. (1986), Lefroy et al. (2012) posits that such a hierarchical view shifts focus from the level of field, to farm, landscape, region or state, and finally to the nation, with a focus on different, and not always compatible elements of sustainability across these scales (see Figure 2.1.2.). At a field scale, agronomic issues are the priority focus. At farm level they are microeconomic concerns about profitability, cash and investment. At a landscape scale they are environmental or ecological; for instance, concerns about environmental water flows, fire and ecosystem function or health. At the state scale they are macro-economic, while at a national scale they become primarily socio-cultural and macro-economic, involving large-scale political and social challenges such as drought and trade negotiations. This hierarchical model suggests that different goals are likely to manifest at different scales. Sometimes they will cohere, and at other times they will be in tension or opposition. An overarching goal is reconciling such tension. For example, water has different functions at different levels: at a field scale it is mostly considered in terms of agronomic efficiency and effectiveness, but at a farm scale it might be mostly considered as an input cost. However, if the farm-scale considerations in aggregate do not allow for consideration of the catchment or regional scale, environmental flows of water can create ecological and then political problems. Thus, this spatial view encourages an integrated consideration of how actions at different scales interact across social, economic and environmental domains.



- National-scale: Socio-cultural, political, macro-economic
- Region/state-scale: Macroeconomic, political
- Landscape-scale: Ecological
- Farm-scale: Microeconomic
- Field-scale: Agronomic

Figure 2.1.2.: A hierarchical and spatial view of agricultural systems adapted from Lefroy et al. (2012 pg. 11).

Thirdly, the agrifood sector can be examined in terms of interactions between large-scale drivers of change and their implications for innovation, especially for the development of sustainable options and pathways for sectors or industries. These large-scale drivers include such things as policies, international agreements, decision-making within large corporations, changes in consumer preferences, and macro-economic, political and climatic change. A useful way to consider these large scale systems and their implications across corporate businesses, individual businesses, or even at state or sectoral level is through what Rip and Kemp (1998) referred to as the ‘multi-level perspective’ (MLP, see Figure 2.1.3.). The MLP depicts three levels of change in systems such as the Tasmanian agrifood system, which unlike the hierarchical view above, are more related to institutions, rules, technologies and power than they are to specific geographical contexts:

1. At the largest level, the ‘landscape’ provides a backdrop to any system, and innovation within it. For the Tasmanian agrifood sector, this landscape includes deeply entrenched elements that are rarely questioned, such as the accumulation of capital and control of food chains, global trade systems, international agreements, and major environmental drivers like climate change (IPES 2017). These are treated as pervasive conditions that structure goals, action, innovation, constraints and expectations profoundly, but often without clear acknowledgement of their influence.
2. The next level is more related to a specific sector or industry and is referred to as the socio-technical regime, or simply the regime. It is comprised of sectoral sets of rules, norms, practices, technologies and other arrangements that create a particular trajectory

with strong inertia. Socio-technical regimes can include infrastructure, markets, policies, organisations and their market interactions, and the material and technological infrastructure. Because of the interlinked components, socio-technical regimes have significant inertia and tend to change incrementally.

3. At the smallest scale, innovation niches are sites where radical innovation can occur, in a manner that is protected from the highly systematised and competitive environment of the larger socio-technical regime. These niches are not to be confused with niche products. Innovation niches may be fostered within large companies, or labs, or in someone's paddock or shed. They are the means by which novelty is nurtured and may involve technologies, practices, process or governance that are not generally able to flourish at the regime level. Yet, as in the transitions between levels, these have the potential to emerge and influence the trajectory of the larger regime, for instance, through what Joseph Schumpeter (1934) called 'creative destruction'. A central idea in literature related to the MLP is that regime-level incremental change does not address sustainability challenges well, and certainly not quickly, and may need to be disrupted by enabling radical innovation in protected spaces at the niche level. A commonly used example of this *strategic niche management* is solar photovoltaics (PV) in the energy market. While PV is now a major player in global electricity markets it would not have this role without a specific evolution. In its early forms it could not compete with coal and other 'conventional' sources of electricity generation. Yet it did not have to. Power needed for satellites, yachts and remote housing provided a *shielded market* in which it could be developed through investment in R&D. These industries created a *nurturing space* where learning and innovation could take place over a period of decades. Meanwhile, concerns about carbon emissions and climate change created political and business will for *empowering increasing interest and investment*. Smith & Raven (2012) argue that these three components of shielding, nurturing and empowering can create protected spaces for radical innovation to take root. The degree to which niche innovations can foster sustainable transitions in regimes is a much more complex challenge and will always need to be considered in context.

The point of introducing this perspective is that the broader, global agrifood system, the Tasmanian agrifood sector, and the many businesses therein, are going through substantial changes at various scales and speeds. The MLP provides a lens through which to consider the Tasmanian agrifood sector in terms of what is being sustained, transitioned or transformed through seeking to progress different goals, or doing innovation differently.

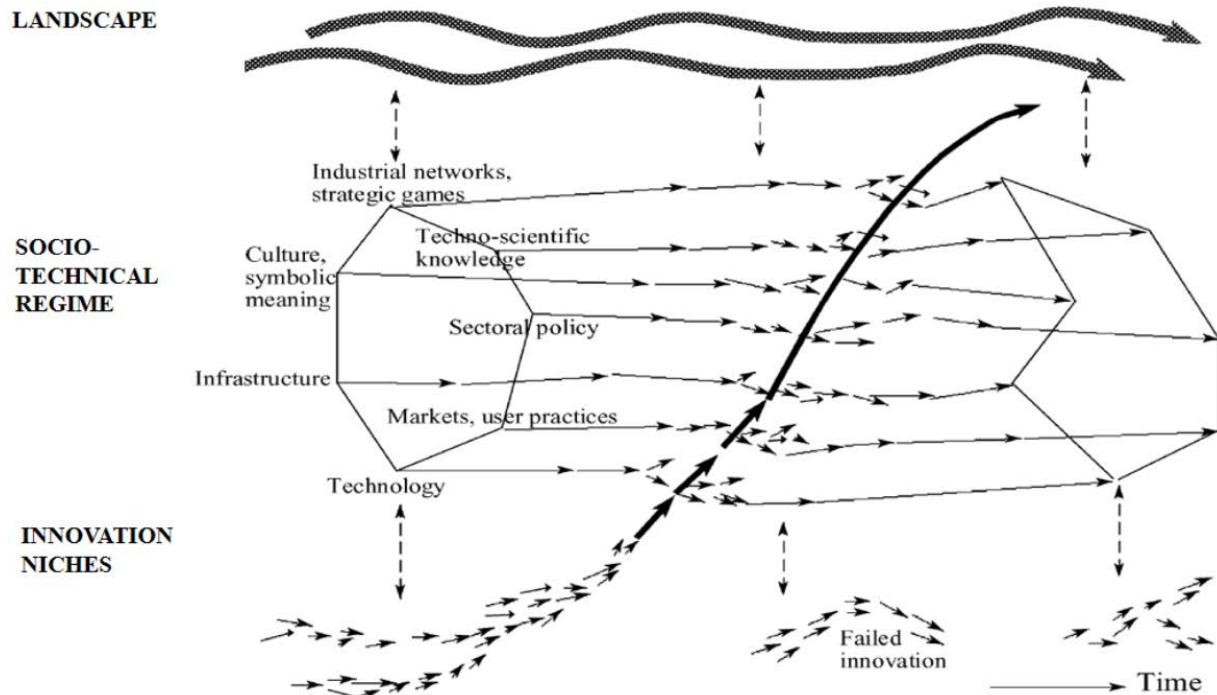


Figure 2.1.3.: The multi-level perspective (MLP) depicts three interacting levels of influence on any given sector or industry (Geels 2002 pg. 1263).

These three ways (spatial, value chain, and innovation systems) of looking at Tasmania's agrifood system are drawn on variously through this report, largely to the degree that they are reflected in the narratives of participants. These perspectives provide a means of thinking about the agrifood sector as places and regions, value and supply chains and relationships across them, and the specific pathways and trajectories of sectors, industries and regions. They can serve to open up methods of understanding the way people talk about their businesses, challenges and operations. This can lead to the aggregation of these discussions across the state to understand their implications for RD&E priorities, policy and industry prioritisation. They allow the research to be both empirical and critical.

2.2. How is Tasmania's agrifood sector changing?

2.2.1. The foundations: earlier land use and tenure

The current pattern of land use for modern forms of agriculture in Tasmania was largely developed in the nineteenth and early twentieth century. The dominant method of expanding agricultural land in the nineteenth century was to develop the open landscapes of drier grasslands and grassy woodlands around Hobart, Launceston and through the Midlands and East Coast (Tasmanian Yearbook 1968). These landscapes were granted wholesale to relatively wealthy settlers, however had been actively maintained by the Aboriginal custodians for tens of thousands of years though what Jones (1968) called firestick farming. In many

instances, these large tracts of land are held by descendants of the people to whom they were granted in the early nineteenth century.

In the early decades of the nineteenth century wheat was the major crop. Agricultural production quickly grew beyond what was needed for the colonies, and established Tasmania as a net food exporter. Sheep grazing also expanded rapidly across the extensive grassy woodlands surrounding the open valleys first cultivated. By 1838 Tasmania had 1.2 million head of sheep, compared to less than 100,000 cattle, goats and horses combined (Tasmanian Yearbook 1968). In the later part of the nineteenth century and early twentieth century land clearing started in more forested valleys in the south and along the north coast (Tasmanian Yearbook 1968). These were wetter areas, often with good soils, and once the land was cleared it was used for orchards, vegetable cropping and dairy development. Into the twentieth century and in particular after the first and second World Wars (Tasmanian Yearbook 1973) the state supported further expansion of agricultural land. This was most notably into wet swampy areas with poorer soils in the far north west, north east, the fringes of the Midlands and the Bass Strait islands (Tasmanian Yearbook 1968). Machinery enabled improved drainage, and fertilisers made some of these areas capable of high-value production through improved pasture and cropping.

Land in Tasmania is now largely assigned either to specific crown functions (state forest, conservation reserve, various infrastructure uses and public reserves) or private land. This is not considered likely to change significantly in the coming years. Unlike mainland states, Tasmania does not have large areas of crown land leased for grazing purposes.

2.2.2. A changing agrifood sector

The agriculture and food sectors contribute substantially to the Tasmanian economy. While farmgate value of agriculture ranges between 1% and 5% of Gross State Product (GSP) for other Australian states, in Tasmania it is over 7% (Meinke et al. 2017). The types and variety of agricultural crops grown in the state has fluctuated substantially over time, largely in response to market drivers. While the relative production of these crops changed through the late twentieth century, growth in agricultural productivity remained relatively stagnant until recent and rapid expansion of irrigation infrastructure over the last decade. Through Tasmanian Irrigation especially, the first two tranches of funding through public-private partnerships are expected to deliver 28,000 megalitres and 45,000 megalitres respectively (Parliament of Tasmania 2018).

Tasmania's production of agricultural commodities is very small by world standards (see Table 2.2.1.). Tasmanian production is unlikely to affect world price, with the exception of poppies and pyrethrum, for which it is a significant world player. Table 2.2.1. shows the volumes of production of a number of major Tasmanian crops at a state, national and international level and as a percentage of global and national production. These are not completely undifferentiated commodities. The proximity of Tasmania to certain markets, harvest times, produce quality and reputation can contribute to potential price differentials. One key example is the potential for Tasmania to produce cherries later in the season which are of a much higher quality than its competitors (e.g. Chile, New Zealand) into the Chinese market timed with Chinese New Year. Such targeted activity has been pursued by Tasmanian businesses in areas such as premium

wine, hops, gourmet cheese, and other high-end products. To some degree this allows growers to operate across the value chain as price makers. However, Tasmanian growers are in large part price takers, due to their small global and national contributions and the relatively undifferentiated nature of their products.

Table 2.2.1.: Food production 2014 of the world, Australia and Tasmania for selected significant Tasmanian crops (in tonnes). Data sourced from FAOSTAT 2017 for world and 2014 for Australia (2013 for wool, greasy). Apples, cherries, potatoes and wheat for Tasmania is from ABS 7121 - Agricultural commodities 2013-14, Milk data is from Dairy Australia website and for 2016/2017 used with litre to kg conversion factor of 1.03 kg/l. Wine is an estimate based on ratio of wine grape production in Australia to Tasmania (6624/1700000 tonnes - sourced from Wine Tasmania 2014 infographic), Wool for Tasmania from ABS 7215.0 Livestock Products, Australia June 2013 and 2015, quarters totaled - seasonally adjusted).

	Global	Australia	% of global	Tasmania	% of global
Apples	84,630,275	266,771	0.32%	29,380	0.03%
Cherries	2,245,826	12,694	0.57%	3,197	0.14%
Milk	655,957,920	9,290,000	1.41%	860,050	0.13%
Potatoes	381,682,144	1,171,259	0.31%	251,602	0.07%
Wheat	729,012,175	25,303,037	3.47%	43,484	0.01%
Wine	29,105,841	1,186,343	4.08%	4,623	0.02%
Wool (2013)	2,126,898	360,520	16.951%	9,227	0.43%

As price takers, farmers and whole sectors are vulnerable to market shocks. A recent example of the potential for change in other parts of the world to impact the Tasmanian agrifood system is the case of poppy production, which shrunk from 30,000 ha to 20,000 ha in one year. This rapid decline stemmed from changes to prescription drug policy in the US in response to issues of drug abuse (McMillen 2015). Demand halved in 2016 (McGreggor 2016) at the same time as interstate competition to grow poppies emerged (McMillen 2015). This, along with volatility in the processed vegetable and milk market highlight the challenges of relying on and heavily investing in specific commodities. Nevertheless, while there is often rapid change in individual commodities, Tasmania's diverse production environment appears to absorb this volatility relatively quickly. While the quantity of specific crops varies, the level of output remains relatively steady.

Recent history shows growth in volume and/or value of some products and variability among others. Trends in 'packed and processed value', summarised in Figure 2.2.1. demonstrate significant growth over the last decade in the value of beef, fruit and berries and chocolate,

while other land based commodities have experienced less substantial growth or variability on average (aquaculture and fisheries are excluded from this report).

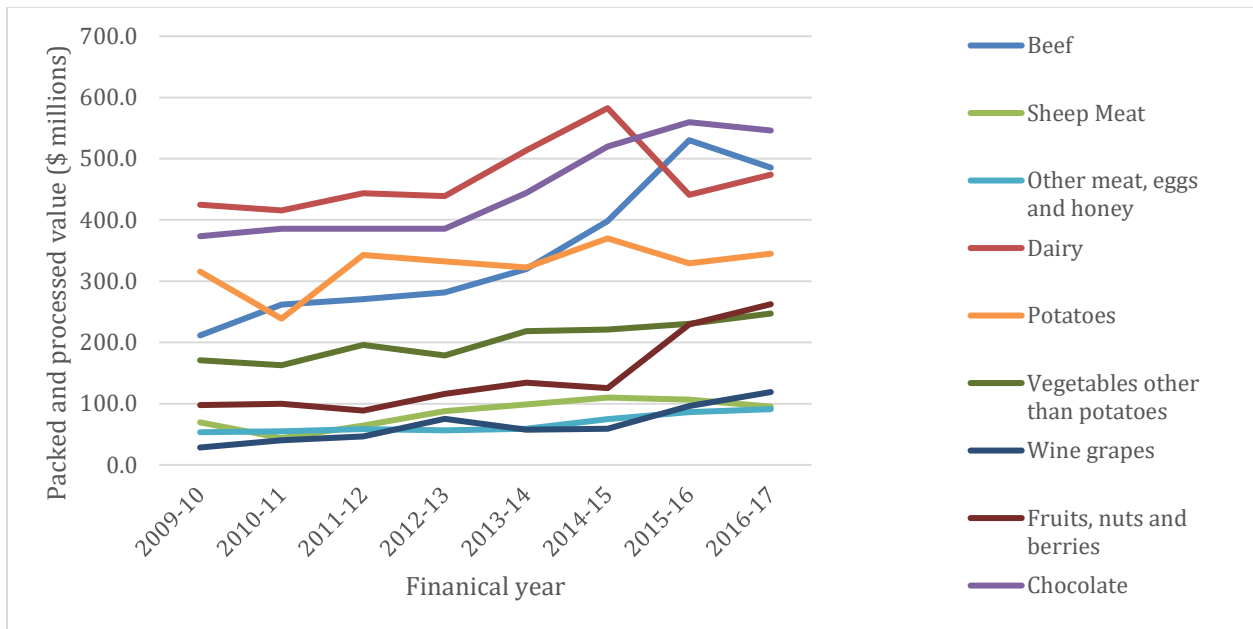


Figure 2.2.1.: Trends in packed and processed value (\$ millions) of different products from Tasmania between 2009-10 and 2016-17 financial years (source: DPIPWE, values in 2018 \$)

The value of aggregated groups of products in Figure 2.2.1. hide some of the fluctuation in production levels in individual crops. For example, Figure 2.2.2. indicates the general growth trend in cherry production is characterised by large interannual variability, while such variability is not yet so apparent in emerging crops such as strawberries. Similar proportional fluctuation at much higher volumes are apparent in annual crops (Figure 2.2.2.). The latter are due more to changes in demand and plantings while the variability around trendlines in perennial crop volumes is associated with seasonal conditions, providing an indication of climate and weather risks for different crops.

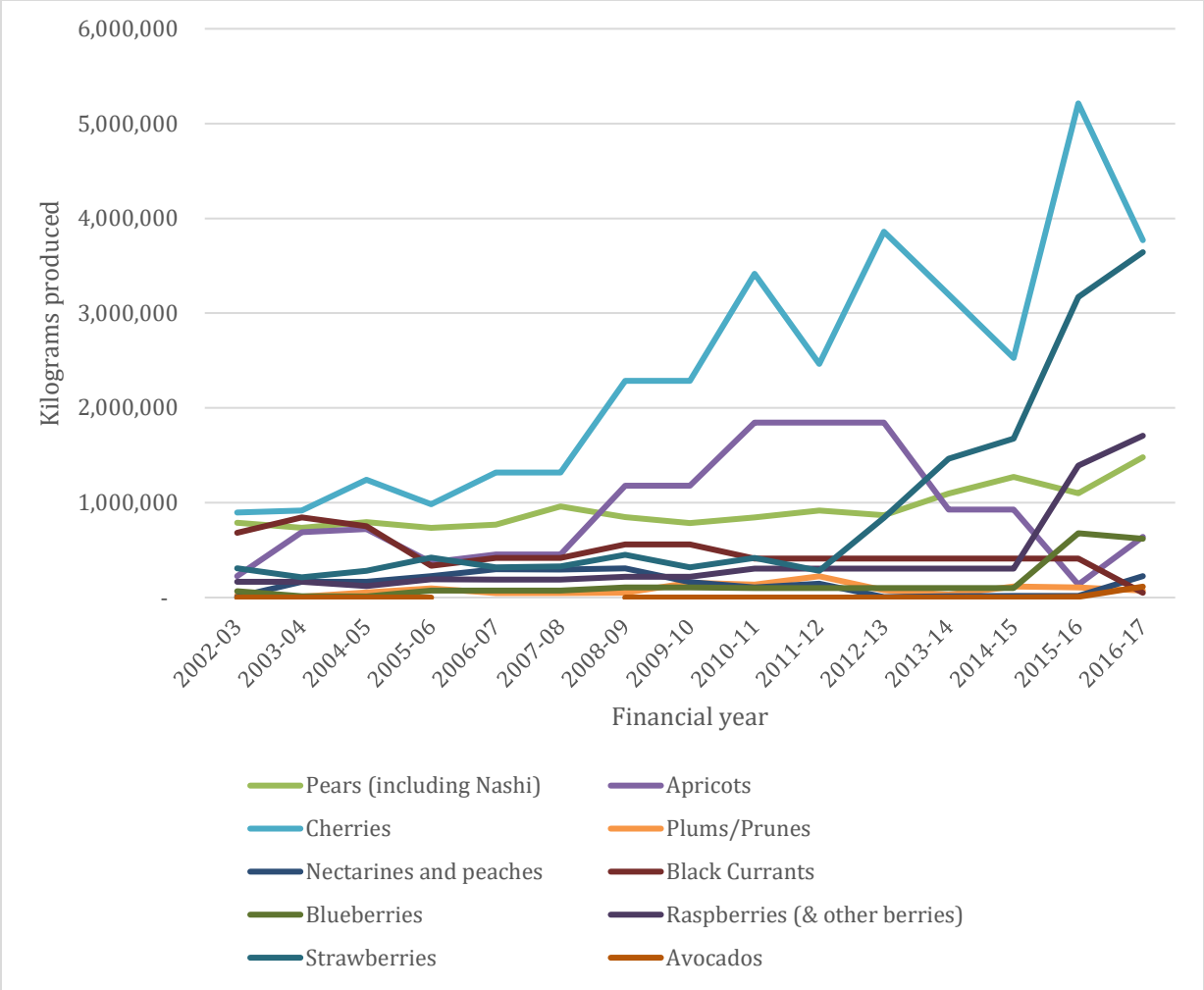


Figure 2.2.2.: Variability in production volume (kgs) across of different perennial horticulture crops from Tasmania between 2002-3 and 2016-17 financial years (source: DPIPWE). Where there is a flat line between years this indicates that data are missing in the second of these years, and in some cases for two consecutive years. This data is based on a variety of sources and is presented here as indicative only.

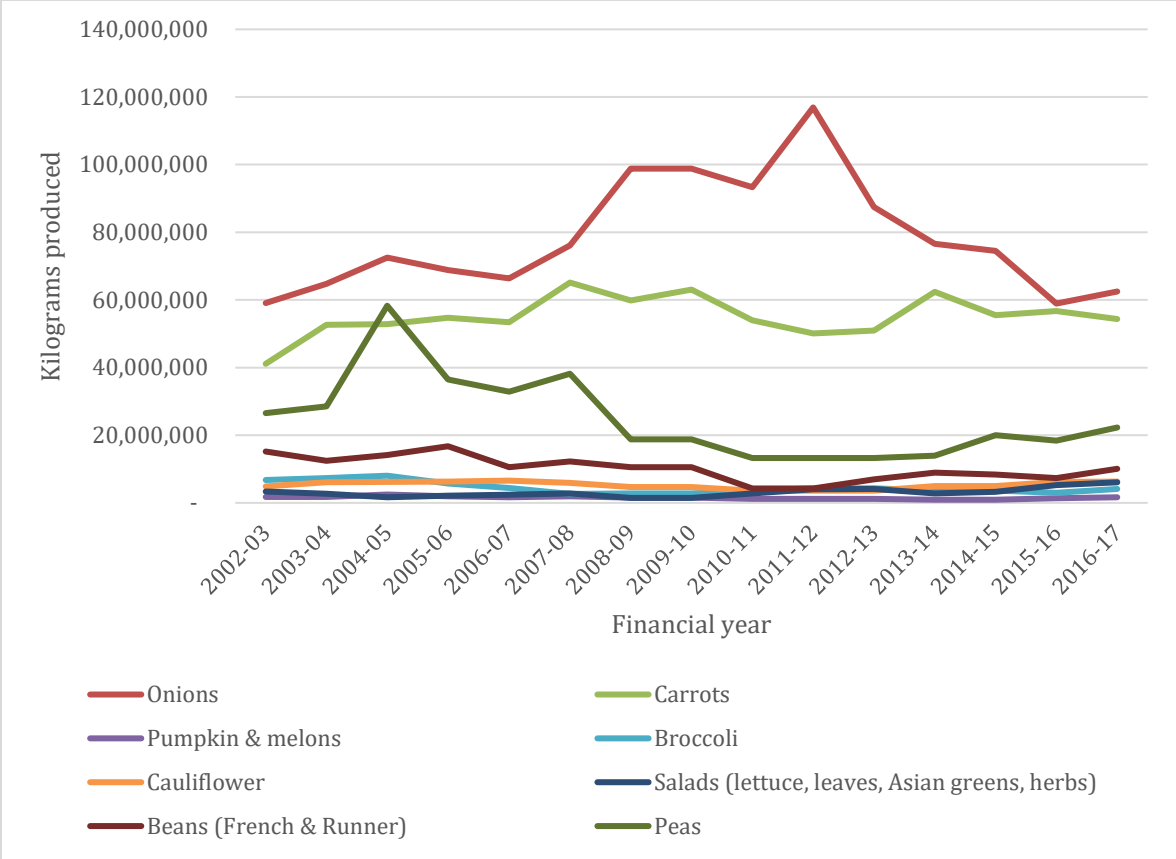


Figure 2.2.3.: Variability in production volume (kgs) across of different annual horticulture crops from Tasmania between 2002-3 and 2016-17 financial years (source: DPIPWE).

2.2.3. Global mega-trends

Global trends in the agrifood sector have a variety of drivers. The green revolution from the 1950s and 60s onwards resulted in sharp increases in productivity through advances in technologies and knowledge. The consolidation of market power among input industries has resulted in a global agricultural innovation and R&D system that is strongly oriented by a decreasing number of very large companies. Similarly, the power of manufacturers, commodity traders and retailers in the agrifood sector has seen consistent consolidation, with mergers and take-overs. For example, according to the International Panel of Experts on Sustainable Food Systems (IPES-Food 2017), the top 10 agricultural commodity traders control the international movement of 90% of agricultural products globally, the same figures reflecting the market power within food and beverage processors. While Australian concerns about the risk of uncompetitive markets often focus market power in domestic retailers, IPES (2017) highlight the extent that a small number of key actors control a complex of inputs, logistics, processing, manufacturing, storing, wholesale and retail. That is, they are competing at the level of the supply chain (Bonney et al. 2007). While farmers and consumers are often depicted in advertising and

elsewhere as the important actors in the food system, at a global scale their influence is negligible compared to the large companies.

In Australia, these global trends have had varied impacts. The general trend has been to increase the adoption of labour saving technologies and practices, boosting factor productivity and decreasing real prices of farm products over time. Consequently, smaller and less efficient operators have exited the sector, farm holdings have consolidated and grown, and rural populations have declined accordingly. In more recent decades, a heavily mechanised sector has begun to be supplemented by automation and is currently seeing early deployment of robots that serve as platforms for data intensive technologies.

Among developed countries, Australian agriculture has one of the lowest levels of subsidisation or trade protection through tariffs. Along with high labour costs, this is often cited as a driver of innovation and technology adoption (Meinke et al. 2017). Yet it has also been associated with development of a strongly individualistic farm sector in which family farmers do not typically form cooperatives, share collective resources or collaborate together on major projects (Stock et al. 2014).

The farm sector is still strongly dominated by family farms despite attrition in the number of family farms (detailed below with respect to Tasmania). Analysis by the Australian Bureau of Agricultural and Resource Economics (ABARES 2016, <http://www.agriculture.gov.au/abares/news/media-releases/2016/family-farms>, accessed 12/09/2018) suggests that family farms tend to generate higher returns than corporate entities in most sectors, however the latter are increasingly playing a larger role in some sectors, such as beef. Arguments for why this is the case have an empirical basis: family farmers are willing to work longer and more flexible hours than managers on an annual wage. Also, return on capital tends to be low in agriculture compared to other sectors of the economy, which means that investors often avoid agriculture. However, in highly systematised sectors such as dairy, where high returns on investment are possible and the work involved in production is relatively well defined and continuous, corporate investment in farms is becoming more common. As explored throughout this report, the ways businesses operate are not easily split into family, corporate or other models but depend heavily on the skills, interests, goals, and constraints of individual people in the business.

Partly in response to effects of globalisation and corporate control in the agrifood system, a counter trend has had important consequences for opportunities in the agrifood sector. An increasing number of consumers are demanding greater transparency and seeking more information when making food consumption choices. Their concerns range from the welfare of farmers and animals, to corporate control of food systems, to the healthiness of products, to issues of land management and degradation, to non-point source pollution. The rise of celebrity chefs has raised the profile of gourmet produce, agrarian idylls and, at the same time, contributed to concerns and fed a desire for people to connect with food in more than utilitarian ways (Phillipov 2014). This aspect of food is often associated with features of Tasmania, ranging from quality produce, cleaner production, its GMO-free status, significant conservation

of natural areas, the Museum of Old and New Art (MONA) and the notoriety of gourmet food and beverages. These reputational elements have been fostered by government and industry through Brand Tasmania, an initiative that brings together government and a range of sectors including agriculture, arts, research, tourism and food and beverage. (Brand Tasmania 2014). The strategy aims to boost this reputation and consolidate the place-of-origin branding. In agriculture, Brand Tasmania appeals to people interested in provenance, and natural and clean products produced in fair conditions. There is a marked growth in global demand for organic, sustainable, local and fair-trade products (Heinmueller et al 2015, Feldmann & Hamm 2015, Rana & Paul 2017).

These large scale changes in consumer preferences and demand have contributed to a highly diversified agrifood sector, not least in Tasmania, where 'clean and green' branding, quality and safety of produce, and other aspects of the exoticism of the place and products are used to create premium value. They also create risks for sectors and businesses that do not proactively engage. At a minimum these changes lift the bar for market entry and the means by which premium value is gained; at their most extreme consumer and market campaigns or acts of food espionage can rapidly undermine brand on product value, or even decimate the value of whole sectors.

2.3. TIA and its roles within the state agrifood sector

Because this report aims to inform TIA's strategic direction, it is useful to summarise what TIA is, what it is, and how it has evolved to date in some detail.

The Tasmanian Institute of Agricultural Research (TIAR, now TIA) was established in 1996 to consolidate agricultural research being undertaken in the School of Agricultural Science at the University of Tasmania (UTAS) and the Department of Primary Industries, Parks, Water and Environment (DPIPWE, Tasmanian Government). In 2007, DPIPWE staff in the dairy and vegetable development and extension teams were transferred to TIAR, followed in 2009 by staff in the perennial horticulture and extensive agriculture development and extension teams. While the merger initially lacked recognition by some stakeholders, TIA has developed a model for the delivery of agricultural RD&E and tertiary education that has been viewed favourably by organisations of similar size and purpose elsewhere in Australia (Hamilton & Hamilton 2010).

Today, TIA has a broad purpose of contributing to the sustainable production of food and other agricultural products. It remains the Tasmanian Government's preferred supplier of publicly-funded services for agricultural RD&E.

TIA currently has a \$69 million research portfolio, employs more than 130 scientists and technical experts, hosts more than 100 postgraduate research candidates and provides undergraduate teaching in agricultural science and business. TIA was ranked 39th in the world and 4th in Australia for agricultural sciences in 2017 by Academic Ranking of World Universities (ARWU). A key section of TIA's activities are developed through a Joint Venture Agreement, between UTAS and the Tasmanian Government, which helps leverage co-investment from

industry, the Commonwealth, Research and Development Corporations, industry bodies and private investment. Beneficiaries of TIA's work include private and public providers of services to the agriculture and food sector, policy-makers and private businesses.

TIA promotes itself as a boundary organisation providing an interface between university research, learning and teaching, and other sources of knowledge, and those who can gain benefit from these activities. TIA distinguishes clearly between 'next users' and 'end users' of its research, with many research outputs targeted for uptake by those servicing the farming and food sectors, rather than direct delivery to producers. TIA's applied researchers engage strongly with industry through on-farm research, field day presentations and user-centred activity around the development and delivery of products, services or systems contributing to industry development. Increasingly these researchers are developing and using approaches to co-develop knowledge with stakeholders, facilitated by technology and rapid dissemination of information via knowledge management tools. Industry development staff are increasingly integrated in research teams to aid translation and communication of new knowledge as it emerges rather than as an activity separated in time and space from the research.

The delivery of industry development and extension services by TIA has been the subject of significant review and discussion among stakeholders (Hamilton reports MoUs). Indeed, the diversity of individuals and organisations delivering extension services has arguably increased in recent decades. TIA connects agricultural sectors to research and undertakes extension when the private sector would not find an acceptable or efficient way to provide such services. However, such services are prioritised based on factors such as available resources, support for extension related activities, urgencies including biosecurity or other threats, risk of market failure, and public benefits that might accrue from activities.

TIA's current service delivery is in line with the national trend whereby farmers pay for individual advice given to them by the private sector and for private benefit (Pannell et al. 2011). This approach is intended to free up public sector resources to address the less tractable, landscape scale extension problems that involve facilitating social interactions, negotiation and capacity building. Extension for natural resource management (NRM), is one such case, and the Australian 'regional model' has seen most states set up regional NRM organisations as statutory bodies within state legislation. Tasmania never created a statutory role for its three NRM regions, meaning that TIA's role in NRM-related extension remains fluid, defined largely through piecemeal projects funded through competitive grants.

Sustainability is a core principle from which TIA's work flows. Sustainability, at its most fundamental level, is about meeting the needs of the present without compromising future generations. The UN Food and Agriculture Organization (FAO) has defined sustainable agricultural development as "the management and conservation of the natural resource base, and the orientation of technological change in such a manner as to ensure the attainment of continued satisfaction of human needs for present and future generations. Sustainable agriculture conserves land, water, and plant and animal genetic resources, and is environmentally non-degrading, technically appropriate, economically viable and socially

acceptable” (FAO 1988). TIA’s conception of sustainability echoes this vision and tries to embed it within the design of user-centred, industry embedded and/or participatory research that considers the context and potential consequences of the research being undertaken. TIA’s next five-year strategy, under development, will be aligned with the Tasmanian Government’s White Paper as well as the five-year RD&E Investment Strategy (under development). Key RD&E areas of interest from the government’s perspective include industry development and sustainable production, capacity building, innovation, international linkages, farm-level impacts and adoption of RD&E, biosecurity risk mitigation, appropriate use of research farm capacity, and agricultural education, skills and training.

University Setting and Research Priorities

TIA’s strategy is also aligned with that of the UTAS – a place based and regionally responsive university that is globally connected and focused on research excellence. For students, it means creating equivalent educational opportunity, experience and learning outcomes. For research, Tasmania offers the world a laboratory for cool-temperate systems. TIA is helping to engage the broader skills of the entire university in an agriculture and food focused research agenda that will deliver benefits for Tasmania.

An example of this is the newly formed and University wide Bioeconomy for Society (BE4S) research cluster led by TIA. The cluster takes a systems approach and is expected to deliver joint projects that contribute to a sustainable food system. BE4S recognises the significance of food in achieving the UN’s Sustainable Development Goals and the need for industry to ensure its enduring commercial success by demonstrating sustainable practices and maintaining social license. Key areas of expertise being contributed by TIA to BE4S initiative, among the broader set of TIA capabilities, are food safety, value chain, agricultural systems, water governance, and social research.

In the next 5 years, TIA aims to make significant contributions to the following high level outcomes:

Positioning for Growth

- Sustainable growth in the productivity and the annual value of the Tasmanian agrifood and processing sector.
- Increased local value capture and whole-of-chain value by exceeding consumer expectations and delivering to cultural needs.

Sustaining Markets for Food and other Agricultural Products

- Meeting needs for safe, affordable and nutritious food, including security of local supply.
- Demonstration of sector credentials, performance and compliance using science-based evidence.
- Traceability through the supply chain of provenance and brand.
- Enabling a social license to operate e.g. clean air and water, soil conservation, animal welfare, ethical production, acceptable pesticide residues in food.

- Effective biosecurity.

Future Proofing

- Policies and debates influencing the agriculture and food sectors are informed by science based knowledge.
- Greater agrifood sector resilience and capacity to adapt and respond to changes in the environment (political, social, environmental, climate, cultural, economic, regulatory, institutional).
- Graduates and post-graduates that are enabled to address local to global problems.
- Globally recognised contributions to national and international public goods (e.g. seed banks).

2.4. The policies and priorities of TIA's key partners and stakeholders

This section provides a very brief contextual background about the priorities and policies of TIA's main stakeholder and partner groups within government and industry. These are large and diverse groups of stakeholders, funders, and other groups with varied and sometimes overlapping or conflicting mandates, interests and programs. They cannot be fully detailed in this report. The purpose here is rather to acknowledge the importance of these organisations and their alignment or otherwise with TIA's goals and with this research.

TIA is part of UTAS, as a research institute in the College of Science and Engineering (CoSE). UTAS has a deep commitment to outcomes in and for Tasmania, as the state's only university. However, as a research institute, TIA also has a mandate to look beyond Tasmania, to contribute to national and international R&D and education. In this role, TIA has a large cohort of Australian, international and higher degree research candidates as well as undergraduate students and international research collaborations. These collaborations range from addressing fundamental practical challenges to improving practices in Papua New Guinea, to development of value chains in Southeast Asia, to doing foundational research in plant breeding in collaboration with national and international partners. A large portion of this international research is funded through partnerships with the Australian Centre for International Agricultural Research (ACIAR), while more foundation research and large industry collaborations have been funded in part by the Australian Research Council (ARC).

Joint Venture Agreement – UTAS and State Government

The Tasmanian State Government and UTAS are TIA's key partners within a major component of TIA that is a Joint Venture Agreement (JVA) between these organisations. Both invest in TIA to support excellence in research (UTAS), and outcomes for the state primarily in its agricultural industries and businesses (State Government) and educational outcomes (both) through the TIA's undergraduate teaching program.

The state government invests in TIA as its "preferred supplier of publicly funded agricultural RD&E services" with a central goal of "increasing sustainable growth and productivity of

Tasmanian agriculture and food sectors” (Agrigrowth Tasmania ND, pg. 2). At the time of writing, principles and strategies for achieving such goals are not specifically defined. However, the state government’s White Paper, *Growing Tasmanian Agriculture: Research, Development and Extension for 2050* (Agrigrowth Tasmania ND), suggests that the allocation of government funds through the JVA will reflect the government’s goals of substantially increasing farm-gate value of agriculture to \$10 billion by 2050. Thus, it suggests that JVA funds should be directed as a priority to industry development, capacity building, and to a lesser extent blue sky research and international RD&E. This aligns with current state government’s 2014 Cultivating Prosperity in Agriculture Policy, which is focused on public and private sector investment, productivity enhancing technology adoption, and developing improved skills and career pathways. While RD&E and education are critical components here, there are also commitments to biosecurity, infrastructure, reducing regulatory burdens on farmers, and provision of farm welfare and rural community services.

Relationship with Research and Development Corporations

In practice, much JVA investment in TIA has been used to leverage further investment in research through other sources, not least Australia’s Research and Development Corporations (RDCs). RDCs are sectoral organisations which fund RD&E on behalf of levy paying producers and the Commonwealth government, which provides roughly matching funds. RDCs were set up through the establishment of the Primary Industries Research and Development Act (1989). This move was part of a large scale restructuring of Australian agricultural RD&E, instigated by moves to more market driven, user-pays approaches to advisory services (Hunt et al. 2014). The transition to the RDC and user-pays model has not occurred without criticism. For example, Hamilton & Hamilton (2010) argued that the general shift away from state-driven public provision of extension has led to reduced academic capacity in extension and “a return to transfer of technology approaches” which are poorly adapted to the complex challenges facing contemporary agriculture. Hunt et al. (2014) suggest that a focus on short term results from RD&E projects does not support “professional succession, retention of expertise, or maintenance of client and partner agency relationships.” These issues have been responded to in a variety of different ways, and are raised here briefly to highlight that the RDC model along with relationships across agricultural RD&E, NRM and Landcare continue to evolve.

The predominantly sectoral RD&E funded by RDCs is competitively granted to research organisations like TIA, CSIRO and other private or public sector providers. As such, the RDCs role is to represent the interests and priorities of their levy payers. Cross-sectoral issues such as soil management, irrigation efficiency, water governance, weed management, and climate variability have been variously included, but have been considered as ‘orphaned’, particularly since the decommissioning of Land and Water Australia, an RDC focusing on natural resource management issues across sectors. Today, AgriFutures gives some attention to these issues along with regional development, approaches to innovation across value chains, and other cross-cutting matters.

Influence of Agrifood Organisations

Beyond the influence of large-scale RD&E policy, the Tasmanian agrifood sector is substantially influenced by numerous industry representative bodies and other groups, private sector organisations, NGOs and quasi-government organisations. The roles of these groups range from building infrastructure to political lobbying, to providing welfare and support to farmers and rural communities. The number and diversity of groups create challenges and opportunities for both government and research. For instance, while there is strong but diverse advocacy in the sector, there is sparse representation across it, and there are numerous claims about what farmers and food producers want or need. This report does not detail this complex setting but goes some way to clarifying some aspects of these claims and laying a foundation for dialogue among the diverse interests and groups about common and divergent goals and ways of achieving them.

3. Methodology

In this section we briefly sketch some broad cross-cutting considerations and concepts that inform this research (Section 3.1), the key constructs around which the research is based (Section 3.2), and the empirical methods used to undertake the research (Section 3.3). We highlight key demographic and other characteristics of our interview participants and survey respondents in Section 3.4, and provide a brief overview of the project approach to monitoring and evaluation in Section 3.5. More detailed methodological information will be made available in forthcoming peer-reviewed papers for this project. Some of the language in this section is technical, and for interested readers a definition of some of the methodological terms used in this section is included in the glossary.

3.1. Cross-cutting concepts for informing this research

This research is founded in a tradition of social research that takes what people say seriously. Rather than asking whether what people say is true or untrue or trying to measure behaviours, this constructivist tradition examines *how* people use language to create or construct their world (Bunningham and Cooper 1999). Constructivist research thus focusses on how people make meaning, in the case of this research, how farmers and food manufacturers constitute goals, motivations, means of achieving goals, and possible futures. Constructivist research is aligned with these sorts *how* questions, and typically uses open-ended prompts to allow participants to explore these areas in their own terms. Both the participants and researchers must interpret meaning from the use of language (Gubrium and Holstein 2000). The rigour of constructivist and interpretivist research rests of researchers challenging their own assumptions about meaning in the processes of interpretation. The processes occur across a range of research activities from the conducting interview to coding transcripts, to looking across multiple interviews to ask ‘is this a consistent message?’, ‘what other ways of interpreting this could I take?’, ‘does my interpretation really look like a common theme or pattern?’.

This study combines qualitative and quantitative research in a specific way. Quantitative studies in agricultural and rural social research tend to use survey results to group farmers and others into segments or other clusters via statistical associations. The goal of doing this is often to define extension audiences or groups who will respond favourably to certain messages, products, processes, technologies or other interventions. Qualitative research tends to use more open-ended questions in in-depth interviews or focus groups, and examine closely commonalities and differences among people, whilst still allowing for enquiry into the intricacy of people’s narration of their own lives. Qualitative research relies on reading and rereading people’s accounts closely until common patterns and unique perspectives resolve. Common patterns can inform us on dominant ways of thinking about values, goals, motivations, and how people consider pathways to achieve success. Unique perspectives may contain insight, or challenge common assumptions and norms. But qualitative research tells us little about the extent or pervasiveness of these patterns across a population. Quantitative surveys can help

with this. When they are well-designed and based on detailed qualitative understanding, a survey can help get a sense of the degree to which patterns are represented in the larger population. Thus, the qualitative and quantitative elements of this study contribute to different aspects of its goals:

The qualitative research addresses the primary research aim of the project to understand the diversity of participants in their own terms, in order to inform strategy.

The quantitative TasAgFuture survey draws broader inference at a population scale about goals, capacity constraints, actions and perspectives of the future than can be achieved with the small qualitative sample. Survey results lend weight to, and sometimes challenge the qualitative understandings.

Taken together, these qualitative and quantitative elements help to understand what we refer to in this report as directions for the Tasmanian agrifood sector. Our understanding of ‘directions’ draws from a variety of research, planning and importantly practical work. However, it can also be defined as “the particular directions in which interacting social, technological and environmental systems co-evolve over time” (Leach et al. 2010). TIA’s role is to work with partners in the private and public sectors to support and enable pathways that lead to sustainability and profitability for Tasmanian agriculture and food. A key challenge of such work is finding common goals, and mapping how these might be achieved through coordinated action, part of which is RD&E. This in turn requires an understanding of historical patterns, current practices and trends, and future options.

Importantly for this research, these elements are not all about objective ‘facts’ but also narratives - people’s stories of the past, present and future. For instance, as indicated in Table 2.2.1. (Section 2.2.2.), Tasmania’s scale of production compared to global production and consumption patterns is miniscule, yet many people in Tasmanian agriculture argue that ‘we can’t all be niche producers’. Factually, this is not necessarily the case – globally, niche markets are large enough to accommodate massive extension of niche production within Tasmania. However, the existing trajectories and pathways of the sector mean that commodity production is likely to remain the mainstay of the sector for a long time to come. Similarly, a common refrain among agricultural research organisations is that their work is necessary in boosting production to feed the world. Yet the greater challenge is the distribution of food, and ensuring that food is nutritious for all. This challenge is typified by twin problems of malnutrition and obesity, even among different populations in the same country (FAO 2018). These points highlight the power of narratives, whether they are true or not, to reinforce certain pathways and make others look less feasible (Hajer 1995).

3.2. Aspirations, capacity, actions and expectations

The project was developed to explore four topics, with each member of the research team leading one of these broad topics, as follows:

1. **Aspirations:** Long-terms goals and motivations of food producers and processors.
Dr Peat Leith
2. **Actions and innovation:** Work people have done to achieve their goals.
Dr Rajendra Adhikari
3. **Capacity:** Things that constrain and enable businesses in achieving their goals.
Dr Carolina Garcia
4. **Expectations:** How businesses see the future, their hopes and concerns.
Dr Saideepa Kumar

Each leader undertook literature reviews related to these topics, and as a team we developed a cohesive methodology. The empirical research used in-depth interviews, and then a broader but more representative survey. An overview of the interview and survey methods is included in Section 3.3. In this section we briefly outline how the four topics are understood in the academic literature.

Human behaviour has significant impact on individuals and environments. For this reason, different disciplines have aimed to improve understanding of human behaviour. To develop an analysis framework for this project, we used key concepts from studies focused on decision processes and immediate determinants of behaviour (Fishbein & Ajzen 1975, Gottfredson 1981, Fishbein & Ajzen 2010, Perugini & Conner 2000, Leavy & Smith 2010). Figure 3.1.1. is based on Fishbein & Ajzen (2010) and Perugini & Conner (2000) with a focus on practical concepts and less emphasis on intermediary steps. **Drivers** encompass background factors and other external influences, which in turn affect values and beliefs that motivate specific goals or **Aspirations**. The concept of **Capacity** encompasses the ideas of perceived and actual control. Instead of using behaviour and the intermediate steps, we focused on **Actions** as a more tangible concept that could be explored and interpreted within the scope of the project. The importance of future beliefs was introduced by Perugini & Conner (2000) as anticipated emotions of specific behaviours. Our concept of **Expectations** expands this idea to include forecasts beyond individual emotions as important determinants of actions. **Outcomes** were included as a key link between action consequences, which in turn affect capacity, expectations and aspirations, and therefore become new drivers for future actions. For instance, outcomes of actions feed into expectations, capacity and aspirations through experience and learning.

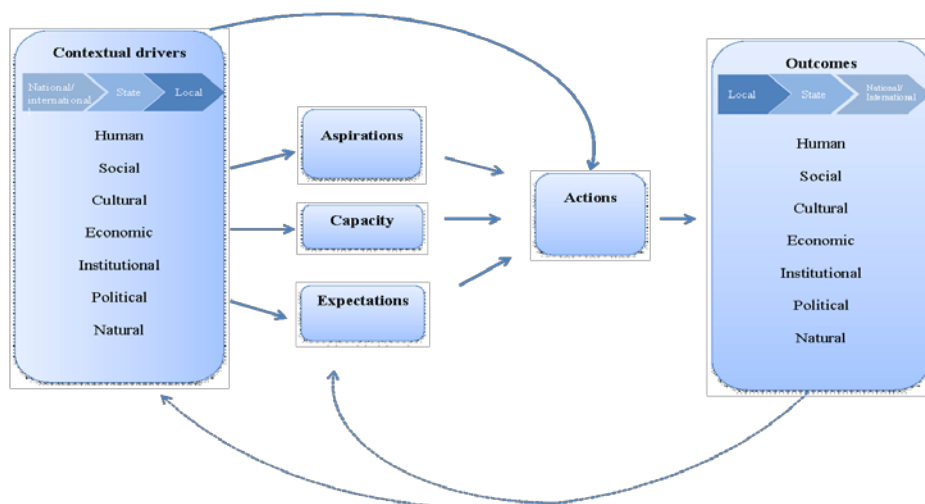


Figure 3.1.1. Simplified conceptual relationships between the focal topics of this research.

3.2.1. Aspirations: Goals and motivation

Long-Term Goals

The premise of our focus on goals is that while governments and industry groups may set economic, social and or environmental targets for the agrifood sector, the attainment of these depends on the goals and motivations of producers and processors, along with capacities to achieve those goals. Goals are founded in human values, along with various other aspects of psycho-social and cultural foundations. In government and research communities it is commonly assumed that the primary goals of producers and processors are to maximise profits. While financial motivations are important and profitability is essential to any enterprise, it has long been recognised that farmers have diverse goals (e.g. Gasson 1973, Vanclay 2004). Barbieri & Mahoney (2009) argue that understanding farmer goals is useful for developing agricultural policy. For example, supporting diversification of rural enterprises and regions, or scaling up of sectors relies on understanding the drivers and constraints on such practices. Similarly, goals influence decisions to adopt different farming practices (Thompson et al. 2015). To date, minimal work has been done to consider how goals of producers might be used to shape agricultural RD&E or how broader efforts towards changes in practice and development of knowledge might draw on these goals. Instead, it is often assumed that the translation of goals as well as RD&E and policy priorities simply happens through farmer representative bodies and levy funding of RD&E at a sectoral level. Arguably, such approaches allow for simplified goals, or goals of powerful groups to lead the discussion (Hunt et al. 2012). Bias may be exacerbated by social acceptability of some things over others. For example, researchers tend to see issues as research problems, often within limited disciplinary terms. Agricultural scientists tend to work with innovators, or early adopters, but less widely acknowledged groups do not necessarily share goals, capabilities, networks or approaches to innovation that typify this ‘top 5%’ (Vanclay 1995).

Qualitative research in the social sciences tends to investigate goals through methods such as interviews, focus groups or detailed ethnographic accounts. Different ways of conceptualising the relationship between goals and farming practice have been used. Early work on goals in agriculture found farmers' goals are often underpinned by the intrinsic value of, for example, 'being a farmer' (identity), 'living on the land' (relationships with place), and 'working with stock' (affiliation with work). This goes against earlier assumptions that suggested farmers had solely instrumental reasons for farming, such as 'making a living' (Gasson 1973). Later studies tried to incorporate producer goals as a component of specific farming management styles, noting that goals are among the most important and consistent elements that help identify particular styles of farming (e.g. van der Ploeg 1994). More recently, diverse studies have sought to understand, on the one hand, how farmers can be segmented into different audiences for extension (e.g. Groth et al. 2016), and on the other, the nuance of developing particular sets of goals, values and motivations. The former work draws on the traditions of 'farming styles' research as well as marketing and economic research, which suggests that some types of goals are better than others. The latter tends towards much more descriptive approaches, highlighting how people constitute their own goals and practice, often with respect to those of their peers.

For the purposes of this research, goals described in interviews were coded across four key categories: economic, social, environmental and human. Economic goals were making profit, income, drawing down debt, growing or consolidating the business and other matters regarding money and capital. Social goals pertain to various forms of relationships such as family, community, places and historical ties. Environmental goals related to improvements in soil, generally looking after the land, maintaining habitat, looking after waterways, and other aspects of natural resource or environmental systems. While there are possibly other categories, such as human goals relating to personal achievement (gaining knowledge or skills), these are considered more as motivations in this report, as described below.

Clearly, these categories overlap, and while we have attempted to make them exhaustive and mutually exclusive, they are rarely described this way by participants.

Motivations

Our analysis of motivation draws largely on a prominent approach to social psychology: self-determination theory (SDT). Over recent decades SDT has shifted the way behaviour is understood in psychology and, to some degree, in economics. Traditional economic approaches see motivation as driven by incentives and disincentives or cost-benefit calculations. SDT split from this behaviourist approach, to identify how specific 'human needs' underpin motivation. Leading proponents of SDT (e.g. Deci & Ryan 2008) came to see intrinsic motivation as a leading driver of behaviour. In intrinsic motivation, actions or tasks are valued for their own sake, as distinct from extrinsic motivation, where actions are valued as a means to some end.

A further key finding of the large empirical literature on motivation is that sources of intrinsic and identified or integrated extrinsic motivation tend to be underpinned by a combination of three

elements referred to as basic human needs: autonomy, competence and relatedness (Deci & Ryan 2000).

- **Autonomy** is described as being about the ability to make one's own choices. It can also be explained as not being limited by the imposition of someone else's will. This idea resonates across societies with long-standing liberal democracies as a foundation of dignity and social identity (Fukuyama 2018).
- **Competence** relates to the motivation that comes from being good at something and the intrinsic value of such, of achieving success and the extrinsic rewards, recognition and other benefits that flow from that.
- **Relatedness** comes from being part of something bigger than oneself - a community of some form. Among these human needs, autonomy and competence have been evaluated as playing a more important role than relatedness.

These concepts of autonomy, relatedness and competence, along with the ideas associated with varying degrees of intrinsic and extrinsic motivation provide a useful SDT-based scheme that allows for the empirical examination of qualitative accounts of motivation, and in turn the identification of common sources of motivation that can be examined quantitatively through the survey. An important caveat here is that SDT has, to date, predominantly focused on specific and discrete tasks, rather than larger scale goals and has usually been determined through quantitative, psychometric approaches rather than qualitative or ethnographic approaches, or even surveys. Nevertheless, recent decades have seen increasing attention to SDT in work relating to long-term goals. For example, Deci & Ryan (2000), pg. 239 argue that: "research on internalisation of extrinsic motivation highlights the human readiness to internalise ambient values and regulations. Yet to fully integrate such values and regulations, and thus to become self-determined with respect to them, people must grasp their importance and synthesise their meaning with respect to other values and motivations." Such assertions are ripe for detailed qualitative examination, however our focus is more prosaic.

In this report we focus on the degree to which participants express different motivations for differing goals.

The key questions that guides the analysis of goals and aspirations are:

1. How do participants constitute their goals and motivations for them? And;
2. Do these suggest particular pathways for the future development of Tasmanian agrifood sector?"

3.2.2. Innovation and action

Actions and innovations are terms used to capture what people do to achieve goals, but in less directed ways. Human actions are largely the result of willful intention by people in the context of institutional constraints. These institutions include laws as well as less obvious rules and norms. Norms are often the most subtle and taken-for-granted, such as what is considered appropriate

behaviours and actions within a specific community, family or place. Actions lead to events or outcomes, intended, unintended or ambiguous. We asked interview participants for their accounts of actions and achievements that they are most proud of as indicators of innovation.

Innovation in this research is considered a vital link that bridges aspirations, capacities and expectations of food producers and processors. Understanding the nature, extent and processes of innovation undertaken by the research participants, therefore, is a key methodological consideration in this research.

In the Schumpeterian (1934) typology, innovation includes much more than technological innovation:

1. Product innovations include the development of new products, and new product features, forms or presentation for an existing or new market.
2. Marketing innovations include innovations undertaken to develop or enter into new markets, including the development of radical new products to create new markets.
3. Supply chain innovations include innovations related to developing new sources for inputs, creating more efficient and coordinated supply chains, or increasing the consumer focus of supply chains.
4. Governance innovations are innovations in the organisational structure of agrifood businesses (Bonney et al. 2015).

Since Schumpeter's seminal work on innovation, a few other modes of innovation have been added. These are **strategic innovation**, which relates to change in the organisational strategy (rule of the game) and **business model innovation**, which is about offering new value propositions or new ways of doing business that alter the firm's position in the market or change its business domain. Another is **co-innovation** (Bonney et al. 2007), which is innovation through collaborative action across different levels of value chains, between two or more businesses.

A central influence in human actions are diverse decision-making processes that lead people to act. Decisions might involve individual actors, small groups, or complex interactions across supply chains, organisations and other levels of influence. Simple models are often used as descriptive or normative models of human action, such as assuming a decision involves weighing different alternatives of action to choose the most appropriate according to a series of goals, costs and benefits. Rational action models posit that decisions are made to maximise their individual benefit (Lee 1971). Assumptions include: 1) that people have all the information available about the existing alternatives and about the consequences of each decision; 2) a rational decision-maker can discriminate between the slightest of differences between alternatives and; 3) alternatives can be ordered, so that if A is better than B, and B is better than C, then A is better than C. Several long-standing critiques of this model are supported by empirical evidence which points at issues such as incomplete and uncertain information; consistent biases that affect the premise of perfect calculative rationality (Kahnemann & Tversky

1996); tendencies for people to seek reciprocally advantageous outcomes, or even altruistic ones, over those that clearly maximise their own utility (Thaler 2016).

Individual decisions can also be affected or embedded in collective decision-making processes. This adds a level of complexity to understanding human actions. In this case, individual decisions are affected by the different ways in which a group makes decisions, from hierarchical to consensus-based. Collective decision-making processes are highly relevant to understand and eventually improve a governance system. Some elements of interest for this project include hierarchical structures, informal power relationships, dialogue opportunities, coordination and collaboration processes, institutional capacity and organisational skills.

We have explored specific ways in which actors in the Tasmanian agrifood sector have approached fulfilling their aspirations or utilising their capabilities. A narrative analysis of these stories allows us to explore both specific themes and the mental connections that actors make between different factors (drivers, outcomes, capacity and their own expectations and aspirations). The stories explain how participants have dealt with change in the past, in what context, and provide detail about ways in which people can adapt to future changes. These change-related examples can also provide an indication of the reasoning behind adopting (or not) new technologies or practices.

3.2.3 Capacity

The literature on capacity is extensive, and many terms and concepts are used. For this study we understand capacity as the enablers and constraints that affect the ability of food producers and processors to achieve their long-term goals.

The sustainable livelihoods framework proposes classification of different types of resources according to different capitals (Scoones 1998). Our analysis is based on five commonly used capitals: physical, financial, natural, human and social.

- **Physical capital** refers to human produced or built resources, whether public or private. This includes infrastructure, machinery, irrigation systems, inputs and technology.
- **Financial capital** includes economic assets (or lack thereof) like money, income sources, investment funds, loans, grants and physical assets with a commercial value.
- **Natural capital** includes natural resources and environmental services. Examples of natural capital are forest resources, natural availability of water, quality of water, soil structure, fertility, diseases, climatic conditions and climate change.
- **Human capital** consists of the resources that people can offer. Issues related to human capital include supply and demand of labour, skills, knowledge, management approaches and health.
- **Social capital** is probably the most complex set of assets, as these are mostly intangible and difficult to quantify. It refers to the resources created by the relationships within a community, or between communities. This can span multiple scales, from family and close friends, to a local community, to a region or a global

scale. Common ways of measuring social capital include the membership of groups such as Landcare, or volunteerism. Governance, through laws, rules and participation in lobbying, committees and other aspects of decision-making are also part of social capital.

In practical terms, many 'issues' are classified into multiple capitals. For example, a government grant that supports the development of tourist infrastructure is classified under physical (building the physical structure), financial (access to initial investment funds and expansion of capital assets), human (a staff member with the skills to write a compelling application) and social (government policies and incentives). Capitals also constantly interact with each other in a dynamic way, such that their capitals can be traded and used to build or deplete other forms of capital as illustrated in Figure 3.2.1. (Campbell et al. 2002).

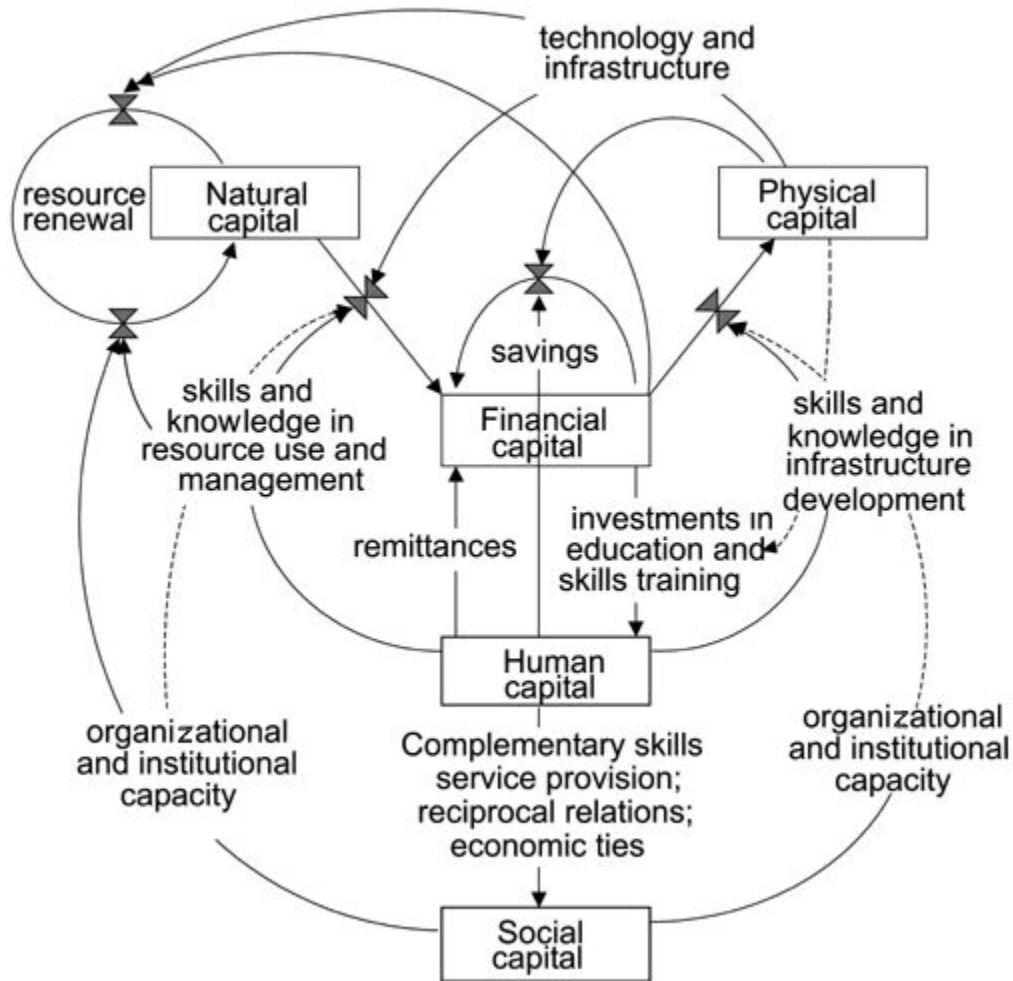


Figure 3.2.1.: Different capitals can be 'traded' for each other. For example, farming can turn natural capital into financial capital (profits) which might then be converted to physical capital (technology) and human capital (self-education) to make the first process more efficient and/or sustainable (Campbell et al. 2001, pg. 9).

3.2.4. Expectations

How the Future Shapes the Present

Expectations of the future are often associated with projections of the past and the present. Such projections assume a linear form of causality - that the future is determined by the past and the present. However, sociologist Barbara Adam (2005) shifts our attention to the causal influence of the future on the present. Expectations of the future, she argues, are not merely statements of what people think or believe will happen, but also expressions of hopes, fears and desires about what could happen. People's narratives about the future shape the present; they set in motion strategies in the present, they reinforce particular perspectives, they negate others, and they introduce path dependency. Rhetorical constructions of the future influence which innovations are brought into existence, through justification for funding, rallying for public support, or by influencing policy direction (Borup et al. 2006, Selin 2008).

In this study, we identify the hopes and concerns expressed by participants as they articulate their expectations about the future. We then explore how these hopes and concerns are enacted as strategies in the present. Innovative strategies that shape the direction of an industry or sector are often celebrated, but Courtney et al. (1997) point out that many businesses lack the resources, position or risk appetite for such strategies. They suggest that people assume one of three strategic postures when faced with an uncertain future: 1) they shape the future by playing a leading role in setting standards or creating demand; or 2) they adapt to the future by responding with speed, agility or flexibility to capture opportunities as they arise or; 3) they reserve the right to play by avoiding early commitment of resources (Figure 3.2.2.). Using the concept of 'strategic posture' in this study, we aim to understand how agrifood producers and processors enact the future in the present. To the postures identified by Courtney et al. (1997) we add a fourth posture 'opt out', which we anticipate will be adopted in the future by some of the participants.

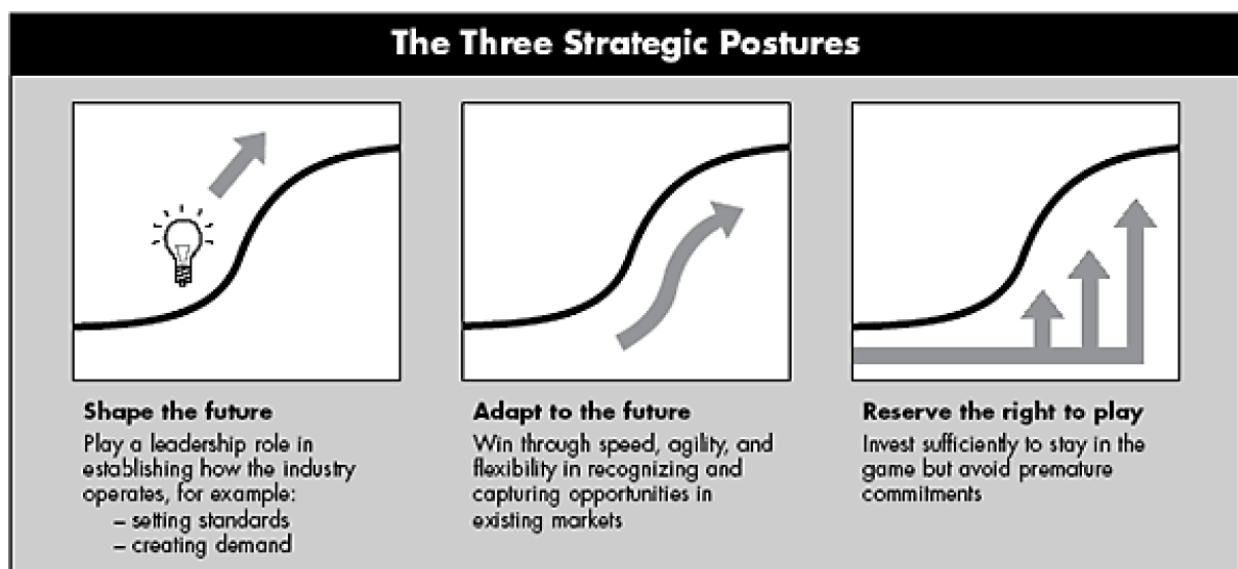


Figure 3.2.2.: People assume one of three strategic postures when faced with an uncertain future (Courtney et al. 1997, p.73).

TasAgFuture builds understanding of the expectations that participants share across the agrifood sector, especially how pathways for the future of the sector are shaped by individual and collective visions and strategies. We examine how these pathways are embedded in infrastructural, institutional and financial commitments to create new risks and opportunities into the future. We also identify where visions diverge and where groups seek to resist the dominant vision and create alternative pathways for a desirable future.

The key question that guides the analysis of future expectations is: “how do visions of the future shape the strategies adopted in the present, and how do they shape different pathways into the future?”

3.3. Methods

The mixed methods approach described in this section moves away from the overview of constructs discussed above, to the mechanics of how the in-depth qualitative interviews and broad scale, quantitative surveys were conducted. This includes an outline of the selection of participants, approaches to recruitment, the conduct of interviews and survey, and the collation and analyses of data.

As per standard requirements, all research activities were approved by the University of Tasmania’s Human Research Ethics Committee for Social Science (Project number:H00016717). They comply fully with the National Statement on Ethical Conduct in Human Research (2007, updated 2018). Further details about the methods will be made available through peer-reviewed publications.

It is also worth noting that this research design involved early input from key stakeholders in the State Government (AgriGrowth team), the Tasmanian Farmers and Graziers Association (TFGA), and the Tasmanian Agricultural Productivity Group (TAPG), as well as researchers from across UTAS. The research conduct was overseen by the project Steering Committee comprised of members of TIA’s leadership team as well as non-TIA researchers who are recognised leaders in qualitative and quantitative social research. Further ongoing guidance was provided by Dr Megan Woods on qualitative research design and team use of the qualitative research software, NVIVO.

3.3.1. Qualitative Methods

This section provides a brief outline of the qualitative methods developed for TasAgFuture (Phases 2 and 3, in Figure 1 Executive Summary). It details how participants were selected (sampling) and recruited and provides an overview of the interview and analysis techniques.

Selection of Participants

The interviews comprised 10 participants in each of 10 study areas (see Figure 3.3.1.) to total 100 interview participants. This approach sought to cover the diversity of food producers and processors across the sector. In its early scoping the project aimed to include participants ranging from rural supplies, to investors, to consultants and agronomists. This scope was too large to be contained within the research design in a way that were methodologically defensible. However, as detailed in the 'recruitment and piloting' section below, the research drew heavily on the knowledge and networks of 'input providers', and other intermediaries in the recruitment of interviewees and survey participants. We drew on the deep connections that such people have to agricultural and food communities, and their role as 'key informants' provided contextual material which informed later analysis. This approach is widely used and allows for relatively rapid recruitment of diverse participants. A drawback is that it can favour 'insider' networks for a two key reasons: 1) because the networks of any small group of individuals are unlikely to be broad enough to cover the full diversity of perspectives, and 2) because key informants often direct interviewers to people that they think will either represent the sector or region 'well' or have time and be willing to talk. These issues were proactively raised with key informants in our attempt to cover the widest diversity possible.

The frameworks for selecting participants arose from analysis of existing economic and social data (summarised in Section 3.4., and covering sectors and segments identified in Section 2.2. and Section 2.3.) and through industry intelligence and consultation with key stakeholders (e.g. TFGA, TAPG, and the TasAgFuture Steering committee). The resulting intersecting foci were used to guide selection:

- 1. Geographic focus:** Three processor and seven producer focus zones were selected as in Figure 3.3.1. These focus zones were modified to allow for some cross-fertilisation, following feedback from a representative of the TFGA that, for example, issues for intensive graziers in the north west will be different from those in the Derwent Valley. This was accommodated by the use of a rule of thumb to ensure that 8 of 10 participants in each area met the focus zone requirements (Table 3.3.1.) and 2 others were selected to cut across the other regional diversity (Appendix 1). It is important to note that following these criteria was not always possible, and in a couple of cases less than 8 participants had the "must have" characteristic.

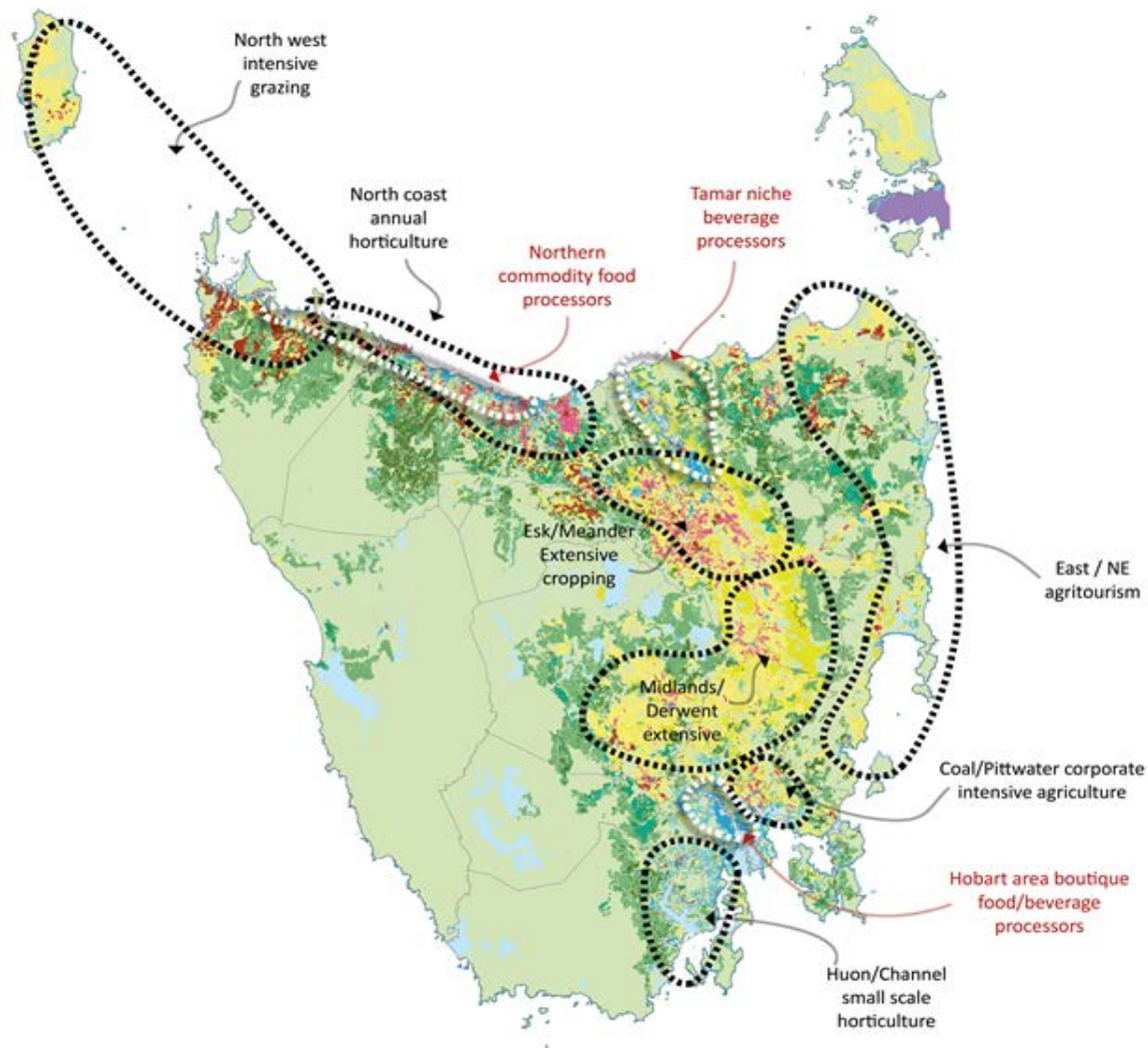


Figure 3.3.1.: Map showing the geographical focus areas for recruitment.

2. **Diversity checklist:** A checklist of target characteristics for each focus area was developed to ensure appropriate diversity in the sample, drawing on data and categories from the Australian Bureau of Statistics (ABS, see Section 3.4.) and discussions with stakeholders. These characteristics are broadly grouped as business characteristics (ownership, business size, food type, market focus, integration); and demographic characteristics (age, gender, education). The actor characteristics in Appendix 1 were selected to capture a sample of individuals across key groupings of characteristics.

Sampling

Producers: This group includes individuals and organisations involved in farming and producing food in Tasmania, and actors producing food for sale through retail or wholesale. Food produced specifically for hospitality or tourism was not considered unless it was part of a vertically integrated businesses, which may grow, process, market and sell food.

Processors: We focused on organisations operating in Tasmania that add value to Tasmanian agricultural produce through processing and manufacturing. These range from large processing companies to small operators who produce a product (often a boutique product) for local markets.

Because of the large numbers and diversity of these actors, we excluded input providers to avoid overextending the project scope. However, numerous input providers were engaged as key informants (detailed later in this section) and a small number were also included in the interviews in cases where they owned or managed farm or food businesses. Input providers were also excluded from the survey because developing a single survey instrument that could be used across so many groups was deemed unrealistic because the categories of questions and answer options needed to be contained to keep the survey short.

Table 3.3.1.: Diversity checklist used to determine scope of inclusion across geographical areas.

Processor focus	'Must have' characteristics
Northern commodity food processors	Medium to Large business, Food focus
Tamar niche food processors	Niche food production; Beverage focus
Hobart area boutique food processors	Small to medium business; Boutique food production; Food or beverage
Producer focus	'Must have' characteristics
North west intensive grazing	Medium to large business: Beef/dairy production
North coast annual horticulture	Medium to large business; Annual horticultural crops (focus on vegetables); >\$50k turnover
Esk / Meander extensive cropping	Medium to large business; Extensive landholding (>100ha); Annual cropping
East / NE agritourism	Small to medium business; Enterprise has integrated retail sales or tourism elements
Midlands / Derwent extensive grazing	Extensive pasture including semi and native pasture; Family owned
Coal / Pittwater corporate intensive agriculture	Medium to large business; Ownership is corporate; Includes irrigation
Huon / Channel small scale horticulture	Small to medium business; Horticulture

Recruitment and Piloting

Participants were recruited using an approach called 'snowball sampling', which draws on people's networks to spread from initial contacts to an increasing wide and diverse group of participants. The specific approach used was as follows:

1. The project leader asked numerous agrifood leaders for contact details of well-connected people (key informants) who would be willing and able to provide further contact details of diverse people within specific geographical focus areas. This allowed us to develop a preliminary list of 4-5 potential interviewees in each of the 10 case study areas. Key informants were often contacted in person or by phone and the study was explained to them. Notes were taken, as key informants often conveyed details not only about the diversity of people and perspectives in the study area, but also key issues and concerns, historical, current and future. At least one key informant for each of the 10 case study areas was asked to provide contact details (i.e. telephone number [preferably] or email address) for up to five potential participants who fit the requirements for each of the relevant case study areas as defined by case study foci (as defined in Table 3.3.1. and Appendix 1). These were the first people approached for each area.
2. Potential participants were contacted by telephone and then via email to invite them to participate in an interview at a time and location that suited them. Following each interview in the first round of interviews (up to 5 in each area), we again used the list of characteristics for each case study to ask each interviewee for names of up to three further potential interviewees, especially requesting producers/processors with very different perspectives from the interviewee. In asking for the second cohort, we sought to fill gaps in representation across key characteristics such as age, gender, and size of business.
3. The second group of interviewees' contacts were reviewed and invited to participate based on gaps in characteristics in the first round of interviews. The second round of potential interviewees were contacted in the same manner as the first.

Initially, a pilot set of ten interviews was conducted, drawing on characteristics and participants with as much diversity as possible within approximately 100 kilometres of Hobart, where the research was based. The pilot interviews were transcribed and coded and the interview schedule, approaches to delivery, coding scheme, and processes of coding and analysis were refined. Each of the four major constructs - goals, actions, capacity and expectations – were allocated to one member of the team who would then code² all the interviews for statements related to that construct and lead analysis related to that construct. This enabled deeper engagement with literature and ideas related to each construct by the team's 'specialist' and

² Coding is essentially a way of organising qualitative data so these can be more easily handled and analysed.

ensured that all researchers read and coded each interview transcript. Our discussions and reflections on coding and analysis enabled cross-fertilisation and consistency.

Analysis of Interviews

In-depth interviews allow researchers to explore complex issues with participants in a safe environment. In this research, a constructivist and interpretivist approach is used. This means that firstly, the situation of the interview creates a setting for a purposeful conversation to be recorded. This interview is not a one-way process by which the interview collects objective data from participants, but rather a setting in which data are constructed through interactions. This active interpretation can enhance the depth of reflection among participants and interviewers alike, and thus the richness of the data. In-depth interviews can identify issues that are often missed or hidden in normal conversation. The interviewer has license to ask follow-up questions, and the interviewee license to say things that might usually be considered 'over sharing'. In-depth interviews can therefore contribute to better design of interventions, ranging from research tools such as surveys, to larger RD&E programs and other policy instruments.

Semi-structured interviews were used in this project to draw out and analyse perspectives on the constructs discussed in Section 3.2. This largely relied on theory-driven deductive coding and analysis (Denzin and Lincoln 2011). This direct coding is supplemented with narrative analysis and thematic analysis (using both pre-selected constructs and emergent themes if relevant). Thematic analysis, taken broadly, seeks to find and examine underlying patterns and themes (Guest et al. 2011). This allows for unexpected patterns to emerge during analysis rather than assuming that the pre-defined, theory-driven coding scheme could or should capture all elements. Narrative analysis is used to explore connections that different actors make in talking about their lives, often through stories about sequences of events (Polkinghorne 2006). Understanding how people story their lives and connect ideas can provide deeper insight about the future, including the role of RD&E or other policy instruments. It can also indicate what forms of innovation might be more or less appropriate and adoptable in different places or sectors. Together, thematic and narrative analysis are a means of creating and delimiting options, opportunities, risks and priorities, now and into the future.

Interviews were transcribed by a third party transcription service who provided checked verbatim transcripts, that included words and audible gestures (e.g. laughter). These were coded in NVIVO. The coding frame, supplemented with narrative analysis and emergent codes, was based on the four construct areas discussed in Section 3.2. The deductive coding protocol for the research team was informed by standard social research methodology (Denzin and Lincoln 2011) and is included in Appendix 2. Coding frames and codebooks are available on request. Common and unique themes and exemplars from the data were used to draw attention to detailed issues, potential pathways and leverage points across the sector and the geographical regions of the state. For example, the interviews drew out bottom-up processes of innovation through narratives and common patterns and themes. These provide improved understanding of how innovation and governance interact across different geographical foci.

As detailed in Appendix 3, some structured/closed questions at the beginning of the interview were used to collect demographic information to allow for comparison. This was done to ensure that sampling met project requirements, and to inform development of hypotheses to be tested through quantitative data collection, which we now describe.

3.3.2. Quantitative Research

While qualitative research can look closely at nuance, patterns and interconnections across what individuals say and how they say it, it generally lacks the sample size to be able to represent the larger population, statistically speaking (Denzin and Lincoln 2011). A quantitative survey was included in this project in an attempt to provide a larger and more representative view of how the issues revealed in the interviews are reported at a population scale. The questions in the TasAgFuture survey thus explore the same constructs as the interviews, but were devised to do so in a way that: 1) was easy to understand and quick to answer; 2) represented the main issues and topics that were raised through the interviews presented in a standardised way and; 3) would be relevant as much as possible across producer and processor groups, for owners and managers.

The survey instrument was developed following a first pass assessment of key themes and issues arising from the interviews, and an analysis of literature in which comparable surveys had been developed. Individual question items were crafted through internal revision among the team and piloting drawing on colleagues, willing interviewees, friends and several visitors to TIA's site at Agfest 2018. Pilot data were assessed to ensure they could adequately address key research questions, and the needs of this report. The final survey instrument was developed as both an online survey and a print product and is included in Appendix 4.

Selection and Recruitment of Participants

The survey aimed to cover the same diversity of producers and processors as the interviews but develop a more representative sample of these actors across the state. Representative surveys usually rely on probabilistic (random) sampling to develop a list of prospective respondents from a larger list representing a whole population. However, for people working in agricultural production and food processing businesses in Tasmania no such list exists. Survey distribution thus relied on multiple approaches to selection and recruitment.

Open procedures for selection of participants include broad-scale publicity through print, broadcast, and various social media platforms, both through earned, paid and owned media. This activity included (but was not limited to) the development of media content in the form of preliminary interview analysis to raise discussion points in print and broadcast media (see Appendix 5), the production of a promotional video, and the use of advertising posts via Facebook, Twitter and LinkedIn.

Targeted recruitment was undertaken through wide-scale email distribution via intermediaries. Links to the online survey and print copies were emailed or posted to various lists of TIA and third party organisations, including: Tasmanian Farmers and Graziers Association, Tasmanian Agricultural Producers Group, Brand Tasmania, Wine Tasmania, DairyTas, Fruit Growers Tasmania, Rural Business Tasmania, NRM organisations (North, South and Cradle Coast), Rural Youth, State Government Private Land Conservation Program, Sprout, Tasmanian Women in Agriculture, Launceston Harvest Market, and Enterprize.

Intermediary organisations were provided with content to alert their members to the survey through their e-newsletters, social media platforms and emails. They were also encouraged to send follow-up communication to further promote the survey to their constituents. The team sought advice from these organisations about whether it was best to send emails and links or print surveys with reply paid envelopes. Online survey links were sent to an estimated total of 6,688 potential respondents through intermediaries and TIA project teams. Email or e-newsletter follow-ups were sent by most intermediary organisations. Print surveys were sent to a total of 1,026 potential respondents and a follow-up request was sent through the post, with relatively low increase in response rates.

Communication about the survey by intermediaries and TIA, and a summary of media activities and their reach are included in Appendix 5.

The survey was open from 27 June to 31 August, 2018, and was completed by 630 respondents.

Analysis

Analyses of survey results, for the purposes of this report, are simple and preliminary. Simple descriptive statistics for all respondents and by regions and sectors are included in Appendices 8-17. They include basic descriptive statistics and analysis of significant differences in construct related items across demographic cohorts (e.g. age, gender, region) and main business, as selected by respondents in the survey. The purpose of these analyses for this report is to identify how widespread the the broad patterns and themes in the qualitative analysis are across the wider population. Use of these data in this report are relatively preliminary and were largely conducted using statistical packages in R-Studio (see <https://www.rstudio.com/>). The survey dataset will allow for considerably more detailed analysis, not least to potentially provide a useful benchmark for longitudinal assessment of changes in the construct at a population level. Further analyses of these data will also be undertaken for peer-reviewed publications and to contribute to dialogue and decision-making processes.

3.4. Participants and respondents: sampling and recruitment considerations

A critical test of the effectiveness and rigour of the approach outlined in Section 3.3. is whether it manages to effectively capture the diversity of the population, for the qualitative work, and the degree to which it is representative of that population, for the quantitative work. In this section

we address these questions by comparing key demographic characteristics of both samples to secondary data about the larger population. Unfortunately, because the population in question includes people working in food manufacturing and processing as well as producers and farmers, there is very limited secondary data covering this whole cohort, so most of the data used relates solely to farming and agriculture, especially census data. This is not an ideal proxy dataset for the population, as discussed below, but is useful to validate the data. At the time when these analyses of the population were completed (early 2017), the 2016 Census data was not yet available, so 2011 Census data were used.

Employment Type

In terms of sectoral employment characteristics, as indicated in Figure 3.4.1., both the interview and survey data over-represent owners or managers of enterprises. This was intentional (for the interviews) and expected for the surveys. Agricultural employment is strongly skewed towards owner managers compared to other sectors (especially family farmers as owner managers) as depicted in Figure 3.4.2., and contributing family members also provide a substantial portion of farm labour for businesses. Reaching agricultural labourers would not only require different approaches to sampling and recruitment, but would also comprise a substantially different study. The smaller number of interview participants in this cohort provided valuable insight, but this does not comprise the core of the study.

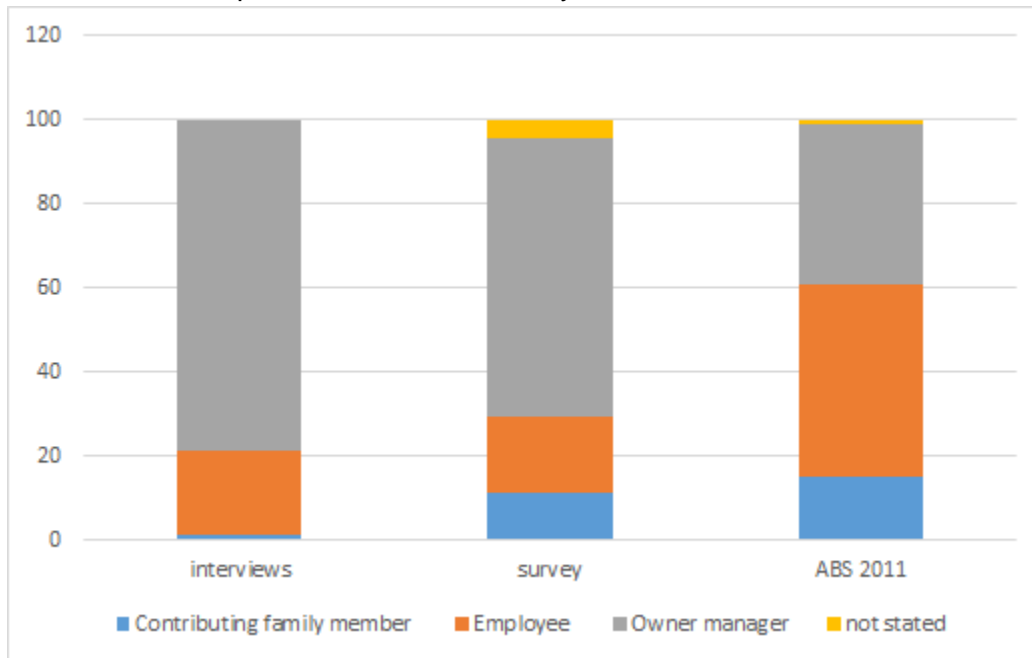


Figure 3.4.1.: Comparison between proportion of interview (n=100), survey (n=630) and Census data from 2011.

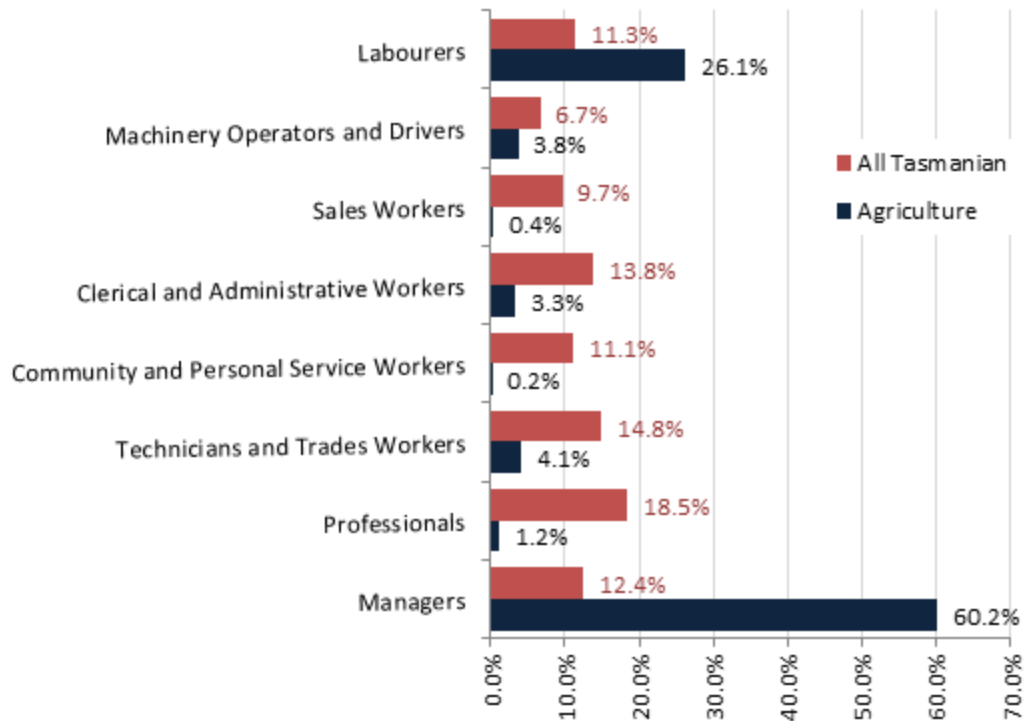


Figure 3.4.2.: Employment by occupation groups in 2011 in agriculture and all of Tasmania.

Regions Across the State

As indicated by census data in Figure 3.4.3., the three regions of the state have variable reliance on the agrifood sector as a source of employment. Although the total number of agrifood jobs is relatively even between these regions, they are markedly different in terms of the reliance on the regional job market in the sector. The spread of employment in the sector across regions led to a choice to select relatively even numbers of interviewees across the three regions via the 10 geographical case studies.

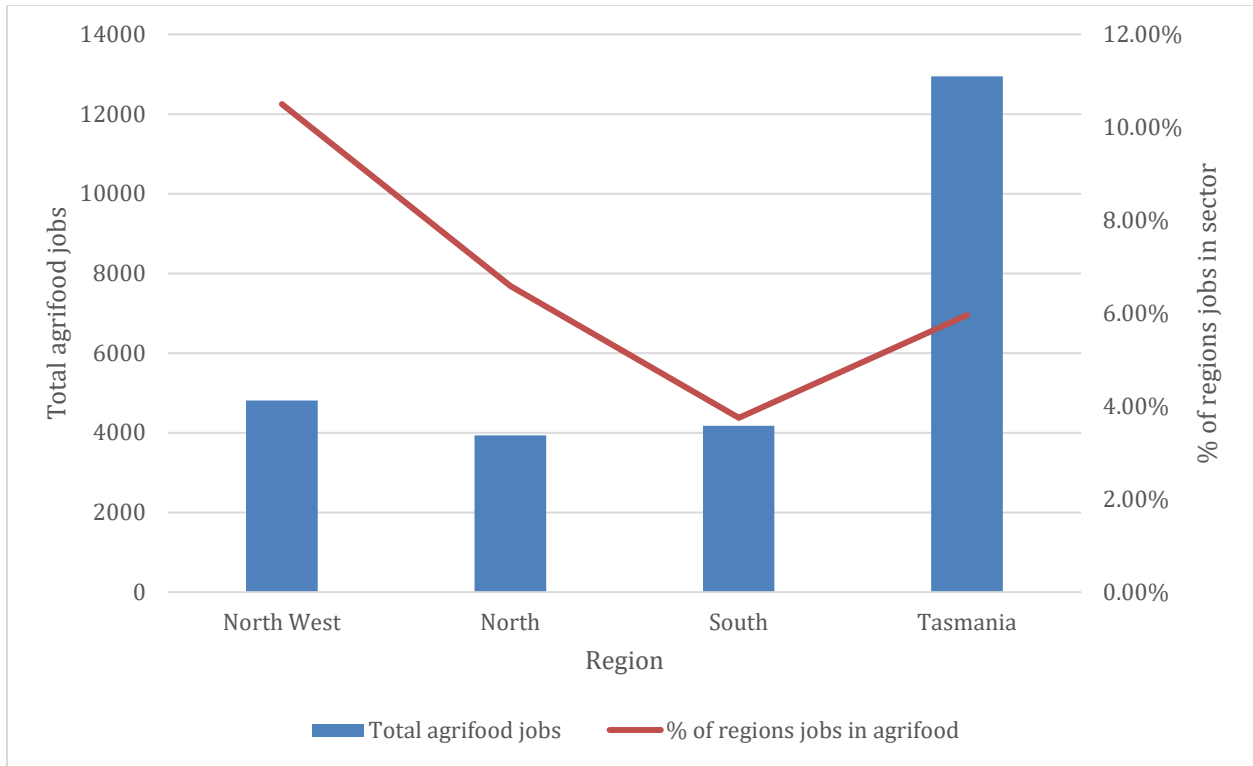


Figure 3.4.3.: Employment in agrifood sector and proportion of total regional employment in agrifood in 2011 for Tasmania’s three (ABS census 2011).

When considered alongside the number of enterprises in different regions (Figure 3.4.4.) it is clear that in the southern region there is both a lower number of enterprises and that this number appears to be declining more steeply than in the other regions.

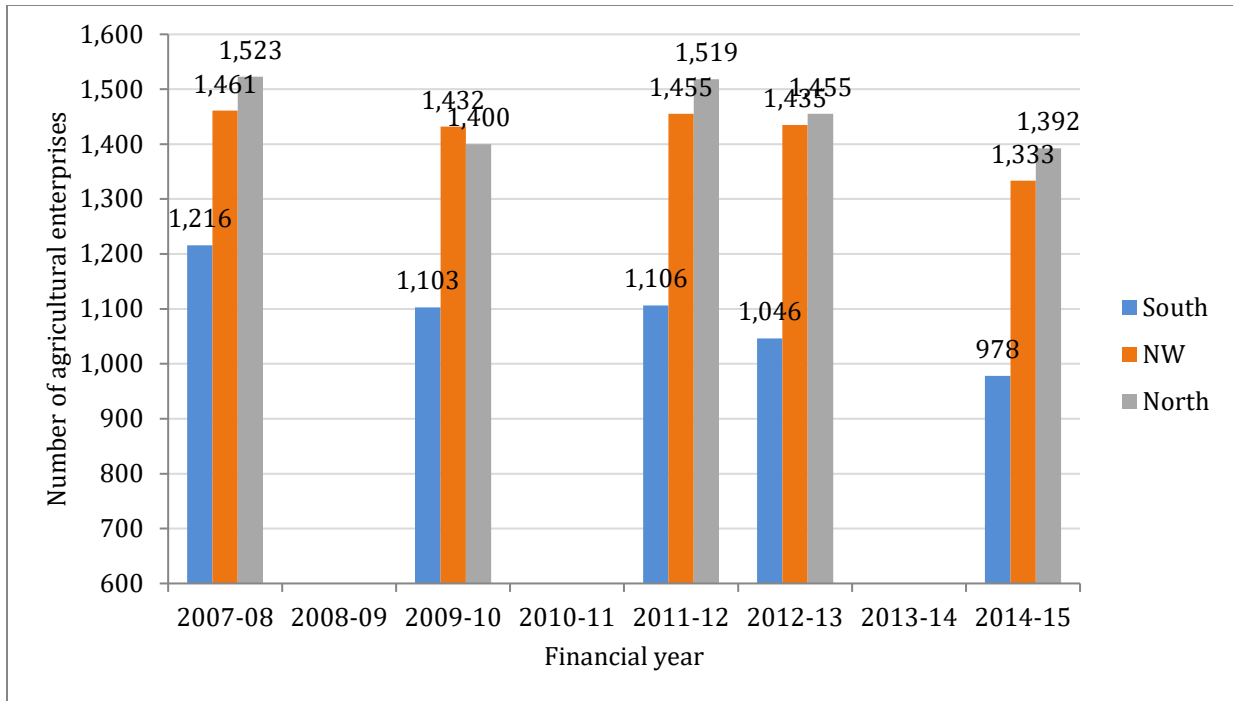


Figure 3.4.4.: The number of agricultural enterprises in Tasmania from 2007-08 until 2014-15 (Source: ABS data series 4627).

We were able to select interview participants representing sub-sectors and geographical areas, with two focus areas in the south, two in the north, three in the north west, and three areas that spread across regions (two north, two south and one north to north west). For the survey, respondents were relatively evenly spread across the state's regions with 30.8% from the northwest, 33.5% in the north and 35.7% in the south. Given the lower number of agricultural enterprises in the south, this result indicates a sample bias towards the south of the state.

Age Cohorts

As indicated in Figure 3.4.5., the age cohorts represented in the interviews were substantially skewed towards the middle cohort. The survey participants appear to have an even representation of ages of managers, however the ages of labourers are not necessarily representative, as they appear more likely to be in the younger cohort. As explained at the start of this section, the project intentionally over-represents managers that is an artifact of the study design and the focus population.

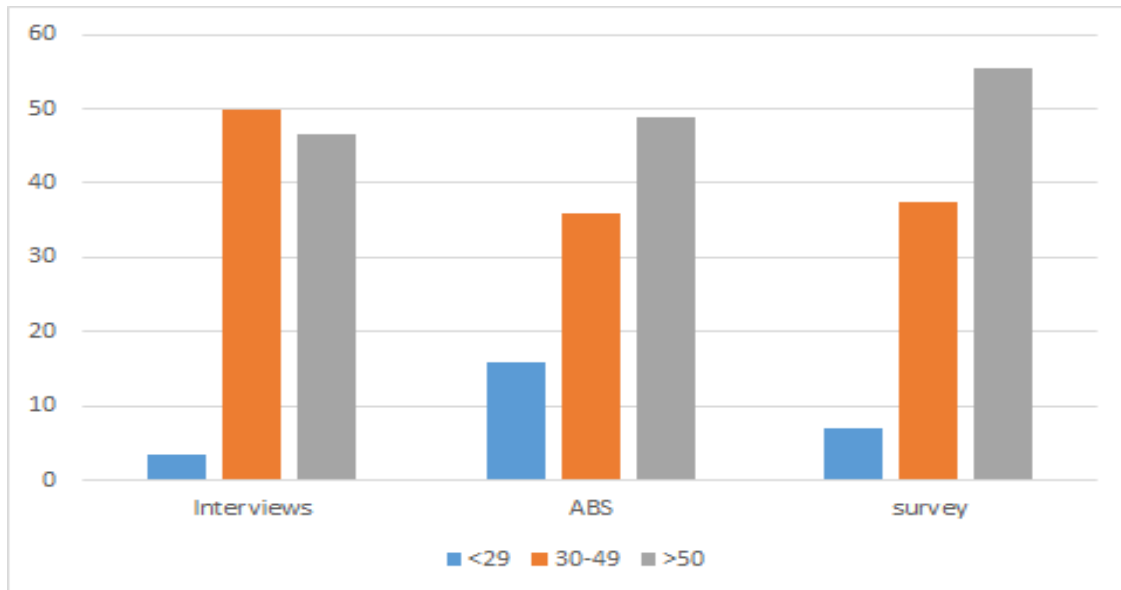


Figure 3.4.5.: Representation across age cohorts of interview participants and survey respondents compared to ABS data (2011 Census) on people working in agriculture.

Turnover

The most important source of bias, especially in the interview data, relates to turnover. Participants in the interviews and survey were asked to estimate their average turnover for the last three years. These data are compared to ABS data on agricultural businesses operating at the start of the 2015-16 financial year in Figure 3.4.6. The opposite pattern to ABS data is apparent in the interviews, indicating that the interview sample is skewed to larger, successful businesses. However, it was also apparent in our attempt to recruit small-scale farmers that these individuals were harder to reach and they were more likely to postpone, put off, or (in 2 instances) simply refuse an interview. Attempts to reach smaller businesses both for the interview and survey were facilitated through third parties with networks in family farm businesses that are struggling financially, such as Rural Business Tasmania, but these yielded fewer interview or survey participants. Discussions with these intermediaries informed some of the qualitative analysis in the section below, but the bias needs to be considered as a limitation of this study, especially with respect to the survey data.

This bias towards larger businesses is partly also exacerbated by the inclusion of food companies. These tended to be 1) businesses that had been operating for a period of some years and were thus known in networks through which recruitment was done and; 2) often large enterprises.

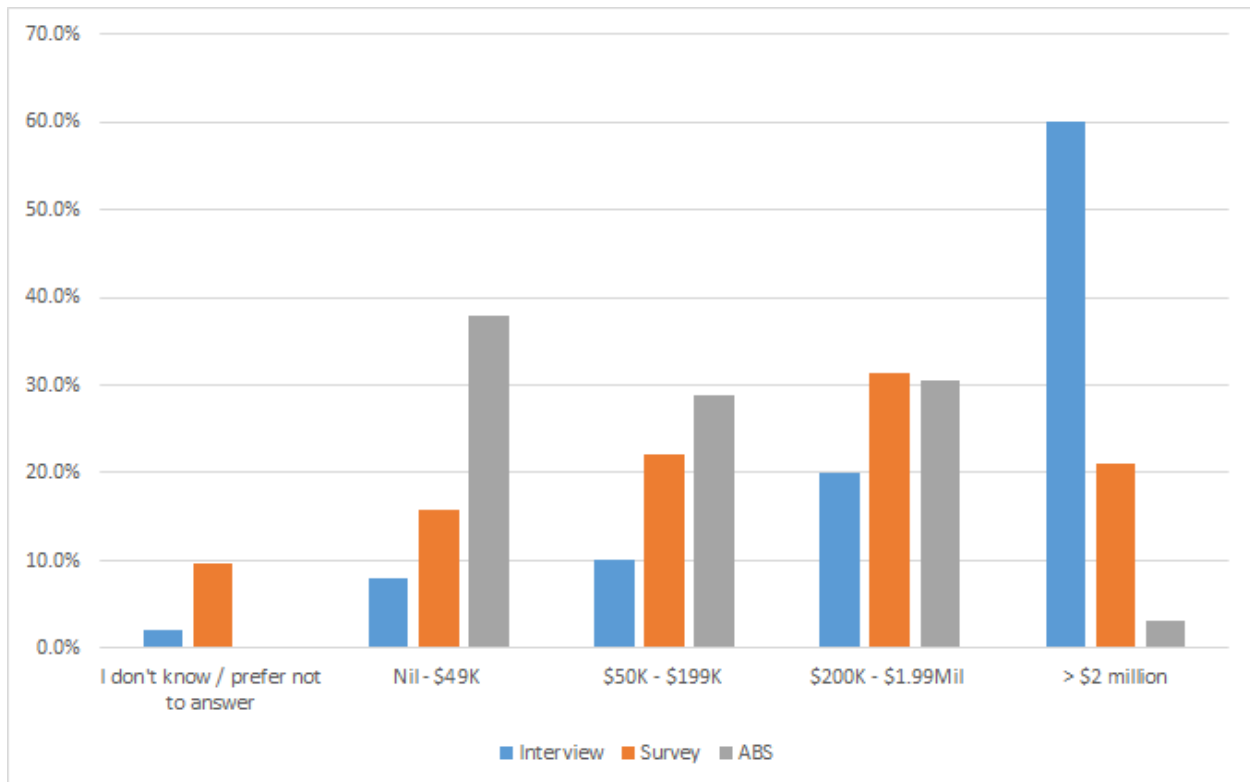


Figure 3.4.6.: Turnover across interview and survey data compared to ABS data on agricultural businesses operating at the start of the 2015-16 financial year.

Employees

The way businesses employ is recorded in fairly coarse terms by the ABS through census data. Comparing these data to survey and interview responses reveals that both are skewed to underrepresent smaller, non-employing businesses and to over-represent larger businesses, consistent with turnover data, outlined above.

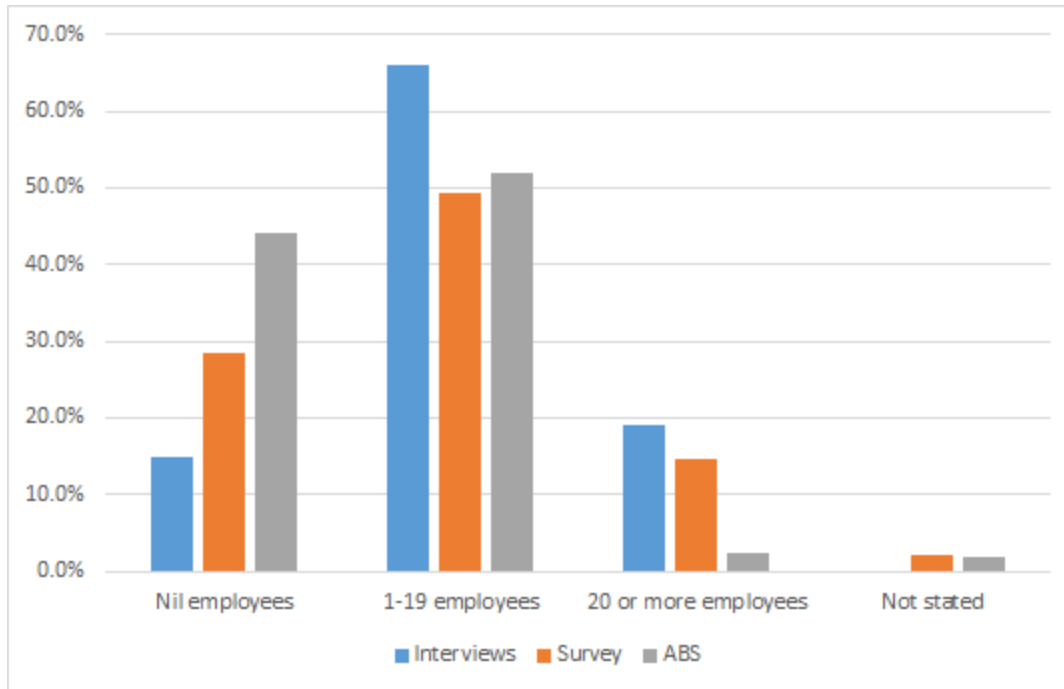


Figure 3.4.7.: Interview and survey data compared to ABS data (2011 Census) on employee numbers in agricultural businesses in Tasmania.

Sectors and Market Segments

The focus across farming and food manufacturing in the interviews was reflected in the case study areas, seven of which (70 participants) focused on farming, and 3 (30 participants) on food manufacturing (see Figure 3.3.1.). In the survey, 78% of respondents were in farming and food production, 9% in processing and 13% indicated that their businesses did both.

The interviews and survey data have good representation from across agricultural sectors. For the interviews this was pre-determined by the recruitment process, while the survey data indicate that respondents are well represented across the major areas of production (Figure 3.4.8., compare with Figure 2.2.1.).

Across the interview participants, 103 distinct products were stated as being part of their enterprise mix. These products were categorised into commodity, niche and boutique market types by the interviewer on the basis of the definitions of these terms used in this research. This process highlighted that there are clear differences across these segments, however attributes of products often make categorisation difficult and reflect that these segments represent a continuum, rather than absolutely discrete classes.

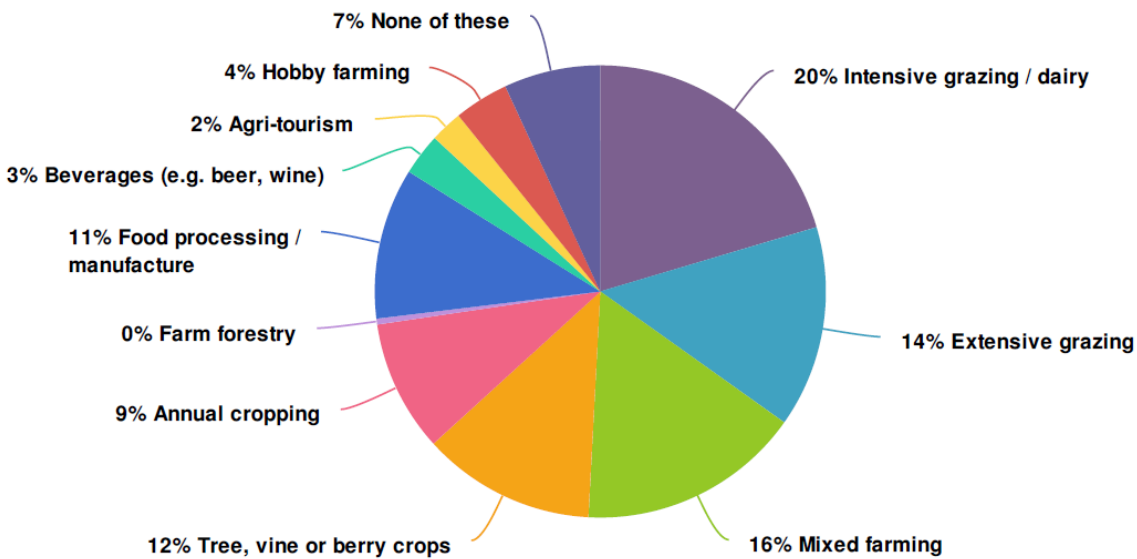


Figure 3.4.8.: Survey respondents' main 'business or work' (n=630).

Table 3.4.1.: Examples of products made by interviewees' businesses in different market segments.

Commodity	Niche	Boutique
Beef cattle	Varieties of lawn	Cellar door
Fat Lambs	Pinot Noir	Farm stay
Milk	Hops for craft beer market	Handcrafted cheese
Wool	Processed berries	Elderflower products
Eggs	Race horses	Craft cider
Pears	Specialty grains for bakers	handmade yoghurt
Vegetables (fresh)	Frozen fruit	Artisanal beer and cider
Vegetable (for processing)	Lamb Pies	Native pepper products
French fries	Whiskey	Specialty mushrooms
Cheese	Specialised smallgoods	Superfine wool for co-branded suits
Livestock	Honey	Truffles
Vegetable seed	Blueberries	Gourmet olive oil

It was also clear that individual businesses commonly produced multiple products across different segments. Figure 3.4.9. depicts the tendency of commodity producers to stick to commodities, and niche producers to stick to niche production, but also highlights the prevalence of commodity production (usually meat) as an element of many businesses with a primary focus on niche and boutique products.

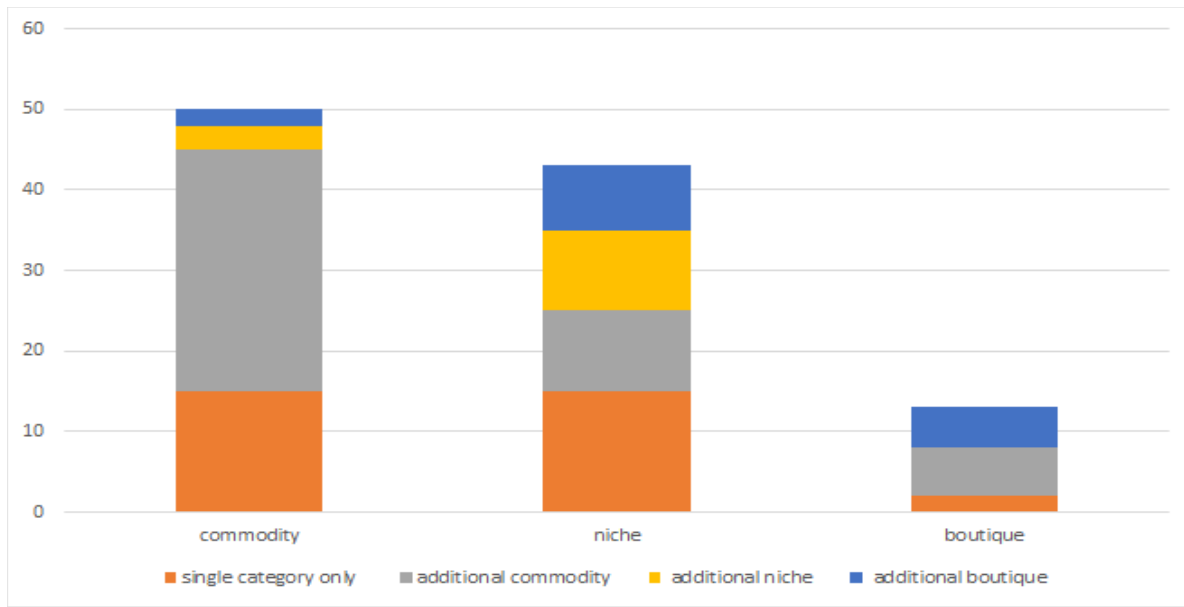


Figure 3.4.9.: Interviewees often produced multiple products and sold into different markets. The orange in the graphs represent the number of participants who produced a single product type. No matter the market for their largest product line, participants often also produced a commodity product as well (usually meat). Niche producers were more likely to produce multiple niche products.

In the survey, respondents self-identified the segment or segments that they sold their products into. Of the 630 respondents, 56 did not select any category and 113 selected more than one segment. Of the 461 remaining, 238 identified as commodity producers/processors, 97 as boutique, and 126 as niche. Taking these single segment groups, Figure 3.4.10. indicates how segment identification was split across sectors, with: 1) commodity production dominating in intensive and extensive grazing and mixed farming; 2) high proportions of people in perennial horticulture, food processing identifying as niche producers, and; 3) boutique production dominating agritourism, beverages and hobby farming. Figure 3.4.11. shows the proportion of each segment in different turnover categories. It indicates that commodity and niche producers tended to have a similar (normal) distribution around an average turnover of between \$200,000 and \$2 million per annum. Boutique businesses tended to have a much smaller turnover with the modal value being in nil-\$49,000 per annum.

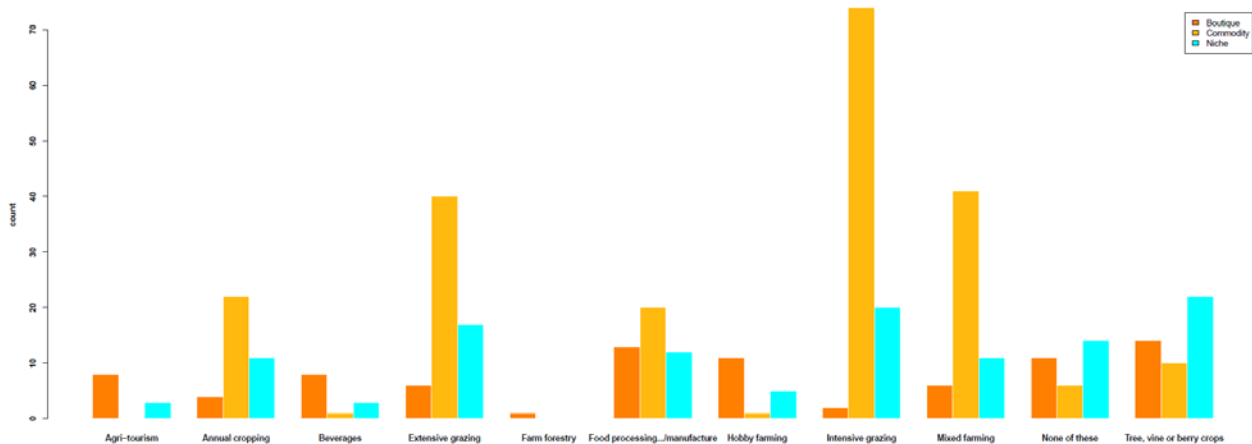


Figure 3.4.10.: Main 'business or work' (sectors) in categories of market segment (commodity, niche, boutique) for all single segment.

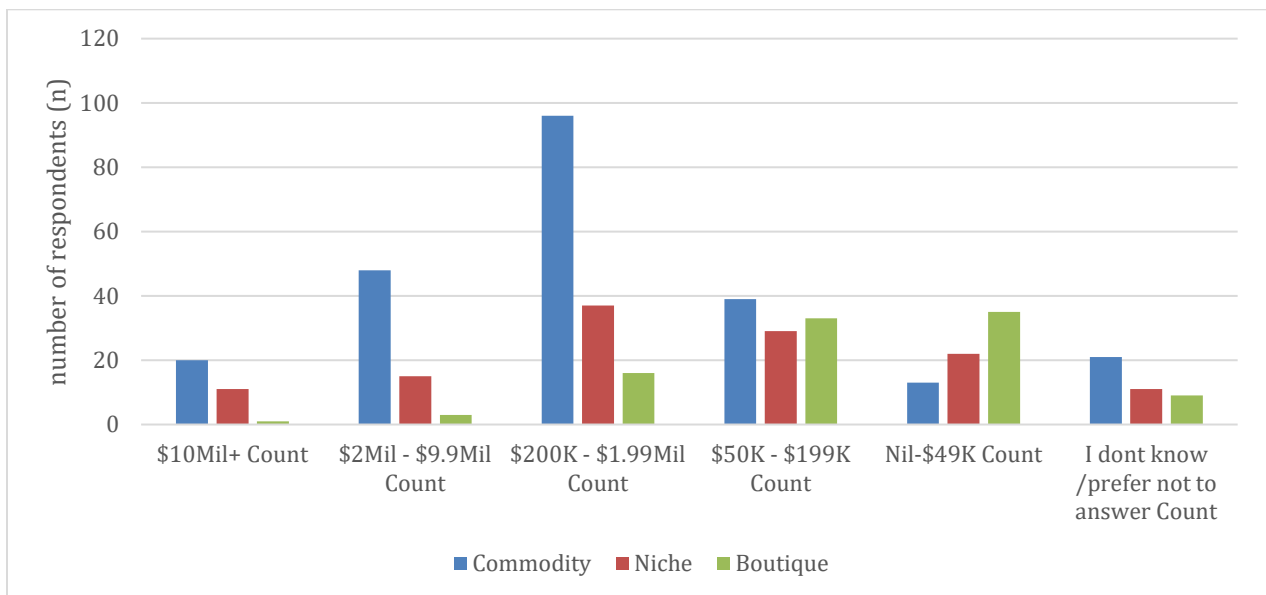


Figure 3.4.11.: Survey respondents identifying with a single niche (n=461) compared across niches on the basis of turnover.

3.5. Project monitoring and evaluation

The purpose of monitoring and evaluation (M&E) for this project was to identify, assess and describe the immediate project outcomes. Project logic and theory of change (Appendix 6) were used to describe the pathway to outcomes and to help focus the project M&E. The complete plan for project M&E is available upon request. A separate evaluation report will be completed after the final engagement activities which will follow from the release of this report.

During the project, the team monitored who engaged with this project, for what purpose, and how they used, or intend to use, the project outputs. The project team also dedicated time to periodic reflection using an [ORID technique](#) - a facilitated group process - to ensure continual improvement in the research process and for more effective teamwork.

Much of the research data collected also served as evaluation data. Summative evaluation will be achieved by reporting against the key evaluation questions (Appendix 7) and feedback from TIA's Leadership Team and key stakeholders on this final report.

At a larger scale, longitudinal use of the survey instrument or a smaller sample of interviewees that cover the cross-section of perspectives could be used to track changes in producers and processors with regard to their long-term goals, motivations, drivers, decisions and actions, constraints, community connections and how businesses are preparing for the future. This sort of recommendation will be further explored in the final evaluation report.

4. Results and analysis

Much of this chapter focusses on descriptive analysis of the qualitative interview data, which is necessarily lengthy, because the data are people's statements. We include some limited analysis of the survey data to suggest where patterns and observations in the interview analysis are indicated or countered by survey data.

4.1. Goals and motivation

This section firstly highlights long-term goals and then motivations for achieving these as they were articulated by participants; respectively, what people want to achieve and why. Goals and underlying motivations are drivers for change in agricultural and food sectors. They are manifestations of values at the level of a business, family and/or an individual. Put another way, goals and motivations are expressions of what people consider most important.

4.1.1. Long-term goals

The survey items reflect a preliminary analysis of interview data, which identified a series of goals (Figure 4.1.1.) that can, in preliminary terms be considered as social, economic and environmental items. These goals are not surprising when compared to other studies in Australia and elsewhere (e.g. Mayberry et al. 2005, Morrison et al. 2012, Pannell et al. 2006, Vanclay 2004). Figure 4.1.1. highlights the strong coherence around goals, with the majority of all survey respondents suggesting all goals were either important or very important. Further analysis of significant differences among demographic cohorts is included occasionally throughout this section, where it provides useful insight into larger scale patterns³.

³ Because of the skewed responses, goal responses are split into two groups for testing significance of differences: 1) those who suggested a goal was very important, and; 2) all other responses grouped together. This analysis indicates where cohort (e.g. women) were significantly more likely than another cohort (e.g. men) at 99% confidence (signified by $p < 0.01$) to consider a goal as very important. However, these differences were relatively small.

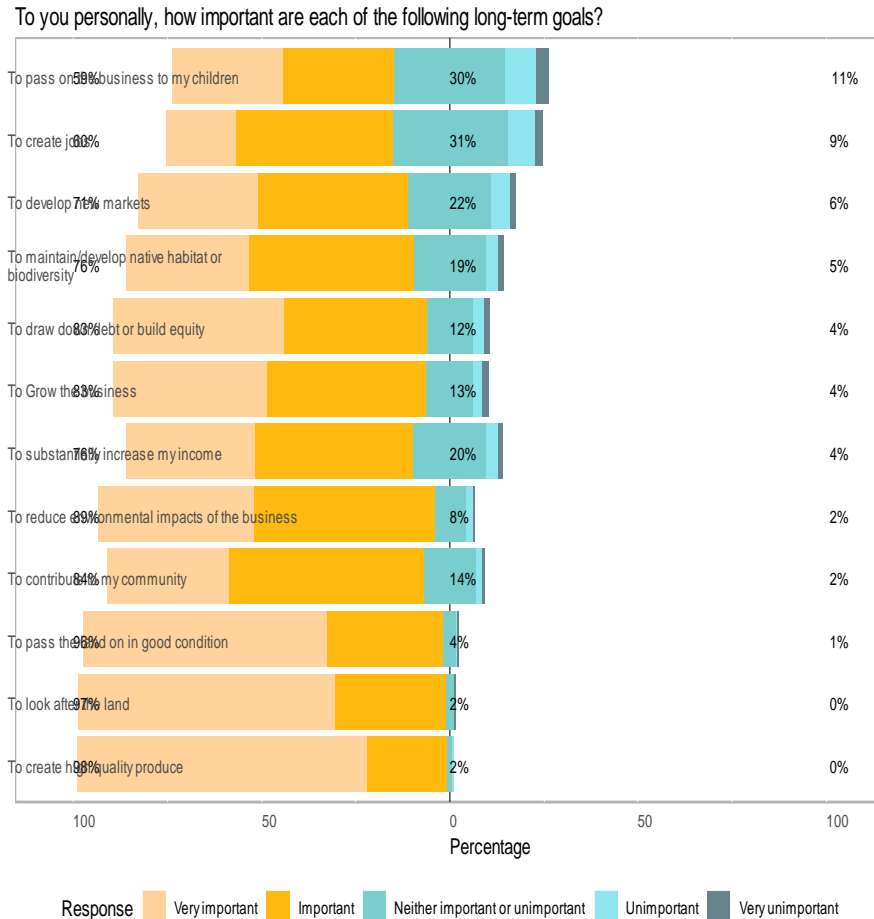


Figure 4.1.1.: Distribution of likely responses to survey question “to you personally, how important are each of the following long-term goals?” Percentages represent the proportion of respondents who indicated the goal was ‘very important’ or ‘important’ (left), ‘neither important or unimportant’ (middle); or ‘unimportant’ or ‘very unimportant’ (right). Responses from whole sample (n=630).

While the survey data suggest a strong coherence of goals, interview participants talked about economic, social and environmental goals and their fundamental motivations in diverse ways. Firstly, we highlight two key points from the qualitative analysis that should be considered in viewing the later detailed analysis of economic, social and environmental goals:

1. Goals tend to be integrated.
2. Goals are talked about as both means to an end and ends in themselves.

Goals Tend to be Integrated

Coherence in the survey data is consistent with the interviews in which people expressed linked social, economic and environmental goals. The goals of staying viable, being profitable, growing the business, for example, are often linked to looking after the land, maintaining happy staff and

other generic goals. Among family-run businesses goals were often expressed, in a generic way, as principles of action.

“... [T]he big overarching goal is obviously to produce... What is it? The people, the profit and the planet kind of thing” (CG38).

Some went further to suggest a sequence of priority, that tended to start with family level goals such as educating children, having enough to retire on, or being in a position to pass on the family farm.

“[For me farming] starts with lifestyle and what you want for your life, and economics comes later. But because you've established a farm lifestyle and you've set your goals based on that lifestyle, what you're producing from that property resonates with that, and therefore, we can attract a premium price” (RA04).

Providing more detailed accounts, some farmers offered insights into how the systems of farms, businesses, land and succession are integrated.

“I guess my goals largely revolve around being a caretaker for the land, although I don't actually own the land. The land is in a trust of which I hope at some stage, the beneficiaries of the trust may become my children. I don't have any children yet, but that's my plan. A lot of my goals revolve around farming the land that I have available to me sustainably, improving its carrying capacity, making it more sustainable as a business, and hopefully being able to give it to the generation in a better financial position, more aesthetics, more sustainable, and more user-friendly, maybe, so to speak” (CG33).

In this quote the land is the foundation of an emerging family business. Care for the land is presented as the root of social and economic success. Narratives that suggest land is the basis of success are reflected in the very high importance given to related 'environmental' items in the survey. Such narratives were common in many interviews. However, a key difference is notable between the narratives of family farmers and those of managers in more corporate businesses. Family farmers tend to include issues related to place, aesthetics and history as part of this lineage. There is not only the utilitarian view that looking after the land is necessary for economic success, but a commitment to place-based aspects.

Among corporate managers, similar goals may be sought in environmental terms, but there was commonly a different construction of reasons for achieving those ends. Intent was more frequently related as achieving a 'balance' between goals, and managers in corporate organisations linked environmental and other goals together in more instrumental ways:

“So, we have a very long rotation. And so we're always balancing up this view of: we need to look after the land, and try and be environmentally responsible, socially environmentally responsible, keep your license... Your social license” (DK03).

The ways goals are integrated manifest differently across the case study areas. Some aspects of these differences are discussed further in Section 4.1.2., as they reflect differing motivations.

Goals can be Expressed as a Means to an End, or an End in Themselves

While goals tend to be integrated and spoken about in ways that link the social, economic and environmental aspects, there were also relatively consistent ways of articulating them.

Many owners of family-run businesses talked about financial goals as a means to social and environmental ends. Conversely, people managing operations for larger corporations tended to talk about economic outcomes as the primary business goal, and environmental and especially social goals as a means to economic ends.

Economic Goals as a Means to Social and Environmental Ends

For larger family farming and food businesses economic goals tended to be described as strategies for achieving more complex social goals. Typically, economic goals such as maintaining or increasing profitability were described as means of surviving or growing in order to be able to pass the business on as a going concern or a viable future for the next generation: "... it's gotta be profitable otherwise we won't be here ... when you leave at 60-ish ... you like to leave it in a better state than what it was" (DK05).

While the ultimate goals relating to succession tend to predominate in a family farm and, to a lesser extent, family food businesses, in some cases economic strategies were a means of shifting the business to reduce work, or be more aligned with lifestyle and other social goals. Economic strategies were also often expressed as a means of achieving more community-oriented goals, such as building strong businesses that could provide local jobs, support skills development, provide people with experiences of agriculture and greater understanding of it, and test and develop new technologies, products or processes. A typical example of such narratives highlights how successful economic strategies allow people to achieve more social and environmental goals that have greater public benefits.

"There's lots of things that we are doing to be good social and environmental stewards. But I think really long term, that's part of running our business. I think the ultimate goal to be able to continue doing all of those things is that economic sustainability aspect" (PL01).

Interestingly, the tendency towards community-oriented goals was distinctly more common in sectors and geographical areas that were oriented to local consumption. We explore possible reasons for this in Section 4.1.2.

Finally, environmental end goals were commonly tied with ongoing business viability and only very occasionally highlighted as the ultimate goal of the business. The example in Box 4.1. in the section below on environmental goals, highlights how maintaining the ecological values of a

particular farm became a primary objective within the business, which ended up motivating action across the business to drive quality, branding, and operational aspects of the business.

Social Actions as a Means to Economic Ends

Within larger businesses where employees must achieve economic, financial or productivity targets, social and environmental goals are more often discussed as means to economic ends. One participant described the importance of building relationships as the means to meet ambitious economic goals:

“We're constantly looking at the ways we work, and changing things as a team to meet our goals. Because we have some pretty big targets we have to meet every year in terms of volume. So we're always operationally looking at ways we can do things better and more efficiently, getting more for less, working with our growers to do that. So I would say as a business, and me personally ... I think we could be really proud of the way we deal with our grower base and our relationships” (CG19).

A slightly more detailed example came from a participant from a commodity processing company, who talked about providing services to farmers as a means of differentiating their company from others and ensuring security of supply.

“I guess this new model I was talking about where we have support services available. That's why we're doing it, because there's so much competition with the processors and often one pays a milk price and the other one pays a bit higher and then it goes like this, and you just pay a little bit more, so how do you distinguish yourself in a competitive market? And that's probably having the support services as well” (CG52).

More critical perspectives on these arrangements came from smaller players who described some of the contractual arrangements between larger players and (particularly) their suppliers. Where larger players commonly talked about the value of their relationships with growers, smaller players criticised inequitable contracts and other institutional arrangements, emphasising the need to get the settings right between players across supply and value chains. One small processor in the annual cropping sector said that such arrangements were key to “an equitable system where the growers are doing better than what they probably have, and we still do well” (PL10). This person went on to say: “no industry will grow to its potential until you've got those basic things in place ... we've got ... the right level of highly skilled growers, water availability, all that sort of stuff” (PL10).

These quotes and many others point to an abiding commitment to Tasmania and its agrifood sector among people working in corporate food processing businesses:

“At the end of the day, in black and white terms, we contract [growers] to deliver potatoes to the front gate. How they do it is entirely up to them. That's very much the black and white business model. But reality is, is that the world doesn't operate like

that. When we're on farm and having those interactive discussions and stuff, quite often it's observation that you are seeing, rather than necessarily the one to one conversations about these things ... you build up relationships of rapport and everyone is different" (PL16).

While such individuals see clear lines of accountability and strong relationships and friendships between themselves and their suppliers, they are also clear-eyed about the structural elements that make production of chips, milk powder, peas or other commodities geared to efficiency in a highly competitive global market. Some articulated the need to 'collaborate locally to compete globally'. Yet, across the sector the tension between corporate practices and families, places and communities was apparent:

"The [corporate] farming practices are all based on profit for the investor. They're not there for the reasons that we've spoken about for last 20 minutes. You know, for my children to come home, my brother's children to come home, and the wellbeing of the cow. There's obviously that involved, which is the guidelines that they've gotta follow. But it's just not done with the same passion. Do you know what I mean? ... I just think some of them are probably lacking a bit of love [chuckle], I think" (CG13).

From the broader set of interviews, we would argue that most people involved in the sector care deeply about the Tasmanian agrifood sector and its future; however, this was demonstrated in vastly different ways. The chuckle, after the word 'love' in the above quote appears to reflect a common level of caution, reluctance or complete avoidance of speaking about farming in emotional or lifestyle terms (cf. Watson 2016). People in the agrifood sector tend to be pragmatic about the imperatives of profit and the work needed to achieve it in the cost-price squeeze environment (reference) that is taken as a facet of being in the business. Few were nostalgic or talked in depth about their historical and family relationships with places, environments or even their local communities. But the sense of passion for farming, the work and the land was clearly evident in interviews.

Ultimately, getting to economic goals by social and environmental means may only have subtly different outcomes from getting to social and environmental goals by economic means, but these differences depend very much on a variety of other drivers. Large corporate entities appear to be currently very aware of the need to compete, not just in economic terms but through providing workplaces that attract and keep good staff, and through building and maintaining social license. The professionalisation and career opportunities associated with larger firms provide avenues by which Tasmanian agriculture can become more sustainable and profitable, and through which agribusinesses attract and keep skilled staff and adopt new technologies. Yet there is also potential that increasing professionalisation and scale of operations overrides some of the authentic connections to places and communities that has typified agriculture historically. In short, these different ways of rendering goals as means to ends contribute to different pathways in and for agriculture, to which we return to in Section 5.1.

Economic goals

Growth of enterprises and economic success was most commonly described as a strategy to stay in the game, or make the enterprise endure. Two distinct (but not discrete) strategies to achieve these goals can be summarised as increasing factor productivity or market differentiation: "... you either compete on price or you differentiate yourself" (PL11).

While these economic strategies interact, they are often described as being either focused on undifferentiated commodities or on niche products. The simple distinction is also a false one. Commodity producers and processors must maintain consistent quality, just as businesses in niche sectors must pay a lot of attention to efficiency. Yet there are different narratives around economic goals associated with these different market segments, as described below.

You Have to Grow to Stay Afloat

A pervasive narrative, among larger commodity producers and processors, particularly, takes the imperative of growth as one of scaling up, by increasing size and efficiency:

"I don't think there's gonna be many small farms left for my children's generation, and if we don't continue to expand we'll get left behind. And once you do, land's only gonna go one way, and once you get left behind it's impossible to catch up" (PL09).

"... we're not prepared to stand still, otherwise we'll get gobbled up" (CG32).

"... we just need to keep going, that's really ... That's our goal. We just keep doing what we're doing, we keep generating net worth. We have to be careful that we don't invest too much into depreciating assets that themselves don't have an innate high cash return" (CG14).

"40 years ago someone would have made a living off this little farm here. This 40 acres ... would have supported a whole family. Whereas now, I have 200 acres of high quality ground and irrigation, and it's 30% of my earnings. [chuckle] Yeah, it's an interesting, interesting space to be in" (CG51).

This expression of the imperative of growth as a means of keeping the family farm was common across most major agricultural sectors (cropping, extensive grazing, intensive grazing). It was less apparent in dairy, where people often talked about building the asset value of the enterprise for their own superannuation, with less concern for keeping the farm as a family asset. This, in part reflects the high potential rates of return on capital in dairy, relative to other farm sectors, and the fact that many dairy participants were the first generation on the parcel of land that they farm.

The people who espoused this narrative about the imperative for growth rarely discussed the larger drivers and structural conditions that make efficiency and scale such a critical imperative.

Where the structural conditions were discussed they were usually laid out simply and descriptively as something one had to adapt to. As one dairy farmer put it:

“... for the last three years has been an environment where cost of production has continuously gone up but yet what we get for our product has not, not in the same relation. That's another thing that's squeezing us really tight and making it not viable for a small man to operate by himself” (PL13).

Narratives of scaling up and efficiency are taken for granted in the sector and rarely examined in aggregate, as pathways or trajectories at sectoral and regional scale. A key point here, is that with increasing business size comes increasing complexity, the need for more diverse skills and capabilities within businesses (REF). These interviews identify how this shift underpins changing relationships within the sector. It suggests there may be decreasing reliance on external service providers as capability grows within organisations. Among larger businesses the management of people, budgets, agronomy, R&D, and many other aspects are covered:

“I think some of the bigger producers will buy a few more of the smaller ones out, because they've got all the infrastructure on hand. They've got all the IT on hand. They got everything on hand. And, they could probably make the smaller plot of land return a better return than that being just a one person show. And, I think that's got a lot... Going forward, that will be what we'll probably see in the next 10 years. The smaller holdings may be brought up by some of the larger ones, as time goes” (CG45).

Scale also changes how risk is seen and managed:

“We looked at growing hazelnuts for example, we weren't just gonna grow a hectare of hazelnuts we would have grown 200 hectares, so the risk factor is bigger. If you put a hectare in and it doesn't work, well, it's not the end of the world. But because of the scale we're at now and operating at, anything we do is going to be really, really big. So, it's quite high risk, so you tend to be getting a little bit more, maybe conservative. You stick to what you've been doing and just grow that” (CG46).

Such narratives suggest that capital accumulation can increase specialization in agriculture. This should not be read to imply that bigger businesses are all or even mostly sticking to a central focus. Successful businesses on a growth trajectory often appear to be expanding along supply chains, effectively reducing the number of input providers or customers, including processing and packaging activities as part of the business, and reducing the number of intermediaries in these chains by effectively occupying these positions.

“Most people have, around here, have a slight diversification to their business whether it be contracting in some way or trucks or harvesting or some other... I guess we've got that with the factory” (CG40).

“This business is capital hungry, extremely capital hungry. And every line we do is all unique in its own way. And it's all got its own swath of machinery and gear around it. You have to be very careful on where you're spending money, and what you're prioritising, and this whole how it all fits in the whole mix. One of these trucks costs half a million dollars” (CG42).

Scale of operations does not just change local or business-level risk profiles, it also changes the dynamics of sectors and regions in terms of their composition, labour force needs and succession. As one dairy farmer put it: “I sold the farm and my main cows for \$9 million. So your buyers are fairly limited as your scale gets bigger ... increasingly the buyers are bigger operators” (PL17). While corporatisation of the dairy sector is well known, there are clear shifts to company and trust structures in family businesses also, driven by the increasing size and complexity of these operations.

The transitions towards larger businesses (whether corporate or family run) in the sector has several important implications for the agrifood sector, in relation to succession, changing demands for RD&E, and the need for advanced training and industry development, all of which are discussed later (especially in Section 5.1.).

Where family businesses are growing, a personal challenge in that process can be stepping away from the reason they are on the farm or in the business in the first place. Several participants expressed a degree of frustration at the work that is entailed in running large complex businesses as a family farm.

“I'm hopeless at HR. God, I hate it. [laughter] But that's a lot of what I do now. Like, you know having to fire someone, and performance reviews, how do you do that? And how do you sit down with someone and talk about how they're going with their job and, you know, I'm not good at that” (CG46).

Right-Paced Rather than Rapid Growth

The common line of argument noted above that ‘you can't stay still’ was tempered by various self-imposed limits or constraints to growth, and reasons to grow slowly. A common narrative built on this idea of economic growth at the right pace; that is, not too fast. This preferred pace reflected a risk aversion and a need to retain control over the situation.

“So we're more about measured growth now and we're wanting to grow the business. I think you always... You gotta keep moving forward, you can't stay still. We're about getting more out of what we're actually doing and ensuring that we're as good as we can be at what we're doing and then building off that base, as opposed to increasing just for the sake of it. And picking and choosing and learning to say no” (CG18).

“I'll take the lower return, higher security, longer picture look at things than the get rich quick scheme. That's been my model, because I've started off basically with nothing. I've had to go with security, and it's taken longer to get there, but it's been all about risk

management for me. And I've taken plenty of risks. [chuckle] But that's been my model" (CG46).

"I'm not in a mad rush. Things happen steadily and slowly" (PL10).

Social goals

Social goals were the most prevalent and diverse goals among participants. In part this was because the category is large, and therefore includes diverse and often complex goals. Many businesses were described by participants as primarily oriented to supporting livelihoods. To a lesser extent they were also described as focused on supporting lifestyles for families or individuals and supporting more social outcomes through economic, career or other opportunities provided by the businesses they were working in. However, a much wider range of social goals were articulated than can be described in detail here. Briefly, these include goals around retirement, reducing workload to allow a focus on other things (especially in older participants), goals to attract younger people into agriculture or to help others in a community to improve mental or physical health (particularly among female participants), spending more time with family (especially among those with young children), among others. The focus of the analysis below reflects social goals that were prevalent, and that we think have important implications for the future of the Tasmanian agrifood sector. A key finding explored below is that these social goals sometimes extend well beyond the family, or the business to the region or sector, and thereby to a broad set of public benefits of particular relevance to government and RD&E, which has strong focus on areas of public good and market failure.

Family, Place and Business

For many participants, the primary goal of their work and lives was presented as a duty of custodianship that was a deep norm within their family. As just a couple of participants articulated:

"... from a very early age we all understood that that farm was something that gets handed... It's not someone's to own it, it gets handed down from one generation to the next. [...] That's always been very clear that that's not part of... So we have to think about the ways of making sure that we have a very sustainable life style around the farm. And that connection to place, when you've been on the same farm for six generations, is quite emotive" (CG11).

"... And I think that comes down to, being a family farm. I guess the worst thing you wanna do is go broke and lose what your parents or grandparents have built up" (PL09).

Such pervasive narratives have been well recognised in the rural social research in Australia and around the world, and their implications have been well documented for issues as diverse as mental health and farm suicide during drought, and landscape degradation (Leith 2009,

Stehlik 2005, Vanclay & Lawrence 1995). In these interviews it was also noted that the scale of businesses and changing social norms about intergenerational expectations meant that many farmers stressed that while they would like to see their children continue with farm businesses, they would not put pressure on them to take on the business. Interestingly, this potentially changing norm was sometimes compounded by the view that the farm businesses were often too big to pass on. For example, a mixed farmer who believed his teenaged children were unlikely to take over the successful farm business put it like this:

“When a farm gets really big with so many employees it's maybe harder for the next generation to come in and take over, than if you're just a little farmer carrying on” (CG29).

While this view presents an interesting consideration in changing succession environments, many younger farm managers who had taken over family businesses in recent years were very upbeat and optimistic about their role in continuing the family farm business. They often portrayed themselves (and were described by their peers) as highly capable managers in quite a complex business environment. They were also often well educated, with experience from diverse businesses, often from overseas. It may be that many family farms are being passed into safe hands, yet the challenges of succession in family farming are growing markedly.

It's About People

Across businesses, a goal that reverberated was the sense that running a successful agrifood business was about working with good, capable people; people committed to the business and to each other. As discussed in Section 4.3., this goal relates to differences in capacity constraints. Where it was expressed most strongly it was also linked to work in building and supporting strong teams.

“I was having a conversation internally here last week. I was saying the things that keep me awake of a night, it's not the quality of the [commodity product]. It's not the reliability of supply of potatoes. It's more around the social aspects of finding the right staff, training the right staff, keeping the right staff. Because at the end of the day, is that if we don't have the right staff or - it's very hard to run a business” (PL16).

“I think the one area of sustainability we probably haven't focused on that we need to now is staff sustainability or people sustainability. The business is so geared up now that it definitely takes its toll on me and the staff during the peak period” (CG33).

Goals about looking after staff and building capability were especially prevalent in larger businesses where professional managers saw this as a central activity within the business. In smaller operations, “dealing with staff” was sometimes talked about as a necessary but unwanted task.

Social License

Social license and the reputation of agriculture and food businesses was raised frequently in the interviews, often with respect to goals. According to Gunningham et al (2004) social license can be considered as demands and expectations that affect a business and emerge through the interactions of that business with various societal stakeholders. Yet for participants, it was not about their business per se, but the larger enterprise of agriculture or of a sector. Social license was often talked about in relation to one or more diverse issues, ranging from mulesing and other animal welfare issues, to water quality, good stewardship of land, and (although to a much lesser degree) the social welfare of farm workers. The goal of maintaining a social license is an ambiguous one. For a few participants, usually in large scale enterprises where animal welfare was a core focus, it was described principally in terms of staying out the media spotlight.

“We've gotta be very careful. Yeah. We deliberately keep a low profile because of that. That's the best way to tackle it, just keep out of the public eye. Yeah. We actually wish we were four or five kilometres away from the highway” (CG54).

This sort of narrative tended to be accompanied by stated commitments to keep up with standards and best practice, but to do so quietly.

An alternative and very different focus was expressed by some family farmers who saw it as a key part of their role to build greater public and consumer awareness of agriculture and (to a lesser degree) food manufacture. This was not expressed simply as education about the work farmers do but to give publics and consumers a sense that farmers care deeply for the land, their stock and various other concerns reported in the media and topics of public discussion.

“I just think people are getting more and more conscious about where their food comes from and what they're putting in their bodies and all that sort of stuff, and I think there's real value in being able to show people and educate people about what we actually do. There's a lot of bad press about farmers and the way they conduct themselves, I suppose, and to actually show people that we genuinely care about what we do, I think, will go a long way to helping educate people. And I also really worry about the younger generations coming through that they're so disconnected from where their food comes from, what animals do, how animals work, all that sort of stuff. I think it's a real problem that we're gonna face, probably this upcoming generation, but certainly the next generation as well” (PL03).

Goals to remedy challenges related to social license were usually not as clearly articulated as in the above quote. Nor was dealing with these issues considered a core part of people's business. There was, however, a clear and apparently growing concern that something needed to be done to address these issues. This sort of view reflected a larger concern among many participants about changing perceptions of agriculture, and demands upon on food and fibre systems in general to become accountable and transparent in new ways. These concerns, as in the above quote, were often expressed in terms of the growing distance between farms, food

production and consumption - especially within commodity markets. As one commodity grower put it: "... it just goes into the market and you don't even know who your customers are. You never see them" (CG03) . On the other side of the coin, among some small holders running vertically integrated businesses customers were seen as a central element of the business and a key role of some of these businesses was described as giving customers a sense of what agriculture and food are and can be.

"... [people visiting the farm] understand that in order for us to eat, something has to die, and to take that quite seriously. But also to understand that how much work goes into growing food and just to get people to start to think just a little bit. ... Some people come here and they just wanna have a good time ... That's great. But there's always a handful of people who are here 'cause they're really genuinely curious about where their food comes from" (RA06).

A challenge associated with this may be that the people who are engaging with the imaginations of consumers are presenting an agrarian idyll of food production at the very highest end of food markets, that is at odds with the economies of scale that are central to commodity production. While smaller niche producers are alert to customers' expectations, larger scale commodity operators have little incentive to make changes, as one manager in a large business suggested:

"It's definitely, I think people are aware of it, but people being people, if they can get away for it a bit longer and there's no rules that's patrolling it, they will" (PL13).

The Qualities of Quality

'Improving the quality' of products was the goal item most widely selected by survey respondents as either important or very important (98.3% of respondents).

While nearly everyone agrees quality is crucial, it was talked about very differently among interview participants. In commodity markets, the quality of Tasmanian produce was a mark of pride, often described as an industry standard that was maintained through institutions such as contracts and the (attempted) creation of standard and accepted practices:

"We're high quality, but we're higher cost. We are some of the most expensive French fries in the world. Trying to get growers, in the broader sense of industry, to understand that, rather than it just sounds like poor old me, the processors are just trying to screw us down for another dollar, is always a challenge" (PL16).

Niche markets for products that are not substantially differentiated, such as high-end beef products were often talked about as requiring more attention to quality of the specific product at a standard, than the maximisation of production.

"... there is a sort of an inverse relationship between the amount you can produce and the quality that it is sometimes. So we can't just keep adding more cattle and expecting

it to be the same product at the end. As much of it as we can, without compromising on quality, I suppose” (CG49).

In many businesses the above quote is a maxim of any focus on quality. In niche and premium agrifood businesses, though, talk about quality came over with a different sort of conviction. While minimum standards are still apparent, quality tended to be the primary focus differentiating one’s product, brand and business, around which compromises were described as a route to losing brand and consumer value.

“We’ve gotta be... Seem to be a cut above the rest, I guess, in terms of quality, in visual and all that sort of stuff.”

“A lot of the bakers are actually looking not for standard [grain qualities], they're looking for the regional differences” (CG34).

While always underpinned by qualities of safety, consistency, and flavour, agrifood qualities range widely, from provenance to stories about local history, from management practices to environmental services, and from endorsement by celebrity chefs to experience of places. As a generalisation, businesses operating in larger niche markets, especially with distant customers, and within competitive global markets (e.g. hops, superfine wool, seed), tended to be more clearly focused on specific qualities of products themselves, whereas people in more local markets, or those producing final high-end products, had a wider focus on a range of qualities that were less tangible. In agritourism, for example, everything orients around the experience of consumers:

“You don't want it to grow so much that you ruin the experience that people have when they come. So at the moment people can come and they feel pretty much like they are kind of just there with the family. There's not heaps of other people around. There might be some other guests in the other property or whatever, but they don't really... They still get a sense of the whole place as their playground. I think you can get to a point where if you start to go too much...” (CG11).

In vertically integrated businesses with high-end products, that experience may be targeted to a specific type of person:

“So everything at [this business] has been designed for women. And women make a judgement on a place from the minute they drive in ... If you drive in, and the place is orderly and neat and tidy and colourful, then they're gonna have more confidence in the kitchen and the food” (CG15).

Along with numerous other examples, the above quotes point to diverse qualities that businesses seek to achieve. While these are market oriented, they are often tightly linked to identities and character of customers and a fundamental motivation of the businesses to produce something excellent, special or unique.

Environmental goals

Environmental goals, while still frequently discussed, were the least widely talked about, and the least clearly articulated. There were some notable exceptions to this, which we return later in this section. Despite this, in the survey, environmental goals were rated as 'important' or 'very important' at very high rates, with little significant difference in this result across demographic or business groups. The key group differences among survey respondents was that women were significantly more likely to rate 'looking after the land' and 'reducing environmental impacts' as very important compared to men, and non-employing businesses were more likely than others to rate 'maintain habitat/ biodiversity' highly than all other businesses ($P > 0.05$). This section unpacks some of the complexity of environmental goals in the Tasmanian agrifood sector, via the major narratives associated with them.

Custodianship as a Generic Environmental Goal

While they are often not well articulated, they run deeply through the goals of intergenerational succession that is common across family farmers, who make up the large majority of the farming population and the interviewees (REFS). Passing the land on in better condition, having a farm that is sustainable across generations, and looking after land are more than figures of speech. They are central to the identity of many farmers.

"Anyone that grows up on the land and has a family farm or even a farm that hasn't been in the family for a long time, will have an affinity for the land, a sense of place, and a sense of custodianship" (CG03).

"You're gonna run out of ground very quickly if you're not sustainable, if your practice is not sustainable" (RW03).

This sort of generic narrative around custodianship was reflected in goals in corporate agricultural enterprises, although more commonly in terms of maintaining a sustainable asset base and a social license, and often with a stronger appeal to scientific understanding of viable long-term practices.

"I guess the more intensive we get to produce more on the same amount of land, the technology and the science that goes in that to make sure we keep that equilibrium, that healthy balance, becomes more important and we need to use that. I mean I can pour 500, 600 kilos of urea on my paddocks and I'll grow an awful lot of grass year one and two but it's going to go out of balance, in year three and four I'm going to grow nothing. So if I don't have that science to tell me you're making your soil too acid, we've got a problem" (PL13).

Such perspectives lean towards common definitions of sustainability (cf. Brundtland et al. 1987) that primarily reflect use values of land over the long-term, with a commitment to intergenerational benefits of doing so.

“Looking after the land. And putting back into it what you're taking out. So that you ensure that it remains profitable and productive for years to come and for generations to come” (CG17).

Many participants expressed custodianship pragmatically as a balancing process to gradually improve aspects of a property or business, with many larger, more established businesses indicating that they had much of this ongoing work in hand:

“Not clearing trees and not selling off little blocks here and there, an encroachment of smaller house blocks and things. They're opportunity costs. And then the direct costs, like managing weeds” (CG03).

“Obviously you need a healthy country to grow a healthy stock. You can't just use and abuse it” (CG27).

“We put the pivot into the paddock and you leave a grass headland, and then you put the trees in the corner, which is very good. So they're joining up fairly well. That's working well, and it's 10 years before you see any shelter, but we're doing it every year” (CG32).

Smaller businesses sometimes expressed these goals differently as something to work towards, that required greater profitability in the future:

“I would really like, environmentally, to see the business profitable enough that we actually can address some things like gorse, [and] woody weeds” (RA01).

Environmental Goals as a Growing Imperative

While generic commitments to environmental goals in terms of ‘looking after the land’ pervade small and large businesses, there were also widely expressed views that these goals are becoming more important to agriculture, as part of the operation of businesses. Two standout drivers of this change were intensification (e.g. PL13 quote above) and changing consumer preferences.

“Consumers are pretty conscious these days and then we're selling a clean and green image in Tassie ... but then you're really not doing much about... Farmers keep clearing land and letting stock graze ... in natural, in bush areas” (DK13).

Changing consumer preferences was spoken about as a hope that the market could and should cover the costs of good environmental management, but also something that was considered doubtful. Businesses from which individuals saw this avenue as having substantial potential tended to be organic farmers, small-scale niche producers and processors, or others with a commitment to regenerative agriculture.

“If we can shape our food systems, so that they are regenerative, they're rebuilding natural capital, they're rebuilding soil, they're producing food that is genuinely clean and green, then we have a massive future, a massive, massive future” (RA04).

Environmental Goals as Business or Societal Goals

An ongoing tension in agriculture and food production is summarised in two questions that were implicit in many discussions of environmental goals. These questions are 1) who accrues the benefits of achieving environmental goals? and; 2) who pays for them? While the above generic goals suggest forms of environmental management with long-term benefits to the farm businesses, other levels or types of environmental goals that provide wider societal benefits were the concern of some, largely because they wanted to provide such benefits, but were not adequately compensated for these efforts.

“We provide a number of ecosystem services, but the community hasn't got to the point of saying, this is valuable... If I re-veg my hilltops and make sure there's no erosion going down the river so that the water's clean and all that sort of stuff, I'm expected to do that” (PL11).

Societal expectations of the agrifood sector, in this quote and others like it, reflect well documented tensions around commitments of Australian governments not to directly subsidise environmental outcomes (e.g. Lockie & Higgins 2010, Vanclay & Lawrence 1995). Participants also acknowledged the challenges of internalising the real cost of environmental management within markets.

A small but widely varied group of business managers expressed environmental goals that were deeply rooted in their own values, and that differed markedly from solely instrumental goals. An example is the conservation of biodiversity (see Box 4.1.). Such goals were highly variable and based on identities and values explored in the next section. They resist easy categorisation. Some large businesses described such goals as based on their own or family values, while some small niche businesses considered these goals as foundational principles on which they would not compromise. For others they were expressed as hobbies or passions. However, the majority of participants talked about environmental management in terms of its long-term benefit to their business. Some participants expressed concern that both public expectations and customer driven compliance are increasing the costs of environmental management without covering the costs, thereby adding to the cost-price squeeze.

4.1.2. Motivations (why?)

In this section we briefly explore the articulation of reasons for the various goals in the previous section. This section draws on the well-developed Self-Determination Theory (SDT) as outlined in Section 3.2.1., and especially its claim that motivations are driven by the three 'basic human

Box 4.1: Habitat and biodiversity conservation as a core goal

"It's highly likely that the natural values retained on *Kingston* make this property a place of national significance."

Conservation of biodiversity was not widely stated as a major long-term goal in this study, however it was a central concern for a small cohort of participants, including Simon Cameron.

Simon Cameron oversees the management of his family's farm *Kingston* in the Northern Midlands.

The property is comprised of native lowland grasslands and natural conservation is a top priority.

Simon's farm was visited by conservation scientists from the University of Tasmania in the 1990s. A natural values study followed. He recalls them referring to the property as a place of national significance.

"When you get confronted with that, you've really got to stop and think, which way do I go? What do I do?" Simon said.

Although he grew up on the land, Simon's profession was not in agriculture and his work had taken him and his family to mainland Australia. When his father passed away he was prepared to continue his father's conservative farm management but with fresh eyes and a professional manager.

The farm had to pay for itself as a private conservation reserve and superfine wool growing business. The quality of the wool produced off the property's merino flock is known as super-spinners: the finest quality wool sourced by the best Italian mills.

Building on this quality, Simon connected with an Australian menswear retailer – MJ Bale – which now uses his wool for a special line of suits: *The Kingston Collection*.

The business partnership was somewhat serendipitous, but the focus on the customer had been on Simon's mind for a long time. He wanted to develop a relationship not just with the buyer of his wool, but with the craftspeople who mill it, those who turn it into a special product, and even those who wear it.

needs': autonomy, relatedness, and competence. While SDT's precursors suggest that people are motivated mainly by incentives and disincentives, SDT has established robust evidence supporting the proposition that such extrinsic motivators are often less powerful than strategies which enhance the intrinsic motivators of autonomy, relatedness and competence. As detailed in Section 4.1.1., when it comes to long term goals, economic outcomes are necessary to survival of businesses, so making money is a critical motivating factor. Some participants expressed their motivations in simple economic terms, such as older people whose primary motivation was economic security in retirement. Yet the large majority expressed fundamental drivers that cohere well with the three 'basic human needs' of SDT, with some important caveats and additional considerations, explored at the end of this section. Participants commonly highlighted how these motivations are very important enablers. These are therefore not repeated in Section 4.3. An understanding of motivations can help to inform the practice and focus on RD&E and other policy interventions, by ensuring that they support and are attuned to specific forms of autonomy, relatedness and competence, and well as other drivers of motivation (Deci & Ryan 2000).

Autonomy

Participants talked about autonomy as a motivator in ways that go beyond ideas that autonomy reflects a simple sort of freedom, or self-determination. Rather they provide deeper insight into how people constitute their freedoms. Two distinct types of autonomy were identified from participants' accounts of their motivations: 'autonomy to' and 'autonomy from'.

Autonomy to:

Autonomy is often cited as key intrinsic motivation in all areas of work and life. It has significant and particular currency in agriculture. Howden & Vanclay (2000) for instance, highlight how 'being my own boss' was one of the most widely used scripts among farmers. This sense of being able to choose what to do and when, has often been considered a key drawcard of the farming life (Gasson 1973), and a motivator for the relative social isolation and hard work involved in agriculture. This version of 'autonomy to' identifies autonomy in positive terms, as the freedom to do specific things. This theme was evident in several interviews:

"You kind of live or die by what you've produced, whereas in the public service you're a cog in a much bigger wheel" (CG21).

"I like the flexibility of farming. Sometimes there are jobs you have to do, that don't stop you, but you can... I can work later one night and have the morning off" CG35

"For me, if the weather's right, can I still go fishing? And if that's possible, well, I know it's a good decision. [chuckle]" (PL14).

"We're just out here in the middle of nowhere, and if we want to do something, we just do it. And we use our own brains to work out..." (CG10).

As these quotes and many others like them indicate, a sense of autonomy, within constraints, is about choice and freedom to choose. Many participants expressed the value of having options, and highlighted the necessity of giving employees such choice. A typical expression from a senior manager was:

“... we give [our managers] free autonomy to run those enterprises or divisions. ... to make those changes and push for changes to strive to better the bottom line” (CG42).

Central to the idea of ‘autonomy to’ is that individuals have a defined remit to achieve their goals whether this is within their business, department, farm or production processes. Thus, large-scale farmers often expressed a strong motivation to grow excellent crops as well and efficiently as possible, but were uninterested in exploring or developing markets for them. Similarly, large processing companies have contracts with growers, but the farmer has autonomy to grow the crop as they see fit, so long as it meets the conditions of the contract. Thus ‘autonomy to’ is typified as freedom within specific roles, structures or constraints. Such autonomy has long been understood as a fundamental driver of decisions on family farms where managers are ‘their own boss’. This ideal was espoused, especially by owner-managers.

Autonomy From:

A different script of autonomy might be called ‘autonomy from’. Here participants talked about their reasons for pursuing autonomy by removing themselves from arrangements that limited their ‘autonomy to’ or attempted to change those arrangements that hindered autonomy (Stock et al. 2014). This form of autonomy often came up in interviews with smaller family farmers or food/beverage business owners. In one instance, ‘autonomy from’ was expressed as reluctance to take on external investment, in order to maintain control of the speed and direction of change in their business.

“I’ve had investors come to me - if I wanted to scale up really quickly, I had that opportunity. I didn’t choose that opportunity, because it wasn’t something - it wasn’t pressure I wanted to put on myself; I wanted to do it at my speed, I didn’t want to be responsible for other people when there’s failures - I wanted to keep that stress level down in my life” (PL07).

Another version of this form of ‘autonomy from’ related to having greater choice within supply or value chains, often accompanied by a critique of the way power is organised in many such chains. This form was evident in interviews with smaller dairy farmers and livestock producers, especially where businesses were selling into niche markets, but also among smaller manufacturing businesses. As one relatively small-scale processor articulated:

“Because the farmer has been screwed so much, it’s allowed me to exist. I can come in and I can give them more money [for their product] and they want me around. The farmers want me around. The big guys don’t want me around” (CG48).

Another presented a detailed picture of difficult negotiations and concluded that: "There's a lot of farmers, a lot of producers have gone broke over supplying just to [name of supermarket]" (RA08). A small minority of larger farmers explicitly suggested a similar perspective:

"There's too many corporates now that have got into the dairy industry and cut it to the bone ... I think the way to go is to do a bit of value adding, build a cheese factory, process it, maybe send some overseas. Who knows? We'll have to just start slowly and work up to it" (CG13).

'Autonomy from' also surfaces as pushing back against the expectations placed on farming businesses. This is an aspect of autonomy that was often expressed as a complaint rather than a motivation for action.

"It's freedom, it's independence, it's the opportunity to shape your own life and go, "No I'm not going to accept what my culture tells me how I'm going to live. I've got some ideas of my own." And that's farming, is basically a way of enabling that expression, I think. I think that for most of us it's pretty big" (DK10)

These scripts of 'autonomy from' to some degree suggest forms of caution and conservatism that may well be barriers to overall expansion of the sector, but important contributors to individual wellbeing in the sector. They reflect particular ways of managing risk, and maintaining control which are pervasive, especially in family businesses.

Relatedness

Motivations under the banner of 'relatedness' in social psychology focus on relationships among humans that make one feel part of something larger than oneself. This idea is reflected in statements among participants such as: "This industry is nothing about machinery or the farms, it's all about the people" (CG42). Relatedness was conveyed in interviews in ways that we suggest go beyond human relationships, to include relations between the agrifood sector and the wider society, with groups, and with places. This section briefly describes those forms of relatedness, and in doing so provides material for considering who drives the agrifood sector, and how.

Relatedness to Family

Firstly, the motivation to pass the land onto the next generation - a goal described earlier - was expressed by one participant as giving you a big picture context to what you are doing and motivating you to try hard to build the family enterprise and have that legacy within the family.

Interviewer: So why do you think it's important for you to keep the farm going and be able to pass it on?

Participant: It would be a great opportunity, it gives you something to work for. It's not just daily income. You got a big picture. I think if it wasn't for that, you'd probably get a

bit stuck in your way. Yeah. 'Cause I'm hoping to build it and have something to hand down if they want it, it keeps you on your toes. You're always looking for new ways, better ways" (CG27).

Relatedness to Team

Notions of being part of a team, and the importance of that group, were expressed clearly by participants who prioritised looking after staff and creating strong and effective teams.

"If employees are happy and then they work to their best ability, and I'm happy because everything's easy, and everybody's happy, and everything works the best. So very important that people are as happy as possible. Even if they're dagging sheep, they're not gonna be extra happy maybe, but you know... So I just spread it around, or we do it the easiest way we can and we get contractors to help for the tough jobs. So, everybody gets a bit of good time, as possible.... It's selfish, 'cause I wanna be happy, so I want them to be happy, so I'm happy" (DK08).

Relatedness to Customer

Particularly among people working in vertically integrated, or small niche food processing businesses, as well as in vineyards and in perennial horticulture, there was a strong motivation relating to the experience of the customer, and a drive to understand and please the customer.

"The customer is the important one, and you've got to meet the market, in whatever form that is. They set the rules of the game. If you don't like the rules, well, don't play the game" (CG32).

Relatedness to Groups, and to Society

Relatedness was less commonly linked to being part of groups or communities. Where groups were discussed they tended to be 'in-groups' such as farmer groups or specific industry bodies. Only a few participants expressed a view of themselves as outside of dominant groups, and pushing boundaries to create a new sense of what is possible. One example points to the pivotal and increasingly visible role of women in positions of leadership within agriculture:

"I'm a mother myself, so I've seen this very masculinised form of agriculture. And it's not only making society ill, it's keeping a lot of people poor and hungry and as a mother, I see that as a flaw in all our societal systems. And that's basically why I'm wanting to showcase farming system that includes women and children in that as well" (RA04).

Similarly, a few participants with deep commitments to regenerative or organic agriculture, or to their practices producing artisanal food, expressed relatedness as fostering new ways of

thinking, and of working to do new things and build new practices (i.e. outside of dominant agrifood regimes, see Section 2.1.).

Another expression of relatedness the of groups was voiced as a motivation to be integral to the life of a specific community.

“I’d like to see these things as a success - success in my eyes, but it’s a success in the community’s eyes. ... I have people come into the shop and they’re got their interstate visitors coming with them, they walk in the shop and they go and oh this is [Name], and this is her shop, and then they start talking about [my farm] like it’s theirs, but it’s theirs because it’s a part of [this town], you know what I mean? ... that to me is more of a success than having a million dollars” (PI07).

Relatedness to Place

A deep connection to specific places went back five or six generations for several participants, and for at least one participant to their Aboriginal ancestors. One participant summed this sense of relationship, connection, obligation and motivation as something that accrues across generations:

“I think the further, the more generations you go down the family tree, the more pressure or the more you probably feel a loyalty to the land and to look after it for the next generation, 'cause you’ve seen it being passed down. And so, my father definitely felt that way, and I do too” (CG33).

A relationship and commitment to place as a motivator is also strongly apparent in people who have recently come to a place. These people did not express their connection to place as a motivation to pass the farm on, but instead in many different forms reflecting their values – aesthetic, productive, peaceful, and others connected to place.

The Region and the State

Relationship to place extends to larger spatial scales for some. For wine-makers there was often discussion of developing distinctive regional wines and an associated brand. Among participants working in larger corporate businesses there was a common identification both with sectors and with the state as a whole:

“My family are all dairy farmers ... but I guess I’m passionate about the industry because I think Tasmania is the perfect place for agriculture. There’s so much opportunity here. I moved away and sort of come back and you just appreciate it, I guess” (CG52).

Competence

Competence was very widely related as a fundamental motivator of goals, ranging from being profitable to producing products of high quality, to being recognised as leaders or innovators.

“I'm particularly proud of the fact that we're a profitable farm. Profitable farms aren't that common” (CG49).

In the following quotes, competence was frequently associated with producing quality products or good crops, with team morale, and with a deep sense of job satisfaction.

“If [my team are] growing better crops and they see better results, then they'll feel better about it. And that helps ... as non-financial sources of satisfaction with people's jobs as a sense of achievement. It's worth a million bucks. If someone goes, "Oh, we're really nailing these. This is going really well, guys" (DK03).

“When I hear, "That's the best wheat I've even tasted," or something like that, it's like, "Oh, yeah. That's a pretty good reason to do what we're doing" (CG34).

“Growing good quality fruit for a premium market, that's quite satisfying. Yeah, it helps me to work, if I think about it, and work harder. So that's a goal, motivating thing, isn't it?” (DK05).

“All I know is that I want to do everything absolutely properly in all areas, in how we grow the plants, how we deal with our staff, how we deal with our customers. Just to touch a few points” (CG50).

As these quotes emphasise, narratives of competence commonly link other motivators. Relatedness is brought in through places and teams; autonomy is highlighted through the satisfaction of being responsible for positive outcomes. In this sense, competence and competence enabling activity might be considered a foundation that underpins motivation in a flourishing agrifood sector.

Identities and other motivators

Beyond motivations involving ideas of competence, autonomy and relatedness, a complex array of motivations were associated with individual or group identities and belief or value systems. These motivations were linked to individual inclinations, and ranged widely from being wealthy, avoiding chemicals, improving diets, supporting the mental health of others, to taking care of biodiversity on farms, and providing places for community education or where people could have potentially transformative experiences. It may be that such a diverse array of motivations has long influenced the agrifood sector in the state. This diversity appears to be associated with pluralism and identity politics that typifies late modern liberal democracies, and may well be on the rise (Fukuyama 2018). Although some people expressed simple identities (e.g. “I'm a farmer

and that's it" (CG16), an emerging cohort of younger people in the sector appeared to have a larger purview, an entrepreneurial spirit, which emphasised finding and taking opportunities, moving away from dependencies (e.g. being price takers), working across value chains or partnering with food and beverage processors or manufacturers. Some were strongly oriented to the development of niche food industries in the state. Participants in food processing businesses who expressed this innovative streak had often brought capital and skills from an earlier professional career to new entrepreneurial life. As one such person said: "I was making lots of money but not enjoying life" (CG09). Others articulated a complex set of ethics and principles as driving their practice, often including commitments to communities, environmental outcomes, building the capacity of staff or others across their sector, and being transparent about their practices.

4.2. Actions and innovation

This section firstly describes innovativeness in the Tasmanian agrifood industry. Secondly, it highlights the planned and adaptive nature of innovation seen in the participants' narratives. We then present findings about the contexts of participants' actions, focusing on innovation. We define innovation as a change that creates value to participants or their ecosystem. Fourthly, this section highlights drivers of innovation. Finally, two sub-sections present a brief analysis of the nature and pathways of innovation. This section builds on some themes already established in Section 4.1., and focuses in on what these mean for innovation across the agrifood industries.

4.2.1. Innovativeness in the Tasmanian agrifood industry

Small businesses, particularly farms, are the foundational unit of Tasmania's agrifood sector. Within businesses, factors from the natural and social world interact and incite human actions of continuity or change for desired outcomes, as reflected in the below narratives from some participants.

"But the business has changed a lot, the industry has changed a lot, so we're always trying to stay one step ahead" (CG05).

"That's farming. I mean if it's not drought, it's flooding. [laughter] If it's not flood, it's theft.... I'm fighting insurance..." (CG12).

"...the challenge of doing it season in and season out depending – regardless of what the season throws at you, doing a good job. So it's seeing the results at the end of it" (PL13).

These quotes reflect not only the sorts of issues participants face, but the combinatorial facets of agrifood actions which shape how (process) and why (outcomes) participants innovate. They also point to beliefs and attitudes towards innovation (mindset), and the nature, sources, and drivers of innovation. While participants rarely used the term, innovation is an integral component of businesses that remain sustainable and competitive:

“I think we've always been reasonably innovative in what we do” (CG36).

Very early on in the project we realised that the term innovation often presents a narrow view of technical or scientific endeavour reflected in patents and Intellectual Property (IP) and technologies. We decided to use a broader meaning of innovation, and included the narratives of change and pride (significant changes that participants were proud of) to explore and understand various aspects of innovation in this study.

Innovation is a management function that involves a causal process of innovative mindset leading to innovative process and outcomes (Kahn 2018). In this study, we started exploring innovation as a core function of farmers and food processors. In the interviews it was clear that most participants had change-oriented mindsets, as revealed by expressions of pride in their innovative actions, outputs and results.

“We're seeing a bit of a changing of the guard... So there is a new fresh thinking, there's new innovation, there's a new eagerness to push the businesses forward, push the limits, borrow money, expand, so there's a new thinking as well, which is really great” (CG19).

The narratives related to the need to always expanding (Section 4.1.) were linked to a mindset that held change as inevitable for sustaining growth in agriculture. For example:

“I think if you just sit on your hands, you don't really get anywhere in this game. You have to be constantly improving and getting more out of your ground...” (CG44).

“There's lots of small things that we're constantly... 'Cause if we're not progressing and changing, we're going backwards” (CG19).

Other narratives included an optimistic outlook that the change brings positives for the future of agriculture.

“... at this point in time I think [agriculture] has a pretty sound future because there's no replacement to food. You just cannot get food from any other source ...” (CG40).

This change-oriented and optimistic mindset was a foundation of innovations, and almost all participants across industries and geographical areas were aware of the inevitability and the need for changes in the Tasmanian agrifood sector. Moreover, it was widely seen as an opportunity. The survey examined innovativeness in the Tasmanian agrifood sector through items depicted in Figure 4.2.1. While this question is likely to be affected by social acceptability, a preliminary analysis of the survey responses indicates that the large majority of respondents identify with the idea of being risk-takers, innovators. More than 80% agree or strongly agree with all four survey items. This confirms the qualitative finding that the Tasmanian agrifood actors are innovative, at least in their mindset or conception of themselves.

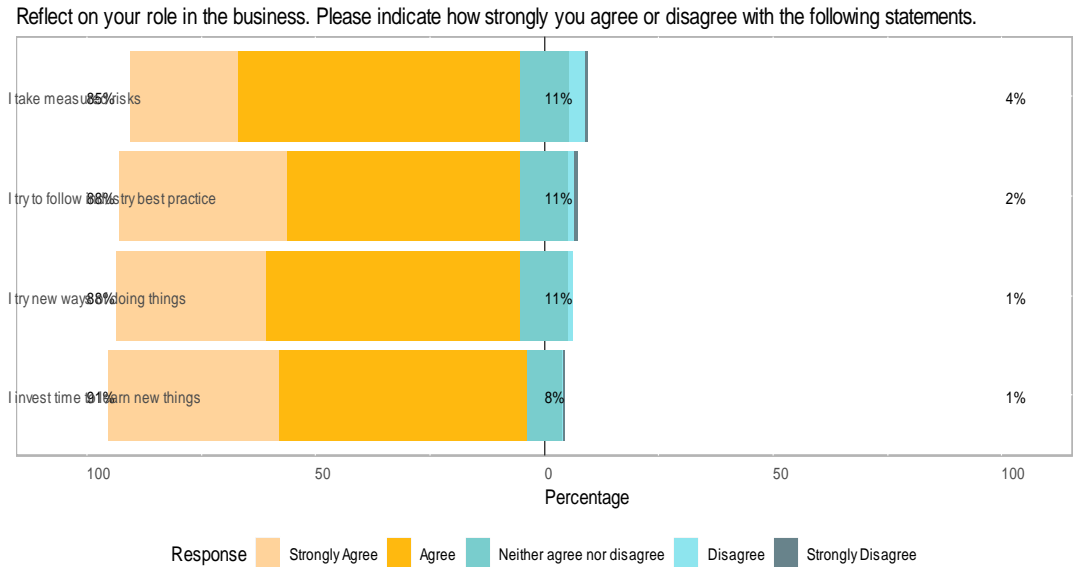


Figure 4.2.1.: Distribution of Likert responses to the survey question ‘Reflecting on your in the business, how strongly do you agree or disagree with the following statements on their innovative action?’. Responses from whole sample (n=630).

4.2.2. Innovative actions are planned or adaptive

Below is a representative narrative reflecting a planned form of innovation, which is quite a common expression among participants.

“So yeah, as far as decision-making's going, it went fairly well. In hindsight, we planned it fairly well. Yeah” (CG28).

This approach to planning reflects a mindset among actors who translate innovative ideas into tangible results in a relatively systematic manner. This change-oriented mindset underpins acts (processes) of innovation that have been planned or are adaptive to changing situations.

There are also cases where innovations were adaptive, but outcomes were not planned. They resulted in participants responding to situations and opportunities in a fashion typified by the saying ‘fortune favours the prepared mind’. For example:

“And that wasn't planned. That was just going with the flow, and seeing where the opportunities were at the time” (CG19).

“Again, it kind of evolved, really. I didn't apply for it straightaway because I suppose I wasn't really confident that I could do it, and the skills kind of came along as I got a bit more used to what I was doing, I suppose” (CG25).

“No, just took a chance, just took a chance, just did it, took a chance. Found the right equipment at the right time. I think if you make, I would say in anything in life, let it be exercise, eating, losing weight, business. If you spend time doing something, opportunities open up” (CG48).

For some participants, innovation was embedded in routine or organisational culture.

“Well, it's a pretty dynamic industry, and things happen quickly. Change is a pretty common thing around [this business]. We're always changing up crop portfolios. We're always changing how we do things. We're always looking to change things around to strip cost out of what we do, and become more efficient. Change is a given around here. It's gotta happen, otherwise we won't be in business. So, yes, change happens daily, which is good and bad” (CG42).

Examples above suggest that innovation can be planned or adaptive, and therefore learned and managed. All the related innovations were valued by participants. These innovations had the potential to be scaled out, had contributed to the overall performance of the agribusiness enterprises, and culminated in benefits to the Tasmanian agrifood sector.

4.2.3. Innovative action: contexts

Reasons why people innovate are fundamentally linked to the goals and motivations detailed in Section 4.1., and particularly to motivations around competence. Yet they are also mediated by internal capacities, and the specific contexts of innovation have a big role in shaping participants' innovative actions.

These contexts and capacities can be summarised under the following headings: policy and institutions, international exposure and networks, technology, place, education and experience, markets and consumers.

Policy and Institutions

Policies⁴ and other government interventions have a key role in promoting or undermining innovation (Mazzucato 2013). In this study, government policies and programs were often raised as driver of innovative actions across various sectors and geographical areas.

A significant proportion of innovations supported by policy and institutions were related to water (use efficiency, utilisation of multiple water sources, water infrastructure development) and knowledge, technology and infrastructure development and adoption. These can lead to various economic outcomes such as increased profit through productivity gains, crop and market diversification, premium product development, judicious use of external inputs, spreading production and market risks; better environmental outcomes through sustainable production

⁴ Policy here refers to government intervention in the agricultural sector to resolve problems or to improve the situation (Ellis 1996).

systems, soil and land quality improvements; and social outcomes, such as quality of life, availability of water for non-agricultural uses, employment generation, and regional development.

“Probably the irrigation setup at [property name] is probably, obviously what I've said before, is a fairly big undertaking. There's a couple more center pivots we've put in here as well, since I've been here. And the improvement probably, on this farm, as much as anything in the dry land areas of the farm, like I really tried to lift the fertility, and increase the amount of dry matter I'm producing per hectare, so I can run more stock. Yup (CG440).

Complementarity to the policies and programs were the roles of institutions operating in the state's agrifood landscape (education, research and extension institution such as TIA, various industry associations, informal networks of participants, and consultants) in driving agricultural innovations.

“Some good things have come out of... Getting people together, like the... Well, it was the Next Users forum, which was run by TIA, was an initiative of the Perennial Horticulture Advisory Group, was instead of us sitting here talking, there was six or seven or eight of us from the horticultural sector, just talking with... Take it out there and invite everybody from industry along and... they present what you're currently working on, and then have think tank exercises...” (CG06).

Interestingly, water-related innovations were not limited to the geographical areas where government had invested in water infrastructure. The key role of water in agricultural production and the demonstration effect of ongoing initiatives could be attributed to the transfer of innovation. Innovations originating in the context of favourable government policy and institutional support were not only open, but also transferable to other regions and high-value agricultural products.

The impact of this context to participants' innovations were found to be contingent upon interactions, representation, voice and existing capabilities of participants to be able to harness support systems. For example, some smallholder mixed farmers indicated that they were unable to effectively organise and influence decisions at a policy or institutional level:

“There's no system of small farmers coming together and coming up with a system, coming together as a group and approaching the regulatory authorities and saying, "Can we do things this way?" (RA06).

Contributions of financial organisations to promote innovations, however, were skewed towards established and growth-oriented participants, and especially to large-scale capital investment for land, infrastructure and equipment. Smaller, emerging and more niche-oriented businesses suggested rules for loan-making often excluded their businesses, as risks were seen as high or unknown.

International Exposure and Networks

One of the most significant sources of innovation for participants of the study was their interactions with outsiders. Figure 4.2.2. represents the narratives that show international exposures and formal and informal networks outside Tasmania have been instrumental in promoting innovations.



Figure 4.2.2.: Narratives of exposure and network.

This source of innovation was apparent across all types of businesses, but especially strong in process and marketing innovations.

Technology

Technology is well established as a great enabler of innovation in the agrifood sector. In this study, it contributed mainly to process and marketing innovations.

“So at this point is it to, yeah, focus on utilising that asset to make the best possible wines. But we need to grow our sales. So the cellar door is a big focus for that, and we're fortunate that tourism is very strong at the moment. So we're able to grow our business through tourism numbers increasing” (CG23).

“But no, it's just an exciting time because there's a lot more confidence, there's a lot more things happening in terms of technology and the uptake and change. They're not scared to change” (CG19).

Technology as a source of innovation was dominant, where labour was an important element of the enterprise's overall cost structure.

“We've always focused on having the best equipment. We've got excellent winemaking equipment. And we're very focused on getting as much mechanisation as possible. For instance, we're starting to do research on a cane-pruning machine, which may reduce pruning costs, they say [to] a maximum of 40%. And these are the sort of things that you have to do, because the biggest threat is labor. Wage increases are so high and they have nothing to do with productivity” (RA03).

“We run as lean as we can and we look for any manufacturing mechanisation improvements that we can, that makes us as competitive as possible” (PL16).

This common rendering of technology was supplemented by narratives about connecting with consumers, and promoting products in markets.

Place

The place-based source of innovation among the participants focused on seeking a balance between environmental, social and economic outcomes. Innovations that promoted and utilised the clean green image of Tasmania, both through tourism and export, were guided by the sense and image of place.

“Obviously there is other things. But in general. It is – land's expensive but it is a pretty favourable climate. Fairly consistent. Not too many troughs. Because the economy's sort of based on agriculture, it's a lot more support. Most of it brings a lot of better people stick with farming” (PL17).

“But majority of the food that we serve and the way that it's explained to our guests is that the food that we serve comes from within our fence line” (RA06).

Innovations originating from these sources were widely directed to the sorts of quality introduced in Section 4.1.1. and diversification of enterprises.

“My achievements for this place is to have good wines.... And to grow it up there and get some gold medals and things for this vineyard. Now, you know, it's a hard case, but

this year we might get our first gold from 2017 vintage, which I finished. So, let's cross our fingers and hope, eh?" (CG22).

"I think we've been quite successful in expanding this business and being smart about the capital expansion we've done and the way we've set it up and the way we've structured all that" (CG28).

Product, process or market innovations were dominant forms of innovations emerging out of this source. For example, premium wild berry products, introduction of new pasture seed varieties suitable in the Tasmanian climate, production and marketing of sheep milk whey and specialty beverages (wine and whiskey) are a few examples of innovation specific to Tasmania. Innovation related to regional specificity – the identity of a place (a region) within a place (Tasmania) – was common among participants who were close to consumers, particularly tourists. Innovative action towards establishing a place-based regional brand was guided by the image of places.

"We should be celebrating the East Coast region, the Huon Valley region, the Tamar region. We should be... When visitors come over here, they should be talking about the regions and seeing it far more on the bottles than just banging on about Tasmania. That's like if you go to Burgundy, you'll go and look at specific regions in Burgundy, or even in Champagne, because that's what quality grape growing is about, it's celebrating the terroir and understanding, well, this is the sort of pinots you get from the East Coast, which are different from the Coal River Valley" (RA03).

Education and Experience

Agriculture and food-based education, training and business experience from elsewhere were found to be another common source of innovation in the narratives of the participants. This is represented by the following quotes.

"The education that I've had commercially from managing... So the businesses that I worked in, I ended up being a manager of the [xxx]. And then I was on the executive management team in managing equipment with [xxx]. So yes, I absolutely... And I sort of made some notes before you got here, and one of the things that I've written down, which often comes up, is education. And I think education brings awareness and the ability to be flexible" (PL19).

"... so I had a corporate job, nothing to do with wine, in a marketing department of a big business, and I was attracted to the idea of running my own business. And learning how to do that" (CG23).

Innovations which originated out of this context were associated with quite comprehensive forms (product, process, marketing, business model and governance), including innovations that

were considered radical (including niche innovations around hop, olive and wild berry). Participants also translated innovations from one context to others.

“I worked on a potato farm for a couple of years, and then doing agronomy for a bit before that, the skills you've learned, you can transfer them across from potatoes to grapes and whatever else, and it's different, but it's similar principles, I suppose, and you can transfer them. That's a good thing.... And then it's also on the other end, it's got spins off for marketing and that sort of stuff, because we do that sort of stuff, so it's got benefits in that regard” (DK05).

Market and Consumer

Markets and consumers were other important sources of innovation, mainly contributing to economic outcomes.

“So I have had to tweak, tweak, change, modify according to our customers. The other thing that identified from the very start was who my customers would be were mature people...” (CG15).

These common contexts of innovation reflect the development of future innovations in the agrifood sector. They also suggest core competencies and roles for various actors and agencies in this innovation ecosystem. Governments set enabling policies, build infrastructure development, provide start-up support, and support brands and the development of norms. But also by focusing on the state, they may underinvest in distinctive regional brands and related innovation. Knowledge organisations have a role in identifying disruptive innovations and opportunities, collating scientific, experiential and indigenous innovation knowledge, sharing the knowledge through education and training, and brokering partnerships among diverse stakeholders. Industry networks can contribute through convening, supporting dialogue, collaboration and deliberation about priorities and taking leadership of these. Individual participants can contribute through their leadership, sharing experiences and IP. Customers and consumers also play their roles in promoting innovation. Considering the difficulties in financing innovative ideas, these elements of innovation ecosystems also need to collaborate to adequately finance innovative actions.

The main influencers of innovation as identified in the interviews above were included in a survey question which asked respondents to select which had influenced their business most positively over the last 5 years. Figure 4.2.3. indicates the central influence of peers and professional networks as well as family and friends across segments, and identifies a key difference between segments: commodity producers are strongly influenced by consultants and advisors, while niche and boutique producers are influenced by customers.

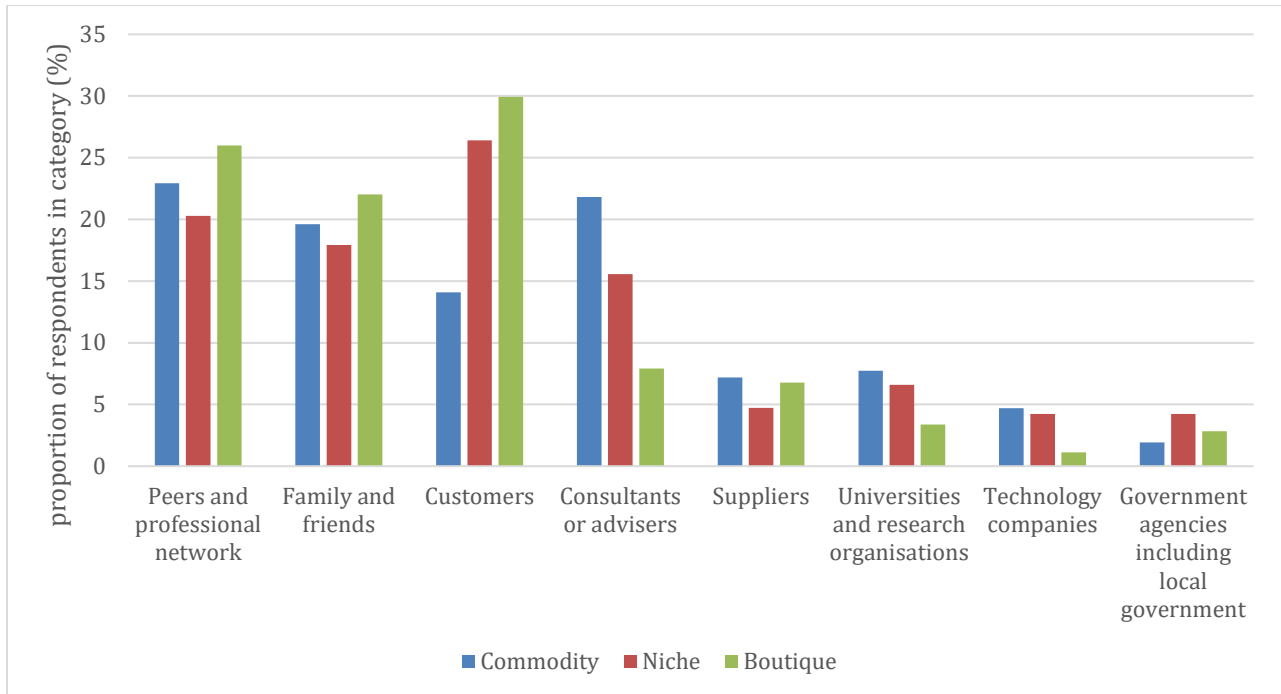


Figure 4.2.3.: Survey respondents identifying with a single niche (n=461) compared in terms to the groups they stated had most positively influenced their business over the last five years (proportion of each market segment category selecting each influencer group).

4.2.4. Drivers of innovation

Drawing on the action narratives of participants, this section describes key factors that are important to participants' innovative mindset and go some way to define actions in their life and business. These factors are outlined below as goals, opportunity, value and the problem.

Goals

A large cohort of participants undertook innovative actions to fulfil their personal or business goals as detailed in Section 4.1.1.

"Do it and it makes you go forward, And if you just do it for the sake of doing it, in a short time you'll get, "Oh, why do I have to do that... " If you've got an aim, you'll keep trying to challenge yourself to make it better. Alright?" (CG22).

"And in 2008 I won the best wine in Tasmania, and the best wine between New Zealand and Tasmania, and the best Riesling in Tasmania. So that was my goals. In 2008, I've done that" (CG22).

Goal-oriented action is typified by setting targets of tangible goals, often economic, and while common, is far from ubiquitous.

Opportunity

For many participants, innovations were described as driven by opportunities, and presented with reference to diverse factors that present such opportunities: place-based image or change (e.g. irrigation availability), domestic and export market opportunities, internal capabilities (knowledge, skills, experiences, assets), technologies, policies, social license, as well as networks (social and institutional) and clusters.

“An opportunity came my way and I picked up on it. At the time it was a very small piece of business, compared to what it is now. So, it was just something new and I went with it and it's grown from there. It's 7000 ton now, I think the first year was about 300 or 400 ton” (CG40).

Participants with actions driven by opportunities were largely guided by economic aspirations such as growth, supernormal profit, income replacement or capital accumulation.

Value

Actions were not absent of social value considerations, and commonly reflected convictions to family, community, environment, material resources, and places, and suggested forms of innovation that aligned with values were very important.

“So I was seeing the money end of agriculture, rather than the family end. And we're also only ever taught about British grass species, we're never taught about native grass species. And so I left that, loving agriculture, and then coming back to manage my family farm here in Tasmania and trying to implement change because I could see that the ecosystem was crumbling, and that the super trucks were arriving and the pasture would respond but then trees were dying or a drought would come” (RA04).

“I've changed so many things [laughter] of which most things I guess you're proud of, because you put a lot of work into it, but from my point of view, trying to run it like an economic business but with a real bent on sustainability is something I've been very proud of” (CG33).

These and many other quotes highlight how value-driven innovation can focus on environmental and social aspects as priorities rather than using ‘balance’ metaphors which hide the potential and real trade-offs.

Problems as Drivers of Innovation

Problems were another important driver for participants' innovations. Problems were widely varied and have largely been discussed in Section 4.2 of this report. Some participants' course of innovative actions were oriented, often reactively, to overcoming such challenges and constraints:

“This district has struggled for water for a long time, so it's [10:06] _____ irrigation scheme and... I was part of the development in that. So I think that's a positive, certainly is for us, isn't it?” (CG40).

“Because the problem is that it's very complicated, the taxation system for the wine industry is based on an ad valorem system, on the higher wholesale price the more tax you pay. So, they give you a little WET (Wine Equalisation Tax) rebate, tax rebate, and they wanna cut that back. So, that is gonna make it even harder for people like ourselves to make a profit. So, you're constantly, in the back of your mind thinking, "How can I cut my costs?" because one day that WET rebate's just going to get less and less. I don't know how the small wineries are going to survive. Everything the government does in large business is designed to destroy the smaller businesses...” (RA03).

“It's hard when you're young, although he owned the business. You don't see that. You see your friends driving new cars and buying houses and stuff. So he wanted to do something that was about him and that was his creative” (CG47).

“I think that we're proud of having the reputation to be very reliable suppliers of high quality seedlings with very good service. And we strive to achieve that year in, year out. And if we experience problems, which we all do, working through those problems. Getting help from different consultants and doing our own in-house trialing to ultimately come up with what we would call perfection” (CG50).

Whether due to a lifestyle choice or lack of better alternatives, participants were not surrendering to problems. Rather they were proactive to challenge the problems. Innovations driven by problems were more adaptive in nature than planned innovations.

The drivers of innovative mindsets and actions are summarised in Figure 4.2.4. It can be argued that innovations that are goal-driven or value-driven have a longer timescale in contrast to opportunities and problems, which are relatively instantaneous. In addition, value-driven and problem-driven innovations are largely influenced by internal factors, whereas external factors influence opportunity-driven or goal-driven innovations.

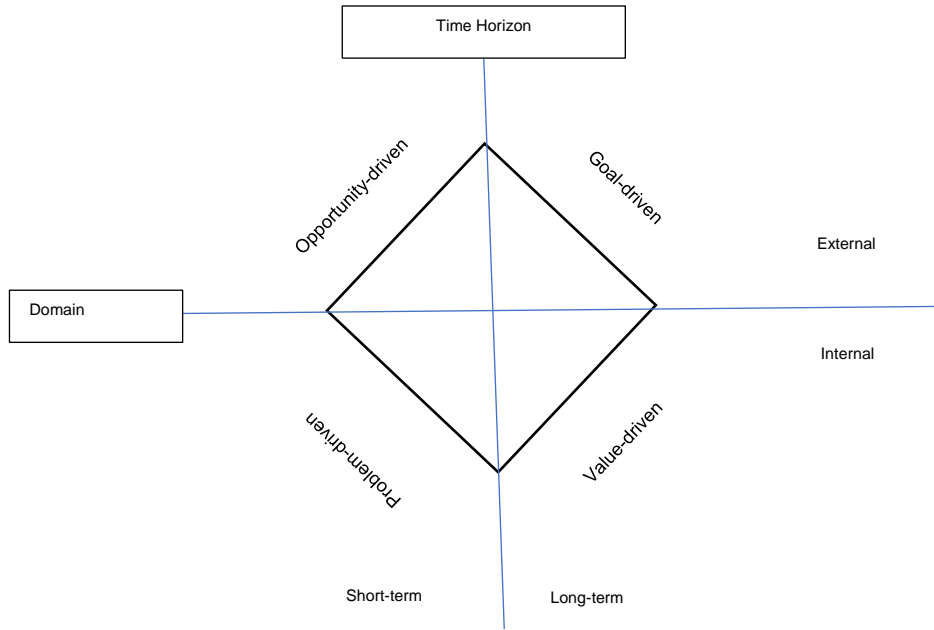


Figure 4.2.4.: Drivers of innovation with respect to time horizon and major domains of influence.

4.2.5. Nature of Innovation

A clear pattern identified in the interviews were two tendencies: a prioritisation of incremental over radical innovation, and for independent over collaborative innovations or co-innovation. While the former pattern is not unique to the Tasmanian agrifood systems, the latter reflects trends and potential.

Some co-innovation was notable among participants operating in niche segments as well as large-scale commodity businesses. There were key differences with the former more inclined to co-innovate with customers and consumers, and the latter with other value chain actors.

“To me, it's important to understand your customer and try to produce something - focus on what the customer wants” (PL11).

“The other thing was, that I started to hear, because we actually offer samples of our jams and sauces, etcetera. And I started to hear the word, “Too sweet, too sweet, too sweet.” Now, everything in Australia, too sweet. And I thought about that. So, I had my jam maker make up five different samples of different sugar levels. I went to Hong Kong for four days. Sat down with to Tourism Tasmania's manager over there, and a whole group of Chinese, and I said, “Which one do you like?” And they said, “Number three.” So I came back. I dropped the sugar level in all our jam products. And then a month later, I dropped it again. And now sales went up 20%, just like that. Then I dropped... Well, it tastes better” (CG15).

Other co-innovation was with value chain partners.

“Our relationships with our growers are very, very important to us. And how we treat them, it is not a them and us, it's as a team we work together to achieve the goals together, we include them in our decisions, why we're doing things a certain way or why the market's going a certain way. We're always very good at communicating with our growers around that. So I think that's something we are pretty proud of and we do, I think, better than some other businesses. And our growers are very, very important to us, so I think that's something we could be proud of...” (CG19).

“A few years ago, in the drought, it was very hard, so we... And with a neighbour down the road here, we built a big dam out in the forest. So that's made our water security quite good now, so we haven't got a problem with that...” (CG13).

“I mean the farmers are very... They're one step ahead of us a lot of the time. [laughter] They're out there thinking about how... And working with us and telling us how we could be doing things better. We're all ears as well, if there's something we could do better” (CG19).

These examples could be scaled-out across other industries and scales of operation. Some participants were found to be ready, capable and even vying for collaboration, what they required were trustworthy brokers, incentives and an enabling mechanism for co-innovation.

Ironically, some of the niche food producers, who were open to co-innovate with consumers, were more inclined to develop a vertically integrated business model.

“We have a particular set of skills that has made this possible. The ability to open a restaurant and attract people to the restaurant, so that we can integrate the whole process and take the end, we get the retail dollar, not the wholesale dollar. But I'm very proud that we've done that and we've done it very quickly” (RA06).

This could be attributed to a lack of trust to intermediaries or capacity to control the whole operation. The vertical integration if was driven by the former, potentials of collaborative innovation would not be fully realised. This calls for a mechanism that promotes trust and showcase benefits of co-innovation with multiple stakeholders.

4.2.6. Innovation pathways

Analysing these contexts and sources of innovations, three distinct forms of innovation pathways are apparent. These are 1) top-down; 2) bottom-up and; 3) horizontal. These pathways were not exclusive to an industry or a type of agribusiness, but more distinct for some segments than others.

1. Top-down

Policy and institutions that support the systems represent a top-down pathway of innovation. An example is the investment in water infrastructure in Tasmania, which was the foundation of a lot of innovative actions and outputs among interviewees. In this pathway, government initiatives provided innovation directions and incentives for participants to take them up.

“But getting back, our biggest achievement was when we got our first grant from the government. They gave us a [large] grant to... We put in a professional application to increase our workforce and that was to help build our export kill floor” (CG45).

For some participants, government support was hard won and slow to come, but ultimately instrumental in their innovations.

“And we didn't let anybody down, we didn't have a bad credit name, we just kept on plugging along. So that was our first big achievement and that was done in... Went to the government early in 2000, but this wasn't until about 2010... we got this grant. So, we kept on plugging away until that came along” (CG45).

“It's definitely a planned process, because a lot of money went into the restaurant, into building it. We got a federal grant” (RA06).

Benefits from this pathway of innovation were experienced across the scale of operations, from very large farmers and agribusinesses to very small food producers.

Both grants and policies can facilitate innovation and help translate innovative ideas and visions into action. This is particularly the case for generational farmers, and food and agriculture businesses guided by their values and social interests. However, as outlined in Section 4.3.1., grants were also criticised as leading to uneven playing fields and threatening competitive neutrality. This potential creates imperatives to consider the processes by which grants are allocated is made to be transparent and legitimate.

Knowledge from education, research institutions and industry bodies also promoted top-down innovations, especially in sectors such as dairy and perennial horticulture where TIA has a strong and well-established presence. Research and development organisations such as TIA supported the innovation ecosystem in multiple ways, through its own innovation (scientific knowledge and technology) that were adopted by the participants, through co-innovations (industry-research collaborative outputs), through education (consultants and participants), and through providing innovation platforms (policy advocacy and networks). These supports directly and indirectly contributed to various forms of innovations undertaken by participants. In large businesses R&D comes through companies' own policies and investment. For example, one respondent voiced that his/her company's policy direction as a pathway to innovation; “Yeah, there's a bit of a company policy involved in that as well...” (PL13). In family businesses there was a greater emphasis on adoption.

Top-down pathways of innovation, contributed by policies and institutions, represented a planned causal process of innovation, which tended to assume or create a relatively stable and predictable future. In the face of an uncertain future, driven for example by the impact of climate change on water availability, these supports and frameworks for innovation were discussed with a sense of optimism and security among participants. In this way, top-down innovation provided a framework for optimism about further innovation or insurance for broader uptake of innovation. This, however, had a risk of creating an uneven playing field if it did not reach maximum participants within an industry segment.

2. Bottom-up

Many participants expressed their autonomous capability (see Section 4.1.2.) through narratives of continuous innovation.

“And we were one of the first people to start cross-breeding. I mean it... We've done other things, like we practice 16 hour milkings, which we started probably six or seven years ago. And once again, we were one of the very first people to start doing that. And other people have moved to it now. There's quite a lot of farms doing it now. So, we've got some innovative practices around probably grazing management that other farmers don't... Hadn't done before” (CG36).

Rather than setting goals and mobilising their resources to achieve those goals, some participants talked about how they had experimented with their resources and leveraged their existing capabilities to bring changes.

“Like I said, I have always strived to do it the best I can and I have always tried to do it the best I can. I don't really go to a goal, but if there's one there and I've done it well, well then, you'd like a pat on the back, or say, "Gee that's good," or vice versa” (CG22).

Much of this bottom-up innovation arising from actors' internal drive to change was linked to figuring out how to capitalise on available resources, but was articulated differently in different businesses. In the case below it was explained as a mixture of capabilities, opportunities and goals.

“So at this point is it to, yeah, focus on utilising that asset to make the best possible wines. But we need to grow our sales. So the cellar door is a big focus for that, and we're fortunate that tourism is very strong at the moment. So we're able to grow our business through tourism numbers increasing” (CG23).

This shows that some actors are operating with effectuation logic where they focus on utilising their assets and competencies to leverage opportunities as and when appears, such as the growth of tourism in the state. Innovations arising from this pathway were relatively slow paced and with impact limiting to individual or enterprise level.

3. Horizontal

For some participants, particularly in food businesses and large operations, the innovation pathways were mostly horizontal, in the form of co-innovation (see Section 4.2.5.) with customers and consumers and value chain partners. For example:

“I think we've learnt by doing. I would say we have a good network of people. Other wineries here in the valley, we've... It's a friendly community so there's [definitely] been... [...], we've asked them for advice a lot of times. [...], they've given us a lot of advice. So I would say that that helps a lot when people are happy to share their knowledge with you, to help you... Yeah, that's been really, really valuable” (CG23).

“...it was mutually developed. I'd been looking - there's two sides to it. There's the commercial side and there is the feel-good side, if you like. A wool grower - the Holy Grail for a wool grower is to see something made out of their own wool and I'd always wanted to do that. That got short circuited when I met this guy at a function put on by the Italians, who we both deal with. Over a couple of years, we talked through what we might do and developed this project. So it was – look, it was just one of those fortuitous things. But I had - having said that, I had been pressing to try and do something like that” (PL11).

Because horizontal innovation leverages effort across chain partners, as well as customers and consumers, it can create value for both. However, it requires willingness to lead activities that are across businesses and therefore relies on trust and good will.

These different pathways of innovation (top-down, bottom-up and horizontal) suggest that innovation does not happen in silos. It evolves through dialogue, interaction and cooperation at various levels and through multiple directions. Approaching innovation through all pathways and direction could help develop an effective and sustainable innovation ecosystem.

4.3. Capacity: enablers and constraints

This section shows results from both the survey and the interviews, but focuses on a detailed descriptive account of how participants described various issues as constraining and enabling. We used the sustainable livelihoods framework and five capitals to guide the initial analysis: Financial, Physical, Human, Social (Markets, Institutional and Networks) and Natural (see Section 3.2.). Using some of the most prevalent issues raised during the interviews, the survey asked respondents to choose constraints on their business (Figure 4.3.1.). When asked to choose the most important constraint, responses varied widely, with the most important constraints being identified by less than 12% of respondents.

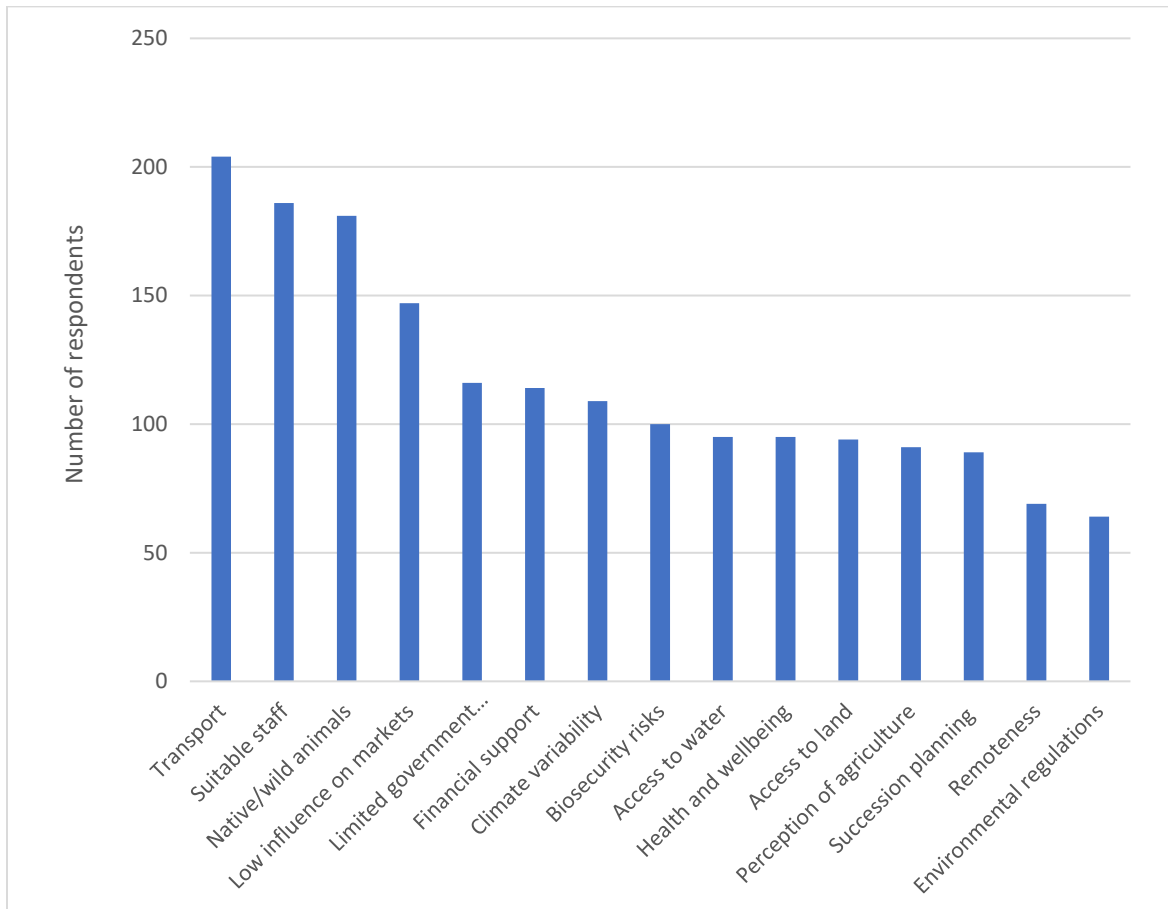


Figure 4.3.1.: Most important constraints as identified through the survey (n=630).

In-depth analysis of constraints and enablers began with detailed accounting of issues raised across a sub-sample of 45 interviews. Within this initial sample a saturation point was evident, with many issues recurring and few new ones emerging. This quantitative approach suggests the extent to which the diverse array of issues under each capital were construed as constraints and as enablers by participants. The complexity of some issues resulted in a number of statements that could not be classified as either positive or negative, and in Figure 4.3.2. the grey colour refers to these ambiguous or ambivalent statements.

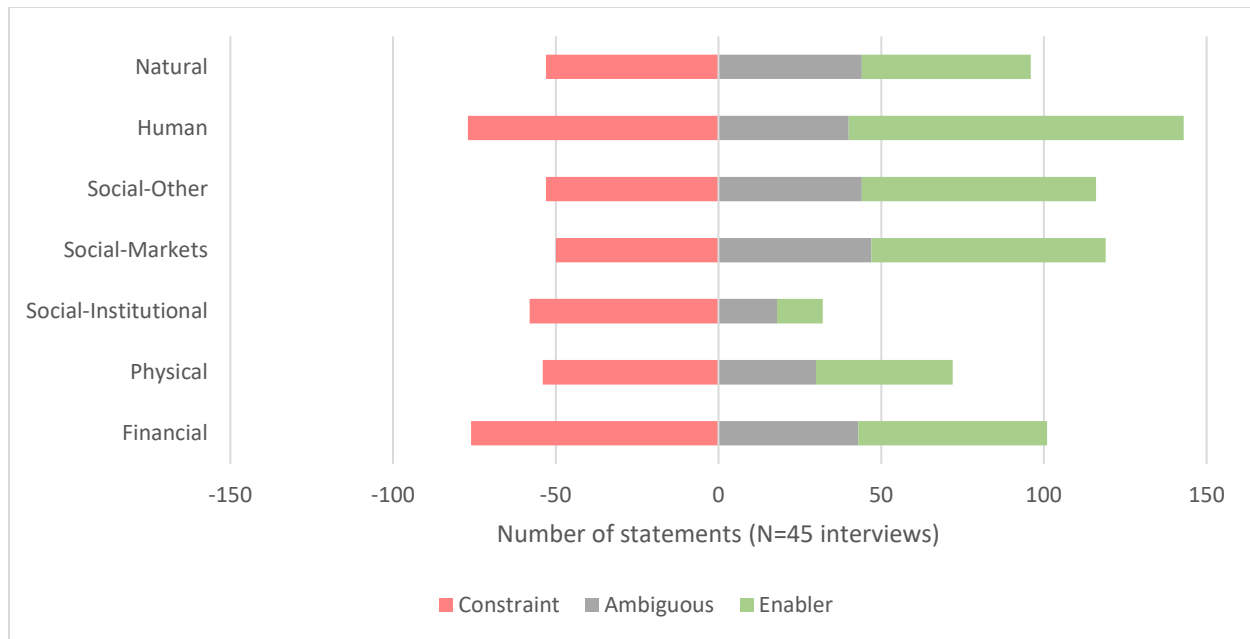


Figure 4.3.2.: General perception of different capitals. The overall length of each bar indicates how often participants talked about different capitals. Red indicates how many statements were negative, green how many were positive, and ambiguous statements are grey.

Issues were discussed showing the complexity, but also the interconnectedness between them, as most key topics were related to different capitals. It was evident that most issues were related to multiple capitals, and cross-cutting themes that emerged from this initial analysis are discussed in Chapter 5.

4.3.1. Financial capital

Financial capital was mostly mentioned in relation to other capitals, specifically the capacity or lack of capacity to do or achieve something else: to hire capable staff, to buy better machinery or inputs, to trial new things or simply to share time with family and friends (See Section 4.1.). Some mentioned that financial freedom allowed them to pursue environmental interests, to start complementary businesses or to invest in research of new products or practices for their farm. In contrast, financial limitations were related to family hardships, difficulty to adapt to changing conditions, or inability to invest in new technology or to buy more land and become more efficient. Key areas of focus for participants were:

- Large investments in different business models.
- Different approaches to risk and strategies to deal with large investments.
- Diversification as a strategy to reduce risks.
- Grants as contested enablers.
- Succession planning as a financial challenge.
- Operational costs as important constraints.

Large Investments in Different Business Models

Initial and one-off investments were referred to as one of the hardest financial challenges, especially where there is a significant time lag between an initial investment and the onset of the first returns, as in the perennial horticulture sector. Central concerns revolved around growth in the scale of operations to increase efficiency, costs of productive land, improving irrigation, acquiring machinery and technology, and minimising labour requirements. Banks prefer to lend money to more “reliable” businesses and those with higher equity. Scale of farms allows land to be used as collateral for agricultural loans: “You’ve gotta have that asset behind you to be able to have the borrowing power” (PL09). Large investments are therefore more difficult for smaller farms that have not kept up with the growth trend, younger people who have not inherited land, businesses suffering family breakdowns or a few lean years of cash flow.

Financial constraints on large farms were different from those emphasised by smaller niche and boutique producers and processors, who often mentioned different challenges when compared to commodity producers. In this case, it was not always necessary to have large extensions of land, but the available technology could be less mainstream, if it existed at all. This made the acquisition of technology relatively more expensive and difficult to assess and trial, often leading to home grown technological developments.

Several niche and boutique products are not well known, especially when they are first developed. In this case, as banks usually lack the means to evaluate future viability and chances of success, they tend to be unwilling to provide loans to these ventures, as a processor of specialty cheeses described:

“Banks wouldn’t give us any money because we were too strange and different. So the only money we could raise was on the property, which we owned outright to start with. And then once that ran out, then that was it. We couldn’t get anymore money to grow the business. We would have ideas. For example, we always had more demand than supply. So what do you do? You get another farm. But we couldn’t because we didn’t have the money to buy it” (CG47).

Diversification of existent farms is seen as a way to reduce risks in the face of uncertainty (Medhurst & Segrave 2007), but it can also be curtailed by low financial capacity. Consequently, limited financial options can be important disincentives for agriculture innovation, resilience and rural development in general.

Although acquiring debts is frequently the only way of growing an agricultural business, it also poses significant risks. Unexpected events, such as volatile markets, weather extremes, theft or personal problems, can affect a fine balance of debt repayment, business costs and household expenditures. Many participants discussed the consequences of acquiring large debts. Some were overworking themselves, often for no pay. Debt can also reduce options to take advantage of emergent markets or to diversify. To reduce the size of one-off debt, some producers and processors have chosen lower quality machinery, which would soon require a new investment,

due to its shorter working life. Some farmers assumed that investments would be paid for if they eventually sell their business, but this might not be the case: “The reality is there's not a single grove in Tasmania where the trees have paid for themselves, as on the sale of the property” (CG21). An interesting point discussed in detail in Section 4.4. refers to the transformation of risks, where the reduction of some risks like those associated with weather extremes, comes at the cost of increasing financial risk.

Different Approaches to Risk and Strategies to Deal with Large Investments

There are different attitudes towards high financial risks. A few participants mentioned an intuitive approach, but the majority mentioned the importance of a thorough research of market trends, a careful business plan, and when possible, financial backing:

“...That involved buying hundreds of thousand dollars' worth of equipment from the US, and bringing it to Australia. I suppose the key behind that was, we had a long-term contract ... and that gave us the confidence and surety to do that innovation, to spend that money” (PL01).

Other participants were less meticulous about their planning processes, with variable results. For example, CG18 explains how the business might have taken risks without all the supporting information, but that helped them grow at the time:

“We were probably naive in the beginning so that's probably helped... And overall being persistent because agriculture is very cyclical. So you get these downturns and they run for a while. And you gotta be aware of it. You gotta have enough hay in the barn to withstand it, but by the same token you also gotta have enough patience to keep going through it and out the other side”.

Other participants mentioned that personal circumstances forced them to be more cautious. For example, a family with small kids delayed business decisions, which resulted in more thoughtful and measured decisions. Several interviewees preferred to reduce risks by changing gradually rather than radically, thus reducing the initial investment of resources, effort and upskilling: “I was not a farmer, and I was not going to invest in anything large scale until I'd earned my stripes” (PL07). This was a key factor in reducing initial investment and involved keeping track of the business performance to grow in a sustainable way, and reinvesting profits in the business. While a larger initial investment would have allowed her to pursue a number of new ideas, avoiding it reduced the overall risk of financial failure for a new, untried business. A similar approach was mentioned by participants who lacked substantial equity to borrow large amounts of money.

Having a certain level of financial stability was a key factor facilitating innovation and exploration of new markets, or setting up new businesses. One participant mentioned having a small profitable fresh produce market. This financial base allowed her to invest in new businesses of food production. Others mentioned family loans or using their own savings to cover initial

investments. For example, a winemaker used their own savings to set up their business, which was later a foundation for the bank to approve a loan to expand their business: “We just had to offer plenty of security, so they wanted twice as much security... And we were able to provide that” (CG07). Other interviewees mentioned alternatives like external income, profits from the same or complementary businesses and using profits from unrelated businesses. Others developed partnerships that enabled the establishment of a new business or the expansion of an existing one. For example, a winery owner who needed a capital injection to make significant improvements explained:

“Our new partnership with [partner 1] and [partner 2], so that's enabled us to... So they've provided a capital investment which has enabled us to build the winery... we had got to a stage before we had the partnership with [partner 1] and [partner 2], where we couldn't borrow anymore money to expand the business... [partner 1] had a business background, [partner 2] has a viticulture background, [spouse] has wine making, I have marketing... it's a good combination and then just having the extra people in the business as well” (CG23).

Another strategy to reduce initial investments was leasing land instead of or in addition to owning it. Working with contractors who own high-quality machinery rather than buying it helped one interviewee to achieve the highest standards of production, without a prohibitive initial investment:

“And I get questions all the time about the expense of using contractors, and it's absolutely expensive, but they're using machinery that's worth three to four hundred thousand dollars. They're very productive. So these guys, they come in and they could... Even if I did buy implements for the small tractors that I own, it would take me so much more time depreciating the equipment and also the results they get... It's beyond what my operation could justify, anyway” (CG51).

Scaling up or corporatisation of the sector were discussed as opening career pathways in agriculture for people who are otherwise unable to cover high entry costs. Some participants had used such career pathways to build the equity needed to start or grow their own business. Share-farming was also mentioned as a good strategy to allow younger generations to enter the agricultural sector, especially in the dairy sector, as it requires lower capital investment.

Some participants mentioned strategies such as developing business plans, debt management plans and conducting a careful market research before major investments: “We just make sure we do our research thoroughly before we just go ahead, especially anything that's a big capital expense” (PL09). Other participants related some of the disadvantages of not having a clear business plan. One interviewee explained that mistakes are part of the process of learning their trade, but some of these mistakes can have significant financial consequences. For example, one business was starting to market a niche new by-product, but the combination of bottles and labels did not work out. They lost that investment which set them back in the development of new value-added products. Another interviewee described how they have lost valuable time and

resources pursuing activities that were not quite profitable: “The main way we have avoided getting rich is basically trying a lot of things that didn't quite work” (DK10).

However, there are certain skills required in developing a management plan and undertaking all relevant research. Many farmers in our sample did not have those skills, although in some families, younger generations had studied or were planning to study a degree that would improve those skills. A few unskilled participants mentioned taking advantage of learning opportunities in management, mostly small producers:

“They had a correspondence course certificate in rural office practice and in that not only did they teach how to do rural accounting, manual and computer, but they also did other things like basic computers... I did my business plan and I learned enough to do my business plan through all that. So we've got a business plan” (CG02).

Diversification as a Strategy to Reduce Risks

Diversification entails producing multiple outputs within a market segment (commodity, niche or boutique), combining market segments, or working across a value chain to value add or market (post farm gate) or develop inputs. For example, one participant pointed out that they have invested heavily in a boutique venture, but maintain sheep and crops as ‘bread and butter’. While diversification can help reduce risk and increase opportunities (Medhurst & Segrave 2007), it can also make food production inefficient:

“Years ago, we used to try to do lots of new things: grow peppermint, we grew dill, tulips, potatoes, seed potatoes. Tried lots of things. But I tried that, doing lots of things for while, then I undiversified. So you can diversify too much” (DK08).

Both vertical integration and development of value-added products tended to be more common among niche and boutique producers than among commodity producers, except those who are expanding their business. Examples included dairy farmers thinking about making cheese, or apple and pear producers starting to use part of their produce to make cider, lamb growers making pies and fine wool being sold to a specific *haute couture* manufacturer. These examples are important because they provide pathways to increase value. Integrating vertically or partnering along the value-chain appeared to increase motivation of participants who had previously been ‘price-takers’, as they felt they had more control of their business direction:

“Historically this business was, I guess, was built around just supplying ... And in that market, we were really not a differentiated producer. What we produced was equivalent to a global commodity... We're a fully vertically integrated business. So it gives us the ability to manage all levels of that chain” (PL06).

Grants as Contested Enablers

For some, government grants had provided an opportunity to setup new ventures: “So I wouldn't say without them we wouldn't have done something like this, but those grants enable you just to think a little bit bigger, enable you to bring it on a bit sooner that you might otherwise” (CG03). However, a larger proportion of participants claimed that they did not have the time nor the necessary skills to apply for grants:

“I've looked at ways of getting Landcare grants, and trying to get funding, but you nearly need to be full-time at the computer and have the lingo to apply for those things, and being a mother who's trying to raise two children, that's been a huge constraint... there's been an inability for me to access some of these funding opportunities because I'm time-poor as a mum” (RA04).

Among these participants, some feel that grant application systems are actually not designed to support farmers:

“They've all [agri-tourism businesses in the region] come from non-farming backgrounds and a lot of them have come... from government grants. But then it's actually when farmers apply for government grants... They're usually the people that don't get them, the farmers that apply for it. It's the people that come from agri-tourism sector or they've worked in tourism” (DK04).

Another participant who was strongly against grants believed that they were a perverse incentive that allowed unviable businesses to start and artificially remain in business:

“If you, at the end of the day, if you can't do it on your own merits there's a problem there. We're seeing a lot of people just... It's become a habit in Tassie. Just live off grants and it's not a healthy way to run your business... ” (RA03).

This interviewee provided a compelling question about the value of grants when they generate animosity in a region through what they see as unfair competition:

“Now, we know a business up the road that was given \$250,000 to set up a shop to sell wine. Now, why would they give him \$250,000 when we've got tasting rooms and wineries running for many years already in the area? So, why am I paying tax to go to them to come into competition with me?” (RA03).

Succession Planning as a Financial Challenge

Succession planning in family businesses was another financial burden that was widely raised, especially where people needed to buy out siblings to maintain a viable farm:

“It probably won't be long-term farming... when the old man dies, it'll get sold or whatever. And then, it'll get split up... I can't afford to do that [buy his siblings' shares] ... I'd be working for the next 150 years to pay 'em off” (CG08).

The problem of succession was different depending on how many siblings were in the family and their interest and involvement in the management of the farm. In the above example, only one sibling was involved in farming, so the others would probably prefer to inherit the money rather than the land. In some cases, participants with young children mentioned acquiring more land to grow the farm enough so that it would still be viable in the future, if they had to split it between children. In other cases, siblings had split the land titles, but were still working together as a unified business. Some families decided to diversify, allowing different family members to oversee different aspects of the farm. Such was a case of a family-owned vineyard, where the interviewee oversaw growing the grapes, another sibling was in charge of wine production, their parents still provided advice through the managing board, and one of the children was already supporting the online marketing and cellar door customer service. Provided the complexity of family businesses, it was often necessary to get external support to go through the process of succession planning. This external support ranged from legal services to hiring a manager who was not part of the family to provide an objective view into the decision-making process. Although it was not mentioned specifically, psychological advice to acknowledge and deal with the interference of emotional and complex family dynamics within a business would be helpful (Kaslow 2012).

Operational Costs as Important Constraints

Some of the most important operational costs included labour, transport, inputs, irrigation, taxes, regulatory/compliance costs and marketing intermediaries (different costs are discussed more in depth in relevant sections). Costs were often discussed in relation to the reduction of competitiveness in the global market, mostly of commodities but also some niche products. On a day-to-day basis, business managers cited cash flow as a significant constraint: “And cash flow, definitely, keeps things limited. It's how fast we can buy things, how many people you can employ” (CG07). Some participants mentioned partially solving this issue by improving book-keeping and operational planning. Unfortunately, farmers do not necessarily control all finances. For example, processors, supermarkets and intermediaries can significantly delay payments, reduce the concerted price or even deny payment based on quality standards. In many cases, this has been a key driver to integrate vertically or develop new value-chains:

“Supermarkets have the ability, and no one's stopping them, in screwing the small grower in ways you just wouldn't even begin to imagine... they'd ring up and say ‘we found six grubs in this bin”, and you got no way of knowing whether they did or not of course... they've got your broccoli at this stage... And they'd say, ‘Well look, tell you what; because you've been a good supplier and you're a nice guy and we want to look after you and the supermarket's on the farmers side, we can take it but we'll have to pay you half what we usually would, is that okay?’” (DK10).

Occasional adversities, including weather extremes, market failures, family issues and theft were raised as issues causing unexpected financial difficulties. These unplanned events can change the cost/profit balance, significantly affecting competitiveness:

“So, we get a disease in raspberries, blueberries, or whatever. That wipes us out as well. So all of a sudden, rather than producing 10 tonnes to the hectare, we're producing five tonnes to the hectare. All of a sudden our costs have essentially doubled” (PL01).

Insurances help offset some of the costs associated with unpredictable negative events, but this topic was seldom mentioned during interviews. One interviewee in particular was at the time struggling with the claiming process over lambs and ewes recently stolen.

On the other hand, difficult situations have been the trigger for innovation and social resilience. When faced with financial hardship, some have implemented radical change by starting new ventures, changing practices to lower overall operational costs, to increase productivity or both: “I think I was forced to change, because I don't... I just do not have the capital. I don't have the funds to apply fertiliser or apply herbicide, or farm in a conventional way” (RA04).

Interviewees mentioned some government mechanisms to reduce some of the costs associated with production of food and transport, including the Wine Equalisation Tax (WET) and the Freight Equalisation Scheme. In Australia, wine is subject to a 29% tax, but small producers are exempt. The government recently reduced the rebate cap from \$500,000 to \$350,000 (ATO 2018). While this rebate supports small producers, it was also seen as a significant barrier to consider increasing production:

“So [the Wine Equalisation Tax]'s recently been changed after the big companies campaigned the government to change it... put enough pressure on the government and got them to change the threshold for the Wine Equalisation Tax... So that will be quite a disincentive for us to grow beyond a certain point” (CG07).

An important consequence is that wine producers at that level, prefer to focus their efforts to increase quality rather than quantity (see Section 4.1.1).

4.3.2. Physical capital

Key issues and themes relating to physical capital were:

- Irrigation as a key driver for growth and diversification.
- Costs, benefits and limitation of technology.
- The burden of transport.

Irrigation as a Key Driver for Growth and Diversification

Access to water is relevant across natural, institutional and physical capitals. In the first instance, access to water depends on natural conditions such as rainfall or distance to water sources. Irrigation schemes, however, depend on institutional arrangements of access, but also on the infrastructure necessary to deliver water to users. Once on farm, the water needs to be moved and stored. We discuss irrigation under physical capital, because most discussions revolved around infrastructure, rather than access rights or natural conditions. Most farmers mentioned access to water as the most important factor driving business performance. With increased access to water from various sources, farmers have been able to diversify, increase productivity and reduce drought risks. For example, a farmer in the Midlands explains how irrigation allowed them to diversify:

“We came from a dryland property, which is just mainly wool and a few fat lambs, and then when... We had access to the South-East Irrigation Scheme we went more focused into cropping because at that stage there wasn't a lot of money in red meat or wool” (PL04).

Water sources mentioned by interviewees included taking water directly from a river or stream, dams filled with rainwater or water from nearby watercourses, irrigation schemes, and recycled water programs. For example, in the relatively dry Midlands, new irrigation schemes have resulted in an expansion of operations, diversification, an increment of cropping and even the establishment of fruit plantations.

Most participants were satisfied with their current access to water, but some felt that irrigation options could be improved. For example, one participant mentioned that the amount of water they could access at the time was enough to maintain his business at the current level, but if they wanted to expand, they would need additional water sources: “We're getting to the point of being constrained by lack of water in terms of expansion” (CG05) .

Some participants complained about the quality of water from certain sources, as the water tended to be salty and affected production, while others talked about the benefits and cost-effectiveness of re-used/recycled water. A few interviewees had no irrigation options at all and had to minimise their herds according to the dry-period capacity. They also had limited options of diversifying their production.

While most participants appreciate the benefits of increasing irrigation others noted that intensification through water has increased debt levels, led to removal of paddock trees, and demanded more time of owners or increased labour requirements:

“It's completely different farming. It's more intensive for a while. With dry land you can plan around having your weekends off. But with irrigation, if the crops need or pastures need irrigating you gotta do it” (PL04).

Water licences and allocations can be sold, but other investments are more difficult to turn back and farms can become dependent on an irrigation system with its corresponding financial challenges (see Section 4.4.). Some farmers were also concerned about the reliability of access:

“... probably being over-allocated on past stages, and therefore, even if you do hold, what you think is a good water right with a good priority water in it, it still can be restricted to 2% intake” (DK01).

Strategies to manage these risks, such as building dams were raised by some participants alongside concerns about the regulatory restrictions on such activity (see Section 4.3.4.).

Costs, Benefits and Limitations of Technology

A broad dictionary definition of technology is “the practical application of knowledge in a particular area”. Thus, it encompasses a broad number of topics discussed in this study. Participants discussed: machinery and mechanisation, information technology and the internet, precision agriculture, on-farm infrastructure, and the development of breeds and varieties.

Participants who talked about technology mostly did so in explaining its costs and benefits for them and for agriculture, from machinery facilitating physical tasks to software easing administrative tasks. It was widely taken for granted that technology is the means by which farmers, particularly in the commodity segment, can be competitive within a high wage economy.

However, attitudes to, and uptake of, technology in agriculture varied widely. Some have embraced new technologies and expected them to keep improving their operations. For example: “We wanna make sure we are up to date with all the technologies to make the best use of our water” (CG36). Others had a more cautious approach, allowing others to try new technologies, waiting to discover the comparative advantages, and waiting for prices to drop. As CG06 commented, technology can help make operations more efficient, but some still require a human back up:

“One of the deficiencies with all of that fancy gear is that, you really don't know 100% unless you come and look at it... We've had incidences where we have had problems and you're not getting... You haven't got a sensor that's telling you there's a problem”.

Another issue with technologies is that some of them depend on good Internet connectivity, which was commonly regarded as unreliable and of poor quality: “That's probably another big thing out here. That makes my job extremely difficult is not being able to utilise any technology that's available. Just because we don't have phone service” (DK06). In one region, one interviewee raised the issue of different mobile phone providers not sharing the network, and the government failing to regulate it. This limitation has brought neighbours together to solve the

problem: “Well, we made our own WiFi repeater so that we've kind of made our own group” (DK08).

A number of participants mentioned solutions they have developed for their problems, some of them low-tech. Some examples included different ways of picking, selecting or packaging fruit to reduce labour, and the development of harnesses to reduce physical injuries. A combination of technology, infrastructure, and changes in practice helped overcome some natural constraints. Among other things, participants described locally generated approaches to managing weather risks such as frost or reducing the impact of wildlife.

Technology is a big topic and has many links with other areas in the narratives of participants. While participants largely described technological change as necessary and beneficial, they also highlighted risks such as the inability of regulation to keep up with technological change, lack of staff with technical skills, distraction and disengagement from physical activities, and high investment costs. Some of these risks are explored in Section 4.4. where participants expectations for the future are explored.

Another important technology that has changed and keeps shaping agricultural practices is the development of new breeds and varieties, and their continuous genetic improvement. For example, the amount of milk produced by individual cows today far exceeds what was possible years ago:

“I suppose the biggest change in all that was, if you go back 20 years, the cows themselves would have been averaging somewhere between 4,000 and 5,000 litres of lactation per cow, where now... The average cow's now doing about eight... They've doubled their production in 20 years” (CG13).

In the fruit sector, having different varieties that produce early or late in the season has allowed them to extend their production season:

“There are [cherry] varieties that are even later than what we had then. So they ripen end of January into February. But also, some of the availability of those varieties, they're club varieties or they're patented. So not everybody can have access to them unless you buy into the program, which can be quite lucrative if you wanna take the jump” (CG06).

Several participants felt it was important to continue research into improving breeds and crops, so that they adapt better to the Tasmanian climate, and can allow the production season to extend into colder months. As the client expectations change in terms of quality of produce, there is also more demand to generate better properties in specific products like nutrition, taste, colour or size and shape. Particularly for certain niche and boutique producers, this improvement justified the investment of resources to develop their own research. Quite surprisingly, only one participant mentioned genetically modified organisms, (GMOs) or the impacts of Tasmania's moratorium on them, specifically.

The Burden of Transport

Transport was one of the most important constraints identified, and the most frequently selected in the survey (see Figure 4.3.1.). Transport advantages and disadvantages varied across regions and depending on product characteristics like weight, volume and shelf-life. Having a small population determines that a good portion of Tasmanian agricultural products are sent to the mainland or overseas. Being an island, long-haul transport is limited to boat or plane, and with growth in the fresh cherry export industry one interviewee mentioned constraints to air freight as a significant challenge:

“They [the airport] don't offer any facilities [to handle fresh fruit] at the moment. Yes, they're extending their runway and there may be opportunities in the future, but right at the minute, we can get to Melbourne overnight [by boat] and then... there's direct flights go to 20 different destinations that are markets of ours. So cherries being as valuable and perishable as they are, we're not interested in a service that's not direct because we don't want to be changing planes on a hot runway somewhere and losing the cool chain” (RW01).

One interviewee explained why at a certain level of production, the high costs of transport out of Tasmania justified exporting overseas: “So we're very export-focused, because we had to put it on the water, it's costing us much... to sea freight to the mainland, you might as well put it on a boat, keep going to Hong Kong or somewhere” (CG06).

Participants mentioned the benefits of the government subsidies for transport, the Tasmanian Freight Equalization Scheme (<https://infrastructure.gov.au/maritime/tasmanian-transport-schemes/>). The purpose of the scheme is to offset the extra cost of boat transport when compared with land transport, leveling the opportunities of Tasmanian businesses to compete with businesses in the mainland. Some interviewees, however, thought that even with the scheme, transport was a constraining cost that reduced their competitiveness and significantly reduced their margins of profit:

“You've still got to deal with getting it over that stretch of water, which unless there's something done from government's point of view to handling the freight and... As people have often said, we should just put a massive bridge from Tasmania to Victoria, and just drive straight across. But it's not that easy [laughter]” (CG09).

4.3.3. Human capital

Key topics under human capital included:

- Opportunities in a labour-constrained region.
- Skills and training options.
- Management and leadership.

Opportunities in a Labour-constrained Region

The availability of skilled staff and the associated costs were mostly viewed as major constraints for agricultural businesses in Tasmania (Figure 4.3.1.). Tasmania has a relatively low population, and most is concentrated in larger cities. For this reason, many participants in regional areas found it hard to locate potential workers, particularly highly skilled ones. When hiring personnel from larger settlements, employers in more isolated areas many times had to help with accommodation and/or relocation issues:

“We have all our own staff here live on farm... So we all have our own houses... The problem with the town and keeping local people in there is, for some reason these smaller country towns are turning into very attractive for retirement, people who want to retire. Because you can buy a house in Avoca for \$150,000 to \$200,000, a really nice little house. And if you're a Queenslander or somebody living in Sydney or Melbourne... You can buy a house down here for that sort of money and low cost of living. And retire and never have to work again in 10 years earlier than probably you could in Sydney” (CG30).

Workers with children additionally need to consider schooling and commuting. This is particularly difficult for businesses in touristic areas, where accommodation prices have been increasing. As locals try to make the most of the opportunities of providing holiday accommodations, many have renovated accommodations to please visitors that are more demanding, rather than to house lower-paying workers: “And what happens is that it's very hard to get staff. What has made it even harder is all the accommodation that one used to rent for staff is now Airbnb” (CG15).

While some employers feel lucky to have found excellent staff and have different strategies to try to keep them satisfied (see Management and Leadership section below), the factors mentioned above make working in agriculture less attractive, particularly when the pay is not necessarily higher than less demanding jobs, closer to population centres: “If there's something else where it's 9:00 AM til 4:00 PM rather than 7:30 AM til 4:30 PM, and I can probably get paid more money and it might not be so labor intensive” (DK04). Smaller and isolated businesses are even more at a disadvantage because they are not well known, and job seekers with better skill sets might look first at employment opportunities with larger companies close to major cities. One participant exalted the strategy of another business to solve the problem of skilled labour in regional areas, by finding motivated apprentices and helping them develop their careers:

“They've thought ahead, and they're employing really good apprentices and training those apprentices up, and they're coming through. They switched around and have got great people skills, but I think they identify their apprentices quite well” (DK06).

Some interviewees mentioned the problem of lack of interest in younger generations, citing as one of several possible causes, a shortage of government incentives for rural development and agriculture development:

“You look at New Zealand and how young their workforce is in agriculture and how many young people wanna stay in agriculture and wanna be involved. And that’s all because of how much the government supports and just looks after their farmers over there... it’s just a really interesting country to see what agriculture should be like and how farmers should be supported” (DK04).

This participant also commented that such support is not based on subsidies:

“Farmers are subsidised so heavily in America that it doesn’t matter if they fail or if they survive. They’re actually more encouraged to probably fail then they still get paid than they are to succeed and make a bigger profit. And they’ve got the same problem with young farmers in America” (DK04).

Several participants also mentioned the need to rethink rural education to put more emphasis on the importance of agriculture, and opportunities within the sector . A few interviewees have gone beyond having an opinion on education, and have got involved directly, showing kids the connection between food and agriculture, and the opportunities in farming:

“So, my big goals for the mixture of those two [goals] is to get more people into agriculture. And so, getting the young kids, despite not necessarily having been brought up on a farm. Just giving them access into getting into agriculture, but not necessarily having to have come from a farm. So, just having the technology and the research and things, at the moment, has enabled the kids to realise that, all the apps and things that we use, they’re like, ‘Oh, I could be involved in developing that. That’s really, really interesting” (CG38).

The lack of interest from younger generations is reflected in an increasing average age, especially in key agricultural occupations (see Section 3.4.): “A lot of our local shearers that we use are getting... The average age in the shed this year was... Probably 50” (PL03).

Currently, there are incentives to employ people with employment disadvantages, including trainees and apprentices, disabled people, job seekers who are young or older than 50, indigenous Australians and long-term unemployed (Business Tasmania 2018). One interviewee thought that in their case, a disability apprenticeship was a win-win arrangement, as the farm received a financial incentive to employ someone local, and the kid with a learning disability received an opportunity to develop skills in alternative ways to formal education. However, this participant also felt that the education system was not dealing with ‘problem kids’ appropriately, trying to get rid of the problem by suspending them, rather than finding the right support systems. Another interviewee supported this idea, arguing that both the schooling and working environments are not dealing with social problems of youth and aboriginal people, disempowering rather than supporting them. In his particular case, a high school teacher directly discouraged him to pursue a career development:

“When I left school in grade 10, the grade 10 coordinator told me that I wasn't clever enough to go off and do any other forms of schooling, and that she didn't think that I would go very far in life” (PL05).

Many businesses related to labour costs as a fundamental constraint, and this is clearly reflected in the survey. Some of these, particularly small enterprises, could not necessarily afford large investments to reduce labour needs. The complicated hiring system and penalty rates have resulted in many businesses opting to outsource the hiring process, which added to their costs, but reduced their workload and potential legal problems. High labour costs were consistently a major constraint lowering international competitiveness, and have been reported to be significantly higher than competing countries (Cover et al. 2018).

Organic producers mentioned the option of getting volunteers who want to work in organic farms or WWOOFers (WWOOF stands for World Wide Opportunities on Organic Farms). For some businesses, this has worked, but others have stopped using them, as they had to train them again each time, had to cook for them, and they were not always up to the tasks: “We got to the point where a lot of city people were not good at physical work. And there was a lot of work that we couldn't do with them” (CG02).

High costs of production are added to an already unbalanced competition from developing countries with low wages and highly subsidised regions (see Section 2.2.3.). Salaries are not likely to decrease in the future. However, higher pays are an indicator of a country with high living standards, being one of the costs of a better quality of life: “And I'm really happy to pay higher wages so that everybody has a liveable wage. And I'll continue doing that, I'd much prefer to live here than in countries with low wages” (PL01). To be able to still be competitive in a global market, Tasmania therefore needs to aim for higher than average quality and performance. The Tasmanian Brand capitalises on this quality and promotes it (Section 4.3.4.).

Skills and Training Options

While there is a variety of opinions about available training opportunities, a large portion of interviewees had positive views about either their own skill set, that of their employees, or the training opportunities available in Tasmania. One important enabler often mentioned was not the existence of specific skills for specific tasks, but the development of skills through particular training paths and/or work experience. As an example, interviewees with higher academic degrees do not think that they acquired the necessary knowledge and skills to manage their business through specific courses. Instead, they believe that the thinking processes developed through their studies prepared them to face challenges and solve problems: “From my experience with the PhD, drew me to be able to or interested in making sure I've covered all the bases. In a research project, you've gotta make sure you haven't missed something” (PL02). Particularly in family businesses, another key enabler was the complementary skills, interests and approaches to risk from different family members and/or team members. For example, some farms have been able to diversify or upscale operations as younger generations take on new challenges and risks. As one participant put it, taking over the family farm:

“Wool industry was pretty, very average and we just weren't making returns on the property... So we had to change and yeah. We've made really, really good progress, but yeah, we've probably built a much bigger asset than we had before, but... [my goal] was just to crank the place up. Very exciting, you know, like you... Fresh out of Ag-college, and all you wanna do is put everything you've learnt to use” (CG30).

Several participants that had the opportunity to study and work outside their own family farm brought new insights into farm management and the development of new business opportunities. An example of skills acquired in an unrelated sector was mentioned by one interviewee, who had extensive marketing experience that she has applied to the family agri-tourism venture: “I obviously had that whole corporate marketing, consumer insights background. So, I felt like that was second nature” (CG11). Key mentors were particularly important in this development path, and included parents, employers, peers and external advisors, (also seen in survey responses about key positive influences, see Figures 4.2.3. and 4.2.4.)

While multiple training opportunities in Tasmania were mentioned, and mostly positively, a major limitation seemed to be farmers' time constraints, as they need to work long hours and over the weekends, so finding a time that suits most people is difficult:

“Farmers are very time poor. So, getting farmers to go to that group... It's hard because someone might be shearing, someone might be weaning lambs, someone might be making hay... So trying to get a free day, where everyone's got a free day... That's pretty hard” (CG08).

Limited skills and knowledge can affect the efficiency and efficacy of farming or manufacturing processes. One interviewee mentioned that to overcome this deficiency, she started small, aiming to grow incrementally, reducing the risk of the investment and allowing a process of learning by doing, and also upskilling through self-teaching and experience exchanges: “I think travel's a big part of it - travel, observe and look and see” (PL07).

Conversely, learning new skills and acquiring new knowledge increased motivation to work the land or to process primary products, providing a sense of autonomy and purpose, as these beekeepers relate:

“We used to buy them, then you've got a queen already mated and ready to lay and it saves time, but [spouse] went and studied under an old beekeeper and learned how to breed queens. We've been doing it for nearly 10 years now and that changed me a bit. That made me feel a lot better about what I do” (CG02).

This quote speaks of a common thread in the interviews that social connectedness, experiential exchanges and relying on experienced people in networks were important ways of increasing competence of both owners and employees. These networks are increasingly becoming global through the Internet. The flip side of this widening of agricultural knowledge and information

systems is that there is often too much information and it is difficult to prioritise and identify the most useful sources. However, owner-managers are drawing on diverse resources to become competent in a range of aspects of farm management, like agronomy, animal nutrition, disease management, human resource management, marketing, planning and accounting. In the case of small producers and processors, particularly of niche and boutique products, informal tools and social networks have become the most important way of acquiring knowledge and skills, as a lot less opportunities are available in subsectors outside mainstream agriculture.

Formal training opportunities, both at the technical level (e.g. TAFE) and at the University level (UTAS/TIA) were seen positively by some interviewees, and negatively by others. One of the negative views about training opportunities in Tasmania referred to the difficulty of people who are not from a farming family to put in practice the things they learned in theory. One young Tasmanian-born farmer decided to undertake his graduate and postgraduate studies in the mainland, because he regarded University courses in Tasmania as lacking the clarity needed by both prospective students and employers. From his point of view, industries were not sure what set of skills Tasmanian students would bring into a potential job, either agricultural sciences, farm management or marketing. This same interviewee mentioned that the necessary connection between the industry and Academia has been undermined because some teachers lacked practical experience and had to limit their lessons to theoretical developments. In many sub-sectors, interviewees felt that formal training was not providing employees with specific skills needed in their business, so that they had to do their own training, yet this was costly because of high staff turnover. In the specific case of highly skilled personnel for agri-tourism ventures, there seems to be a gap between the requirements of agri-tourism businesses and the current amount of high-level hospitality trained potential workers:

“It'd be great if there was a bigger pool of trained professionals available. That seems to be getting worse, not better... But I've only been in this industry a short time, but people that have been in this industry longer would probably say that. And it's partly a victim of its own success. As the food and wine industry goes gangbusters, there's more places starting up like us... Creating a bigger demand for those staff... it's spreading people... more thinly” (CG03).

This same interviewee further explained that as the amount of skilled job seekers was limited, agri-tourism businesses were at a disadvantage, because most of those job seekers would choose to work in larger cities or close by, rather than moving to relatively remote places:

“But for key positions like chefs and managers... I guess in regional areas, getting those particularly skilled positions is a bit of a barrier. People don't necessarily wanna uproot their... If they've got a family and kids at school, it becomes a very big decision rather than just swapping from one restaurant to another in Hobart, it doesn't affect anything other than which direction you drive from your house and maybe not even that” (CG03).

Beyond the limited skills of job seekers, several employers talked about the poor work attitude of younger generations in Australia. Farmers usually have to perform diverse tasks, from outdoor labour, to the use of technical machinery, to administrative tasks. But employees are often expecting discrete and specific tasks, and are unwilling to engage in jobs that require ongoing learning, initiative and problem solving:

“They just want a simple job, they just wanna be a truck driver, they just wanna be a grafter or they just wanna be this or they just wanna be that... Whereas, agriculture is part of the beauty of it and that's probably why I enjoy it, is that every day is very, very different and there's so much that you need to have and you need to know and it takes years to be able to learn it all” (CG04).

Adding to this, participants felt that younger generations were less disposed to engage in physically hard labour or working long hours: “The people of today are not really... They're mushy, they're not, they haven't got the stamina. [laughter] I can run circles around them and I've got a broken foot. [laughter]” (CG20). Another commented that Australians seemed to lack commitment to the job, and viewed it as a right, rather than an opportunity: “If you were born in Australia... You have a right... A job is a right, it's not a privilege” (CG04). Other participants raised issues ranging from lack of hope in rural areas and lack of incentives to work.

Many employers who have repeatedly encountered problems of poor work attitude among seasonal workers discussed how they have moved away from hiring ‘locals’, instead preferring immigrants, who they described positively as willing to work hard and do whatever was required for the benefit of the business. Some of these participants suggested that Federal Government policies on immigration were becoming stricter and it was now more difficult to keep good employees who are immigrants:

“I think they're gonna have to come to terms with letting a lot more of overseas people in to work, because Australians don't want those jobs, a lot of Australians don't want to live in isolated areas, so that's an issue... I had one girl who wanted to stay, now most people don't want to stay in these isolated areas. So I'm relying more and more on foreign workers, and I've got a lot of Chinese people, and they're the most lovely people, it's been a really lovely experience for them and my family. And she wanted to stay, but they've taken the isolation status off Tasmania” (RA03).

Management and Leadership

Issues of poor work attitude are closely related to this section on management and leadership. The results of this study suggest that there are two sides to the attitude problem. Some workers might be “lazy” (RA04) or unwilling to learn or perform a variety of tasks. However, work attitude problems can often reflect a lack of understanding and mentorship from employers:

“It's not a labour issue. Plenty of people turn up to milk cows every morning. Why don't those people stick? Why are they in and out? Why do so many people go through the industry and out the other side? That's a management issue” (PL15).

Another manager who was interviewed explained how his career in agriculture was greatly enhanced by a series of superiors who inspired and supported him to improve his management skills:

“Having good mentors, I think has been the biggest thing. So [my supervisor]'s been a tremendous mentor for me at [the farm]. I have been very lucky that the employers or the managers that I've worked for have been really good. I've never had any qualms or issues with them. And I've picked up a lot of new, different learning styles from each one of them. They've all had different mentoring qualities of their own, 'cause they obviously mentor and manage people under themselves” (PL05).

Employers with a positive view about staff availability and attitude did not necessarily attribute having a good working team to their own doing. Some participants, however, were actively trying to attract and retain good workers. Some of the strategies used included paying them well, when possible; providing accommodation and food in remote areas; being flexible about their working hours; working side by side with labourers to understand what different tasks entail; socialising and making a specific effort to keep them happy; and considering requirements and needs for accompanying family. Other strategies were more focused on human development and encompassed trying to understand staff's motivations and support them through difficult times; providing training opportunities and work exchanges; keeping track of performance to give them higher responsibilities and allowing them to experiment and develop their own processes and outputs. The contrasting views around the labour issue indicate that there are challenges in stimulating regional development, developing the right kind of skills but also improving the management of human resources.

Other aspects of leadership and management that were mentioned by several interviewees, refer to those business decisions that have enabled businesses to get where they are or to keep developing. For example, a clear vision of where particular sectors of agriculture and food demand were going allowed some businesses to make smart investments that were later rewarded with significant returns. For example, one participant had the vision to buy land at significantly lower prices in a prime location for their cellar door years before the rise in tourism. Other businesses developed completely new products that at the time did not have a specific market, but today with the heightened demand for local and artisanal food, can command a premium: “I would be very proud to say, have established a market for beer and cider, or farmhouse ales and cider, in Australia that had, we've almost created our own business, we've created our own market” (RW02).

4.3.4. Social capital

Big issues and themes under the broad category of social capital were:

- Room for improvement in institutional support.
- Markets play a different role across commodity, niche and boutique segments.
- Social networks as key enablers.

Room for Improvement in Institutional Support

References to institutional capital referred mostly to government, with little reference to other forms of governance, such as participatory processes of decision making. For this reason, issues discussed under this section are related largely to policy, bureaucracy and politics. Participants' influence on decisions was mostly through representative bodies or less formal associative groups. Some participants, however, indicated a sense of dissatisfaction with their lack of influence and the way politics play out. Several interviewees suggested that decisions regarding agriculture were politicised, resulting in suboptimal, short-term decisions that reflected more specific interests than the common good. One participant voiced this concern:

“You think the government's there to help you, but when you get really into it, you can't believe how incompetent the government is, the ministers are and also a lot of their advisors... And I believe that the way they appoint ministers these days, they just allocate a ministry or portfolio to someone. Haven't got a clue. You've gotta have some, to me, you've gotta have some base knowledge” (DK07).

Regarding specific government policies, participants commonly expressed complex ambivalent perspectives. For example, the boost that Tourism Tasmania has given to agri-tourism ventures was seen as largely positive, but participants worried that agricultural land was being converted for urban development, and that the government did not have a clear vision about the future of regional Tasmania. A common concern was that a long-term vision was not clearly integrated across different policies, programs and government sectors, levels and institutions. In relation to agricultural growth targets set by the current government, one participant voiced clearly what several others alluded to:

“That sort of stuff takes planning and staying the course for all that time. If that's gonna be achieved then it has to sit above individual politicians, individual bureaucrats and individual terms of government, has to be the vision of many successive decision makers, doesn't it? So there's not many things in politics that'll [laughter] have the ability to achieve that, I don't think. But it'd be good if it could... So there's more to it than just saying, ‘Well, we're just gonna roll out irrigation across Tasmania’. And turn a whole lotta dry land farming into growing cherries and grapes. That's great. That's a big part of it, but yeah. You've got to make sure that you've got all the other pieces in place. The more you think of it... Roads, ports, administration people... To support an industry that's 10 times bigger, it's gonna take 10 times as much of everything else” (CG03).

Such concerns often referred to integration of planning to ensure agricultural land and production was not fragmented, allowing operation at sufficient scales to be competitive, and

avoiding negative impacts from the establishment of small-scale 'hobby-farmers' and 'lifestylers' (widely seen as poor managers of weeds, biosecurity, and other risks).

Conversely small farmers and niche/boutique producers/processors were often concerned about policy 'capture' of government through influence of big companies (Sklair 2002). Policies and planning were described as benefitting large companies rather than smaller producers: "Everything the government does in large business is designed to destroy the smaller businesses" (RA03). One participant argued that the focus on productivity and farm gate value does not reflect the positive impact that small and medium productive plots have on the economy, communities and society as a whole:

"That small farming sector is really important to me as a segment of Australian society... We feel that society is a lot better off if there are at least a big percentage of its members independently financed. So working for the man is not really good for society politically I don't think... So the more people who've had independent means, I think it's much better for the way people think, the way they live, the way they relate to other people. So it's really important to us to develop systems of small scale farming which actually are viable for people, viable for the farmers" (DK10).

Despite recent efforts to reduce 'red-tape', participants tended to talk about regulations negatively. Participants often prefaced critical comments by accepting that regulation is absolutely necessary, particularly regarding biosecurity, health and environmental protection. Yet their critical stance on many regulations suggests that the reasons for regulations, or their blanket application, are either poorly understood, or accepted in terms of the constraints they place on businesses, particularly through onerous paperwork and compliance:

"We're gonna run into dam capacity issues at some stage, because of all our expansion. But to increase the size of our existing dams, cost of government permits is ridiculous, you're looking at maybe 15 grand just for all the approvals, even if I only want a mega-litre of water. And that's without me having moved a single grain of dirt... And I think government really needs to look at doing something about that. Particularly for small farmers such as myself. It's unfair, and it's not adding any value. We're just purely being red-taped, for the sake of it. It's already expensive enough just to build the damn thing" (CG21).

Such perspectives echo concerns that government is increasingly distant and out of touch, that interactions with governments regarding development, compliance and regulation increasingly have to be mediated via professional consultants: "And this old fella is a very successful farmer... and he said, 'Well, the way I see it is this. The role of government is to find what's working and try and stop it' [laughter]" (DK10). One participant explained that before, the role of government was more like a partner, and when dealing with paperwork and permits, agents not only helped, but they also had sound advice to offer. As reflected in several interviews, now government agents tended to be perceived, in the best of cases, as inexperienced and lacking context, which resulted in constant clarifications by applicants. In other cases, participants felt

that these agents were actually trying to make their life more difficult. Bureaucratic processes were described as slow, cumbersome and generating opportunity costs.

Markets play a different role across commodity, niche and boutique segments

Constraints and enablers relating to markets were distinctly different across market segments: commodities, niche and boutique. In the commodity segment the cost-price squeeze conditions were linked to a variety of issues (which are mostly well-known): the volatility of commodity markets; the lack of certainty regarding their future trends; changing exchange rates; high costs of production in Tasmania (especially because of labour and transport costs); strict standards and compliance, and the lack of ability to get quality-related premium prices (see Section 4.1.2.). These producers tended to diversify product streams through having farm-related businesses such as contracting or consulting. But they largely concentrate their efforts on production efficiency.

In this study niche products included commodity products that met certain standards to reach a specific market, like organic fruits and vegetables, or premium labels of beef. In some cases, production was relatively large-scale, for example first-grade cherries to satisfy Asian markets. In many cases, however, production occurred at much smaller scales, such as market gardens selling to Tasmanian restaurants or farmers markets. Flavour and health tended to be much more prevalent in the ways niche and boutique producers referred to quality, along with qualities of experience and place.

Boutique products target very specific markets, and examples in this study included unique products, and products that were connected to a unique experience. In some cases a specific market had to be developed, as expressed by one artisanal beverage processor: “I would be very proud to say, have established a market for [specific kinds of] beer and cider ... We've almost created our own business, we've created our own market” (RW02). In many cases, niche and particularly boutique producers/processors had more control over the market, as they often had a more direct interaction with customers:

“The challenge with farming in a traditional sense is what we were producing is a commodity so it just goes into the market and you don't even know who your customers are. You never see them. You've got no control over the price that you receive and that gets a bit tiring at times... So having an enterprise where we could see having some control over our product, what it gets used for, who our customers are, see the customers... Basically you can set your own price for your own wine... So that's another trigger for an enterprise like that” (CG03).

Producers and processors who maintained direct interactions with customers valued their feedback. The survey data demonstrate that customers were seen as important influencers in some sectors much more so than in others. For example, only 7% of people who selected intensive grazing as their main business checked customers as key influencers, compared to 67% of food processors, and 54% of agritourism businesses and 54% of tree, vine and berry

crop growers. Similarly, the survey data demonstrate that of the 97 respondents who indicated that they only produce boutique products, 54% rated customers as a major influencer, compared to 44% of the niche producers and processors (n=136) and 21% of the commodity producers (n=229). These sorts of figures highlight that niche and particularly boutique production/processing require skills like marketing, communications and advanced administrative skills. In particular, marketing skills were fundamental, when convincing customers to buy an expensive product that they have not tried before: “So lot of the cellar door work was necessary... If you just took that product, put it on the shelf, it wouldn't sell... So they need to be able to experience it to buy it” (CG47). The creation of experience means that inputs are not simple or standardised, and therefore require more skilled labour at a higher cost. Niche and boutique producers/processors usually conducted their own research and innovation over several years before their product or their brand was recognised. Pioneering businesses have often become mentors to new similar ventures:

“We have the right climate, we have the right know-how. And I wanted to grow that. And it's only been the last two years that we've been able to bring other farms online. So we were looking at a, not a franchise model, but a model where we contract to other farmers completely over a 10-year period. So they have knowledge that they will always get paid for every bit of milk that they produce and they get paid a set amount...” (CG47).

The final destination of products also influenced specific constraints and enablers. Export markets required additional investments in government fees, meeting of industry standards, extra paperwork and building a customer relationship at a distance. This discouraged some participants:

“If the governments, in general, in this country, understood that this country and agriculture, not just horticulture and agriculture have to export. ... they should be bending over backwards to help us, not whacking on fees” (RW03).

Producers and processors who suggested they have the easiest time with exporting, produced extremely high value, low weight and/or relatively non-perishable products such as native pepper and dried truffles.

Social Networks as Key Enablers

Survey results indicate that social capital is high in the sector, with the majority of respondents agreeing or strongly agreeing with the different statements around social capital, except for the question around their level of influence in relation to their social connections. In the latter, 43.8% of respondents agreed or strongly agreed, and 34.6% of respondents neither agreed nor disagreed (Figure 4.3.3.).

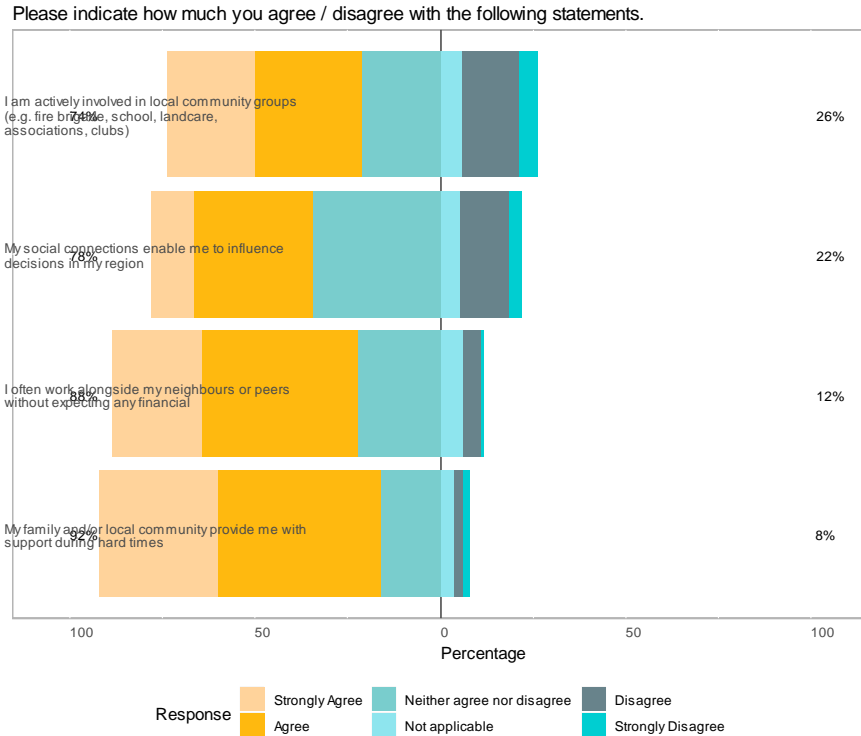


Figure 4.3.3.: Social capital in the food production sector of Tasmania represented as answers to 4 survey items.

Qualitative data indicate that family was not only a major motivation to develop or maintain a viable business (Section 4.1.2.), but also a key source of knowledge and know-how in a two-way exchange, where younger generations learnt from their parents and grandparents, but older generations renewed their visions, goals and practices due to new ideas and knowledge contributed by their children. Family was also depicted as a key hands-on support during times of labour shortages or as emotional support in times of hardship. Several businesses mentioned the importance of family loans and financial support to grow or start new ventures, sometimes from income sources external to the agricultural business. For some, family support unrelated to the business has been crucial to build a business, as in the case of parents who needed someone to take care of kids during hard working days. It was not always easy working with other family members, but most participants who talked about it, managed to create a functional work team with other family members: “I think working, yeah, working in the family business has been fantastic...” (CG09).

Working as part of a family business also has downsides. The pressures to keep a family farm contributed strongly to the most common family issues discussed which were about succession planning and the tensions it caused.

“Often my sister and I wouldn't agree on things. And then one would go running to dad and then vice versa, and it created a very uncomfortable position. And so having that neutral person as [General Manager], and I said right from the beginning we need to

have someone in there as a neutral person that's not going to be influenced by any biases, and [General Manager]'s really fit that pretty well" (CG09).

Local communities and communities of practice were also important topics raised during interviews. One interviewee believed that farmers tend not to share: "If they start telling their neighbour how good things are for them, then they fear that the neighbour might do it" (PL19). In general, however, most references were about the benefits of belonging to such communities, with a number of participants suggesting this had improved over recent years. Personal benefits of socialising with peers and being able to share problems and good news went beyond personal wellbeing. It was also a favoured way of sharing and learning about new technologies and practices:

"We have a farmer's group called the Coal River Products Association. A lot of farmers and other people with agricultural backgrounds are involved in that group and try to meet once every one and a half months, once a month. And we have a meeting. And all the farmers get together and have a couple of drinks and have a meal. And there might be a guest speaker from Rabobank or Tas University or something like this. People with new crop ideas, all those sorts of things come along to the meeting... The Coal River Products Association came out of the 1967 bushfires, and were trying to get help into the area and coordinate help... it just kept on going and now it's been operating for 50 years this year" (DK04).

While time constraints were commonly invoked as limiting participation in such groups, these groups were also widely discussed as key learning and support mechanisms, especially when driven and owned by their participants as farmers or across value chains. In some cases, participants talked about mentors, or linkages among services providers and various forms of emotional, psychological and other support. These are the foundation of wider relatedness motivations, as discussed in Section 4.1.2., worth considering when designing capacity building strategies. In some cases, external actors were described as useful catalysts for bringing groups together, for example through workshops organised by TIA or NRM organisations.

Formal organisations, such as representative bodies, were widely seen as fundamental for farmers and processors to have an influence on political decisions: "I was involved in the TFGA, the main agricultural body. You have influence in the direction of where you wanna be, having a voice on that, I think it's important" (PL04). These bodies allow sectors and subsectors to influence policy and politics. However, small growers and especially people in very small niche industries talked a lot about their lack of power and access to support, because of their scale:

"We don't have a lot of clout. It's not as if I'm representing 50 or 100 growers or farmers who are all struggling to maybe get their product to market, and a freight rebate could be the key... We couldn't really sort of talk anyone into supporting us there because once again, really the only benefactors gonna be us" (PL06).

These sorts of quotes raise the spectre of unevenness and tensions among sectors, regions and groups, that was common if diverse in the interviews, but is often dismissed or not discussed in detail. Whether these issues relate to tensions between highly productive farmers and ‘lifestylers’ who do not effectively manage weeds biosecurity, or between different parts of the state, or around the rapidly changing gender roles in agriculture, they are important aspects of social capital. It appears from the interviews and the survey that there is also growing concern about constraints related to ‘social license’. This was often raised with reference to animal welfare movements and health concerns about chemical inputs. To counter the limited information that most of society has about agriculture, some participants have opened their farms to receive local kids and adults, as well as tourists, in an effort to show them how food is produced and the importance of the sector. Others are exploring ways to meet changing consumer demands for food that is free of sprays, or that take animal welfare as seriously as they can and be transparent about it. These moves, under the broad banner of social license, support the notion that markets are often increasingly influential in determining rules and norms in agriculture and government policy or regulation (Delmas & Young 2009).

4.3.5. Natural capital

Key themes related to natural capital were:

- Location, land characteristics and climate.
- Biosecurity, a major concern.
- Environmental concerns, services and management.

Location, Land Characteristics and Climate

Most farmers interviewed were satisfied with productivity of their land and access to water (Irrigation is discussed in Section 4.3.2.). A few farmers, however, reported having to run their businesses in suboptimal locations:

“This property was on the market for seven years and no one wanted to buy it because it was way too hard to deal with. Too rocky, too steep, too many trees, just not... Most people are looking for land that's flat, that maybe it's cleared already, it's easy access to everything, and you can just drive the tractor all over the place without danger. Well, this place doesn't have any of that” (CG20).

In many cases, there was a trade-off between location characteristics. For example, a farm that was on a tourist route that facilitated the development of a cafe offering food made with farm produce, was located on less productive land. As the cafe became more popular, the owner had to start buying produce from other regions in Tasmania with more suitable growing conditions.

Participants mentioned the limited growing seasons as an important constraint related to Tasmanian natural characteristics. For some producers and processors, this limitation resulted in minimising operations during colder months. On the other hand, other participants viewed

Tasmanian climate as an advantage, with less extreme patterns than in the mainland, as in the frequency and intensity of heat waves and droughts. The Tasmanian climate was particularly advantageous for certain products, like some grapes and olives:

“To a certain extent, [a cooler climate] helps us, to a certain extent, it hinders us. It helps us, because we have a longer ripening period, like, with grapes, like Pinot Noir for example. Why has Tasmania got a reputation for making the best Pinot Noir in the country? It's because they have longer ripening period, amongst other things. So we get the greater flavor, complexity developing, and that certainly suits that crop, and it suits olives, too” (CG21).

Some farm owners with more land extension stated that they had more control over climate effects: “A lot of our environment we're in charge of ourselves as big land managers” (CG03). For example, they did not report issues with neighbours not controlling weeds, pests and diseases appropriately. When land covered different subregions, they also had more flexibility to adapt to different circumstances, as cited by a farmer with lands in low altitudes in the Midlands and in the Highlands:

“Making the climate work in your favour and the difference in altitude work in your favour. So obviously, down here, we're quite low. Summers are very dry. Winters are pretty gentle generally. Up there, the rain falls a lot higher. The season's a lot later. So you've generally got green grass all the way through the summer. So just understanding the production system, understanding the different climates you're working with, and just trying to piece it all together to find opportunities” (PL03).

A similar example was mentioned by cherry growers, who explained that newer plantations in the Midlands, in addition to those in the Houn, has allowed them to extend their production season. This option, however, is not attainable for most farmers, as access to land is becoming more difficult, due to rising prices, but also as land has been subdivided for development and for lifestyle blocks.

Climate change was also mentioned as a key concern, with some interviewees having left behind their original skepticism: “Well, global warming is my biggest [constraint]... I used to think it was a load of crap until I went to the farm. [laughter] And had to rely on rainfall” (CG12). Specific issues mentioned included an increased unreliability of the season and a heightened frequency of weather extremes.

On the other hand, in many cases weather-related hardship has triggered the development of social capital, but also adaptation, innovation and renewed success of individual businesses:

“When we planted the grapes, so that was obviously first in 2010, that was really born out of a drought. In 2006, '07 and '08, there was a three-year drought which was pretty much statewide. And our livestock businesses is dry land grazing, or it still is mostly, but it was all then, and in a drought it just shows that up. It's just completely

unsustainable, so we're looking at other things we could do. So the trigger for this was probably three years of drought on the rest of the farm. And we had to add another bow to the enterprises and the grapes ticked a few boxes. So we planned it and just jumped in" (CG03).

Environmental Concerns, Services and Management

The interaction of farming operations with native biodiversity was not often mentioned, and sometimes only after prompted. Also, during interviews a few participants mentioned approaches to improving soil, looking after waterways and/or maintaining and replacing native vegetation, but most did not provide specific examples of ways of addressing environmental impact, or improving environmental conditions. Some interviewees mentioned having forest areas in their land and using trees as shade and shelter from the elements. One interviewee, however, lamented how the landscape has changed since he was a boy, with trees disappearing altogether from farmlands as larger irrigation systems have been set up. One farmer mentioned replacing those trees in corners and in between paddocks but added that most farmers would not replace lost trees. Recent relaxation of forest clearing regulations aim to promote growth but can have negative consequences on environmental conservation.

Native animals were hardly mentioned during interviews, and when they were, it was mostly off record, as a problem for their business. One interviewee mentioned the need to cull wallabi numbers, and another mentioned fencing areas to reduce impact. This was in stark contrast to survey results, which indicated that native animals were perceived as a major constraint (Figure 4.3.1.). Our interpretation of this discrepancy is that talking about culling of native animals is not a safe topic and might be perceived as socially unacceptable. Specific research would be required to better understand what lies behind this practice, level of impact and options to reduce conflict.

A key point regarding environmental responsibility raised by some interviewees was that it was easier to set and pursue environmental goals when the business was profitable. Yet others suggested that environmental goals were core aspects of their business that could not be compromised.

A few participants raised concerns about environmental and health effects of agrochemical inputs. One participant suggested that the use of chemical inputs was often taken for granted as necessary because of the prevailing influence of agricultural companies and related agribusiness supply chains.

"They're getting educated in the agronomy side, the chemical side, the, "Let's sell a product" side of it, but they're not getting educated in terms of the web of life, which gets back to this understanding of biology and the web of the interconnectedness. So there's major constraints there" (RA04).

Similar perspectives came from people with a strong commitment to organic, to biodynamic, and regenerative agriculture. However, it should be noted that these views were often not 'black and white' and many participants that might be considered 'conventional' farmers lean towards alternative techniques and practices, just as those who would be considered 'alternative' considered diverse practices in terms of their ability to achieve outcomes that aligned with their goals and values:

"So, we hoped to be organic from the start. And, it's still really important to us to produce, say food, and to look after the environment we live in. But, we don't identify ourselves with the organic because I think that the worst thing about that movement is the sort of quasi-religious us and them attitude to other farmers, which stops them from ever learning outside their own field... IPM [Integrated Pest Management⁵] is probably doing more for the environment than the whole organic movement in Australia put together, for the simple reason, that more people are prepared to jump on that bus" (DK10).

This participant further suggested that new inputs with low toxicity could be more beneficial than organic productions, as more farmers would be willing to try them. Unfortunately, not many are available in Australia, because the regulatory burden is not justified by low demand:

"I could name a dozen pesticides, let alone herbicides, that are widely used in the US which have come on stream in the last seven years, which are... That have magnificent toxicology that just, almost drinkable, and so much safer and more effective, than products that are available in Australia. Simply because, it's not worth those companies registering them in Australia" (DK10).

The different opinions about environmental services, constraints and management point to the need for a closer look at the different understandings of "environmental sustainability" across different sectors and stakeholders, what level of environmental and human health impact is acceptable (on water sources, soil, air, human health, biodiversity), and ways to improve both environmental performance and services.

4.4. Expectations

As the final question in the interview, we asked participants to share their perspectives about the future of the agrifood sub-sector that they operate in. In line with sociological theory (Adam 2005, 2008) we found that expectations of the future were often expressed as hopes for a desirable future that is to be shaped and managed'. Participants described not only what they *think* will happen, but also what they *hope* will happen. In many instances, participants were

⁵ FAO defines Integrated Pest Management as "an ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimise the use of pesticides" (<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/>)

quick to follow up with suggestions for what needs to be done now to sustain or promote desirable attributes, while managing perceived threats. Importantly, participants' expectations of the future provide windows for understanding the present. They reveal drivers that shape strategies adopted by participants, or constraints experienced in the present.

Specific expectations of the future were as diverse as the participants in this research. In this section, we focus on the visions that are shared across a wide range of participants and use them to understand the changes that are occurring today to create possible pathways for the agri-food sector. Figure 4.4.1. shows recurrent themes that were identified from participants' narratives of the future, and the spread of optimistic, pessimistic or ambivalent attitudes associated with each.

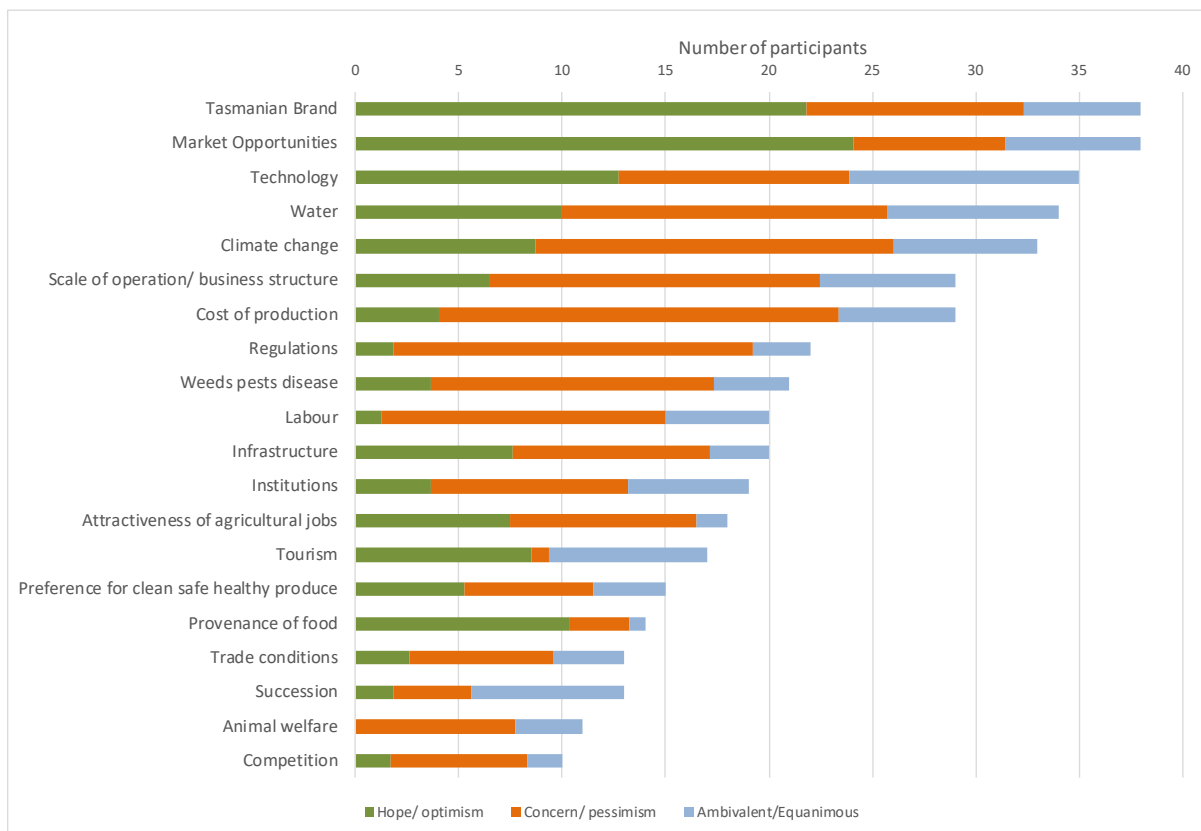


Figure 4.4.1.: Recurrent topics raised in interview participants' descriptions of the future and the number of participants who raised them in different ways.

Below, we explore relationships between the most widely recurrent themes, the hopes and concerns associated with each, and how they guide strategies being adopted by participants in the present.

4.4.1. A future built on the Tasmanian brand and its qualities

The Tasmanian brand is multi-faceted. Built on the state's competitive tourism advantage in its natural environment and its clean green image, it extends to place-of-origin and quality branding in the food and wine sector (McGaurr 2012). For instance, Brand Tasmania, a government-funded organisation links the quality of Tasmanian food and beverages to the state's "famously clean air, ample supplies of clean water and freedom from many of the outside world's pests and diseases" and to its GM-free status (Brand Tasmania 2018). Adopting a brand image across the entire area of the state and across its diverse agrifood sector presents both opportunities and risks. On the one hand, a coherent story about the state's natural and produced values is used by a diverse set of producers, with the benefits shared by all. The diversity of value and experiences linked to the brand helps to make the brand open, diverse and sophisticated. However, such open-ended uniform branding also means the risks are shared by all.

Several participants invoked the Tasmanian brand to describe a "fantastic" and "exciting" future for agriculture in Tasmania. Beverage and food producers operating in niche markets in particular, were extremely positive about the future potential of the brand and its reputation. At the same time, the need to maintain the image and to ensure its authenticity and underpinning qualities (see Section 4.1.1., under social goals) was stressed:

"Tasmania is getting a fantastic reputation for being green and more environmentally-friendly. So that's why I think we have to persist with the environmental sustainability message. ... I think that's sort of there to grab in the next 20 to 30 years, and cement ourselves as Australia, and some of the world's best wine" (DK01).

"I think Tasmania, we're not a big place, but I think being exceptional is really important - it's a hard thing, but I think Tasmania needs to do something and it is quite exceptional" (PL07).

The brand was also described as an opportunity and a need in the meat and wool industries, which have traditionally operated as commodity markets, but there was less optimism about its realisation.

"When I first arrived five years ago, the meat at Coles was pretty terrible, but now you can find Tassie meat and ... it's all MSA graded, and yeah, they do a good job. ... [it is to do with] 100% consumers wanting something free of chemicals and had a nice healthy life" (CG27).

"We would like to try to brand our Tasmanian brand... We need to get a premium price for that instead of going across the mainland. It doesn't matter if it's lucerne, lambs, grapes. It doesn't matter what it is" (RA02).

“Cause history shows us that the real return from commodities goes down, and down, and down. It doesn't fill you with hope that growing wool is the way of the future. You need to do something else, so they're contrasting. ... And despite when the people talk about branding, using the Tasmanian brand even to create demand for even our commodities which happens a bit it, but it's such an entrenched system wool and meat. You see little individually branded producers producing meat and wool doing great things, that doesn't represent the industry as a whole” (CG03).

Consumer awareness of the provenance of food, its clean and safe production and consumer experiences of food are integral to the Tasmanian brand. While the symbiotic relationship between the brand's reputation and the quality of Tasmanian produce creates opportunities for growth, it also increases exposure of the brand image to problems encountered anywhere in the state or in any one industry. An example is the risk of Tasmania losing its status as being relatively safe - of being pest and disease free. Comments by people who have built their businesses on this status reveal vulnerability to the impacts of incidences of pest, disease or contamination:

“Another real worry is that a food safety concern hits an Australian producer of a product like berries and we get tarred with the same brush. ... And if we were to see an Australian producer result in a sickness or a contamination, I think that would spread across the whole industry ... That could bring our industry to its knees. ... So, we get a disease in raspberries, blueberries, or whatever. That wipes us out as well” (PL01).

“If we get fruit fly to Tasmania, we are screwed, [chuckle] because we basically, our industry, the cherry industry is built on being a fruit fly-free. ... I think it's probably a matter of time. I really hope that it doesn't come for a long time though” (CG04).

“I suppose the latest thing is this whole fruit fly free status, which even though we know it's only for fruit, I think a few people have got a bit gun shy of the whole produce from coming from Tasmania now. ... There's some I suppose tomatoes and capsicums and pumpkins, which you'd think are probably more vegetables, and cucumbers, I think they've all been affected as well” (CG39).

The case of animal welfare and animal rights, while not exclusively related to the Tasmanian brand, is another example of the risk involved with a shared reputation, especially one that relies on public perceptions. Livestock producers were highly concerned about public perceptions of animal welfare, which they felt were based on misunderstanding or misinformation about farming practices.

“I always worry about ... There's a big divide between the city and the country ... Understanding animal welfare stuff, environment ideals and things, by people that aren't fully over it, or understanding it, trying to impose that onto country areas” (CG30).

“Don't get me wrong, not everything they do is wrong in my eyes, it's just, sometimes it's extreme and not practical. ... From a livestock point of view, that [live transport of animals] to me is our biggest risk going ahead, how we manage. Because none of us like sending our stock over there. We were choosing to sell them [to the mainland] because they were not price competitive at all” (CG37).

Improved communication between consumers and producers and demonstration of good practice by records and data collection were recommended by some participants as strategies to maintain or improve public perceptions of agriculture:

“I think we can't have our heads in the sand when it comes to that [referring to animal health and animal rights]. With the advent of social media... people feel very free to voice their own opinions, but suddenly someone's opinion becomes fact... people are so quick to judge and quick to follow along with mass hysteria. ... I think we need to be managing that so that it does come back into balance” (PL03).

“I suppose as farmers more of us need to speak up and tell good stories and stuff like that. Which is something I'm trying to do a bit” (CG31).

“At this stage, we have audits for cattle, welfare. You need to keep records of everything, need to make sure you're weighing your calf at six months... to be compliant. I would like to see some compliance in terms of environmental compliance... Consumers are pretty conscious these days and then we're selling a clean and green image in Tassie, and on King Island, but then you're really not doing much about it. If people are aware of that, you'll lose the credibility” (DK13).

One participant suggested that industry bodies could develop a common and consistent message that is then adopted by farmers:

“That's the important thing, to probably have a consistent message that's widely used so consumers keep hearing the same message. ... Well, I think that's gotta come from, some ways, our Australian Dairy Farmers Federation, or TFGA, or Dairy Australia to perhaps, to come up with the strategy around that” (CG36).

The Tasmanian brand, on which so much of Tasmania's agrifood sector relies, is closely linked to consumer awareness of the provenance of food and the processes involved in producing food. Consumer perceptions of the brand's qualities are based on personal experiences, and on information in various media. Participants were conscious of the risks of inconsistent associations being made with the diffuse brand image; they emphasised the need for collective efforts to maintain the brand's reputation into the future.

Some interviewees in the wine sector felt that sub-regional branding was necessary, to provide benefits to more regions and to take advantage of unique traits from different growing areas. Participants involved in agri-tourism ventures voiced a similar view: “The tourism industry could

be a little better at marketing our regions perhaps and getting that regional dispersal happening” (CG11).

4.4.2. Climate change and irrigation

When describing the future, more than a third of interview participants spoke about potential impacts of climate change, identifying both positive and negative consequences for Tasmania. Higher temperatures and longer growing seasons were seen as the “perfect climate for growing grapes and all fruit and vegetables” (RW03) and “not all doom and gloom” (DK06), and that “in climate change, we’re going to be a pretty good environment to be in here” (RW01). However, most participants were worried about increased variability in seasons, more extreme events and lower reliability of rainfall. When interviews were conducted for this project, it was the end of summer and the east coast of Tasmania had undergone a prolonged dry spell. A drying climate and the need to manage water were at the forefront of future visions of participants from the east coast:

“I’m really concerned about here particularly. It’s getting drier and drier and drier, and I’m really... I’m dependent on town water, and quite frankly, I can see the day come when the cost and the availability of water [is too limiting] just to even grow here” (CG15).

“Water is paramount. We’re learning that with climate change and all that sort of thing. I was a little bit sceptical about climate change, but I’ve got a feeling it’s happening. And I think water is going to be a fairly important commodity and it is very difficult to get permits to store water. Yeah, that’s what’s worrying me... We can’t hang our hat on anything” (CG16).

“Really scared by climate change or just inconsistency of the seasons that scares me ... we have more extreme dries and more extreme wets and no consistency and as a farmer it’s really hard to sort of... Sometimes it’s too dry, sometimes it’s too wet, sometimes you get frost that you weren’t planning on and that gets harder and harder” (CG31).

For producers elsewhere in the state, the future was not as grim as in the east coast. They too mentioned changing reliability of seasons and operational impacts of extreme weather conditions.

“Well, yes, [we will experience] more extremes, but the extremes are coming off a very low base here, because it’s a very stable climate on the north-west coast of Tasmania, so the extremes can change a bit but we’re still well within good growing conditions” (CG18).

“I think year on year it’ll just be different weather conditions. I think the stability of the weather has changed... if it’s been wet during the winter... And if we can’t plant onions

'til late, then we have to make decisions about whether we will or won't plant them... after you go past a certain planting date, the quality gets compromised" (CG39).

Most producers identified irrigation as a necessary step to cope with highly variable rainfall, with some saying it was necessary to stay viable during periods of drought. They spoke of moving away from dryland sheep grazing and cropping to more intensive horticultural crops such as grapes, using irrigation for greater control over water availability. The cost and regulatory requirements for building storages and irrigation infrastructure were seen as hindrances by some, while others described a shift to vineyards or intensive horticulture as increasing the ability to pay for water.

"Well, we've moved away from dry land sheep and cropping, that sort of stuff and going into something like viticulture which we can irrigate and can control and take some of the key environmental factors out of the problem by being able to irrigate, then we can manage that problem like we can" (DK05).

"We need irrigation to stay viable here, but it would be to have more pivot irrigators which are easier to irrigate large areas of land. All those sorts of things, but it's pretty expensive for the infrastructure and things like that" (DK04).

"Part of that discussion around water, and this is just an example of this, is that people with huge overheads and doing intensive horticulture, their threshold for water is so much higher because it's. ... it's just a small input cost, really. Presumably, when you're going all the way down the value chain, ... a lot of those input costs become relatively minor costs of getting to the final output, or more minor" (CG03).

Some irrigators spoke of the commitment of time and money involved in irrigated enterprises as a trade-off:

"That's right, but it's all expensive, it adds. I have friends that don't have any irrigation and they're very envious of me because I can irrigate and I'm envious of them cause they don't have the headaches of it [chuckle], you tie up a lot of money and then there's all this gear you gotta keep running and then there's.. paperwork and they can just go, "Well I haven't got any irrigation, I'll sell my stock and go to the beach" (CG31).

"People say you can pay for it by just growing a poppy crop, which is annoying. It doesn't... Very rarely would that happen. And two is it's drought-proofing your farm. It doesn't, because as soon as you had spent a lot of capital on your farm you want to get a return to it, so you lift your stocking rates up" (PL04).

"And if you get a drought you don't have to sell all your sheep, you can keep going. But yeah it does come at a cost. Over time, yes it does definitely [pay off]. But also it's a cost of your lifestyle. My neighbours have tended to farm low input and maintain weekends away, I'm not sure what they do but, a low input type lifestyle. Yeah and

they've done well, and sometimes I wonder whether we've done the opposite where we're high input, and we've done well too, but I'm not sure" (DK08).

Most of the concerns about climate change were related to the risk of unreliable rainfall patterns into the future. Accordingly, irrigation was seen as a way to mitigate climate risk by providing producers with greater control over water availability and application. However, participants also highlighted the trade-offs involved with investment in irrigation, especially the imperative to intensify land use and manage farm activities more closely in order to secure higher returns and service debt burdens. In effect, climate risk appears to have been substituted by financial risk.

4.4.3. On technology changing the future of farming

There was broad agreement among participants that technological advances are and will continue to change the nature of farming. Participants spoke of the benefits of technology for automation of irrigation, for real-time monitoring, for avoiding waste through variable rate management, for managing disease in vine crops, for overcoming labour issues through mechanisation, for creating markets and engaging with consumers through social media, for traceability of food, and for improving farm safety (Section 4.3. above).

Some considered increased adoption of technology as a necessary progression to feed the growing population of the world:

"There's no way we're going to sustain feeding all those people if we don't use the latest technology to do what we do as efficient as we can do it on as small a piece of land as we can do it. I mean it's just that simple, common sense as far as I'm concerned" (PL13).

The increasing role of technology in farm activities also increases the need for highly skilled people. Some participants saw this as a challenge for Tasmania:

"Agriculture is no longer physical work. ... It's maintaining mechanical machines that do the work now... So you need to have higher order skills. You need to make decisions that improve your efficiency rather than waste time. And there are a lot higher order, more skilled, more educated jobs than there used to be ... and it'll continue to change and be more technical" (CG26).

"Having people in the companies that can support their technology is very difficult in Tasmania. Well, it's difficult anyway, but, they sell you a GPS something, and if it's working, it's fantastic. But if it's not working, then no one in Tasmania really knows too much how it works, or they're too busy. ... Or you spend a lot of money, and not get any benefit from it because it's only working half the time" (CG29).

A few people cautioned that technology cannot be entirely relied upon, that one had to still visit the physical location and identify the problem. Reliance on technology, they warned could make

one detached from reality, from the physical process of observing and understanding what is happening.

“We've embraced technology, but we haven't gone overboard with it either, because this industry, it's just got too many non-technological comfortable-type aspects to it; Weather, livestock, all those sorts of things just... Technology still can't be determined for a lot of that sort of stuff. The variability of it, and the vagaries of it as well” (CG54).

A dairy farmer drew attention to the risk of increasing financial commitment in technology:

“Technology is a great thing, but what they're doing is that Tasmania and Australia is losing their ability to be able to supply cheap milk because their bottom line is becoming too expensive. They're getting away from what the values are of the dairy industry in Tasmania, which is pasture and climate. ... They need the higher prices to survive now ... In the '70s and the '80s and early '90s, the world price went down. The Australian dairy farm has survived quite well because their bottom line was so low. Well now when the world price goes down, the Australian dairy industry suffers a hell of a lot because they've pushed up their bloomin' bottom price” (PL20).

As was the case with irrigation (Section 4.4.2. above), technological advances were seen as opportunities to achieve greater control in farming, but large capital outlays required for adoption of new technologies could place pressure on farmers to service their debt burdens. Nonetheless, many participants saw technological changes in automation, sensing and communications as inevitably changing the very nature of farming.

4.4.4. Disappearing small family farms

As discussed in Section 4.1.1., in relation to the economic imperative to grow to survive, various participants predicted that small family farms in Tasmania would be bought out by either larger family farms that need to be big to remain profitable, or by corporations. This vision of the future projects a well-entrenched trajectory.

“The time my father started in the apple business, there were 2,000 apple growers in Tasmania, by the time I started, there was 200, and today there's 20. So we know that we have to sell product for less money in the future than what we get today. We know that we're going to have to pay people more for performing the tasks. We know that all the other inputs in business are going to cost us more, so the only way we see us surviving is to be constantly expanding” (RW01).

“By far, the biggest effect on viability of farming at the moment is the cost of land. It is so hard to pay off land by working it now and it didn't used to be” (DK10).

The dairy industry in the North-west of the state has witnessed high levels of corporate investment. Most dairy farmers we interviewed spoke about the implications of

corporate investment. They wondered how it was possible for the corporate investors to generate high returns for their investors, and discussed the challenge of finding and retaining good staff in corporate farms. “The majority of corporate investors are using, what would you say, investors’ money, superannuation funds or whatever. They have funds available to invest and they are looking for something to invest in, and dairying is something they could invest in... I think it’ll be real interesting to see how well the corporate model stands up... Because, like I said, they’ve got to get their return. And they’re very top heavy, very top heavy” (PL18).

“Especially the corporate side of things is, yes they might produce the food, but at what cost? The profitability within their business, and I’m not an accountant for them, but there’s no money in it if the labour... If you’re going through labour or workforce every six months, if there’s a new person driving that tractor and a new person milking those cows. And that sense of ownership, it’s not there” (PL14).

“It seems like the corporate business is the ones that are starting to take over the - especially the dairy side of things. You know, it becomes more corporate. If that is the best way, I’m not sure because it brings into the equation the problem of finding large numbers of staff, securing them, accommodation, housing. Basic things like that then becomes a problem” (PL13).

While some participants were sceptical or, less often explicitly worried, about the future of corporations moving into agriculture, others emphasised the need for corporate investment to generate growth. This was particularly evident in Tasmania’s cropping sector where value-adding opportunities in the state were seen as limited and limiting:

“More corporate-type agriculture, I think can be a good thing. If they’re the sort of corporate agriculture that’s looking to value add, we probably need more of it. You think about in cropping, farmers need more cropping options coming along all the time and what’s going to drive that is companies coming in and developing markets for crops, seed crops or other crops. That’s not going to be driven by individual farmers... That’s where the growth in agriculture’s going to happen” (CG28).

Small farms are struggling to survive in this environment. A small-scale horticultural producer described some of the challenges involved in operating at a small-scale, suggesting that many find it hard to survive beyond the initial years of setting up.

“I think the small farming sector’s important, and if people can’t actually turn a dollar without killing themselves doing it, it’ll die, simply, because no one will want to do it. ... It’s pretty hard to find small, especially mixed market gardens, their sort of horticulture, who have been in the game more than five years tops, and especially if you start looking at the more sort of organic or nearly organic, or the... Two years most of them last, sometimes five...”.

“It's also sort of a political thing in a way that we feel that society is a lot better off if there are at least a big percentage of its members independently financed. ... The more people who've had independent means, I think it's much better for the way people think, the way they live, the way they relate to other people. So it's really important to us to develop systems of small scale farming which actually are viable for people, viable for the farmers” (DK10).

If current trends of farm consolidation and corporate investment continue, smaller farms could disappear altogether, or only remain viable in the boutique segment. This change has implications for sustainability, for diversity in farming systems and rural communities, and for the political influence of farmers in general.

4.4.5. Strategies to prepare for the future

Farming is often described as a “financially risky occupation” (Harwood et al. 1999, p.1). Producers and processors in agrifood chains are accustomed to dealing with high levels of uncertainty about the future – they are often confronted by an ever changing production environment as well as volatile markets for their produce. In highly uncertain environments, strategies to prepare for the future can be varied. Strategies are driven not only by the need to manage risk but also by the drive to create opportunities.

A shortlist of strategies was inductively developed from interview responses and included in the survey questionnaire, along with a Likert scale for participants to indicate their likelihood of adoption to prepare for the future. A summary of all survey responses is presented in Figure 4.4.2. below, indicating practices or activities that respondents thought were more or less likely for their business.

In Figure 4.4.3., three strategies that were viewed differently across market segments are identified. These data reinforce the finding in interviews that businesses marketing to niche/ boutique segments are more likely to be focused on new markets for products for specific consumers, and through vertical integration that links production, marketing, distribution and other components across supply chains (i.e. co-innovation, see Section 4.3.).

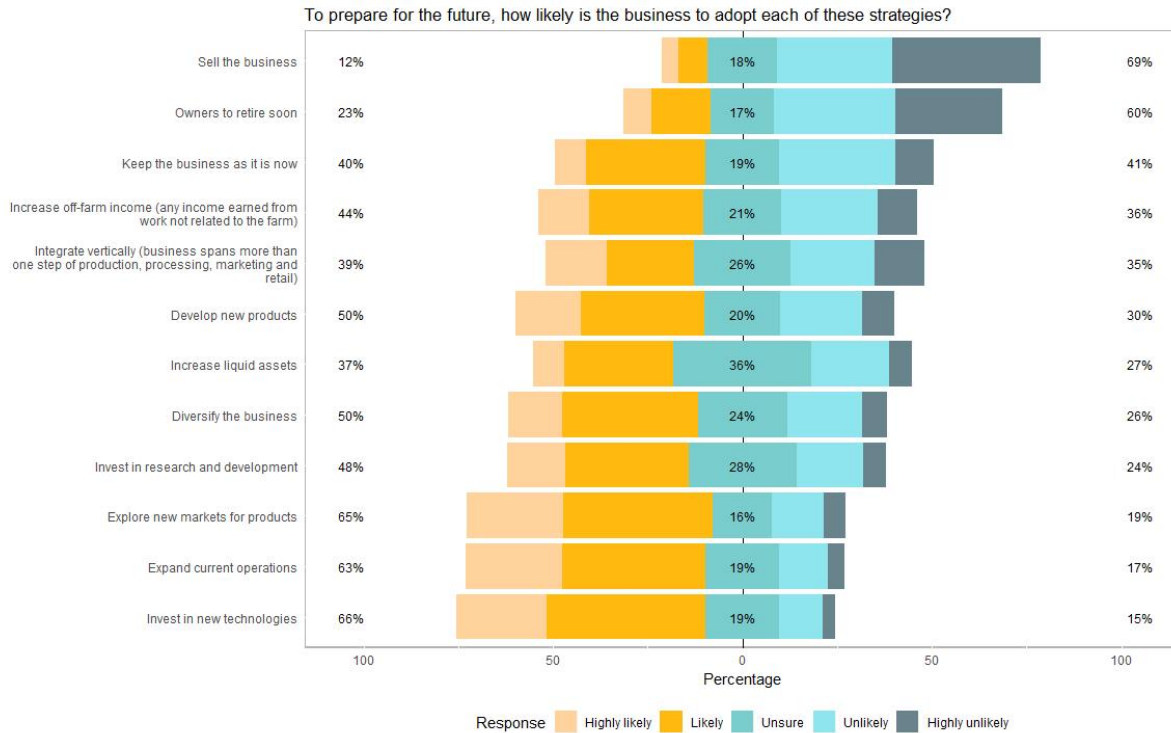


Figure 4.4.2.: Spread of responses to the survey question on likely adoption of strategies to prepare for the future.

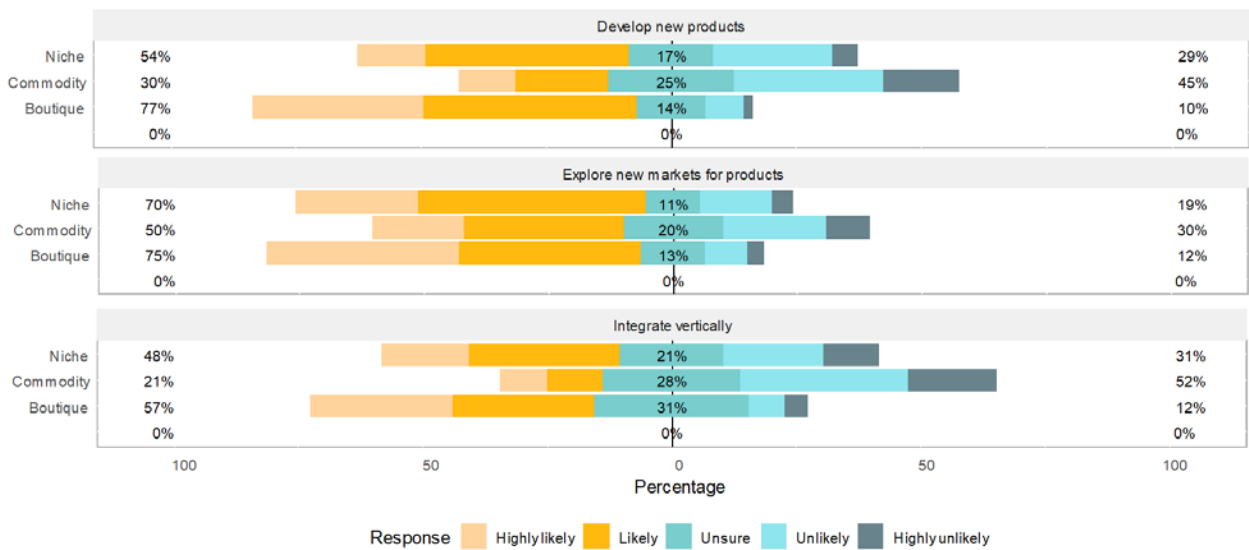


Figure 4.4.3.: Spread of responses across market segments to the survey question on likely adoption of strategies to prepare for the future, identifying the three areas with differing intentions across commodity and niche/boutique segments.

In the survey, we did not ask respondents a direct question about their expectations for the future. However, the likelihood of adopting strategies shown in Figure 4.4.2. reveals

respondents' expectations of the future. For example, more than 60% of respondents indicated that they are likely or highly likely to explore new markets for products, expand current operations and invest in new technologies. These responses correspond with findings from the qualitative analysis of interview data, wherein participants spoke of new market opportunities, the need to expand operations to remain viable, and the importance of technological advances to improve their businesses. That fact that almost 70% of respondents indicated they are unlikely to sell their business, suggests a general optimism for the future of their business and the sector they operate in.

In the case of interview responses to this question, we used the strategic postures framework suggested by Courtney et al. (1999) for in-depth qualitative analysis (See Section 3.2.4.). We categorised participants' strategies using four postures: 1) shape the future; 2) adapt to the future; 3) reserve the right to play and 4) opt out. The posture reflects the "intent of a strategy relative to the current and future state of an industry" (Courtney et al. 1999, p.11). Figure 4.4.4. shows the number of participants we identified as having adopted each of the strategic postures. Note that a participant may adopt more than one strategic posture. The category 'other' is used to capture strategies that did not clearly relate to any of the above postures.

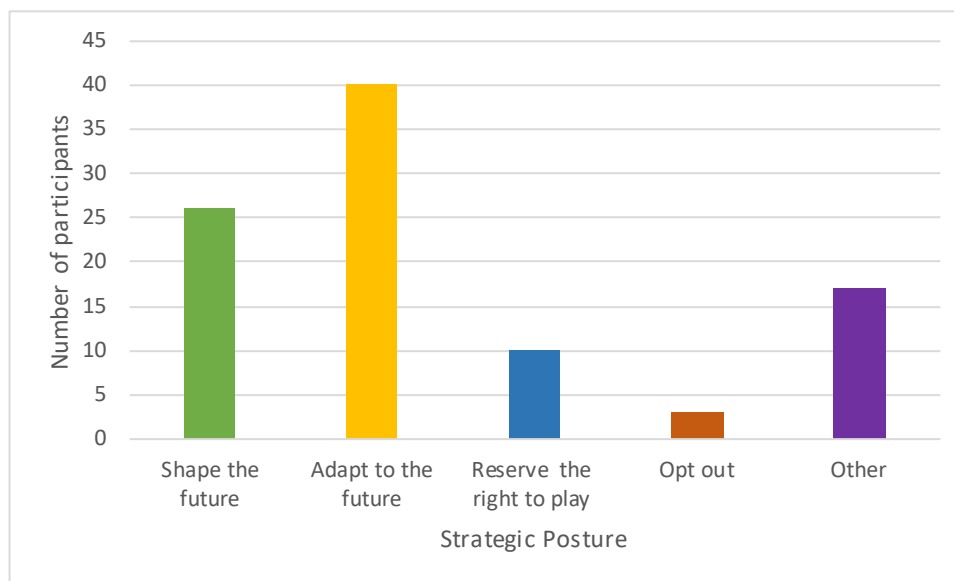


Figure 4.4.4.: Strategic postures adopted by participants to prepare for the future (based on interpretation of interview responses).

Participants who 'shape the future' use strategies to proactively drive their industries and businesses in a direction of their choice. The future is not accepted as a given, but as something that can be shaped. Some strategies are focused primarily on shaping the future of the business, for example by creating new market opportunities, by developing new revenue streams, products and management techniques, or by providing new services. The intention in these cases is often to create or maintain a market advantage.

“Because you are with an iconic premium brand, you also have to be seen to be leaders of the pack, and also be proactive” (DK01).

“We've made a bit of money because the world's short of hops. We've paid down a bit of debt. Everyone's happy, but if we don't do something different, we're gonna end up right back where we've been for the last 10 years” (PL06).

“I guess this new model I was talking about where we have support services available. That's why we're doing it, because there's so much competition with the processors and often one pays a milk price and the other one pays a bit higher and then it goes like this, and you just pay a little bit more, so how do you distinguish yourself in a competitive market?” (CG52).

Other strategies seek to shape the future by changing the environment their business operates in. Some participants said they were working with local schools to attract young people to agricultural careers through education and apprenticeships, while others talked of influencing the direction of the agricultural sector by being involved in the political side of things.

“And being involved in the political side or the social side of [things]. I think it's important for our social activities and also to have an influence on what, how the agricultural sector is moving forward... I was involved in the TFGA, the main agricultural body... You have influence in the direction of where you want to be, having a voice on that, I think it's important” (PL04).

Interestingly, some participants described strategies they adopted with the explicit intention of shaping not just the future of their business, but mainly to shape the future of their sector. They hoped that their business model or experience would serve as an example for others to follow or develop further. One example is the case of a vegetable producer intent on developing viable small-scale farming systems that can be emulated by others:

“It would have been easier for us to adopt some more common farming practices and to make a living a bit more easily, but they're not reproducible things on a small scale. ... [We developed techniques that are] high science but low tech yeah. But the start up costs are much lower. The running costs are much lower, and yet if you do it certain ways it's very, very, very productive. ... and it's efficient in terms of water, in terms of fertiliser and also in terms of labour. So we figure, if we're not making a \$100 an hour harvesting, then it's not workable. So, all those sort of things have been very important to us to develop these kind of efficient systems that small farmers can use and actually make money” (DK10).

The most common strategic posture was of adapting to the future. In contrast to shaping the future, adapting involves accepting the future evolution of the industry or sector as given and positioning one's own business within the industry. In conditions that are highly volatile, it also involves recognising and responding to change quickly (Courtney et al 1999).

Producers and processors in Tasmania are adopting a range of strategies to adapt to a changing future. Strategies in this category include: adapting to a warming climate by shifting to new varieties or enterprises; finding cheaper ways to produce; investing in irrigation or greenhouses to cope with climate variability; integrating vertically to reduce uncertainties in supply; adding value to products; and adopting new technologies to improve efficiency.

As farming businesses have always had to deal with a highly variable environment, adaptive strategies are commonplace. A recurrent theme was a sense of being comfortable with change and adapting to it:

“They might be better, they might sit better, they might not, but growers are pretty good at identifying and not hanging on to something for too long. If it's not working out they change it. That's the risk you have to take. ... It may or may not work out that well, but you also have to be decisive enough to know when to move on” (CG06).

“We know that we got to be doing everything better next year than what we've been doing this year, otherwise, if we're not improving, we haven't got a long-term future. So we're not resistant to doing things differently” (RW01).

“I think from experience we know that problems will show, and we do our best to prevent problems showing up. But if we encounter them, we just have to deal with them as they come” (CG50).

“And overall being persistent because agriculture is very cyclical. So you get these downturns and they run for a while. And you got to be aware of it. You got to have enough hay in the barn to withstand it, but by the same token you also got to have enough patience to keep going through it and out the other side” (CG18).

Reserving the right to play is also a type of adaptive strategy, but it involves “wait[ing] until the environment becomes less uncertain before formulating a strategy.” (Courtney et al 1999, p.12). This typically involves making incremental investments to place the business in a position to respond, keeping reserves at hand, or developing partnerships (Courtney et al 1999). Strategies in this category are often aimed at coping or reducing losses if unfavourable conditions occur.

“But I think once you've been in the industry long enough, you develop a better understanding... And if you've been successful, you've got the reserves in place for the poorer times, when you are hit a bit harder from a freak frost, or a really poor flower set, or something like that” (CG09).

“I think we'll always keep a diversity like cropping, sheep and cattle. So if one fails, you've still got two other options. I think we'll continue to do that just to cover us a bit” (CG27).

“Like two years ago, it was terrible for rye. I got a couple hundred kilos of rye off, but the spelt grew really well, so it's that diversity that can weather the ups and the downs of what's normal in farming” (CG34).

While diversification of enterprises is adopted by some as a strategy to reduce risk (for example, CG27 and CG34 above), other participants explicitly sought to simplify their operations and their lives:

“I've been farming for 15 years. This first 10 years was trying to go down a high input, intense kind of farming operation. And now for the last five years, all I've been trying to do is unwind all of that to get back to just simpler, bigger, less complicated. Which equals less staff, less paperwork, less... Trying to get right away from that, cause it was just driving me up twists” (CG30).

“But I tried that, doing lots of things for while, then I undiversified. So you can diversify too much... We're concentrating on wool and meat and sheep and cattle and... Because it's working and it's... That's where we do what we can can and try and have a good life in the middle as well, if possible” (DK08).

For some, the long-term future had little influence on the strategies they adopted. They adopted a philosophy of focusing on the present, on keeping things going without worrying too much about the future:

“Live here and just be happy, that's it, that's pretty much it. So, we're not begone, we don't do a lot of planning and things like that, things just fall into place and we just do what we have to do to maintain things and get along” (CG10).

“But I just keep going. I'm a bit like the old man, bury the head in the sand and just keep farming” (CG08).

“It's hard to look much further forward than that for me... I think, five years is pretty much. A lot of my crops are on a five-year rotation, so I'd look at it... 'Cause for me it's not... I guess, it's not like... I'd like my kids to be able to farm here. I don't want to mind the grounds, I'm more a caretaker for it really, than a owner. If you get what I mean” (CG44).

People's descriptions of the future, when seen as drivers of actions in the present, provide an opportunity to understand the rationale behind some of the changes we are witnessing in the agrifood sector in Tasmania. The diversity of strategies adopted by participants and the motivations that drive their adoption reveal a rich picture of the current state of the agrifood sector in Tasmania. It is important to recognise that the sector is constituted by people guided by a wide range of aspirations and motivations, developed through a variety of innovative practices and shaped by enabling and constraining conditions that are not uniform across the sector. It allows one to appreciate why an individual producer or processor adopts a strategy or

a practice, for example, why someone uses the Tasmanian brand to create new marketing opportunities, while another prefers to focus on producing for commodity markets. Expectations of the future are also visions of desirable futures. As visions are enacted in the present, individually or collectively, they serve to direct action and material resources towards different possible pathways for the future of the agrifood sector in Tasmania.

5. Discussion and synthesis: pathways for the Tasmanian agrifood sector

In this Chapter we draw together the implications of this research, and how it might inform strategic decision making for government, UTAS and TIA.

5.1. Narratives as sectoral and regional pathways

From the above analysis in Chapter 4, we conclude that there is no typical agrifood business. It may not even be realistic or useful to define types of agrifood businesses. Certainly, simple binary classifications (corporate/family; industrial/small-scale; conventional/alternative; sustainable/unsustainable) are not useful in conceptualising and categorising people in terms of what they are trying to do, why, and how, across Tasmania's agrifood sector. But neither is it helpful to conclude that 'it's too complex'! This raises the question: how can we grapple with diversity in ways that are useful to inform strategy and priorities?

In this section we suggest that the diversity of goals and motivations can be largely encapsulated in four directions that are apparent in interviews, and provide useful ways to think about current and future pathways for the Tasmanian agrifood sector at large (Table 5.1.1.). These directions are typified by four sets of narratives which are overlapping and interactive - most businesses will have elements of each. But they are not a primarily way of classifying enterprises or understanding 'extension audiences'. Instead they represent distinct directions that research, policy and industry can invest in to form pathways for the sector.

We have called these sets of narratives: The Farm; The Character; The Business; and The Passion. These sets of narratives are presented as directions that, in combination, will contribute to future pathways for the sector. They are comprised of elements of businesses (in aggregate), the contexts in which they operate, and the challenges and opportunities that are most prevalent. Taken individually they might appear as caricatures, but their purpose is to reveal key patterns in how people describe what they are trying to achieve and why. Used in this way, they can be applied to identify pathways and possibilities for the sector, now and into the future. Each direction on its own has substantial promise as well as risks and challenges. They suggest key areas of work and development across RD&E and education, and for industry and government. The central elements of each are summarised in Table 5.1.1. in terms of the broad focus, the goals and motivations that drive it, the opportunities it provides for Tasmania, and some of the key associated challenges and risks.

Table 5.1.1.: Four directions derived from interviews that underpin the development of pathways for the Tasmanian agrifood sector.

DIRECTION TITLE / FOCUS	GOALS	MOTIVES	OPPORTUNITIES	CHALLENGES AND RISKS
THE FARM	Focus on efficiency of production, passing land on to next generation, farm-level profitability, continuous incremental innovation, and, for some, growth of enterprises.	Being own boss (autonomy / right to farm), identity as farmers	Large and stable support networks, increasingly professional careers in agriculture, inter-generational vision and commitment to place, and high relative circulation of profits/ value within Tasmanian economy; building innovation capacity	Maintaining competitive advantage in commodity markets; on-going upscaling can make 'family farm' untenable; reliance on one or few large corporate customers can lead to boom and bust cycles.
THE CHARACTER	Focus on quality of products, linking products and services, authentic brands; looking after consumers.	Making excellent products, building or maintaining reputation	Large emerging markets for niche and high-value products, professionalisation through multiple diverse skills across value chain, links qualities and brand with consumers and community through credible /authentic stories; clear lines of accountability to customers, consumers and citizens; co-innovation with customers and consumers	Challenges of supply limited by scale in early business phases, challenge of maintaining or building 'brand' (e.g. maintaining qualities, sometimes across multiple businesses; requires co-innovation capabilities and attracting or building skills and capacities (e.g. entrepreneurial thinking and experimentation)
THE BUSINESS	Focus on profitable enterprises, social license, having strong team	Economic success, strong teams, community acceptance	Good corporate governance; professionalisation of agrifood workforce and career options; economies of scale and scope (e.g. efficiency and sustainability); potential to link Tasmania globally; access to capital investment; corporate social responsibility; champion horizontal innovation, leverage of top-down innovation	Business goals may not be connected to community values, profits may not contribute to Tasmanian social goals, market power and scale undermines suppliers/customers, challenges competitiveness of smaller businesses; reduced role of local, public good RD&E; lack of transparency and community trust (social license).
THE PASSION	Focus on values and identity	Intrinsic motivation, relatedness to specific identities and communities of interest/practice/place	Potential for radical innovation in niches; development of new products/services; link to brand identities (e.g. clean, green and clever); development of focused networks of innovators with particular passions that align with public benefits (e.g. social enterprise, regenerative or conservation farming)	Pluralism of interests leading to fractured or polarised agrifood sector (e.g. turf wars); limited investment opportunities; ideology leads to rifts

5.1.1. The Farm

The direction called 'The Farm' is oriented by goals and motivations of farmers with a focus on profitability and growth of enterprises, especially through production within commodity markets. The ultimate goals relate to family outcomes and, often, to keeping the family farm and passing it on to the next generation. The need to keep the farm creates a strong imperative for expansion of the enterprise to be resilient in the face of shocks, and to survive. A key motivation is autonomy to make decisions at a farm level, and to be responsible for the outcomes of those decisions. Being one's own boss, the increasing scale of these enterprises, and farming traditions and identities in families and localities contribute to conservatism and risk aversion with respect to substantial change in practices. Products of the 'The Farm' tend to have large global production and demand, and markets are dominated by big companies, which often operate across global supply chains. Shocks which affect profitability are driven by currency fluctuations, biosecurity, food safety concerns, geopolitical instability (e.g. trade wars) and climate variability.

Within the narratives that comprise 'The Farm', innovation tends to be goal-oriented and/or value-directed, but is also often reactive (see Section 4.2.4.). Some goals, such as increasing efficiency of production, are relatively consistent (if differently oriented) across sectors. Annual croppers and mixed farmers look for new varieties to complement their existing rotation, prioritising varieties with a known demand (and usually a contract) from an existing customer. Dairy farmers build on the fundamentals of the system to gradually increase profitability or productivity. Such change is largely incremental, occurring within a supportive regime (Geels 2002, and see Section 2.1.) that includes structures and institutions such as RDCs, RD&E, private businesses and government policy.

There are diverse strategies associated with 'The Farm'. Our analysis of interviews indicates that, as family farms grow, many simplify. The ability to substantially change practices or products tends to be constrained by the risk profiles of larger-scale investments. For large farm businesses there is a tendency to situate themselves firmly within agriculture, rather than branch into other sectors, such as processing. Meanwhile, in smaller family farms managers are often trying to increase an off-farm income and encompass various forms of 'pluriactivity' – multiple businesses within a single farm. Where the smaller family farms might branch out into agri-tourism and value-adding, the largest farms are more likely to operate side businesses within agriculture such as machinery contractors.

The Farm as a pathway into the future suggests that:

- Growing farming businesses will produce competitive quantities of high-quality bulk products, consistently and efficiently for customers in fresh and processed food markets;

- They must and do innovate to survive in globally-competitive markets; they also maintain identities as farmers by continually working to build the business to a scale and scope that is viable, and resilient to market, climatic and other shocks;
- Innovation tends to be focused on improving efficiency of production for farm-level profitability, and managing farm-scale risk;
- There is an industry-wide focus on policy and RD&E to support farm-level productivity (currently through lobby groups and levies respectively);
- Farmers are generally price-takers and do not tend to work across supply/value chains;
- Sustainability is largely considered at the enterprise level in terms of maintaining productive values over the long term;
- The large majority of Tasmania's farms are family farming operations, which tend to be overseen by family trusts or other business structures;
- The farm sector supplies products to a range of large, globally-networked companies who carefully manage supply, contracts, quality and compliance, through non-voluntary market-based mechanisms (e.g. customer-imposed compliance via indicators of animal welfare). Many of these companies have large targeted in-house R&D teams, who advise on changes across the supply chain.

Key risks:

- Potential for lock-in and path dependencies associated with sectoral focus.
- Narrow focus of potential options and alternatives (e.g. supplying known customers, markets, lacking ability to capture premium value).
- RD&E and innovation, and policy become captured by large commodity-focused sectors.
- Focus on scale and volume as driver of economic value leads to neglect of other forms of value-creation (e.g. diverse regional communities, socio-economic resilience in the face of market shocks).

5.1.2. The Character

The direction referred to as 'The Character' is partly about 'brand' and 'quality', with participants suggesting this is an area of growth, linked to tourism, changing identities and priorities among both consumers and producers. At the core of this direction is a recognition that premium food and beverages markets in the 21st Century appeal to specific social and cultural groups, defined en masse by discretionary income that they can and want to spend on food and beverages. The value-add to products are specific qualities and services that appeal to these customers. Differentiation requires connections with consumers through making and telling stories that resonate with their sense of self, and experiences that build and maintain consumer trust.

Where the focus in 'The Farm' was on efficiency, 'The Character' relies on attention to detail across diverse qualities, from packaging, to protection of biodiversity, to the welfare of

employees and animals. 'The Character' can leverage off numerous ideas: an agrarian idyll, a technological utopia, from saving the planet 'one meal at a time', to supporting the livelihoods of small farmers.

Here the idea of Tasmania is often deployed as an intangible asset for businesses progressing along this pathway. Such assets must be maintained and developed through collective action, and sanctioning free-riders (i.e. those who cash-in on the reputation of collective brands, while undermining their qualities). These intangible assets of shared regional (e.g. Huon Valley), product (Tasmanian Pinot), and state brands (Brand Tasmania), are often difficult to exclude people from, but which are rival, meaning that one person or group can degrade the value of the asset for all (Ostrom 1990). In some cases, they are managed by companies as private goods (e.g. Cape Grim Beef brand) and standards are set to control qualities. However, a tendency within 'The Character' as a narrative within the state is a desire to 'lift all boats' – many people espousing these narratives look beyond immediate businesses to communities of practice or interest, and to consumers.

Innovation in this pathway is often across the value chain (i.e. horizontal or co-innovation), spanning activity on-farm to product, process and marketing innovation post farm-gate. Businesses are commonly vertically integrated; complexity does not so much stem from the scale of enterprises as their scope. Having diverse functions in businesses, key challenges come in finding the staff who can work across these, or capability that can be bought in effectively and efficiently.

'The Character' as a pathway into the future:

- Food and beverages markets for affluent and discerning consumers drive expansion of high-value products in Tasmania;
- These products are linked to changing identities and values across a growing middle-class;
- Sustainability is valued as a set of services that are associated with products, and authentic and credible accounts (e.g. certification) can support customer trust in these outcomes and practices;
- The brand is owned collectively and its management is distributed farmers and processors, the market – this creates risks of free-riding or individuals undermining the value of the brand;
- Regulatory and market compliance come to be seen as means of creating value and achieving minimum standards rather than impositions. Businesses compete to achieve maximum standards;
- Tasmania becomes increasingly distinguished by its provincial foods and beverages, with sub-state brands having their own distinct foods, beverages and identities, linked to both tourism and local communities and cultures;
- Co-innovation along value chains, including customers and consumers becomes more evident with focus on product, process and marketing innovations.

Risks:

- Lack of leadership and technical capacity limits ability to build qualities, values, and identities of brands.
- Free-riders with inferior products or sub-optimal environmental, cultural and social practices weaken and undermine brand values.
- Sectors move too slowly to respond to the cultural and social change and loses social license or perception of brand is undermined.
- Lack of social capital and locally competitive culture undermines capacity to compete in global markets.
- Specific niches (e.g. organic) or sectors (e.g. dairy) make claims to sustainability and social license that are polarising, unsubstantiated or controversial, and undermine common brands.
- 'Stories' about qualities are not credible, or are found wanting, and loss of trust ensues.

5.1.3. The Business

In a globally competitive world with rapidly growing affluent populations, high-performance businesses are seeing value in agrifood investment, especially in places where there is abundant water, a stable geopolitical situation, and skilled farmers and a perception of quality. 'The Business' as a pathway, reflects the growth of investment, and particularly foreign investment in Tasmania's agrifood sector (REF, and see Section 2.2.2.). Such investment provides potential to scale production and processing to meet some emerging market demands, particularly in Asia. They also have potential to drive largescale dynamism and change in the sector because of the availability of capital and skilled people.

Large agrifood businesses operate in diverse ways. They might lease or buy large tracts of productive land and manage it themselves, or contract existing farmers to grow for them. A common feature of these companies is that they compete at the level of the supply chain, selling directly to retailers, or even consumers. They can have significant market power and substantial capacity to do things in-house, from R&D, to freight logistics, to the production of inputs. While they do not necessarily have the leadership and will to be proactive, very large businesses are more likely to be able to deploy professional teams to address technical, economic or socio-political challenges from irrigation management to negotiations with service providers and governments.

'The Business' as a pathway is powered by highly skilled people, working in dynamic teams, and achieves economic ends of profitability by investing in assets, technologies and people. Economic outcomes (e.g. shareholder value) are achieved by social and environmental means. While participants working in large agrifood businesses in Tasmania were often committed to Tasmania and its agrifood sector, the motives of large businesses themselves are often treated with suspicion by consumers, farmers and citizens more broadly. Businesses are therefore

increasingly aware of the challenges of social license and the need to demonstrate their credentials through third-party standards and accreditation and good corporate citizenship.

'The Business' as a pathway tends to mesh with 'The Farm', with large companies contracting to growers as suppliers. Some larger family businesses have expanded across value chains, especially in niche and fresh markets (e.g. cherries) to take on the central traits of this pathway. That is, they have substantial internal control over their knowledge systems, inputs and skills base. If internal resources are lacking, then they commonly buy them in from external providers or partner with research organisations, or others.

'The Business' as a pathway into the future suggests that:

- There is likely to be increasing professionalisation in agrifood supply chains with well-developed career paths in the sector;
- Large businesses will increasingly manage across supply and value chains, including knowledge systems, doing their own R&D (with extension that tends to be directive and/or contractual);
- External procurement or partnership with publicly funded RD&E organisations may be necessary in areas of highly specialised product or process development and where a contentious issue requires external credibility (i.e. related to sustainability practices and claims);
- Businesses will actively engage in issues of social license and governance for sustainability through the supply chain as consumer values, identities and demands change.

Risks:

- Changes in global competitiveness driven by exogenous factors like exchange rates, trade wars, and geopolitics can rapidly change commitments.
- Large businesses can 'mine' tangible and intangible assets for short-term gain (i.e. do not have intergenerational commitment to sustainability).
- Large businesses undermine smaller businesses and lose community-based social license.

5.1.4. The Passion

"To be in this business, you gotta have a fair amount of passion for the industry, and for the land" (CG42).

People working across Tasmania's agrifood sector frequently expressed a deep passion for what they do; such passion is an important driver for getting things done and doing things well. People's passions usually centre on a business, but they frequently stretch well beyond the bounds of business to reflect commitments to public good and common pool resources within the state and sector. In some cases, these passions are about addressing mental health in rural

communities, and individuals may volunteer with important groups such as Rural Alive and Well (RAW) or Lifeline. Some participants expressed a deep passion for sustainability in various ways. Others expressed a strong interest in radical innovation and experimentation. These two value-driven passions align with two of TIA's objectives – sustainability and leading research agendas in agriculture and food for the state.

Businesses with a strong passion for public benefits beyond profitability provide avenues for partnerships to advance sustainability, community and regional development and other public benefits. There are many people who are experimenting on their own to achieve such ends, and could potentially benefit from targeted support to generate important findings, if they were able to engage with university researchers.

It is notable that many of the people who espoused goals and motivation related to The Passion were small-scale, niche operators and not well-coordinated through existing networks or organisations, such as Research and Development Corporations or representative bodies. Yet, these people were often interested to experiment, test ideas and engage with R&D. They may be well placed to advance sustainability agendas alongside research and industry groups. They are also potentially key partners in small-scale projects that seek to foster radical innovations, for which their businesses might provide 'protected spaces' (see Section 3.1.).

'The Passion', as a pathway into the future, suggests that:

- Deeply held values and goals relating to sustainability and identity are major drivers of some businesses and are likely to contribute to setting a "high bar" in sustainable agrifood production into the future;
- Businesses that make niche products can charge a premium for environmental services and experiences attached to products. This makes them a common site for radical innovation that seeks to understand, account for, monitor and evaluate environmental outcomes of specific food and farming practices;
- There may be avenues for developing research programs to adapt the radical innovations developed by these businesses and make them more widely applicable.

Risks:

- Economic downturns associated with global climate, market or other disruptions substantially reduce markets for high-end food.
- Value built on identities and contradistinction of products (e.g. organic vs. GMO) leads to polarisation and politicisation of food and farming. This in turn exacerbates challenges of social license, based on emotive triggers rather than credible, science-based and authentic narratives.
- Regulations and compliance developed for large scale agrifood production systems, with high associated costs, can make smaller scale operations untenable.

In Summary

The narrative-based directions highlighted in this section encapsulate overarching ways that people position their goals, motivations and strategies for achieving them, as well as some key concerns and hopes for the future. The four directions also have a strong relationship with constraints and enablers, and particularly forms of innovation evident among participants. We stress that these directions are not ‘types’ of people or businesses. Individual businesses will usually have some mix of these elements. While quantitative surveys are often used to cluster respondents into types, groups or segments with the purpose of developing more or less appropriate engagement or communication strategies for these groups, the qualitative analysis here concurs with early work that people and businesses are not so easily typecast (Howden & Vanclay 2000). However, it takes a step beyond such work to argue that it is possible to identify and map directions that contribute to pathways at a sectoral and state-wide level. These directions can be fostered or constrained by RD&E, policy and industry investment.

5.2. Cross-cutting themes for innovation, capacity and future pathways

The previous section suggests four broad directions in which the agrifood sector of Tasmania is heading. Yet it skates over some of the common concerns and themes across the sector as highlighted in interview and survey data. This section synthesises and explores key findings related to innovation and action, capacity and expectations of the future to define key leverage points to build a more profitable and sustainable agrifood sector for the state.

5.2.1. Innovation and innovative practices

The agrifood sector is mature and, while volatile, it also has strong roots and substantial momentum. It is therefore unsurprising that most participants were innovating at an individual business level and mostly through incremental change. A large proportion of participants were found to be adopting strategies with the intent of adapting to the future. Incremental changes are not necessarily small and may involve large commitments of financial resources; for example, investments in new machinery or infrastructure. These findings suggest that farm-scale change tends to be gradual and the result of careful consideration, especially with the growing size of businesses, and associated costs and risks with change at this scale and the large costs and risk of adoption and change ‘at scale’. Given this context, there was also wide recognition among participants that ‘innovation’, as we broadly define it, provides the means of long-term survival.

In terms of future innovation, there was broad agreement about the need for concerted effort towards what might be called an ‘effective innovation ecosystem’. It is critically important that such an ecosystem is not focused solely on technological innovation and adoption but rather considers multiple forms of innovation, their drivers, and the ways they are structured or advanced. From the literature (see Section 3.2.2.), we typified innovation as taking five interacting forms: product, process, market, supply chain, and governance innovation. All of these were evident in the interviews. Yet they were not evenly distributed, and the implications of this finding are explored below.

Firstly, four drivers of innovation were identified: values, problems, opportunities and goals. Where goal- and value-based innovation are directed over longer time frames, more common approaches to innovation were the reactive problem-based approaches and the less systematic opportunity-oriented innovations. Secondly, the three key ways that innovation is structured (top-down, bottom-up and horizontal) interact to create particular outcomes. For instance, top-down development of water infrastructure and policy can lead to bottom-up innovation in processes at a farm scale. It can also foster horizontal linkages among farm and food businesses in the form of product innovations (e.g. value-adding), market innovations (e.g. regional brands) and governance innovations (e.g. partnerships). But these things don't just happen, rather they result from complex actions and interactions.

Historically, much focus on RD&E in agriculture and food has been on innovations on farms. Political representation, rhetoric and policy development have largely focused on farmers and farms. This limited focus may not enable effective innovation in the sector. The focus on farm-level innovation is rational and understandable, given the current economic strength of agriculture is in commodity sectors, and there are deep values, goals and identities associated with it. However, it can potentially foreclose on other opportunities. We argue that TIA, governments (state and local) and industry can, and should, do more to foster diverse forms of innovation through development of top-down approaches that align with and build bottom-up demands and capability for market, product and governance innovation. This is particularly the case as businesses in food and agriculture are increasingly organising themselves to compete across value chains rather than as a single actor (e.g. a farmer).

Any shift of focus will benefit from analysis aiming to clarify goals and design good implementation, and then evaluation to understand effectiveness, efficiency and outcomes of interventions. Such analysis and evaluation should enable learning and continual improvement. Grant schemes provide a quick illustration. Some grants were uncontroversial and seen by participants as the only means to achieve specific public benefit, such as NRM outcomes. Others, that fostered private benefits to individual businesses, such as developing a cellar door, generated tension in communities when they were perceived as leading to unfair competitive advantage. However, the most common issues raised about grants was that they are mostly out of reach because they require time and specific expertise to process. This will often mean that businesses with greater capacity are more able to capitalise on funding opportunities. This observation presents a challenge for RD&E organisations like TIA which tends to partner with larger businesses with both capacity and capital to be able to contribute to and quickly benefit from R&D investment. With a growing focus on co-funding and co-innovation, and a shifting focus of both business and RD&E to be working across value chains, policy analysis will increasingly need to transparently track how public funds create public value and distribute private benefit. It is worth considering ways of tracking innovation and its influences and consequences at regional and sectoral levels.

In commodity sectors the emphasis on technological innovation and adoption (a form of process innovation), especially for efficiency, productivity and profitability gains are the traditional remit of agricultural RD&E and remain core business for organisations like TIA. This activity relies on

technical capacity in agronomy, soils, plant pathology, plant breeding and other sub-disciplines of agricultural science. For a diverse state like Tasmania it also requires that these technical capacities are flexibly applied to different crops and contexts, and that they are supported by nimble teams that can reorganise in many ways to adapt to emerging challenges and opportunities. Seasonal and market variability make it challenging to directly link incremental innovations to gains in productivity or profitability.

Some people in the commodity sectors of Tasmania are seeing opportunities to develop higher value products. Individual farmers appear to be increasingly looking to value-add to products, to extend enterprises or (less often) to build partnerships that span more steps of a specific value-chain, and to sell directly to wholesalers or retailers. The shortening of value chains shift some focus towards product, market and governance innovation, and may increase demand for related economic, market, value chain and other forms of social research to support such innovation. Narratives in this research suggest that this may be a trend in Tasmania, and a majority of survey respondents indicated they are looking to develop new products or markets.

For niche sectors, examples of market, governance and product innovations being undertaken by businesses provide many lessons. A focus on state, regional and business brands and identities, and on consumers as arbiters of 'quality', has created a growth in interest in the state as a whole. This interest provides opportunities to develop and grow lucrative markets and products, as well as to support the state's largest economic sector - tourism. The strong interlinkages between value chain actors in the niche sectors of the agrifood economy and other sectors (especially tourism) suggest an increasing role for inter- and trans-disciplinary RD&E. This can allow researchers and people in agrifood businesses to co-produce knowledge, technologies and practices that support co-innovation.

This research provides a snapshot of how businesses are innovating. Further data collection and analysis will be required to examine changes in innovation and thereby, potential demand for different RD&E contributions to innovation. A useful place to start such analysis would be in improving understanding of how many agrifood businesses are operating in different market segments (i.e. commodity, niche and boutique) as part of data collection by the Australian Bureau of Statistics. This could provide a useful proxy for changes in innovation and outcomes, specifically by helping to understand the changing foci and needs of agrifood businesses.

While shorter term RD&E projects should aim to make specific contributions to innovation, monitoring and evaluating innovation and its social, economic and environmental consequences is likely to be best achieved through ongoing programs that foster and evaluate regional and sectoral development. Capability to coordinate and understand activity through such industry development is explored below.

5.2.2. Regional and sectoral development and planning

Focus on Sectors

The current State Government has set an ambitious target for agriculture growth in the coming decades, to rapidly increase farm-gate value of agriculture to \$10 billion by 2050.

Much associated focus has been on growing the larger sectors of the agricultural economy. Achieving this outcome will require substantial investment of private and public funds in diverse functions and infrastructure. As one interviewee summarised: “To support an industry that’s 10 times bigger, it’s going to take 10 times as much of everything else” (CG03).

Participants widely acknowledged that the focus on public funding of irrigation infrastructure has enabled them to grow substantially and often allowed a change in business direction. However, it was also acknowledged that sustained effort is required to support the sector to innovate and change. Among large farm businesses especially there was wide acknowledgement of the role of private agronomists and consultants in facilitating this change.

In some sectors (most notably dairy and perennial horticulture) TIA staff were mentioned as valuable influencers when it came to technical information. More widely, large and complex farm and food businesses employ technical staff or outsource technical advice to remain competitive. These individuals can and should (and in many cases do) act as intermediaries between farm business and food and agronomic and other research. Evidence from the interviews suggests that this intermediation between RD&E and farm businesses decision-making is very patchy across sectors and depends on individual relationships rather than well-designed processes and programs.

Current effort towards sectoral industry development is necessarily distributed across public and private sector organisations. The mix of bottom-up, top-down and horizontal elements can have long term consequences for innovation capacity, resilience and preparedness for crises in agriculture through market, climate and other shocks (Hughes & Hatfield-Dodds 2018). There is no single right answer to what this mix should be; ‘getting it right’ is an ongoing challenge requiring concerted effort. It is crucial to build and maintain trust among parties involved in such processes through transparent processes, reciprocal commitment and excellent communication (Reed 2008). The importance of consultants as central figures in agrifood in the interviews highlight their key role in enabling wide engagement of stakeholders in regional development initiatives. These roles need to be recognised for their contribution of public (as well as private) value through social capital and knowledge created in the development of programs and projects oriented to sectoral development.

A Focus on Regions

The need for good regional development and planning that includes food and agriculture was a key message from the interviews. Agriculture and food can and should be an integral part of the

social, cultural and economic landscape of Tasmania. It can benefit tourism, e-commuters and other professionals, service industries, and appropriately sized populations. In fact, vibrant diversified regions will be integral to a successful agrifood sector into the future. Tasmania is seeing some regions moving in this direction, attracting professional immigrants with skills and capital, and developing regional capacity.

The analysis in this report also suggests that planning in regional areas is often seen as short-sighted, serving specific interests and disregarding others. Participants suggested that major planning decisions are sometimes made with little engagement of stakeholders in food and agricultural communities. One example mentioned multiple times is that infrastructure and urban development is encroaching into good fertile agricultural lands, particularly in the case of production that requires large areas of land. Subdivision and competition of agriculture with residential blocks can undermine economies of scope and scale. Lifestyle blocks create problems with weeds, dogs and cats, and biosecurity risks. In areas where tourism is important, there were concerns about undermining natural and landscape assets that attract tourists, the shortage of housing for workers and services to support rural businesses, and rising costs of living.

A policy and implementation challenge for Tasmania is to plan for and manage multiple drivers of regional change simultaneously. This requires work across levels and agencies of government, with stakeholders, and drawing on policy research and evaluation. Despite resource constraints, there is a broad commitment to sustainable and vibrant agriculture and food sectors and regions. The connections across Tasmania's sectors and communities puts the state in a good position to progress these goals. However, our analysis suggests that policies, tools and other interventions are often implemented in isolation, rather than strategically in regional contexts and for regional communities. Inclusive and participatory assessment of advantages and disadvantages of different options and interventions within regions is required to both develop, renew and foster collective implementation of regional strategies.

For some agrifood regions, especially those with strong niche production, a key element of regional development and a symbolic and practical means of developing coherent action is through regional brand development. The Tasmanian brand and its reputation was identified by many participants as an important market advantage that needs to be protected into the future. However, participants were concerned about being heavily reliant on a diffuse brand image that could be easily damaged by one or more inconsistent associations. For example, poor tourist experiences or the occurrence of one pest incursion can damage a large brand. It can be challenging to develop and implement a governance framework for a diffuse brand that covers the entire state. The findings of this research suggest that development of regional brands may afford greater value and ease of governance, in part because they become owned and self-governed by communities and groups of businesses. The Tasmanian brand would then be a means of convening and linking different regional brands and identities.

Whether or not regional brands become a focus, regional investment through RD&E and other public policy instruments needs to be targeted to outcomes that address market failures. Market failure occurs where private businesses on their own do not deliver goods and services that are valued by society, such as protection of waterways or biodiversity. In a regional context, market failures can usefully be understood using a capitals framework (e.g. the natural, social, human, physical and financial capitals approach used in this report), to map public and private benefits of investment across capital. This allows for greater clarity, transparency and accountability about public investment and its purposes, and moves away from limited focus on financial, built and technological capitals as default drivers of regional development. Such an approach would detail linkages between economic growth, innovation, or building resilience, and ensuring sustainability at a regional level.

Such regional development is well beyond TIA's individual mandate. However, TIA could play a key role in regional development through actively supporting, evaluating and contributing to appropriate agrifood innovation, and facilitating broader engagement by the University of Tasmania.

5.2.3. Sustainability and social license

Agriculture is increasingly in the spotlight for issues related to environmental degradation, and animal and human welfare. These issues were front-of-mind for many participants in this project, and they are also the subject of substantial research. Participants were concerned about the reputation and 'social license' of agriculture, less so about its actual negative impacts on environments, or animal and human welfare. Yet related issues have been well documented, at least at national and international scales. These issues remain poorly understood in a Tasmanian context: large-scale irrigation systems are associated with salinisation and degradation of water sources (Wichelns & Oster 2006); agriculture is a key driver of habitat and biodiversity loss due to deforestation, and it is a key source of water and land pollution (Tilman et al 2001); replacement of small farm operations with large-scale more efficient production systems have been associated with declining social capital and wellbeing in rural communities (Lyson et al 2001); and agro-chemicals can enter the food chain, ultimately impacting on health and biodiversity (Alavanja et al 2004). The challenge that social license lays down is this: public and consumer perceptions that such issues are a problem is a problem itself. Our interviews reflect an awareness among food producers and processors that the sector needs to engage better with both consumers and citizens.

The Internet and social media have changed the way information is developed, validated and used, and created debates that agrifood organisation's knowledge systems are ill-equipped to engage with. The dominant industry response has been to improve the way they 'tell their story'. This marketing response, in some cases is papering over cracks, and potentially delaying the need for more conscientious action. A few participants recognised this shortcoming and recommended environmental audits or other means of accreditation be instituted to support 'the story' with credible evidence. Others suggested it was best to keep up with best practice and try

to avoid getting media attention. More interviewees indicated that while they were concerned about these reputation issues, they were not able or inclined to do much about them.

Looking beneath these responses, the interviews and survey results indicate that farmers are deeply committed to 'taking care of the land'. Among the mostly widely agreed on goals is 'to pass the land on in good condition'. These goals with a majority consensus are central to many identities, and core motivations that link people's autonomy, competence and relatedness. It is not surprising then that public debate around what constitutes good land management is often heated. Some farmers respond to criticism the way people respond to being told how to bring up their children. A less metaphorical example is that, although it is well known that farmers frequently cull wildlife and have permits to do so, discussion about management of native and introduced wildlife tends to be combative and reactionary. It was barely mentioned in the interviews, but native animals were widely ticked as a constraint in the survey.

Related to the above, our recommendations to improve social license are grounded in recognition that associated issues are both emotive, and based on technical and practical understanding. We highlight that developing greater commitment to processes, practices and outcomes is necessary, rather than merely developing improved approaches for communication and marketing. As societal values associated with food and agriculture change, the practices across the agrifood sector will have to change too. But this is better achieved through proactive engagement than businesses or representative bodies responding to community or consumer pressure. Communication needs to be inclusive, but also the credibility of claims needs to be sound. That is, the outcomes of practices need to be better understood, rather than simply asserted as 'good'. The increasingly high bar of food production can be costly to meet for many producers who are already struggling with the cost-price squeeze. Commodity farmers and price-takers are currently marginalised in these debates, and so larger sectors and industries need to be proactive. Meanwhile, many niche and commodity producers are managing to facilitate these discussions directly with consumers and communities.

Research has an important role in understanding and enabling social license. Questions range from marketing and economic types queries about willingness to pay for products differentiated based on social values (i.e. when and how can accreditation create premium price points?), to questions about appropriate indicators of soil and waterway health as regional or sectoral objectives. Other research related to sustainability will be more oriented to action on the ground, from the placement and form of shelter belts and revegetation to serve different production and soil or conservation goals, to the minimisation of chemical spray drift and optimisation of use through integrated pest management and cultural controls, to reducing barriers to enter certain markets and/or achievement of certain accreditation (e.g. organic).

A key cross-cutting element of such research is that it should move beyond just addressing farming concerns about productivity or profitability, to addressing market and community concerns about value. Such work should actively aim to reconnect consumers and communities with the food production systems, raise awareness of their dependence on agriculture, and clarify and explore the reasons behind different practices.

5.2.4. Labour and leadership

The common concern about the attitude of employees towards work and the inability to attract people into agricultural careers was often presented in interviews as a problem related to young people in Tasmania and beyond. Concerns raised include limited interest in agriculture among young people; generalised absence of agricultural topics in the school system; lower wages compared to other sectors; and young employees' expectation that they will do well-defined tasks rather than having the initiative required for diverse tasks in farming and food businesses. There were also concerns about a general societal sense of entitlement. Several employers reported having found a solution in hiring immigrants instead, who tended to have a more open and willing attitude towards work opportunities. These people frequently raised concerns about the potential consequences of stricter immigration rules.

The challenge of labour in Tasmanian agriculture requires understanding key elements of its context. Firstly, compared to other sectors, farming does not generate large numbers of jobs. With the introduction of new technologies, traditional farm jobs are being replaced by positions requiring technical proficiency and human and social (i.e. leadership) skills (Meinke et al 2017). Secondly, while some people make a reasonable income by working in agriculture, it is not the highest paying sector; employees need to have a motivation to work in agriculture beyond a monetary remuneration. Thirdly, a large proportion of businesses are family based, whether they are set up as sole-traders, as trusts, partnerships, or even as companies. This has important implications for management, but also in the working environment for employees (Kaslow 2012).

Family dynamics are complex and invariably embedded in the company, whether consciously or unconsciously. For instance, a father or grandfather might be seen as a guiding authority or as the obstacle for required change. Relationships between siblings can be cooperative or ridden by historic rivalry. The mother or grandmother can be invisible, or play a key role in keeping the family together and the business solvent. Such a working environment for external employees can be daunting. Staff often have to deal with decisions and orders from different family members that may be contradictory, or appear irrational, or guided by emotions rather than clear strategies. A key insight from one interviewee was that hiring an external general manager who could be more objective had greatly contributed to development of the business.

It is notable, that while some participants discussed labour as a major challenge, a different cohort across the sector had no complaints about their employees. These participants had a different relationship to their staff. Some mentioned trying to understand the personal aspirations and problems their staff face; paying them a fair wage; motivating them with more challenging responsibilities that allow them to grow in their career; and allowing them to participate in business management. Employees that were interviewed emphasised the value of mentorship and the trust shown by their employers as key motivators to stay in the company and in agriculture.

These findings question the tendency to focus on the supply side of the 'labour problem'. We acknowledge that these challenges are not simple but suggest that key areas for intervention should include building leadership management capacity in agriculture and food. Costs associated with losing an employee can include compensation, training time of both leaving and entering employees, reduced productivity while the new person is being trained, mistakes in the supply chain or customer relationships and lower morale in the whole team with accompanying lower productivity (Covey 2006). Beyond significant capital losses to any business and aggregate productivity losses, this challenge has high social and personal ramifications.

The benefits of developing leadership skills in a company go beyond managing internal human resources. Strong leadership can also help to better address the challenges of industry development and social license discussed above. Leadership skills that generate trust in two-way relationships, for example, are fundamental in the development of key relationships and networks of advice. Food leadership fosters the social capital necessary to participate in emerging collaborative and sharing models which are starting to complement and even replace traditional, hierarchical economic models.

Problems of labour availability can no longer be sheeted to concerns about staff skills and attitudes, but questions of the quality of leadership in businesses must also be taken into consideration. Training that enables people to work in agriculture remains critical, but their willingness to find a place and stay in a business hinges on the effectiveness of leadership and management of people within those businesses. Food and agriculture sectors have an image problem. This image may be a misrepresentation, but it is not baseless. For example, a recent study (albeit with a small sample size) of women working in agriculture found that 93% reported having been sexually harassed in the workplace (Saunders 2015). Leadership skills and personnel management are required broadly in the sector to make it more attractive. These skills will help business owners to retain good staff, to get the best from their staff by supporting them, and to separate family relationships from business management.

5.2.5. Substitution of risk in preparation for the future

Agriculture is inherently risky and farmers are accustomed to dealing with risk. Faced with ever-changing climatic and market conditions, producers adopt different strategies to adapt to the future by controlling variability and mitigating risk. Climatic risk featured as a key concern in many participants' expectations of the future. To gain control over variable and unreliable water availability from rainfall, many participants are investing heavily in irrigation infrastructure. Whilst irrigation is clearly seen as a driver for growth of the sector and an enabler of choice (Sections 4.3. and 4.4.), participants also spoke about increasing debt burdens and pressure to shift to high value enterprises that require intensive management. A similar concern about debt burdens was raised in relation to high levels of investment in new technologies to overcome issues with labour availability, attitudes and costs. In effect, climatic or labour risks are being substituted by financial risk. Some participants expressed grave concern about the survival of their business if interest rates rose and a credit crunch ensued.

The investment of capital in Tasmanian agriculture has flow-on and positive benefits for regional employment and economic activity, but the implications of rising debt burdens on farm viability and farmers' wellbeing need to be better understood. A shift to high value enterprises is often recommended as a way to service rising debt burdens. Many participants spoke of shifting or adding a horticultural enterprise as a means to increase returns while also managing water application more closely. However, it must be recognised that such a shift may require further investment of capital and would involve a time-lag before returns are obtained. Participants who opted to intensify their existing operations through irrigation and automation also warned of personal consequences in terms of a changed lifestyle and higher levels of stress. As agriculture becomes more capital-intensive, it becomes more suitable for corporations or large-scale businesses to operate in.

Increasing size of farms and corporate investment in agriculture were recurrent themes in participants expectations of the future. 'The Farm' and 'The Business' pathways identified from interviews (described in Section 5.1. above) are already entrenched trajectories in some regions and sectors in Tasmania. The implications of these pathways on the viability of businesses, on the health and wellbeing of owners and staff, and regional communities and on the wellbeing of people generally needs some consideration and debate. The cost-price squeeze described by several participants can also drive unsustainable farming practices, which could affect the Tasmanian brand's reputation and the social license of farming. One only needs to look at the Murray-Darling Basin to comprehend the implications of losing the social license for irrigated agriculture and the challenges of restoring it.

6. Limitations

All research is limited. This research sought the perspective of ‘people on the ground’, ‘in their own terms’. It does not go as far as it might to put these perspectives into a larger context of the history of agriculture, food production, markets, trade, sustainability and various policy debates. Rather, this report contributes to debates in and for Tasmania. These are nested within larger national and global debates which are only touched on here minimally, as the focus is on the empirical data – the perspectives of people working in food and agriculture businesses.

Qualitative research, even with a large number of participants, limits the ability to draw conclusions beyond the sample (i.e. to the populations). It does, however provide a rich and detailed picture of perspectives. Similarly, the 630 survey respondents highlight the degree to which common themes resonate in the sector as a whole.

More specific limitations that need to be considered in drawing conclusions from the data in this research are outlined with respect to the two broad approaches to data collection used. It should be noted that the survey data have not been a large feature of this report, and further analyses of these data is ongoing and will be presented as academic papers and publicly accessible synopses (e.g. media reports).

6.1. Limitations in in-depth interviews and analysis

- **Scope:** Inclusion was deliberately limited to food manufacturers and farmers which is a limited cohort of the wider agriculture and food sector. It does not include many perspectives of service providers, investors, researchers, agronomists, machinery operators, wholesalers, policy-makers, retailers and other businesses in the sector.
- **Sampling:** This research relied on specific focused discussions with a subset of people on the accounts of interview participants. As such, it does not track actions or outcomes but rather perspectives and perceptions.
- **Recruitment:** Recruitment through well-connected people in geographical areas is a common means of seeking diversity. However, it is clear that these connections are always patchy. Agronomists are less connected to people who do not engage consultants. Leaders are more likely to be connected to people who take leadership roles. Snowballing helped to further diversify original networks. However, very small family farms are under-represented, mostly because they were unwilling to participate, less easy to reach through prevailing networks, or hard to track down and find times to meet (see Section 3.4.). This could have been overcome with a much more time intensive and embedded (e.g. ethnographic) approach. The farm families we approached who are struggling financially saw little value in participating or suggested that they had little to contribute. We also have a clear over-representation of younger cohorts of business people, which may be partly the result of moving beyond the agriculture sector into food businesses.

- **Interview approach and questions:** While care was taken in the interviews to create a space for honest reflection, some of the participants may have tended to: a) avoid uncomfortable or undesirable issues, and; b) represent themselves and their business in a positive light. Such social desirability is a common issue in qualitative research, though when interviews are professionally conducted is not as common as might be expected (Grimm 2010). It has been considered through design and analysis of this research.
- **Analysis:** Coding and analysis of the interview data was undertaken following initial group review and development of coding frames to reflect project goals and through pilot interviews. Individual construct leaders each coded all 100 interviews for their focal construct to avoid initial inter-coder unreliability, intra-coder reliability over time has not yet been assessed. Analysis relied on individual and team-based reflexivity to ensure assumptions and biases were explored and assessed and spurious claims and arguments checked. Review within the team enabled points of tensions to be further explored and clarified across constructs, and thematic analysis.

6.2. Limitations in survey and analysis

- **Scope:** The scope of the survey was targeted to the same population as the interviews, and also has limitations.
- **Sampling and recruitment:** Our multiple approaches to broad-scale recruitment saw higher proportional rates of response to mail surveys than to the emailed URL for the online survey, and lower rates of response through social media platforms, despite more follow-ups for the latter online approaches. The recruitment through intermediary organisations targeted owner-managers of enterprises preferentially to staff. This tendency may have been exacerbated by self-selection and the likelihood that a higher proportion of staff, especially unskilled staff, saw less value in completing the survey, may not have found the focus of questions to be relevant, and had lower rates of literacy. While total numbers of survey respondents are reasonable and quite well distributed across different business types and regions, the sample is skewed in terms of age and turnover as detailed in Section 3.4.
- **Surveys:** Self-administered surveys, as used in this study, minimise social desirability bias (or undesirability) of specific responses. However, some items related to goals, motivations and actions may reflect desirable attributes and be affected by self-deception and social desirability (King & Brunner 2000). The response to this, in this report was to discriminate statistical difference across a high threshold (e.g. between 'very important' and 'important') for items that are strongly skewed towards positive results.
- **Analysis:** Survey analysis is not a major focus of this report. Simple descriptive statistics have been used in Chapter 4 to indicate large scale patterns. Further statistical and exploratory analysis of the survey data will follow in research papers.

6.3. Key lessons for future research

Despite some limitations this project has undertaken the largest scale and most rigorous social research at the state level the authors are aware of. It presents both deep and broad analysis. The detailed analysis of goals, actions and innovation, capacity enablers and constraints, and expectations provides a foundation for detailed discussion and debate about options and priorities.

The project was ambitious, but has met its goals and produced rich results. Key lessons regarding the methodology of this study include:

- To reach more participants with very small farm businesses, future research could scope diverse networks in geographical areas. Interviewees could be recruited by accessing a larger number of 'gatekeepers' using snowball sampling, rather than relying as much on 'well-connected people' to recruit interviewees. For example, a comparable project could draw upon a variety of local sources (e.g. bank managers, shop keepers, motor mechanics) to increase the diversity of participants' views rather than only agriculture and food networks.
- The project undertook a large number of interviews based on an early commitment, and could have reached the same level of insight from 60-70 interviews.
- Future projects could employ a longer pilot testing phase following development of survey items enabling further testing for issues such as social desirability bias (King & Brunner 2000), and potentially developing proxies for goal and motivation items allow greater levels of discrimination (cf. Richins & Dawson 1990).
- A longer project could also have drawn on a broader literature review to spark debates within TIA and beyond about how the organisation is positioning itself compared to world-wide patterns and trends in agricultural development, competitiveness and sustainability.

7. Conclusions

Widespread optimism about the prospects for Tasmania's agrifood sector should not be dampened by recognition of challenges now and into the future. To conclude this report, we present seven broad points that outlines the findings of the report and summarise its contribution to better understanding the state's agrifood sector. These feed directly into recommendations in Chapter 8.

Conclusions are tempered by consideration of the limitations of the study (Chapter 6). Despite these limitations, this analysis provides big-picture insights about Tasmania's agrifood sector.

- 1. The complexity of the state's food and agriculture sector creates both strengths and challenges. It will be important to build additional capacity across RD&E, government and industry to manage these well and in an integrated fashion.**

Tasmania's agrifood sector is large and increasingly complex relative to the size of the state. The rollout of new irrigation schemes and investment in infrastructure, horticultural development and other capital intensive activity has shifted risks. Climate risk has been partly replaced by financial risk. Many businesses are growing or diversifying. Meanwhile, customers, consumers and communities are becoming more demanding of environmental, animal welfare and human health issues. Social license and the reputation of agriculture are a common topic of discussion, with many people suggesting something needs to be done, but few presenting clear options. The ways knowledge, technology and practices are developed, validated and implemented in the sector is changing. The increasing size of farm businesses, professionalisation of the sector and influence of large corporations means that leading businesses are connected to global knowledge systems, with local trusted advisers and peers informing much decision-making. RD&E organisations like TIA must keep up with this rapidly changing landscape.

- 2. Common sets of goals and motivation provide foundations for defining focus for intervention across the agrifood sector.**

Goals across the agrifood sector are more alike than dissimilar. They speak to core values of the agriculture and food communities across the state and their relative coherence is a positive base from which to work. Yet there are also distinctly differing narratives that link business goals to actions and forms of innovation. These present choices for investment as they speak to different pathways for innovation, RD&E and policy. They are not separate options, but rather intersecting large-scale trends in the goals across the sector. In this report these four interactive directions are presented as foundations for thinking through future pathways for the agrifood sector, and interventions in RD&E, policy and/or industry activity (see Section 5.1. for more details).

- a. The Farm – place-based autonomy:** a focus on efficiency and profitability through farm-scale innovation, development and adoption/adaptation of technologies. The ultimate goals are to pass the land on in good condition, or

pass the business to the next generation for family farms. Traditional roles of agricultural RD&E in resolving problems and adapting and developing new techniques, varieties and technologies remain important. For example, trialing new high-value low-volume crops and varieties for annual cropping rotations provides extra elements for resilience in volatile markets. Approaches to improving sustainability outcomes are important, especially where they contribute to long term profitability gains. Increasingly RD&E also has a role in enabling social license by developing efficient (e.g. technological) means credibly demonstrating environmental, animal welfare, and social outcomes through to customers or communities.

- b. The Character – delight consumers:** a focus on the qualities of products, especially for niche markets, and the creation of value through linking products with places, services, identities, and brands. This growing area of agrifood activity creates many opportunities, especially for small businesses, partnerships, start-ups and food innovators. It commonly leverages claims about sustainable social and environmental outcomes to attract premium value. Many different forms of experimentation and innovation can be fostered in SMEs that work across the supply chain. RD&E can therefore target diverse small projects that create value. At a wider level there are opportunities to better understand and deliver public benefits in markets as consumers of these niche products have greater willingness/capacity to pay for sustainability related outcomes, or other qualities that align with their identities.
- c. The Business – efficient and professional:** large agrifood businesses achieve their economic goals by social means, through finding and keeping good people and teams. They increasingly work across supply and value chains, using their own in-house R&D to develop opportunities and address challenges. Such businesses can provide professional career pathways in food and agriculture, often exemplifying strong leadership and sophisticated approaches to management and governance. Some appear to take their social and environmental responsibilities seriously as a means of achieving their financial and productivity goals. Some lead initiatives to build social license, and/or reinvest in communities and environments as part of their corporate social responsibility. Such aspects of public good investment, as well as key areas of RD&E specialisation that exist within the University and are currently not strong within companies (e.g. plant pathology and breeding), present opportunities for partnerships between TIA and large businesses.
- d. The Passion – identity and ideals:** This pathway is oriented by people whose values align with two core goals of TIA – developing and promoting sustainability in food and agriculture, and doing excellent research to support innovation. Some participants, especially in smaller businesses, have specific passions around public benefits and are interested to engage with TIA in novel ways, often to run their own R&D in food or farm businesses. In some cases, these people are pursuing radical innovation. These people are potentially willing partners in R&D that can enable development of sustainable practices, novel process or other

forms of innovation that have low costs, high-risks and potentially large rewards to Tasmania.

3. Different forms of innovation result in different costs and benefits for Tasmania.

Different RD&E and other investments will lead to different innovation pathways and very different outcomes, so should be considered carefully. Across the sector there is currently a strong focus on technological (process) innovation and product innovation. There are fewer examples of market, value chain and governance innovation. A lot of current innovation is reactive or problem-driven rather than goal- or value-driven, and tends to have short time horizons.

Top-down innovations such as the development of new irrigation schemes have created more proactive forms of innovation and there is substantial potential to build on these. A promising avenue is to increase investment in the development of higher value products and new business models which rely on a mix of process, market, product and governance innovation. These appear to be particularly fostered by co-innovation (innovation between two or more partners in the value network). There is currently a healthy mix of top-down innovation (change driven by government, industry or RD&E) and bottom up (driven by individuals and businesses), but horizontal co-innovation (collaborations across the supply chain) was not as strongly present, especially in commodity sectors. This suggests that there are opportunities for substantial benefits through enabling in co-innovation, between firms across supply chains (e.g. farmers partnering with food manufacturers). Such work requires specific skills and capacities.

4. Long term goals and motivations to achieve them suggest a bottom-up means of defining sustainability for the sector.

Goals among family businesses were most often expressed as economic means to achieve social and environmental ends. Family farmers reflect classic sustainability goals of 'intergenerational equity' through common commitments to 'passing the land on in good condition'. Among larger corporate businesses, economic goals are widely expressed as being achieved through looking after people, animals and the land. In both, a strong emphasis was placed on the connection between economic, environmental and social goals. However, these goals tended to focus tightly on the businesses or the farm, and do not necessarily mesh with societal goals or expectations about regional and larger scale environmental outcomes, animal and social welfare or other issues. The concern among many participants that people in the city don't understand farming might justifiably be turned around to ask if farmers understand preferences of people in cities – i.e. their ultimate customers.

These issues often relate to 'social license', the 'reputation' of agriculture, and the Tasmanian brand. These issues often appeared as concerns that were beyond the ability of a single business to address. Some were trying by opening their gates to the public or building transparency and traceability into their product lines. Fewer were seeking to coordinate at a sector, regional or other scale to manage a shared and intangible asset – a reputation. While

fostering sustainability through interacting social, environmental and economic goals was a resounding priority across participants, there is growing demand to tell this story better. But questions remain about whose role it is to narrate this story and how it will be made credible and authentic. R&D should have a role in enabling social license founded on sustainable, humane and just practices.

5. Leadership and social capital are integral to addressing challenges in regions, sectors and among diverse groups.

Following from the above, addressing many of the emerging and large-scale challenges in the agrifood sector requires sustained leadership and social capital from within the sector – especially strong connections and working relationships within and among groups. With notable exceptions, the lion's share of effort among participants was targeted to the development of their own businesses. This imperative is completely understandable. The cost-price squeeze and increasingly competitive markets, especially for smaller businesses, creates pressure to get things done in the business. Many of the actions described by participants are driven by imperative to increase the size, efficiency, standards of businesses or develop a variety of other qualities (see Section 5.2.2.) to weather the volatility of market and climatic variability. Because of this trend in agriculture towards market driven individualism, it might be expected that leadership that supports social capital is being eroded just when it is most needed. The survey responses report high levels of social capital, as support from family and friends, ability to influence decision-making, and contribution to community groups.

6. Leadership and management skills within food and farm businesses are as essential as skills and training in addressing skills shortage.

It is notable from the results that businesses vary widely in terms of the way they talk about staffing issues. Some have great staff and put a lot of thought and energy into ensuring they are happy and productive; others expressed substantial concern about the quality, attitude and availability of staff. Of course, there were shades of grey, but this divergent way of talking about labour issues suggests the challenge is not just one of 'attracting more young people to agriculture' or building a skilled workforce, or even of improving the attitude of people looking for work. It suggests that an equally important task is 'making agriculture attractive', which requires leadership and cultural change across the sector. At an individual business level, good leaders and managers have a distinct advantage in a competitive market for good staff. At a broader industry level, building leadership capacity should facilitate culture change, for example countering very high levels of reports of sexual harassment of women within the sector (e.g. Saunders 2015).

Although not the focus of this research, the need to build leadership capacity is very likely to be applicable more broadly than just in food and agriculture businesses. Moreover, working across private and public sector organisations, building shared visions and brands, creating place-based clusters and other cooperative/collaborative activities, suggests leadership is needed within research, different levels of government as well as different industry sectors.

7. Substantial opportunities exist to advance sectoral and regional (industry) development.

Regional and sectoral development and capacity building initiatives are patchy across the agrifood sector. While the interviews do not provide specific research priorities for any given sector, they do provide a big picture indication of where TIA is better and less connected to industry. These are, as might be expected, especially strong in dairy on the north-west coast, and perennial horticulture in the south. Among participants in these areas, inclusive cultures that foster learning, continuous improvement and technical understanding appear to be gaining ground, but require further attention. Successful programs such as dairy benchmarking⁶ are founded on trust among businesses to 'collaborate locally to compete globally'. This idea is a foundation for diverse forms of innovation in both regional and sectoral development. While it can occur through the leadership of business people, it often appears to be facilitated by long-term programs that respond to a clear demand for particular forms of learning or innovation, and that build on the knowledge within groups. Such programs foster peer-to-peer learning and can enable new forms of collaboration, connectivity and partnership. Success of programs that enable sectoral and regional development will be indicated by strong support and 'ownership' by industry leaders. Into the future, in some sectors at least, it is likely that these groups will become more diverse, for instance linking customers and consumers to producers and processors.

⁶ Dairy Benchmarking allows dairy farmers to compare the fundamentals of their business to others across the state, giving them insight into the relative strengths and weaknesses of their approach. <http://www.utas.edu.au/tia/research/research-projects/projects/contribute-your-data-and-get-a-farm-analysis>

8. Recommendations

The recommendations detailed here contribute to advancing the practical objectives of this research. They suggest new initiatives as well as changes to TIA's strategic direction, as well as potential for shifting some priorities and policies within the broader agrifood sectors.

These recommendations move slightly away from the dominant policy economic model, which holds that governments and public funds address market failures and the provision of public goods, while industry bodies and private firms work within markets to ensure profitability, and RD&E delivers to private and public benefits dependent on the sources of funding and their aims. The lines between what is a public and a private benefit are increasingly blurred – environmental and social impacts and benefits of agriculture are increasingly governed by corporations through value chains, and driven by changing consumer sentiment, as well as via regulations or incentives. At the same time, governments are often the source 'investors of first resort' driving innovation and radical change in systems and markets (Mazzucato 2016), as Tasmania has seen with irrigation development in recent years.

This shifting of responsibility for outcomes is reflected in a key finding of this research – namely that fostering profitability and sustainability requires different groups to work together in ways that are context specific and fit-for-purpose. A resulting, overarching recommendation for the Tasmanian agrifood sector as a whole is to 'collaborate locally to compete globally'. However, work within Tasmania must be supplemented by strong national and international networks that allow Tasmania's agrifood sector to be 'plugged in' to diverse networks that drive trade, learning and innovation.

For TIA, the overarching recommendation to collaborate should be applied in context-specific ways. It must align with university goals to be place-based, locally relevant, regionally-networked, globally connected, and to foster excellence. It must also align with State Government goals to sustainably and substantially grow the agrifood sector in the state.

To fully realise these goals, TIA's RD&E and education needs to be an enabler of innovation within the state's agrifood sector. This requires improved understanding of who is contributing to innovation, where they are contributing, and how much this adds to economic, social and environmental outcomes. This research has helped to understand the who and how, but further research will be required to better understand, map and evaluate outcomes (see Recommendation 1.7.).

While TIA has a role in facilitating action and innovation, much of the leadership for it must come from industry groups, companies and individual leaders in the industry. Through its leadership on University's Bio-Economy for Society Research Cluster and other initiatives, TIA also aims to facilitate wider university involvement in the agrifood sector and how it contributes to societal outcomes.

The recommendations for fostering a vibrant, profitable and sustainable agrifood sector in the 21st Century are outlined below. Implementing them will rely on programs, partnerships and projects identifying more specific outcomes and pathways to achieving them.

1. Regional and Sectoral Development and Supporting RD&E

A principled approach to investment in sectoral and regional development. Investment of public funds by TIA on regional or sectoral development should be guided by principles of good governance (i.e. due process, transparency, accountability etc.), and align with TIA's broad goals and mandate. TIA's role in sectoral industry development should be advanced as outlined below.

1.1. Sectoral industry development should be underpinned by longer term programs and partnerships. To be successful, industry development activities must be owned and led by industry, and implemented through long-term partnership programs, with projects that build on each other systematically. The usefulness of such long-term initiatives (e.g. in perennial horticulture and dairy) was reflected strongly in interviews. Longer term interventions were talked about as creating knowledge, capacity and trust networks that underpin the creation of economic value. They can and should also provide a forum for addressing social and environmental aspects of sustainability, as reflected in the integrated goals of participants across the sector. This model is markedly different from current arrangements in which the role of TIA and consultants is often piecemeal and inefficient as teams work from one short-term project to the next. Industry, government and TIA should develop 8 -10 year commitments to a specific minimal level of targeted industry development that can then be supplemented through additional projects and programs. This would provide clarity on base level commitments to (and strategies for) industry development across major commodity sectors, based on support and commitment through public and private funds.

1.2. Regional development should be fostered through targeted collaborative projects, programs and partnerships to enable specific communities to more effectively develop food and agricultural enterprises and identities. This supports social and economic development and addresses rural decline. This recommendation is especially (but not only) appropriate to areas where diverse niche producers and processors seek to link agrifood to tourism. Such areas are experiencing rapid change which creates demands to improve planning for regional development, and foster positive and equitable outcomes. Agriculture and food are central to such development, providing both drawcards for tourism and foundations of regional identity. This research highlights that Tasmania's regions are both connected and on differing trajectories, and suggests that regional communities have the potential to differentiate on the basis of specific food and farming foci. TIA's potential roles in such development range widely from R&D on sustainable value chains, to water governance to wine provenance, and development of food innovation incubators.

1.3. TIA should clarify how it will work with key influencers and in RD&E programs and projects to foster sectoral outcomes. In commodity sectors, consultants and agronomists are key influencers that can both inform and be informed by TIA. There is potential for appropriate industry-embedded technical professionals to also be embedded in TIA specific funded projects or programs. Annual 'knowledge exchange events' with a sectoral and/or regional focus could become key professional development and networking events in the annual calendar, and provide a framework for industry professionals, TIA staff and others to learn together and develop or progress initiatives for industry development. TIA's staff should be encouraged to develop integrated RD&E in partnership with appropriate private consultants, and vice versa.

1.4. Industry, TIA and government should consider the development of high-level innovation platforms (or working groups) to support innovation and industry development. These should drive innovation and RD&E agendas for the state. Each should have a well-defined focus. For such groups to be successful they should encourage industry leadership and representation as well as including research, government and civil society (where appropriate). Their mandate would be to identify agrifood and innovation development priorities within a specific sector or area. These might be aligned with TIA's centres and/or a higher level within TIA or the University. For example, a horticulture innovation working group could set priorities for perennial and/or annual horticulture in the state and work to coordinate private and public investment to achieve desired goals. An agricultural systems innovation group might focus on facilitating co-innovation across value chains and within regions, as well as addressing sustainability and social license challenges.

1.5. TIA should consider why and how it partners with businesses and firms, and seek to strategically develop partnerships and platforms to support innovation and extension. Recognition that public value is increasingly the concern of private businesses, large and small, creates avenues for partnerships that help private firms to credibly achieve and document public benefits. Some examples relate to increasing consumer and societal demands to account for sustainability, but others relate to being able to rapidly identify and respond to opportunities. To ensure TIA creates ongoing value within large and emerging sectors it should seek to develop strategic partnerships with large firms whose values and goals align with TIA's, and for whom TIA can contribute meaningful R&D that ensure public and private interests, for example in developing sustainable value chains.

1.6. Consider the development of a platform to foster business level and community experimentation and radical innovation. This research has highlighted that many small agrifood businesses in Tasmania are innovating, often in radical ways that contribute to public benefits (e.g. sustainability, community development, public education, etc.). Mechanisms such as [Science Shops](#) can help support community-driven R&D activities. They provide pathways to develop agile projects as collaborations between university researchers, civil society, SMEs and NGOs.

1.7. TIA should work with DPIPWE and the ABS to better understand the value of agrifood market segments (not just sectors) and innovation within them. While this research identifies clear differences in how innovation occurs across market segments (commodity, niche and boutique), further research is required to evaluate these segments. Improved understanding of the economic status of market segments, their growth trajectories and contribution to employment and wellbeing would helpfully inform TIA's development of RD&E and education portfolios. Tasmania might be considered a 'special case' nationally for improving understanding of the types of innovation and their outcomes across agriculture food and other sectors (e.g. tourism). The distinctiveness of Tasmania's agrifood sector, as detailed in this report, stems from its distance from markets, highly diverse agricultural environments, burgeoning food culture, its brand, and relatively tight networks with the potential to foster diverse forms of innovation.

2. Skills, Capacity and Education

Beyond existing work in skills, training and education, there is a growing need to increase leadership capability, and develop targeted short course and opportunities to build the skill and knowledge base of the sector.

2.1. Leadership skills should be developed among managers within farm and food businesses, especially where businesses are competing for limited staff and trying (as a sector) to attract capable people into the industry. Common calls to attract young people to agriculture and build the skills base need to include a focus on improving leadership and people management skills in SMEs in the sector and especially on farms. Profitable family farms operating in commodity markets will increasingly tend to be sizeable, and will need to manage complex staff, agronomic, technological and compliance issues. While efforts to attract young people to careers in agriculture are important, and skills are needed, these issues are well known and being targeted by current government and industry initiatives. This recommendation shifts the emphasis from 'attracting young people to food and agriculture' to 'making the sector attractive'. For example, agrifood business managers need to consider how they are supporting competence, autonomy, and relatedness among their staff, as these are key ways to ensure motivation and innovation.

2.2. Develop targeted and flexible short courses, either within UTAS, TAFE or through private providers. The interviews suggest that the growing demands of technical knowledge and ability to manage technology requires continual upskilling within many businesses. Another area for potential development is in co-innovation to provide skills, training and resources for developing formal partnerships, cooperatives and other means of collaborating, especially across supply chains. Shifting knowledge and technology demands also appear to be opening new service roles to deliver technological and technical support within the sector, that are likely to be increasingly important into the future.

2.3. Industry focused travel bursaries and scholarships should be considered to build leadership skills and capacity by giving opportunities for individuals to learn from changing practice and experience around the world. Bursaries and scholarships, similar to the [Nuffield Scholarship](#), should be fostered to enable leaders in Tasmanian agrifood to keep abreast with rapid changes in the agrifood sector globally, and be ambassadors for Tasmanian food and agriculture. Such programs should be targeted to build social capital and human capacity. Study trips will often have a clear private benefit, but should be designed to ensure there is wider benefit to Tasmania.

3. Social License and Sustainability

Tasmanian agrifood must strive for excellence to maintain and build on the authenticity of its brand and reputation.

3.1. Building social license should be led by industry and enabled by targeted RD&E.

Tasmania's agrifood future is oriented to quality, safety, sustainability, and cleanness. It could become renowned as a place that produces some of the best quality food in the world, using the best environmental, social and animal welfare practices. However, to achieve such an outcome requires much more than 'telling the story well'. Concerns about the social license and reputation among participants indicate that more proactive work needs to be done to ensure that consumer and community trust in Tasmanian agriculture and food is maintained and built, commensurate with the state's brand. This will require diverse efforts across sectors and regions. For major sectors in which products are manufactured and distributed by large corporations, value and supply chains need to be increasingly transparent and accountable. Efficient and credible means of monitoring and compliance associated with target issues may need to be developed (e.g. soil stewardship). Sophisticated ways of communicating with consumers and citizens are likely to become the norm, but currently pose substantial challenges, requiring collaborative R&D. In less consolidated value chains, such as superfine wool markets, voluntary accreditation (e.g. [Responsible Wool](#)) is emerging as a means of differentiating products or simply gaining market access. For niche and boutique products, qualities of production process are often integrated with the product itself. All these approaches require authentic, transparent, credible and accountable schemes for linking the processes of production and manufacture to values and demands of consumers and/or communities. Because improving connections between the agrifood sector and the wider society will rely on practice change, not just communication change, it will often require integrated RD&E.

3.2. Broader RD&E related to integrated social, environmental and economic aspects of sustainability should form a growing priority for TIA.

As consumers and citizens become increasingly conscious of sustainability imperatives, places like Tasmania have the opportunity to become leaders in sustainable agriculture and land management through excellent practice, use of technologies, and a strong foundation of RD&E. This agenda could expand in multiple directions, but should be managed carefully with guidance of industry leaders in sustainable agriculture. Current opportunities to build excellence in sustainable agriculture and food production appear through partnerships between credible university-based research and:

- 1) Large companies who are interested to authentically pursue joint sustainability and social license outcomes in Tasmania and across value chains; and
- 2) Smaller businesses operating in niche segments who have a strong interest in their sustainability and other credentials and incorporating these in their brands and/or products.

4. Future Focused Research to Inform and Support Policy-Making

4.1. Inter-disciplinary analysis should be undertaken to understand and respond to changing risk environments for the Tasmanian agrifood sector. Research could be better utilised to understand and respond to the changes in the sector and associated emerging risks, opportunities, costs and benefits. This project has identified shifts in farm-level risk from climate risk to financial risk (for example, through irrigation rollout), and associated human and social pressures on farm businesses. TasAgFuture highlight highest levels of concern about future biosecurity incursions, the implications of climate change, and exposure to changing terms of trade, costs of regulation and market-based compliance, and demands for and availability of skilled and unskilled staff. Regular and/or targeted analyses would enable more proactive management of such risks and opportunities.

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Appendix 2

Coding Protocol

Food Aspirations Project - Last updated PL 28/02/2018

Data management

1. Once the transcripts have been received, responsible interviewers check them and add a short summary at the beginning BEFORE uploading them into the Nvivo project.
2. The manager of the master file (see below) uploads the transcripts to the master Nvivo project and to any new working copies.
3. Interviewers enter the survey answers into the last version of AACE_database_survey input (Google Drive\TIA AAC Project\2. Research\Interviews\4. Analysis); currently <https://docs.google.com/spreadsheets/d/1hJgn3KmOFFDxomUFXN-XIzxSD7UOqSIhR8wlgcTHj0s/edit#gid=0>
4. Interviewers enter the attributes of participants in Nvivo classification cases.

Nvivo file copy management

To facilitate multiple people working on the project's Nvivo file we do the following:

- We have a designated team member who manages creating of the master file and creating and importation of team copies.
- All coding etc should be done in copies with the master being treated as a backup.
 - Changes made to copies WILL NOT be effectively integrated into the project unless they comply with RULES FOR DUPLICATES [HERE](#)
- Nvivo project files should only be used from the R drive.
- At the end of each week (4pm friday unless otherwise notified) during active use of the project file the following steps will be undertaken:
 1. Open the master file Import into the master file each of the latest working copies in Nvivo.
 2. Copy and rename the master file *Aspirations4FoodnAgriculture_master_YYMMDD.nvp* with YYMMDD being the date of creation of the file.
 3. Place older version into folder 'Archival NVIVO project files'
 4. Make any required changes to the new master version (e.g. delete old memos, add new transcripts)
 5. Transcripts should be amended to include the overview recorded by the interviewer [HERE](#)

6. Create a copy of the new masterfile for each team member named *Aspirations4FoodnAgriculture_XX_YYMMDD.nvp* and save in the folder 'Nvivo Working Copies'. Remove the older versions to folder 'Archival NVIVO project files/Working copies'.

Coding protocol

All research team members to track which interviews have been coded, and which have been coded multiple times (for coding consistency checks), by entering a 1,2 or 3 in appropriate cell of ACE Participant Logbook (e.g. Coded PL column)

Editing protocol

Changes made to copies WILL NOT be effectively integrated into the project unless they comply with RULES FOR DUPLICATES [HERE](#).

In working copies

When making changes to copies it is important to limit them to the following:

- creating and altering memos (NB: ALTERED MEMOS will be added as additional memos (e.g. 'Raj Memo' becomes 'Raj Memo (1)')
- add annotations
- add coding
- Add cases

When opening source documents do not click to enable editing as this will prevent accidental changes being made while coding.

In master documents

Only make changes to the master in the period between importing the current working copies and creating the next set of working copies. This includes adding new source documents.

Appendix 3

Interview schedule

Aspirations for Food and Agriculture

Exploring aspirations, actions, capacity and expectations

Interviewee name: _____

ID code: _____

Date: _____

Interviewer instructions = [II]:

SECTION 1: Attributes

The first section of the interview aims to get a sense of what you do in agriculture and food and your background.

1. We'd like to start by getting a picture of your involvement in agriculture and food in Tasmania. Can you briefly describe the agricultural business you work in, and what you do in it?

[II: Mark and follow up using the checklist provided]

SECTION 2: Aspirations

This section of the interview shifts focus to what you want to achieve – your long term goals in the agrifood sector. These may be business goals but need not be limited to them.

2. Can you describe what you want to achieve in your life and work in this area?
 - a. You mentioned a variety of things that you would like to achieve. Can you describe *why* these things are so important to you?
 - b. Have your long-term goals changed much over the years? If so, how and why?

SECTION 3. Actions

Moving from thinking about your future goals, in this section we are interested in what you have done to achieve your goals related to agriculture and food in the past.

3. Can you give me an example or two of things that you have done in food and agriculture that you are particularly proud of, or you would like to highlight?

[II: example of action already given in the previous question might be drawn out; if specified goals have been achieved you might ask about how it was achieved]

[II: follow up questions/prompts]

- a. What changes to thinking/practices/processes did you (or those around you) need to make?
- b. What motivated the change from what you (or others) had been doing before?

SECTION 4: Capacity

This section relates to the big things that you see as enablers or constraints to achieving your long-term goals

4. Can I start by asking about the most important things that help you to achieve your long-term goals?
5. What do you see as the most substantial things that limit or constrain your ability to achieve long-term goals??

II: follow up questions/prompts]

- a. Do you need or want any external support to overcome these constraints? if so, what?

SECTION 5: Expectations

In this section we are interested in your perspective on the future.

6. What aspects of the future do you think will affect the agrifood sector that you operate in?
7. Do these thoughts about the future affect the way you approach your business/work/life strategy? If so, how?

SECTION 6: Co-development / input into survey

After doing 100 interviews we want to use a survey to get a wider picture of people's goals, capacity and expectations. We would like to test a few of these with you. Please rate each statement from 1 to 10, where 1 means that you strongly disagree and 10 that you strongly agree.

1. For me, farming is all about dollars and cents
1 2 3 4 5 6 7 8 9 10
2. The lifestyle that comes with being on the farm is important
1 2 3 4 5 6 7 8 9 10
3. I like to look after the land, making it work without damaging it
1 2 3 4 5 6 7 8 9 10
4. When I plan future activities my only concern is how profitable they will be
1 2 3 4 5 6 7 8 9 10
5. The community where I live in is a very important part of my life
1 2 3 4 5 6 7 8 9 10
6. The peace and quiet of working on the land is something I would be sorry to leave
1 2 3 4 5 6 7 8 9 10
7. My lifestyle is more important than a big income
1 2 3 4 5 6 7 8 9 10
8. I consider stewardship as a crucial part of working the land
1 2 3 4 5 6 7 8 9 10
9. For me, the most important thing is to leave the land in better shape than I found it
1 2 3 4 5 6 7 8 9 10
10. Managing environmental problems on the farm is a very high priority for me
1 2 3 4 5 6 7 8 9 10

[II: content below is indicative only]

Before moving to some administrative questions, is there anything else that you want to discuss, issues you might want to raise that haven't been covered, or anything you might want to ask?

Thanks for your time and being so open to this discussion. It is very valuable for us to get your perspective and we hope that answering our questions has been of some value for you.

There are a few administrative questions we would like to ask. Would you like to be contacted for the following?:

- To follow up on this project (or related research projects) and ask for your further perspective? **Y/N**
- To receive a copy of the summary report of this research as a PDF or hardcopy? **Y/N**
- To go on the industry mailing list of the Tasmanian Institute of Agriculture (including being informed about relevant TIA activities such as field days, projects or other activities of potential interest): **Y/N**
- As a potential interviewee for the media (e.g the ABC Country Hour) as part of other media for this project (most likely in 2018): **Y/N**

€ Email/ or other preferred form (if not already on file):

€ Postal address:

Finally, we are snowballing our interviews by asking those we interview for some suggestions about other possible people to interview. We are looking for people involved in the agrifood sector and also interested in suggestions of people who might not be the usual industry leaders we have tended to engage in the past.

Name: _____ Contact: _____

Role and business: _____

Name: _____ Contact: _____

Role and business: _____

Name: _____ Contact: _____

Role and business: _____

TasAgFuture Survey

Do you work in agricultural production, or food and beverage manufacturing in Tasmania?

The TasAgFuture survey is your opportunity to help shape the future of Tasmania's agriculture and food sector.

The Tasmanian Institute of Agriculture (TIA) will use the information collected to better support Tasmania's diverse agrifood businesses.

Find out more about TIA's TasAgFuture project by visiting utas.edu.au/tia/tasagfuture.

Upon completing the 10 minute survey you will have:

- the option of receiving a snapshot via email that compares your responses to others in the sector
- a chance to win one of three iPads

Your responses are anonymous. Details about confidentiality and ethics can be found in the **Information Sheet** included with this survey.

By continuing to the next section you are consenting to participate in the TasAgFuture Survey. If you would like to complete this survey online instead, you can access it via utas.edu.au/tia/tasagfuture.

Where do you work?

1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)

- Farming or growing food (not including seafood)
- Processing food products or beverages
- None of the above - *you are ineligible to complete this survey as we are focusing on individuals that produce or manufacture food and beverages.*

Your work in the agriculture and food sector

2. Which of the following are included in your business or work? (select all that are relevant)

- | | | |
|--|--|--|
| <input type="checkbox"/> Intensive grazing / dairy | <input type="checkbox"/> Annual cropping | <input type="checkbox"/> Agri-tourism |
| <input type="checkbox"/> Extensive grazing | <input type="checkbox"/> Farm forestry | <input type="checkbox"/> Hobby farming |
| <input type="checkbox"/> Mixed farming | <input type="checkbox"/> Food processing / manufacture | <input type="checkbox"/> None of these |
| <input type="checkbox"/> Tree, vine or berry crops | <input type="checkbox"/> Beverages (e.g. beer, wine) | |

3. Which of these is your **main** business or work? (select one)

- | | | |
|--|--|--|
| <input type="checkbox"/> Intensive grazing / dairy | <input type="checkbox"/> Annual cropping | <input type="checkbox"/> Agri-tourism |
| <input type="checkbox"/> Extensive grazing | <input type="checkbox"/> Farm forestry | <input type="checkbox"/> Hobby farming |
| <input type="checkbox"/> Mixed farming | <input type="checkbox"/> Food processing / manufacture | <input type="checkbox"/> None of these |
| <input type="checkbox"/> Tree, vine or berry crops | <input type="checkbox"/> Beverages (e.g. beer, wine) | |

4. What is the postcode of your **main** business or work?

5. What is your primary role in this business?

- | | |
|--|--|
| <input type="checkbox"/> Owner and manager of business | <input type="checkbox"/> Employee in management role |
| <input type="checkbox"/> Contributing family member | <input type="checkbox"/> Employee not in management role |

Other (please write):

6. Which best describes the structure of the business?

- | | | |
|--|--|--|
| <input type="checkbox"/> Sole trader | <input type="checkbox"/> Partnership / Trust | <input type="checkbox"/> Private corporation |
| <input type="checkbox"/> Family business | <input type="checkbox"/> Public company | <input type="checkbox"/> Don't know / unsure |

Your long-term goals

7. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important nor unimportant	Unimportant	Very Unimportant	Not applicable
To grow the business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To develop new markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To substantially increase my income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To draw down debt or build equity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To create high quality produce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To pass on the business to my children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To create jobs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To contribute to my community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To maintain/develop native habitat or biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To look after the land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To reduce environmental impacts of the business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To pass the land on in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Which one of these long-term goals is **most important** to you at the moment? (select one)

- | | |
|---|---|
| <input type="checkbox"/> To grow the business | <input type="checkbox"/> To create jobs |
| <input type="checkbox"/> To develop new markets | <input type="checkbox"/> To contribute to my community |
| <input type="checkbox"/> To substantially increase my income | <input type="checkbox"/> To maintain/develop native habitat or biodiversity |
| <input type="checkbox"/> To draw down debt or build equity | <input type="checkbox"/> To look after the land |
| <input type="checkbox"/> To create high quality produce | <input type="checkbox"/> To reduce environmental impacts of the business |
| <input type="checkbox"/> To pass on the business to my children | <input type="checkbox"/> To pass the land on in good condition |

Your motivators and drivers

9. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important nor unimportant	Unimportant	Very Unimportant	Not applicable
Being recognised for being good at what I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Making high profits or being well-paid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to stay on the farm / in this place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Giving something back to the land / place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creating high quality produce / products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doing work I enjoy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being my own boss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working outdoors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having a lifestyle I enjoy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Business decisions and actions

10. Reflect on **your role in the business**. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable to my role
Most of my business activities are guided by the long-term objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I plan carefully before taking action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I spend time thinking about the future of the business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My actions are guided by what I've learnt from experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to follow industry best practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often go with my gut feeling when making big decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try new ways of doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take measured risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I invest time to learn new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Over the last 5 years, in which one of the following did the business invest the **MOST** money? (select one)

- | | |
|---|--|
| <input type="checkbox"/> Irrigation water | <input type="checkbox"/> Environmental sustainability |
| <input type="checkbox"/> Infrastructure (not water-related) | <input type="checkbox"/> The community where the business operates |
| <input type="checkbox"/> Purchasing or leasing land | <input type="checkbox"/> Product development or diversification |
| <input type="checkbox"/> Training or skills development | <input type="checkbox"/> Market development or exploration |
| <input type="checkbox"/> New processes or technologies | <input type="checkbox"/> I don't know |

Other (please specify):

12. Over the last 5 years, which of the following have influenced the business **most positively**? (select up to three options)

- | | |
|---|--|
| <input type="checkbox"/> Technology companies | <input type="checkbox"/> Peers or professional network |
| <input type="checkbox"/> Consultants or advisers | <input type="checkbox"/> Customers |
| <input type="checkbox"/> Government agencies including local councils | <input type="checkbox"/> Suppliers |
| <input type="checkbox"/> University and research organisation (e.g. UTAS, TIA, CSIRO) | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Family and friends | |

Other (please specify):

Constraints affecting the business

13. Please select the factors that are currently constraining **the business** from achieving its goals. (select as many as relevant)

- | | |
|--|---|
| <input type="checkbox"/> a. Lack of suitable staff | <input type="checkbox"/> k. Negative impacts of climate variability |
| <input type="checkbox"/> b. Inadequate training or learning opportunities | <input type="checkbox"/> l. Restricted access to financial support |
| <input type="checkbox"/> c. Limited access to productive land | <input type="checkbox"/> m. Limited support from government |
| <input type="checkbox"/> d. Limited access to water | <input type="checkbox"/> n. My health and wellbeing |
| <input type="checkbox"/> e. Strict environmental regulations | <input type="checkbox"/> o. High freight and transport options/cost |
| <input type="checkbox"/> f. Negative public perception of agriculture (e.g. animal welfare, practices, conservation) | <input type="checkbox"/> p. Increased biosecurity risk / management |
| <input type="checkbox"/> g. Remote location/limited access to services | <input type="checkbox"/> q. Changing consumer food preferences |
| <input type="checkbox"/> h. Limited access to useful technologies | <input type="checkbox"/> r. Presence of trees / forested areas on my land |
| <input type="checkbox"/> i. Succession planning | <input type="checkbox"/> s. Presence of native animals on my land |
| <input type="checkbox"/> j. Limited influence on product value | <input type="checkbox"/> t. Family issues (e.g. relationship breakdown or children leaving) |

u. Other (please specify):

14. From the options you have selected, please select the **one** that is constraining the business **most significantly**. (enter the letter below)

Connection to your community

15. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
My family and/or local community provide me with support during hard times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often work alongside my neighbours or peers without expecting any financial return	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My social connections enable me to influence decisions in my region	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Preparing for the future

16. To prepare for the future, how likely is **the business** to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Not applicable
Sell the business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Owners to retire soon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keep the business as it is now	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expand current operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrate vertically (business spans more than one step of production, processing, marketing and retail)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diversify the business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explore new markets for products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Develop new products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase off-farm income (any income earned from work not related to the farm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invest in research and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invest in new technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase liquid assets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Are there any other strategies, not listed above, that you are likely to adopt to prepare for the future?

- Yes No Unsure

18. If yes, please briefly describe the strategy you are likely to adopt.

Demographics

19. What was the average **annual turnover** of the business over the last 3 years?

- Nil - \$49K \$200K – \$1.99Mil \$10Mil+
 \$50K – \$199K \$2Mil – \$9.9Mil I don't know

20. How many employees does the business have?

- Non employing 20 - 199 employees Not applicable / I don't know
 1-19 employees 200+ employees

21. What sort of market do your products go into? (select all that are relevant)

- Commodity: large/global market for undifferentiated products
 Niche: specialised market or defined segment of a larger market
 Boutique: small, specialised market for products that command a premium price
 I don't know

22. Postcode for where you currently live:

23. How many years have you lived in this area?

24. What is the highest level of education you have completed?

- Year 10 or below
 Year 12
 TAFE/Apprenticeship
 Diploma/Certificate
 Bachelor's degree
 Postgraduate degree
 None of these

25. What year were you born?

26. Are you: Male Female Other

Next steps

Would you like to receive a **personal snapshot** comparing your responses with your peers, and/or go into the draw to win one of three iPads? If yes, please enter your name and email/postal address below. Your name and contact details will not be linked to your survey responses in any way.

The snapshots will be sent to you, and iPad winners drawn, at the end of the survey period.

Participants are only eligible for the draw if they have completed the survey in full. See pages 6 and 7 for the Terms and Conditions of the draw.

FIRST NAME:

LAST NAME:

EMAIL ADDRESS:

STREET ADDRESS:

STREET:

SUBURB:

STATE:

POSTCODE:

27. Please check the following statements that apply to you:

- I would like to receive a personal snapshot
 I would like to go into the draw to win an iPad

28. Do you consent to TIA using your data in future research, acknowledging that your data and contact details will be kept separate and confidential?

- Yes No

29. Would you like to sign-up to TIA's email list? You will receive an eNews bulletin with a selection of research highlights about every 3 months.

- Yes No

THANK YOU

Thank you for taking the time to complete the TasAgFuture survey.

Please return your completed survey to TIA using the reply paid envelope enclosed.

If you do not have the reply paid envelope, simply write this address on any envelope and post it. No stamp is required:

TASAGFUTURE SURVEY, Reply Paid 83674, HOBART, TAS, 7000

You can find out more information about the project at: utas.edu.au/tia/tasagfuture.

Terms and Conditions of the draw for the iPad Trade Promotion

1. Information on how to enter and the prizes form part of these Terms and Conditions. Participation in this promotion is deemed upon acceptance of these Terms and Conditions.
2. Entry is only open to individuals who (1) complete the TasAgFuture Survey; (2) work in the Tasmanian agriculture and food sector, as defined within the survey, and (3) provide their email or postal address. Entrants under 18 years old must have parental/guardian approval to enter and further, the parent/guardian of the entrant must read and consent to these Terms and Conditions. Parents/guardians may be required by the Promoter to enter into a further agreement as evidence of consent to the minor entering this promotion.
3. Employees (and their immediate families) of the Promoter and agencies associated with this promotion are ineligible to enter. Immediate family means any of the following: spouse, ex-spouse, de-facto spouse, child or step-child (whether natural or by adoption), parent, step-parent, grandparent, step-grandparent, uncle, aunt, niece, nephew, brother, sister, step-brother, step-sister or 1st cousin.
4. Promotion commences on 27/06/2018 and ends at 11:59pm AEST on 31/08/2018 ("Promotional Period").
5. To enter, individuals must complete the TasAgFuture Survey and enter their contact details. This must be done within the Promotional Period to be eligible to enter. This does not apply to participants of the Pilot TasAgFuture Survey preceding 27/06/18, who are included in the Promotion if they supplied contact details upon completing the pilot survey.
6. The Promoter reserves the right, at any time, to verify the validity of entries and entrants (including an entrant's identity, age and place of residence) and reserves the right, in its sole discretion, to disqualify any individual who the Promoter has reason to believe has breached any of these Terms and Conditions, tampered with the entry process or engaged in any unlawful or other improper misconduct calculated to jeopardise fair and proper conduct of the promotion. Errors and omissions may be accepted at the Promoter's discretion. Failure by the Promoter to enforce any of its rights at any stage does not constitute a waiver of those rights. The Promoter's legal rights to recover damages or other compensation from such an offender are reserved.
7. Incomplete or indecipherable entries will be deemed invalid.
8. Only one (1) entry is permitted per person.
9. If there is a dispute as to the identity of an entrant, the Promoter reserves the right, in its sole discretion, to determine the identity of the entrant.
10. The draw will take place at the Tasmanian Institute of Agriculture, the University of Tasmania on 01/10/2018.
11. The entrant will be drawn at random. This is a game of chance and skill plays no part in determining the winners.
12. The winners will be notified by email or letter. The winner's names will be published on the Tasmanian Institute of Agriculture website within 24 hours of the draw occurring, and will remain there for 30 days.
13. The Promoter's decision is final.
14. Prize is one of three iPad Wi-Fi 32GB each valued at \$469.00.
15. If for any reason a winner does not take a prize by 31/10/18 then the prize will be forfeited and will not be redeemable for cash.
16. If for any reason a winner does not take a prize at the time stipulated by the Promoter, then the prize will be forfeited.
17. If any prize is unavailable, the Promoter, in its discretion, reserves the right to substitute the prize with a prize to the equal value and/or specification.
18. Total prize pool value is up to \$1,407.00. Prizes are not transferable or exchangeable and cannot be taken as cash.
19. Entrants agree that they are fully responsible for any materials they submit via the promotion.
20. Entrants consent to the Promoter using their name, likeness, image and/or voice in the event they are a winner (including photograph, film and/or recording of the same) in any media for an unlimited period without remuneration for the purpose of promoting this promotion (including any outcome), and promoting any products manufactured, distributed and/or supplied by the Promoter.
21. If this promotion is interfered with in any way or is not capable of being conducted as reasonably anticipated due to any reason beyond the reasonable control of the Promoter, including but not limited to technical difficulties, unauthorised intervention or fraud, the Promoter reserves the right, in its sole discretion, to the fullest extent permitted by law: (a) to disqualify any entrant; or (b) to modify, suspend, terminate or cancel the promotion, as appropriate.

22. Any cost associated with accessing the promotional website is the entrant's responsibility and is dependent on the Internet service provider used.
23. Nothing in these Terms and Conditions limits, excludes or modifies or purports to limit, exclude or modify the statutory consumer guarantees as provided under the Competition and Consumer Act, as well as any other implied warranties under the ASIC Act or similar consumer protection laws in the States and Territories of Australia ("Non-Excludable Guarantees"). Except for any liability that cannot by law be excluded, including the Non-Excludable Guarantees, the Promoter (including its respective officers, employees and agents) excludes all liability (including negligence), for any personal injury; or any loss or damage (including loss of opportunity); whether direct, indirect, special or consequential, arising in any way out of the promotion.
24. Except for any liability that cannot by law be excluded, including the Non-Excludable Guarantees, the Promoter (including its respective officers, employees and agents) is not responsible for and excludes all liability (including negligence), for any personal injury; or any loss or damage (including loss of opportunity); whether direct, indirect, special or consequential, arising in any way out of: (a) any technical difficulties or equipment malfunction (whether or not under the Promoter's control); (b) any theft, unauthorised access or third party interference; (c) any entry or prize claim that is late, lost, altered, damaged or misdirected (whether or not after their receipt by the Promoter) due to any reason beyond the reasonable control of the Promoter; (d) any variation in prize value to that stated in these Terms and Conditions; (e) if any listed prize tour/activity/event is delayed, postponed or cancelled for any reason beyond the reasonable control of the Promoter; (f) any tax liability incurred by a winner or entrant; or (g) use of and/or participation in a prize.
25. As a condition of accepting a prize, the winner must sign any legal documentation as and in the form required by the Promoter and/or prize suppliers in their absolute discretion, including but not limited to a legal release and indemnity form. In the event a winner or winner's companion is under the age of 18, a nominated parent/legal guardian of such person will be required to sign the legal documentation required under this clause on their behalf.
26. The Promoter collects personal information ("PI") in order to conduct the promotion and may, for this purpose, disclose such PI to third parties, including but not limited to agents, contractors, service providers and prize suppliers. Entry is conditional on providing this PI. The Promoter will also use and handle PI as set out in the Personal Information Protection Act 2004 (Tas) and its Privacy Policy, which can be viewed at <http://www.utas.edu.au/privacy/>. In addition to any use that may be outlined in the Promoter's Privacy Policy, the entrant consents that the Promoter may, for an indefinite period, unless otherwise advised, use the PI for promotional, marketing, publicity, research and profiling purposes, including sending electronic messages or telephoning the entrant. The Privacy Policy outlines how the Promoter collects, uses, discloses and stores PI and explains how entrants may access their PI. If access is refused, the entrant may make an application for access to information under the Right to Information Act 2009 (Tas). All entries become the property of the Promoter. The Promoter will not disclose entrant's personal information to any entity outside of Australia.
27. The Promoter is University of Tasmania (ABN 30 764 374 782) of Churchill Avenue, Sandy Bay, Hobart TAS 7005, 03 6226 6368 (Tasmanian Institute of Agriculture).



utas.edu.au/tasagfuture

Appendix 5

TasAgFuture survey distribution and communications

Survey distribution – intermediary organisations

The TasAgFuture survey was communicated directly to farming or food and beverage producing/processing constituents between 27 June and 31 August.

To distribute the survey, we collaborated with 15 intermediary organisations external to TIA. These groups shared the online survey link via email or eNews and/or distributed print surveys via post. Many of the groups also shared posts on Facebook and Twitter.

Through the intermediaries, print surveys were sent to 576 potential respondents and online survey links were sent to an estimated total of 5,064 potential respondents, totaling an estimated 5,640. Table 1 provides a breakdown.

Table 1: Distribution via intermediaries

Intermediary organisation	eNews	Print	Email	Distribution* (approx.) across eNews, print & email
Tasmanian Farmers and Graziers Association	✓	✓ 260		2060
Tasmanian Agricultural Productivity Group			✓	82
Brand Tasmania	✓			87
Fruit Growers Tasmania		✓ 36	✓	204
Rural Business Tasmania	✓			53
DPIPWE- Private Land Conservation Program			✓	804
Wine Tasmania	✓			142
Tasmanian Women in Agriculture	✓	✓ 250		360
Sprout	✓			419
NRM North	✓	✓ 30		1078
Cradle Coast NRM	✓			83
NRM South	-	-	-	-
Enterprize	✓			235
Launceston Harvest Market	✓			33
			Total (approx.)	5,640

*Distribution calculated from eNews open rate (where provided) plus number of print surveys delivered. Social media reach was not included in this calculation, as the reach is broader than intermediary members and engagement difficult to ascertain.

Survey distribution – TIA project teams and contacts

We included survey content in the established eNewsletters managed by various TIA project teams. Participants of TasAgFuture qualitative interviews (who agreed to receive communications) were also emailed the survey link.

Through TIA project teams, online survey links were sent to an estimated total of 1,624 potential respondents.

Table 2 provides a breakdown of communication and approximate distribution between 27 June and 31 August.

Table 2: Distribution via TIA project teams

TIA project / list	eNews	Print	Email	Distribution* (approx.) across eNews, print & email
TasAgFuture interview participants			✓	97
Tassie Dairy News (TIA/DairyTas)	✓	✓ 450		677
BerryLink	✓			153
Sheep Connect **	✓			289
Irrigation / Water for Profit				204
ARC Training Centre for Innovative Horticultural Products ***	✓			61
TIA Industry News	✓			593
			Total (approx.)	2,074

*Distribution was calculated from eNewsletter open rates and numbers of emails sent.

** Sheep Connect is an Australian Wool Innovation project, with support from TIA. The Sheep Connect eNews was, at the time of the survey, managed by a TIA project officer.

*** The ARC Training Centre for Innovative Horticultural Products is located at TIA, and its communications are managed by a TIA communications officer.

Survey communications – Tasmanian media

To promote the survey, TIA distributed various media releases, produced newspaper articles and facilitated broadcast coverage on Tasmanian radio and TV.

Table 3 shows the number of articles published and stories broadcast between 27 June and 31 August (inclusive) and corresponding approximate audience numbers.

Table 3: Survey communication via media

Media platform	# published / broadcast	# audience (approx.)
ABC radio	3	7,410
Examiner / Advocate newspapers	3	31,949
Tasmanian Country newspaper	2	17,528
Tasmanian Farmer	1	20,000
Southern Cross TV News	1	49,000
Circular Head Chronicle	1	1,186
North Eastern Advertiser	1	2,500
	Total (approx.)	129,573

Appendix 6



TasAgFuture Survey Regional Report: North

This report provides a basic summary of the 184 responses of individuals from the Northern region of the State. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

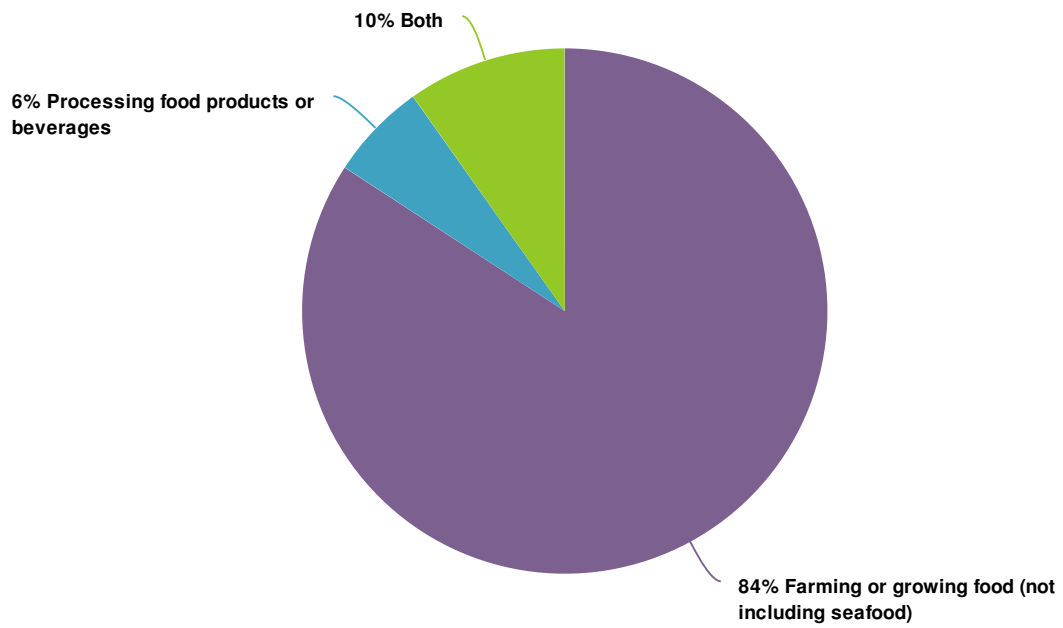
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

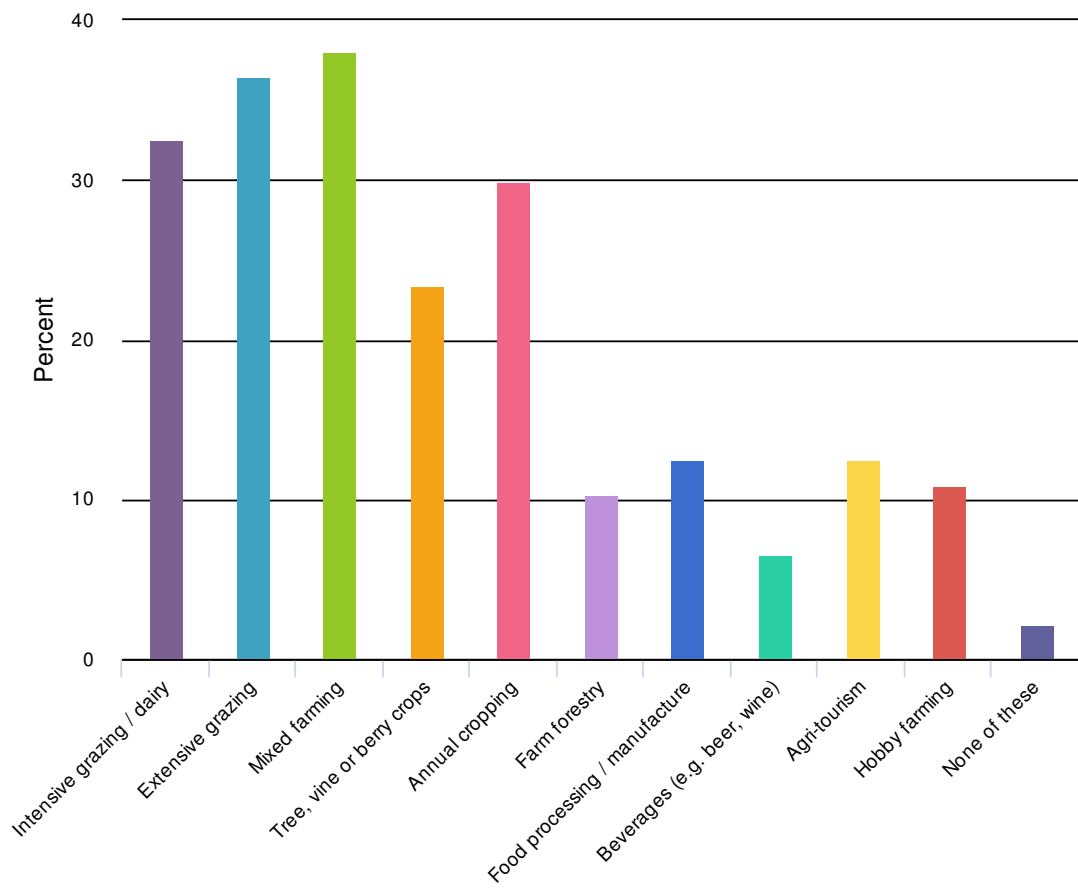
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

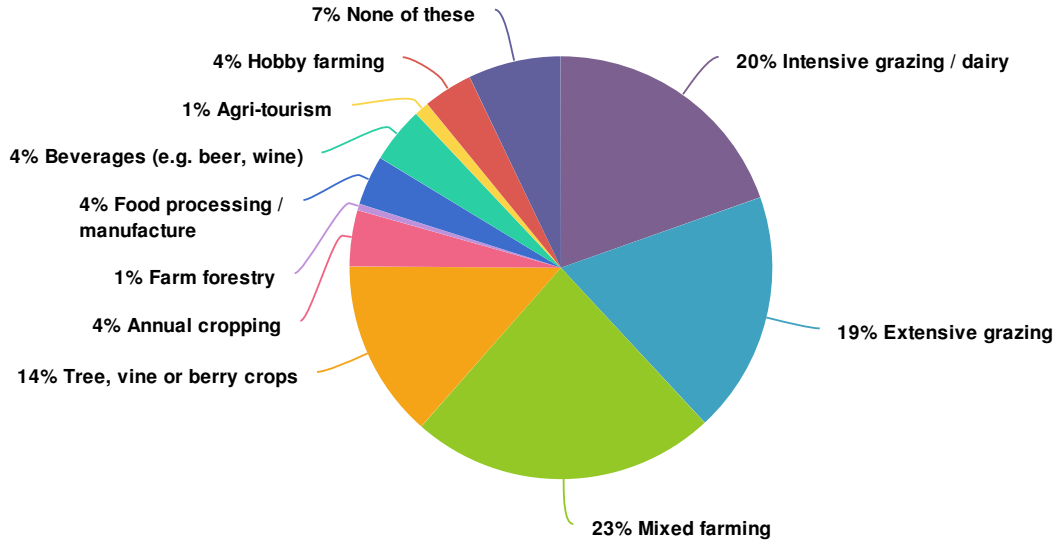
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



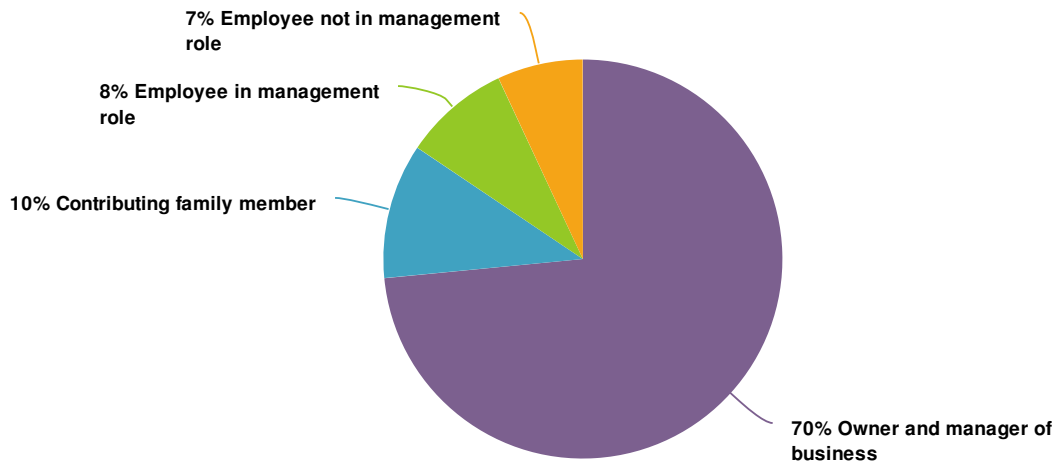
2. Which of the following are included in your business or work? (select all that are relevant)



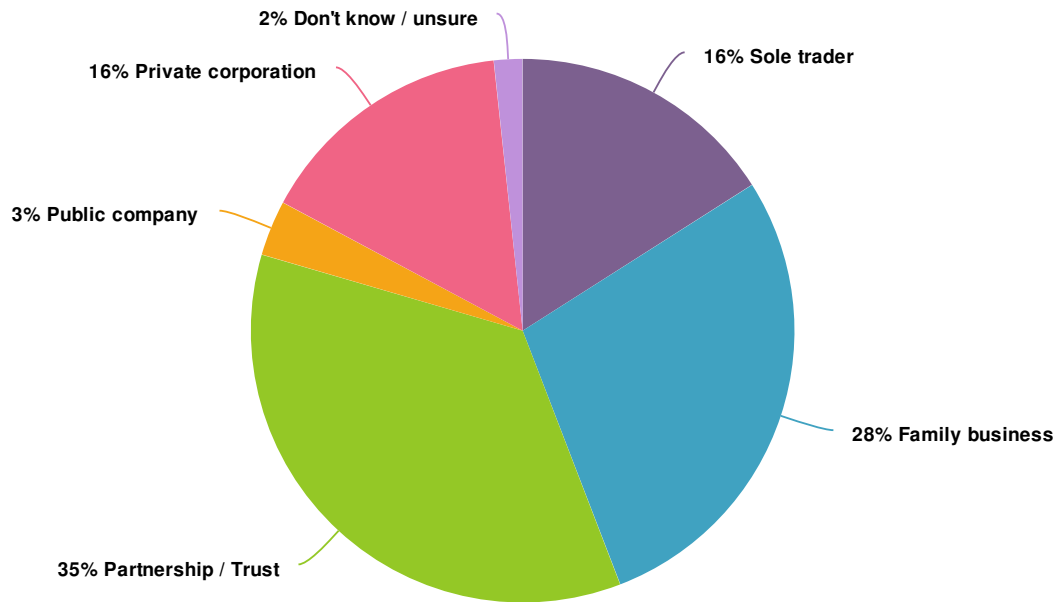
3. Which one of these is your main business or work? (select one)



7. What is your primary role in this business?



8. Which best describes the structure of the business?

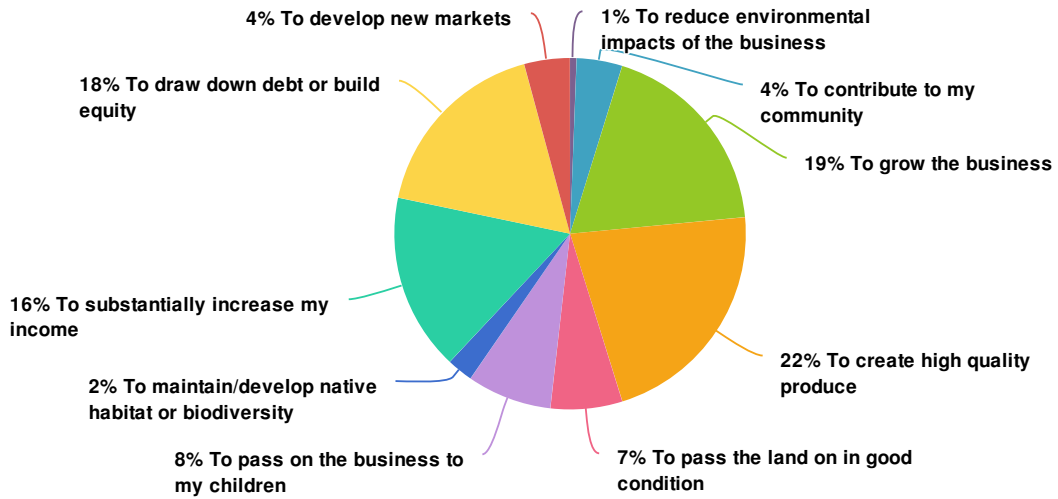


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	39.3%	48.9%	9.6%	2.2%	0.0%	178
To develop new markets Row %	28.7%	41.5%	21.1%	8.2%	0.6%	171
To substantially increase my income Row %	33.9%	44.4%	20.0%	1.7%	0.0%	180
To draw down debt or build equity Row %	52.1%	35.5%	10.1%	2.4%	0.0%	169

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	76.0%	22.3%	1.1%	0.6%	0.0%	179
To pass on the business to my children Row %	31.6%	30.9%	27.6%	5.3%	4.6%	152
To create jobs Row %	16.4%	36.8%	35.1%	9.4%	2.3%	171
To contribute to my community Row %	28.2%	54.7%	12.2%	4.4%	0.6%	181
To maintain/develop native habitat or biodiversity Row %	33.1%	45.7%	14.9%	5.1%	1.1%	175
To look after the land Row %	72.9%	26.0%	1.1%	0.0%	0.0%	177
To reduce environmental impacts of the business Row %	40.4%	48.3%	5.6%	5.6%	0.0%	178
To pass the land on in good condition Row %	69.3%	27.3%	3.4%	0.0%	0.0%	176
Totals Total Responses						181

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

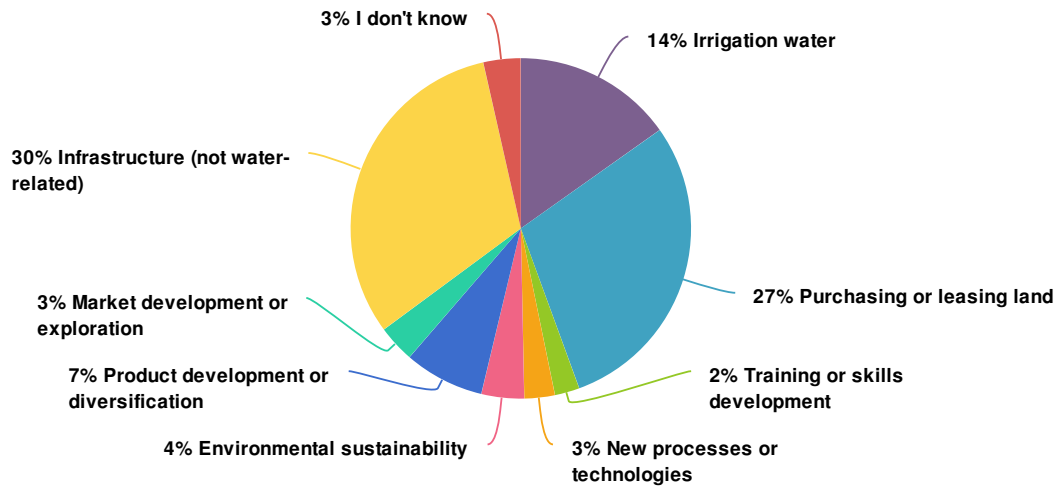
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	25.4%	42.4%	22.0%	7.3%	2.8%	177
Making high profits or being well-paid Row %	24.4%	47.2%	23.3%	5.1%	0.0%	176
Being able to stay on the farm / in this place Row %	46.9%	38.3%	13.7%	1.1%	0.0%	175
						224

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	29.4%	56.5%	12.4%	1.1%	0.6%	177
Creating high quality produce / products Row %	60.3%	36.3%	2.8%	0.6%	0.0%	179
Doing work I enjoy Row %	61.9%	33.1%	5.0%	0.0%	0.0%	181
Being my own boss Row %	33.7%	49.7%	14.3%	2.3%	0.0%	175
Working outdoors Row %	34.7%	45.7%	16.8%	2.3%	0.6%	173
Having a lifestyle I enjoy Row %	56.1%	38.9%	3.3%	0.6%	1.1%	180
Totals Total Responses						181

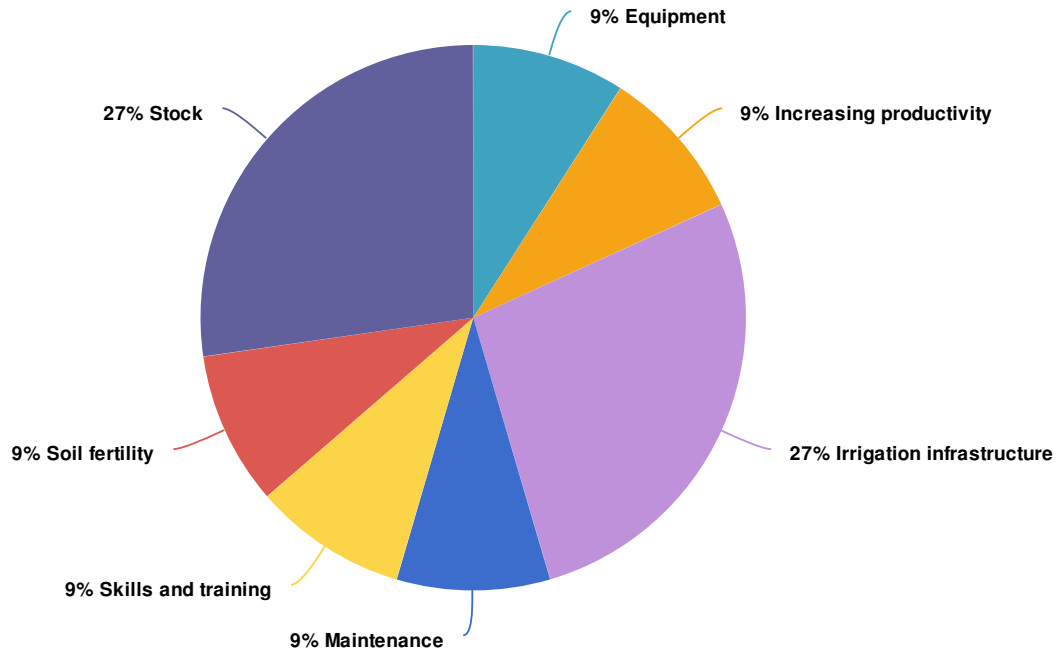
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	37.0%	51.9%	10.5%	0.6%	0.0%	181
I plan carefully before taking action Row %	33.1%	56.9%	7.7%	2.2%	0.0%	181
I spend time thinking about the future of the business Row %	48.4%	45.6%	5.5%	0.5%	0.0%	182
My actions are guided by what I've learnt from experience Row %	41.5%	54.6%	2.2%	1.6%	0.0%	183
I try to follow industry best practice Row %	40.3%	42.0%	16.0%	1.7%	0.0%	181
I often go with my gut feeling when making big decisions Row %	14.4%	43.9%	23.9%	15.6%	2.2%	180
I try new ways of doing things Row %	34.4%	48.6%	15.3%	1.6%	0.0%	183
I take measured risks Row %	29.4%	58.3%	7.8%	3.3%	1.1%	180
I invest time to learn new things Row %	38.5%	55.5%	5.5%	0.5%	0.0%	182
Totals Total Responses						183

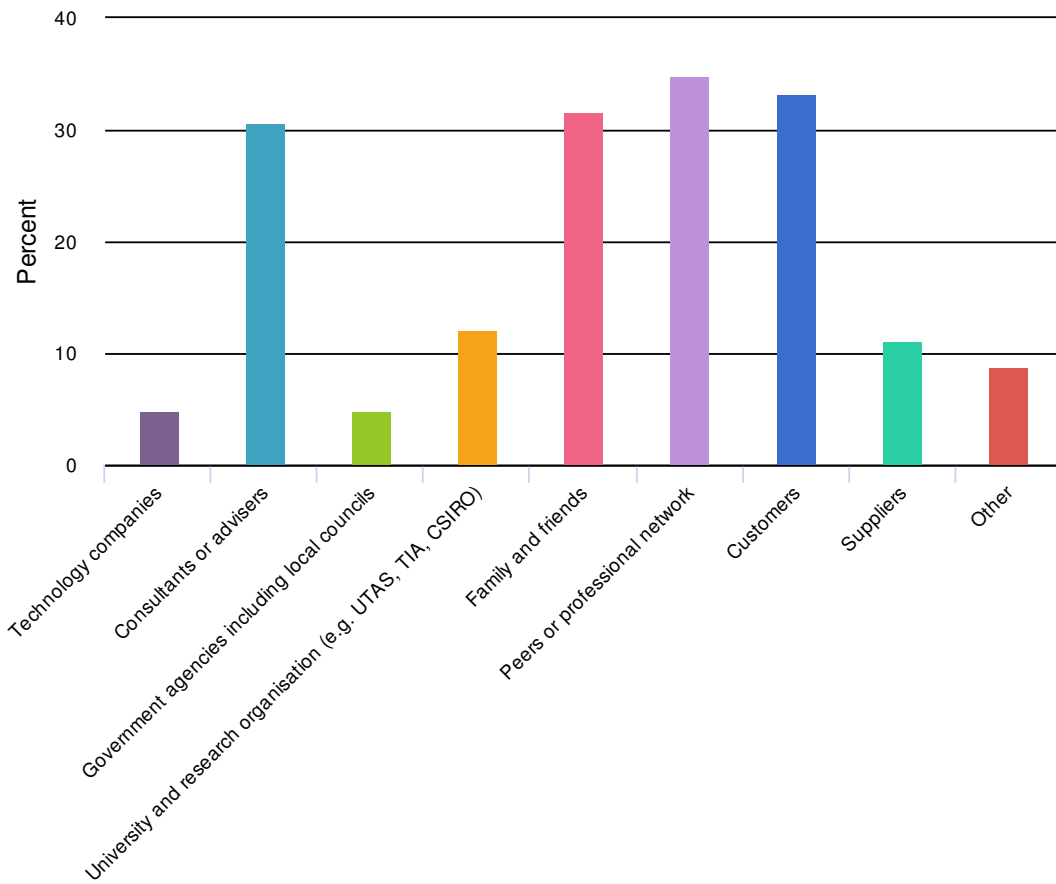
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



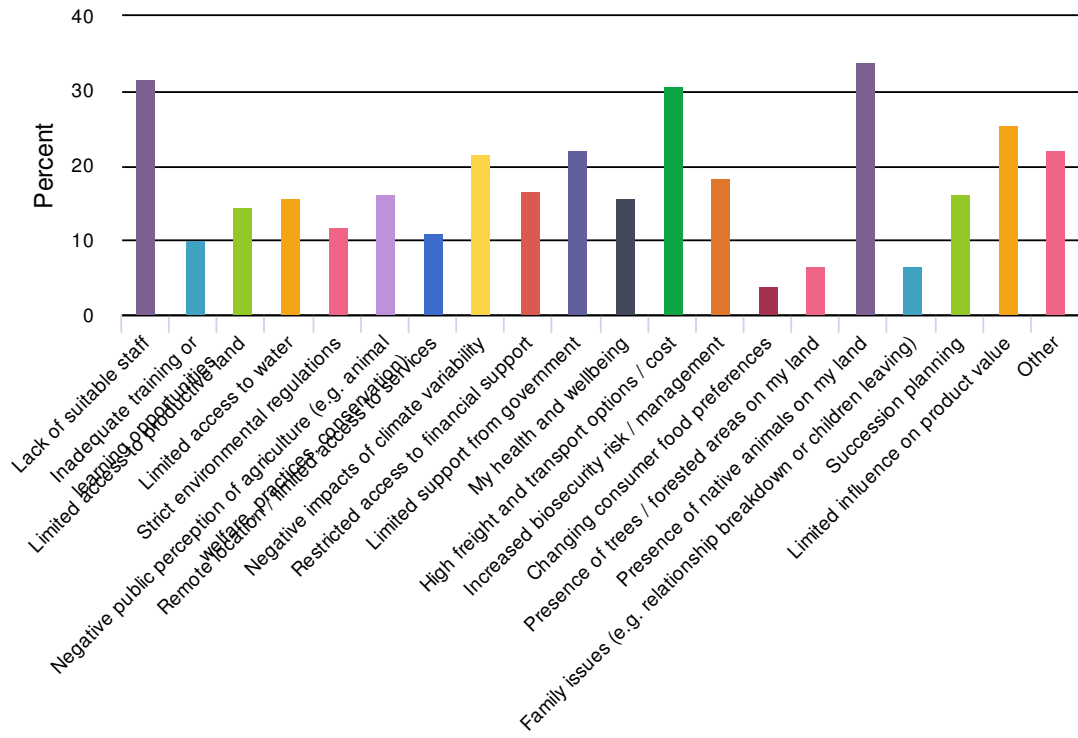
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



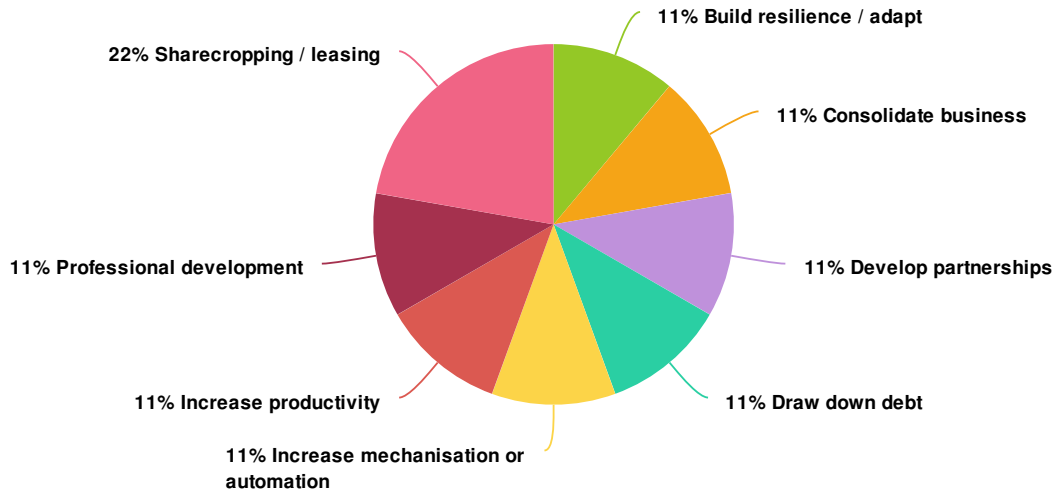
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	30.4%	46.2%	16.3%	2.7%	3.3%	1.1%	184
I often work alongside my neighbours or peers without expecting any financial return Row %	23.0%	40.4%	24.2%	6.7%	0.6%	5.1%	178
My social connections enable me to influence decisions in my region Row %	13.6%	32.2%	32.8%	13.6%	3.4%	4.5%	177
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	28.3%	28.3%	18.9%	15.0%	5.6%	3.9%	180
Totals Total Responses							184

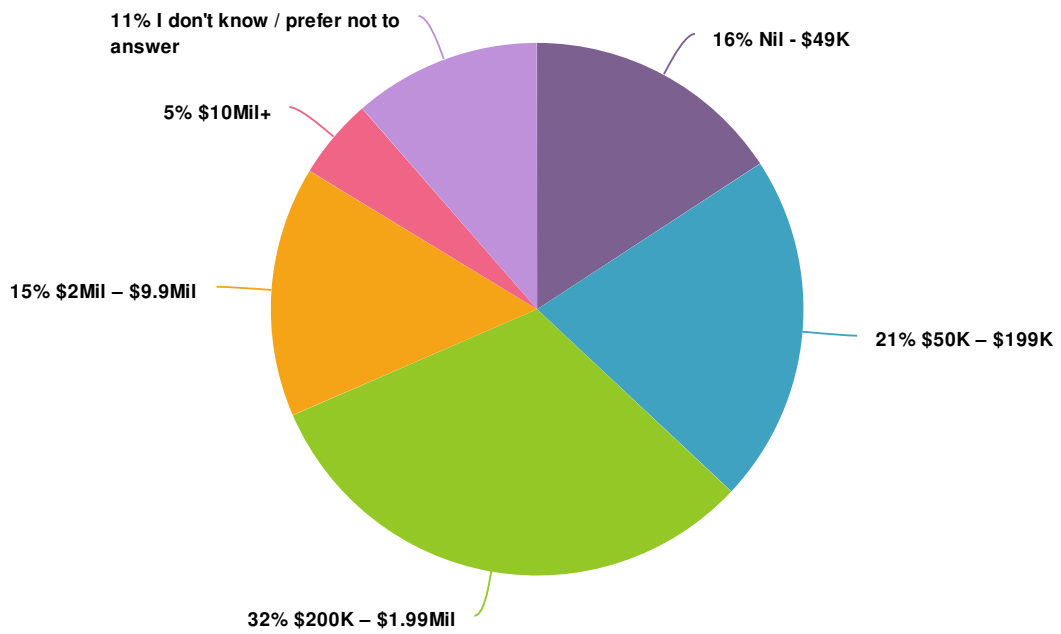
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	13.6%	30.8%	28.4%	23.1%	4.1%	169
Expand current operations Row %	27.1%	37.3%	18.6%	14.1%	2.8%	177
Develop new products Row %	15.8%	26.9%	21.1%	24.6%	11.7%	171
Increase liquid assets Row %	10.1%	29.0%	34.3%	20.7%	5.9%	169
Sell the business Row %	4.0%	6.9%	20.2%	27.2%	41.6%	173
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	13.5%	18.8%	30.0%	21.8%	15.9%	170
Explore new markets for products Row %	26.0%	36.4%	17.3%	12.7%	7.5%	173
Invest in new technologies Row %	24.4%	44.3%	17.6%	11.4%	2.3%	176
Owners to retire soon Row %	4.8%	15.2%	17.6%	31.5%	30.9%	165
Diversify the business Row %	16.1%	29.9%	23.0%	24.7%	6.3%	174
Keep the business as it is now Row %	6.3%	38.1%	17.6%	30.1%	8.0%	176
Increase off-farm income (any income earned from work not related to the farm) Row %	12.0%	27.5%	17.4%	30.5%	12.6%	167
Totals Total Responses						177

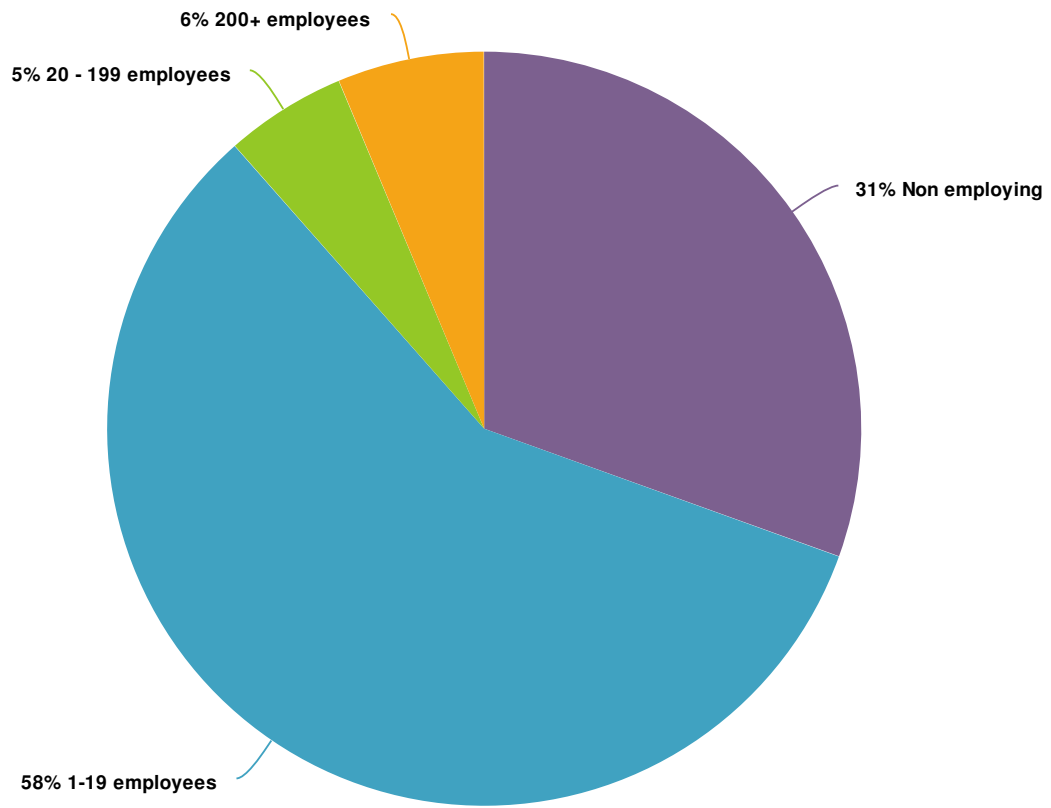
23. **Other strategies you are likely to adopt



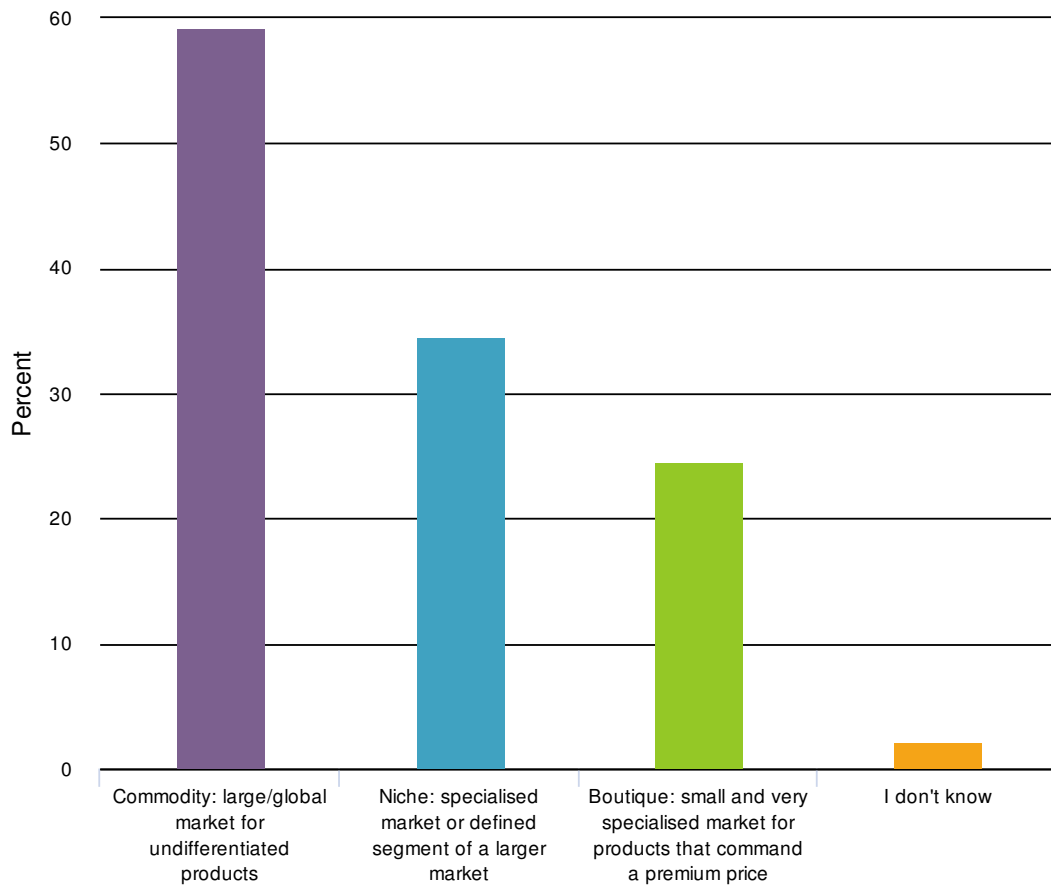
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



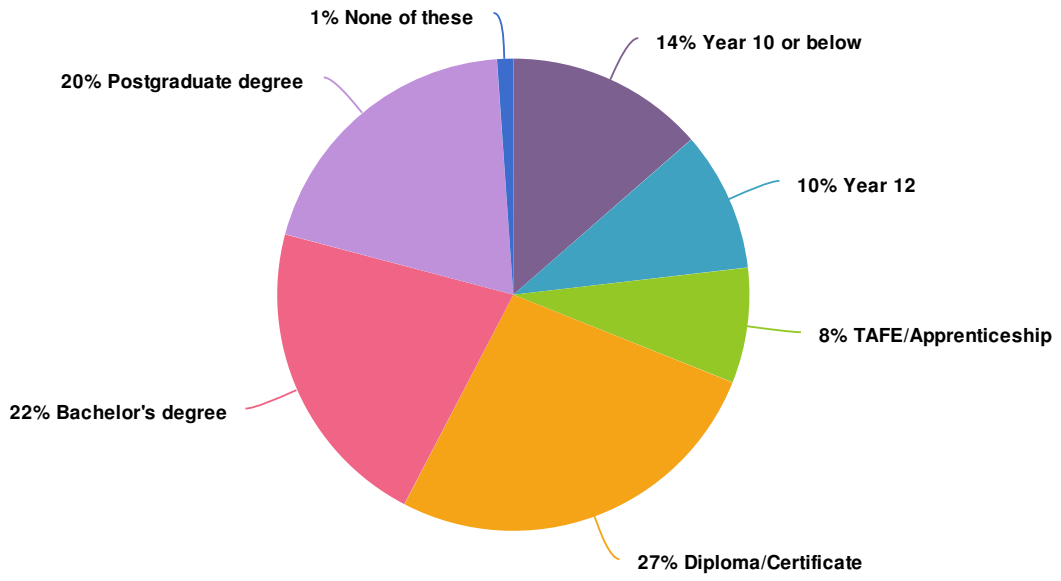
25. How many employees does the business have?



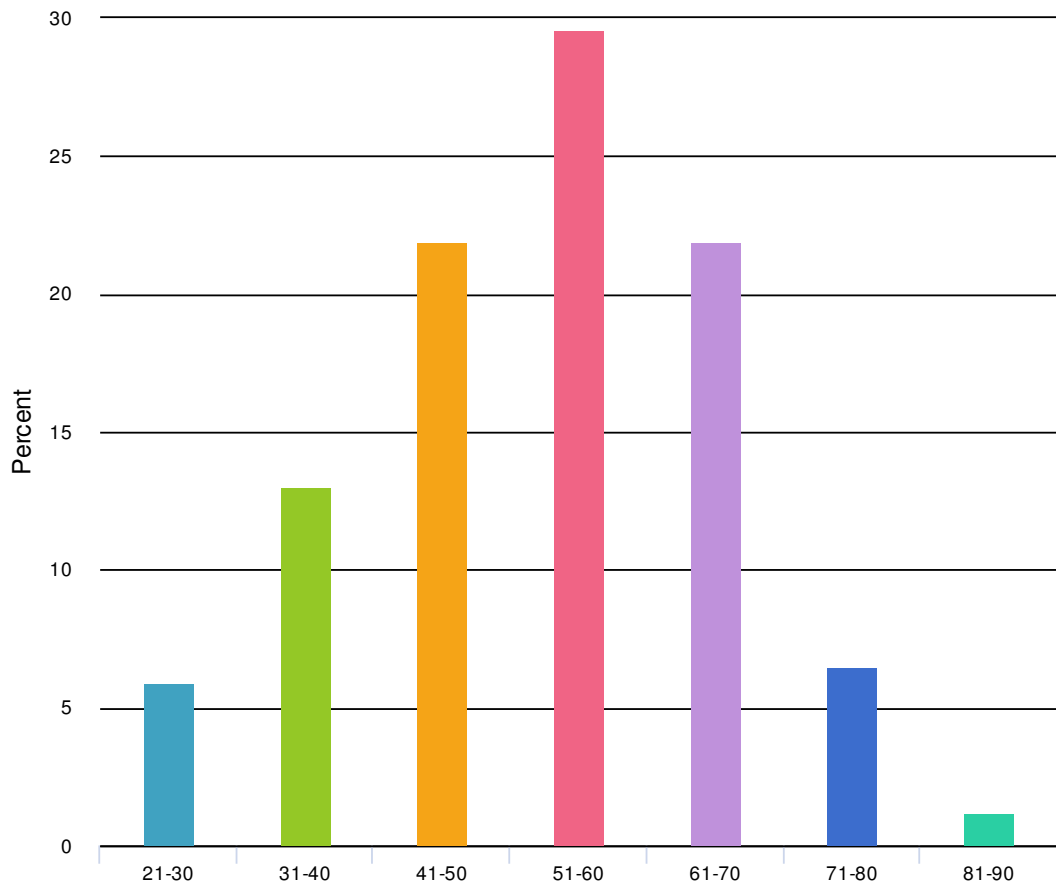
26. What sort of market do your products go into? (select all that are relevant)



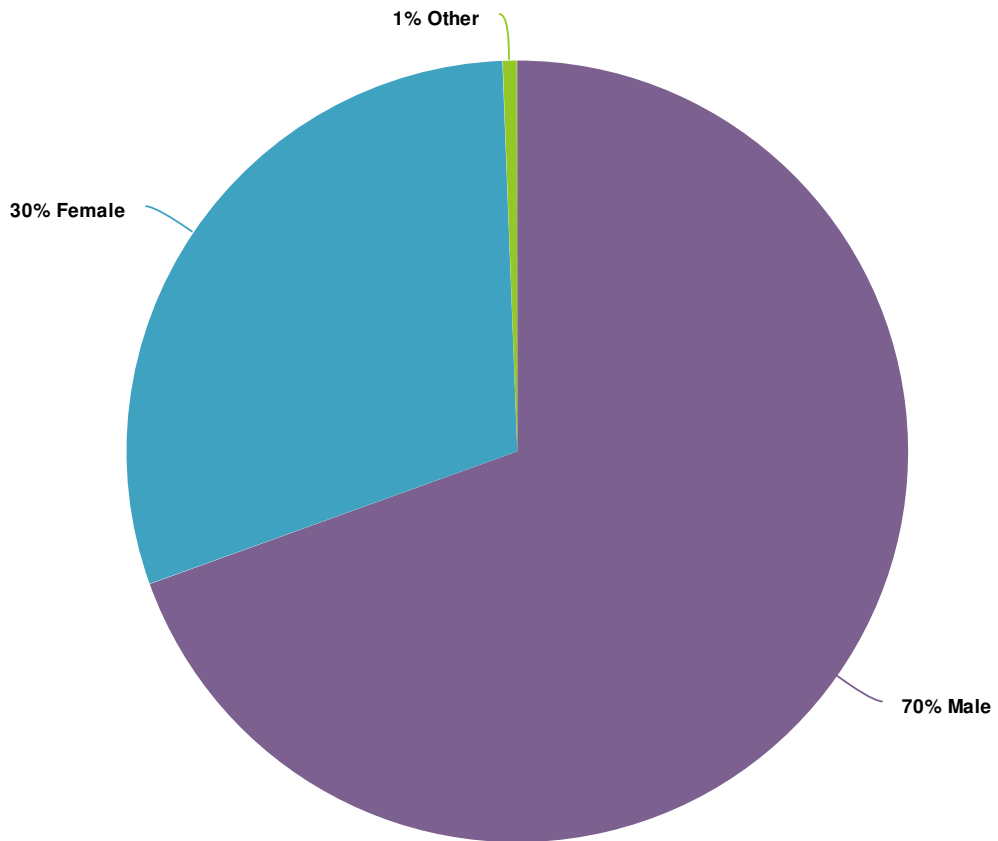
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 7



TasAgFuture Survey Regional Report: South

This report provides a basic summary of the 196 responses of individuals from the Southern region of the state. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

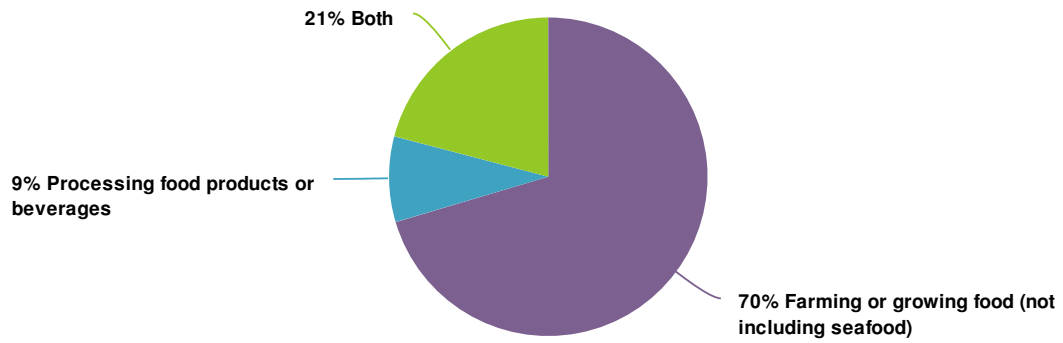
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

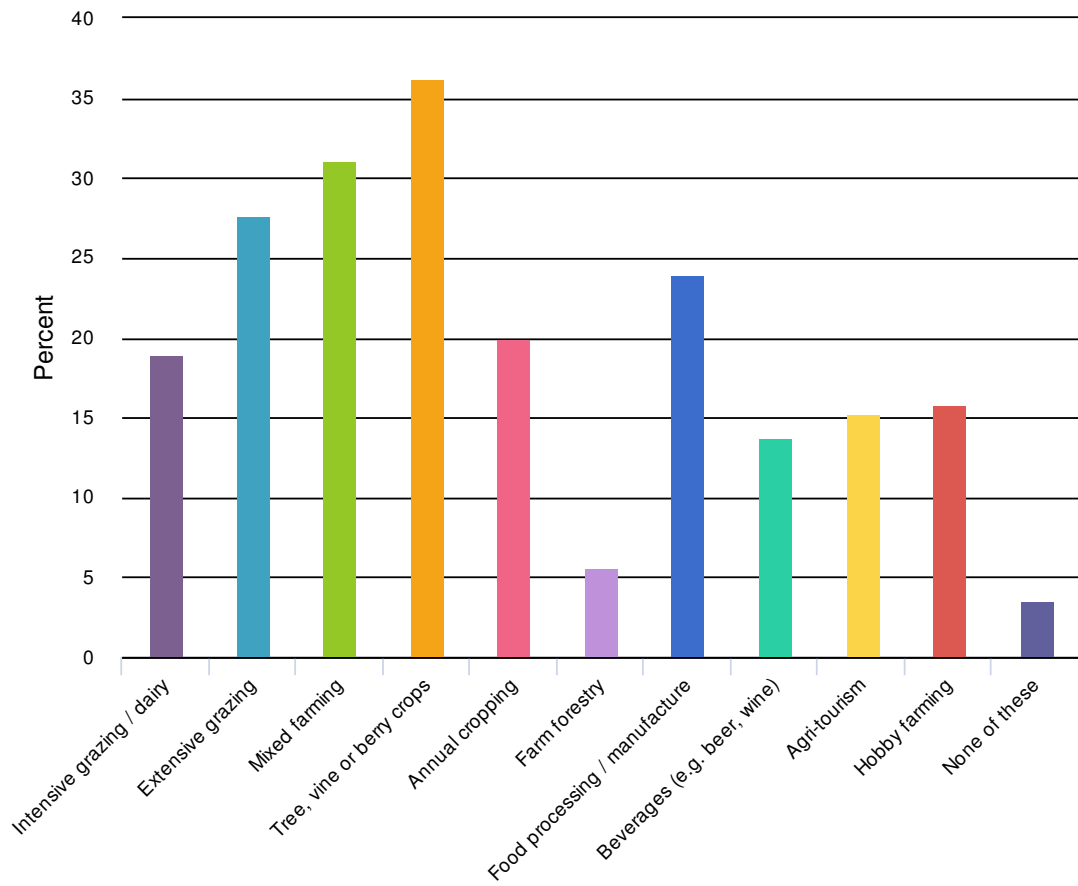
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, y

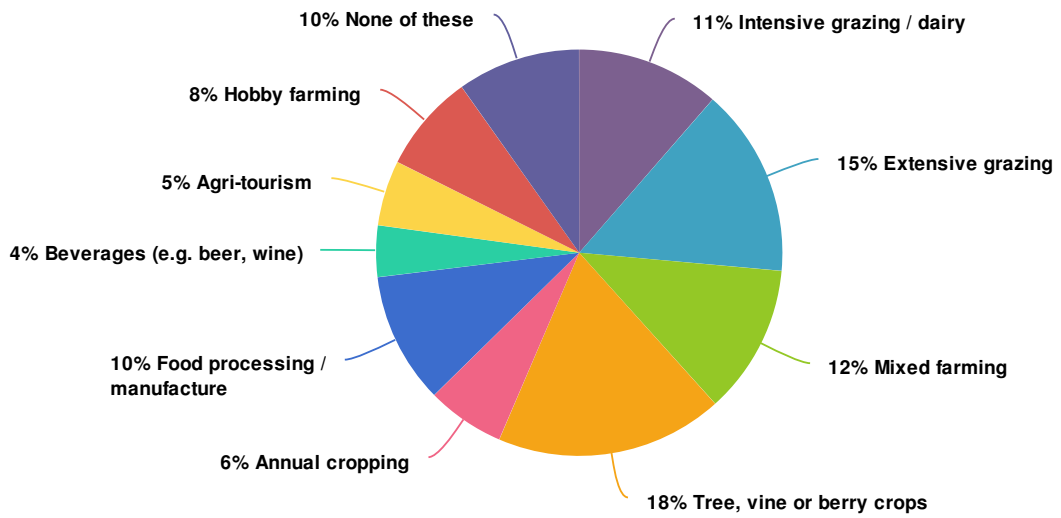
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



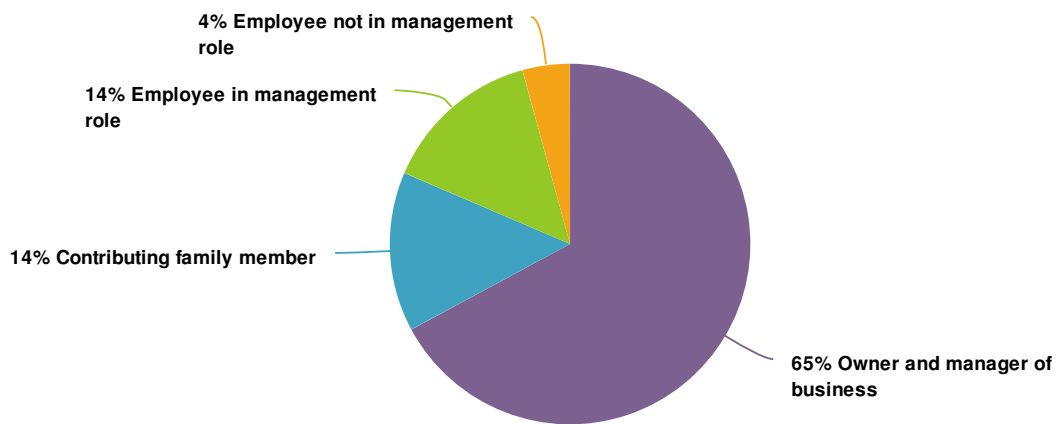
2. Which of the following are included in your business or work? (select all that are relevant)



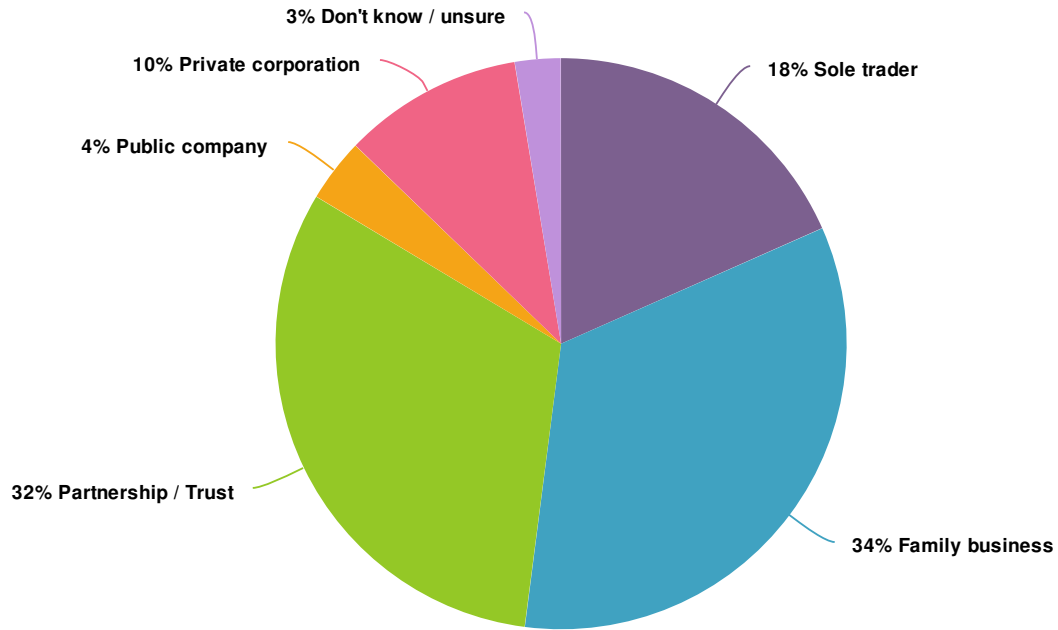
3. Which one of these is your main business or work? (select one)



7. What is your primary role in this business?



8. Which best describes the structure of the business?

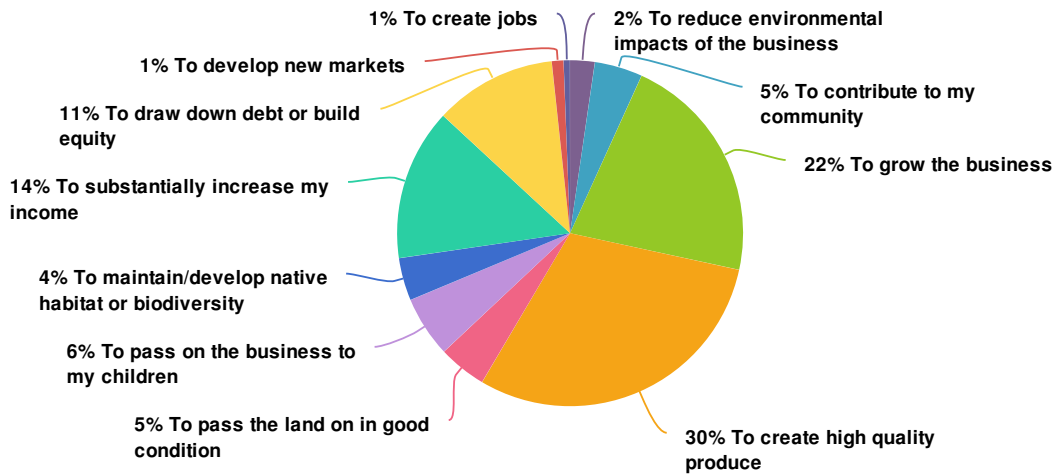


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	40.5%	38.9%	14.2%	3.2%	3.2%	190
To develop new markets Row %	27.5%	44.4%	22.2%	4.2%	1.6%	189
To substantially increase my income Row %	31.7%	42.5%	19.9%	4.3%	1.6%	186
To draw down debt or build equity Row %	38.9%	40.0%	15.0%	3.9%	2.2%	180

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	79.8%	17.6%	2.6%	0.0%	0.0%	193
To pass on the business to my children Row %	31.2%	25.3%	31.2%	8.4%	3.9%	154
To create jobs Row %	15.3%	48.1%	29.5%	5.5%	1.6%	183
To contribute to my community Row %	37.0%	49.5%	13.0%	0.5%	0.0%	192
To maintain/develop native habitat or biodiversity Row %	35.5%	40.9%	19.4%	2.2%	2.2%	186
To look after the land Row %	67.2%	30.7%	2.1%	0.0%	0.0%	189
To reduce environmental impacts of the business Row %	43.7%	46.8%	9.5%	0.0%	0.0%	190
To pass the land on in good condition Row %	62.8%	33.0%	4.3%	0.0%	0.0%	188
Totals Total Responses						193

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

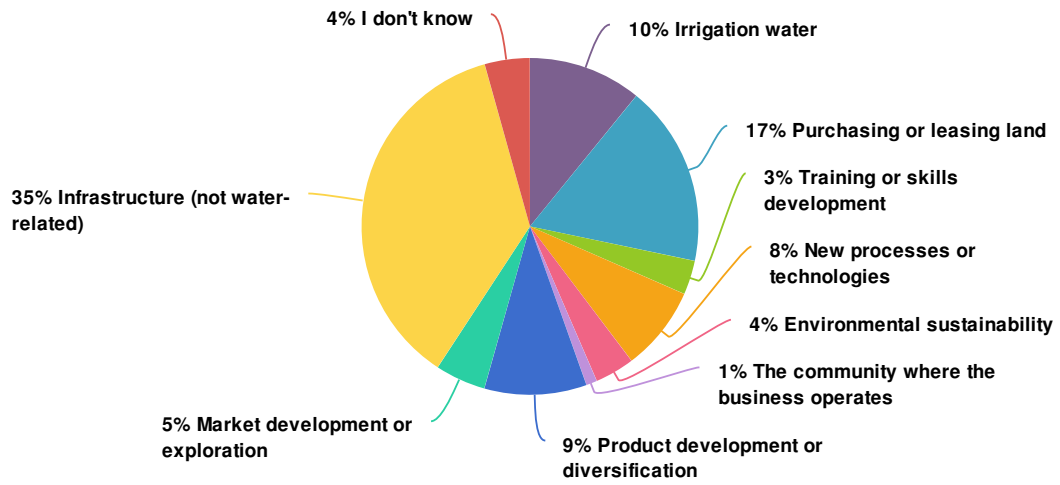
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	26.6%	38.0%	28.1%	5.7%	1.6%	192
Making high profits or being well-paid Row %	13.6%	54.5%	20.4%	6.8%	4.7%	191
Being able to stay on the farm / in this place Row %	47.8%	34.1%	14.8%	2.2%	1.1%	182

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	36.0%	52.4%	9.5%	2.1%	0.0%	189
Creating high quality produce / products Row %	68.6%	28.4%	3.1%	0.0%	0.0%	194
Doing work I enjoy Row %	59.7%	38.7%	1.6%	0.0%	0.0%	191
Being my own boss Row %	32.8%	50.5%	12.9%	2.7%	1.1%	186
Working outdoors Row %	32.1%	46.0%	19.8%	1.1%	1.1%	187
Having a lifestyle I enjoy Row %	53.6%	43.2%	3.1%	0.0%	0.0%	192
Totals Total Responses						194

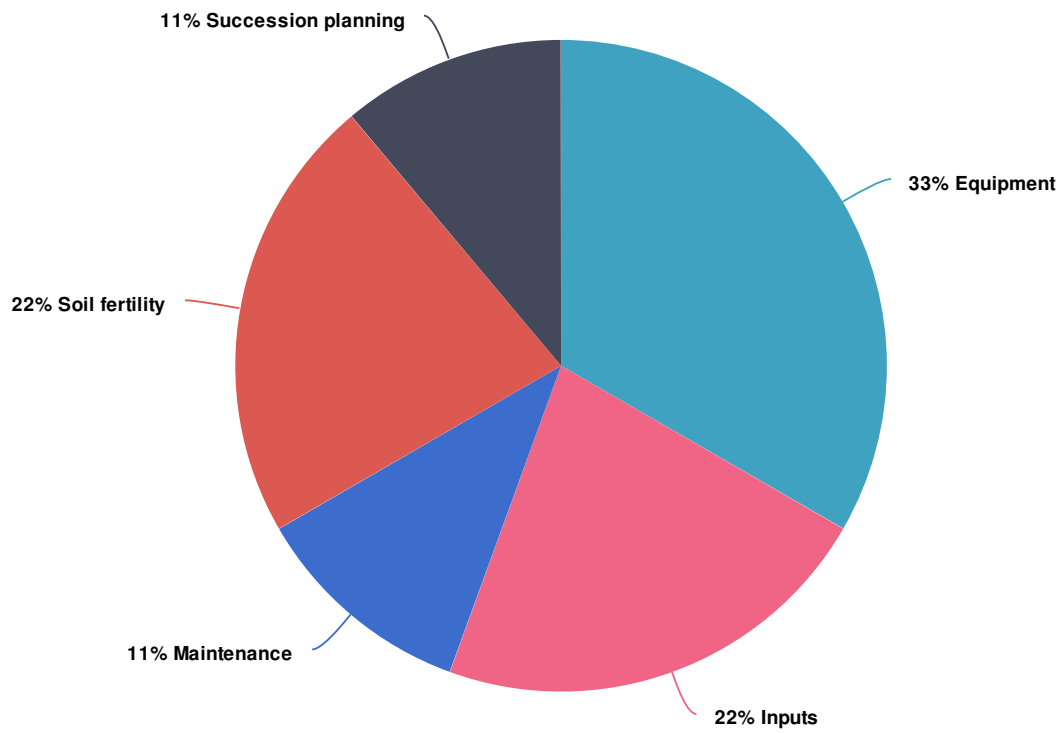
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	31.6%	50.0%	14.2%	3.7%	0.5%	190
I plan carefully before taking action Row %	32.0%	55.7%	10.8%	1.5%	0.0%	194
I spend time thinking about the future of the business Row %	49.0%	45.8%	4.2%	0.5%	0.5%	192
My actions are guided by what I've learnt from experience Row %	41.8%	51.5%	6.7%	0.0%	0.0%	194
I try to follow industry best practice Row %	32.3%	55.6%	9.0%	2.1%	1.1%	189
I often go with my gut feeling when making big decisions Row %	18.7%	45.6%	25.9%	8.8%	1.0%	193
I try new ways of doing things Row %	33.0%	57.7%	8.8%	0.5%	0.0%	194
I take measured risks Row %	21.9%	63.5%	12.5%	2.1%	0.0%	192
I invest time to learn new things Row %	39.6%	52.1%	7.8%	0.5%	0.0%	192
Totals Total Responses						194

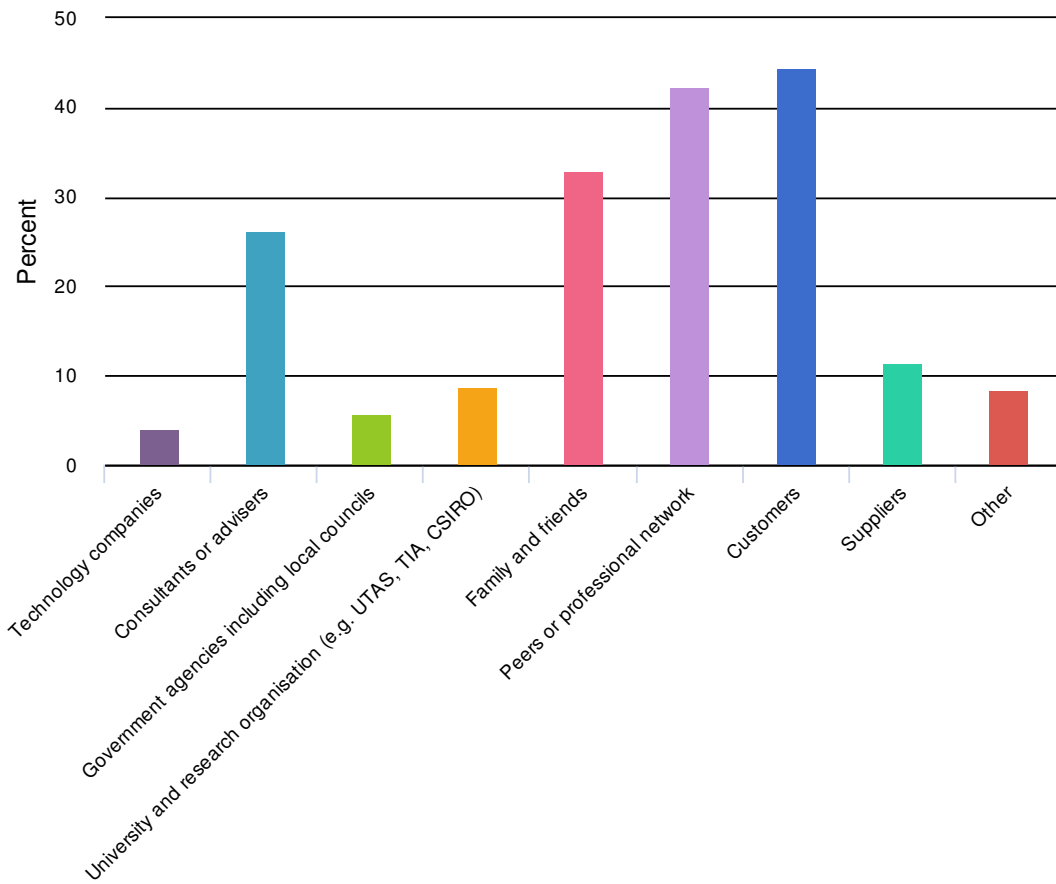
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



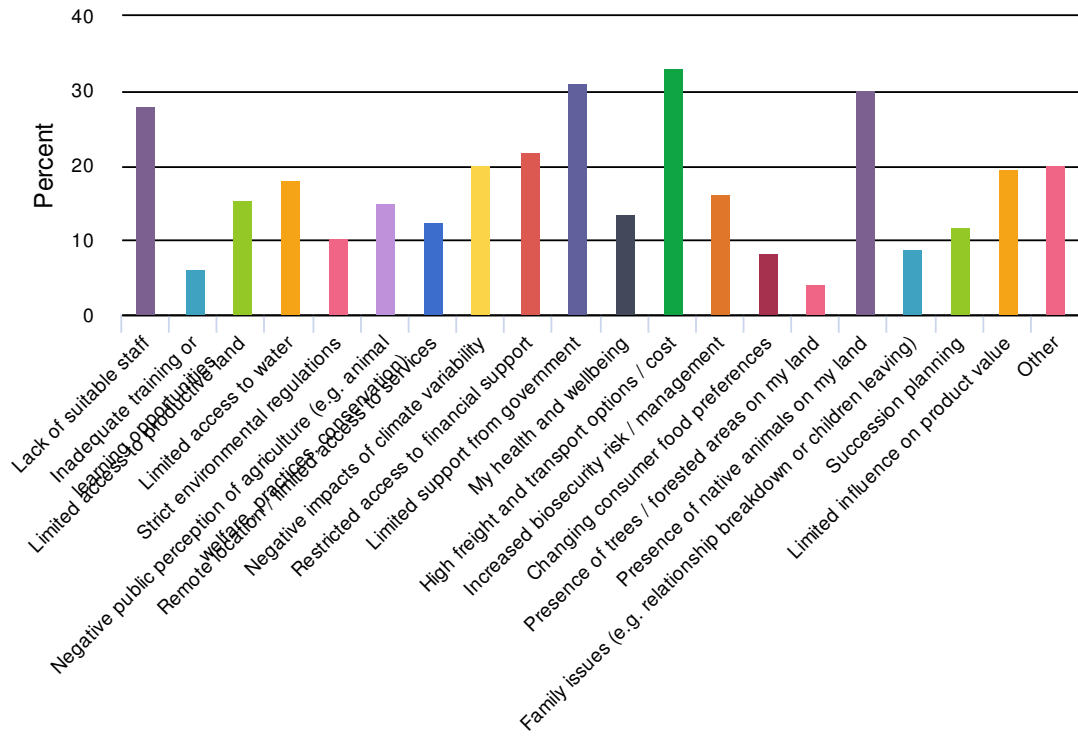
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



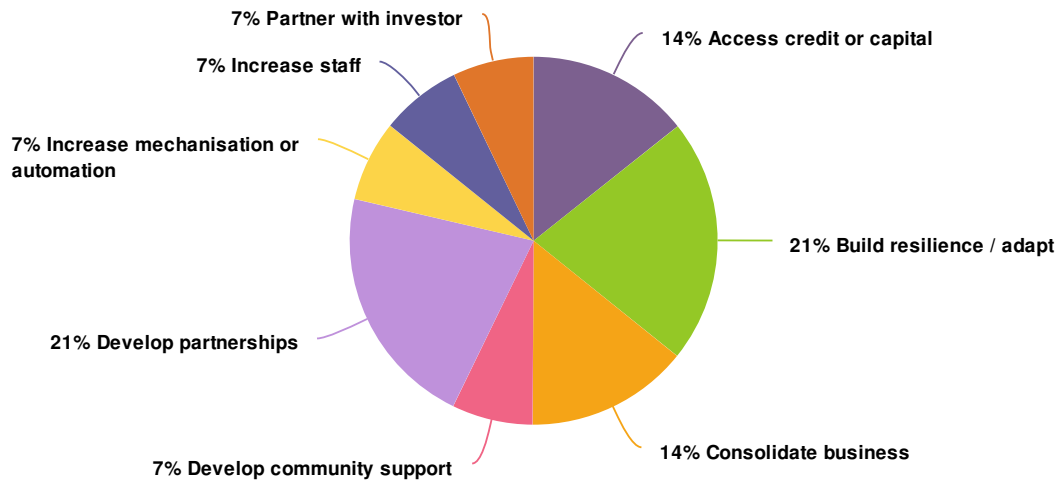
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	36.1%	40.7%	13.9%	3.6%	1.5%	4.1%	194
I often work alongside my neighbours or peers without expecting any financial return Row %	25.8%	42.1%	19.5%	6.3%	1.1%	5.3%	190
My social connections enable me to influence decisions in my region Row %	14.5%	29.5%	32.1%	15.0%	2.6%	6.2%	193
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	24.1%	29.3%	20.4%	15.2%	3.1%	7.9%	191
Totals Total Responses							194

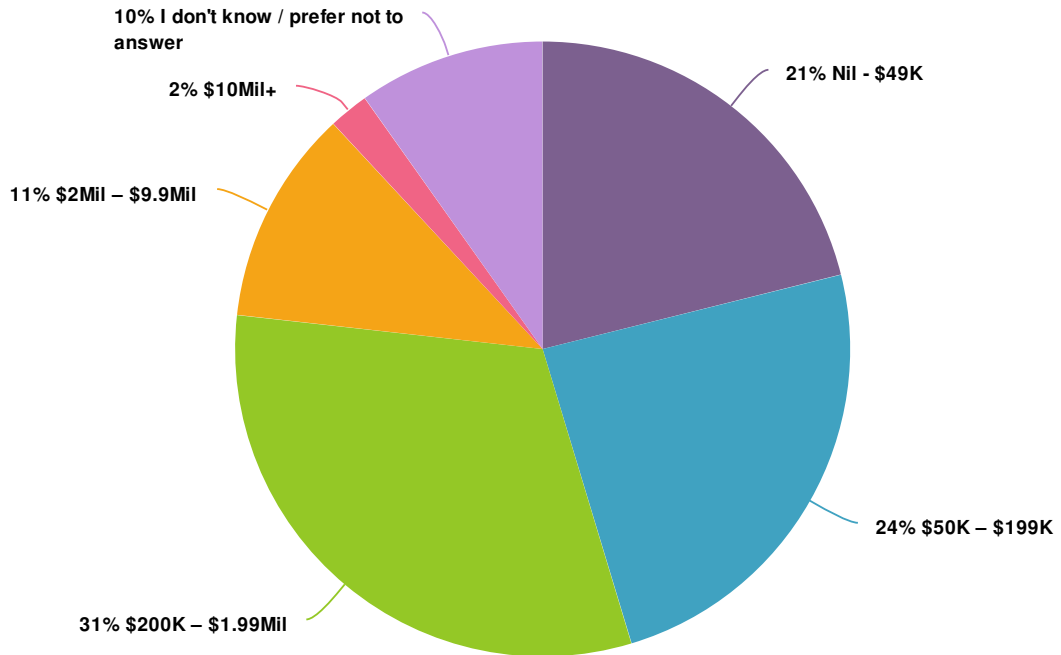
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	11.8%	36.0%	29.2%	15.7%	7.3%	178
Expand current operations Row %	24.5%	40.8%	14.7%	15.8%	4.3%	184
Develop new products Row %	17.3%	41.3%	16.8%	17.9%	6.7%	179
Increase liquid assets Row %	5.2%	27.2%	37.6%	20.8%	9.2%	173
Sell the business Row %	4.1%	7.0%	17.4%	26.7%	44.8%	172
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	17.6%	31.2%	20.0%	19.4%	11.8%	170
Explore new markets for products Row %	23.8%	46.4%	13.8%	11.0%	5.0%	181
Invest in new technologies Row %	20.1%	43.0%	20.7%	10.6%	5.6%	179
Owners to retire soon Row %	7.2%	13.9%	18.7%	31.3%	28.9%	166
Diversify the business Row %	13.7%	42.3%	21.4%	17.6%	4.9%	182
Keep the business as it is now Row %	6.5%	33.5%	20.0%	30.3%	9.7%	185
Increase off-farm income (any income earned from work not related to the farm) Row %	14.5%	30.3%	21.2%	23.0%	10.9%	165
Totals Total Responses						185

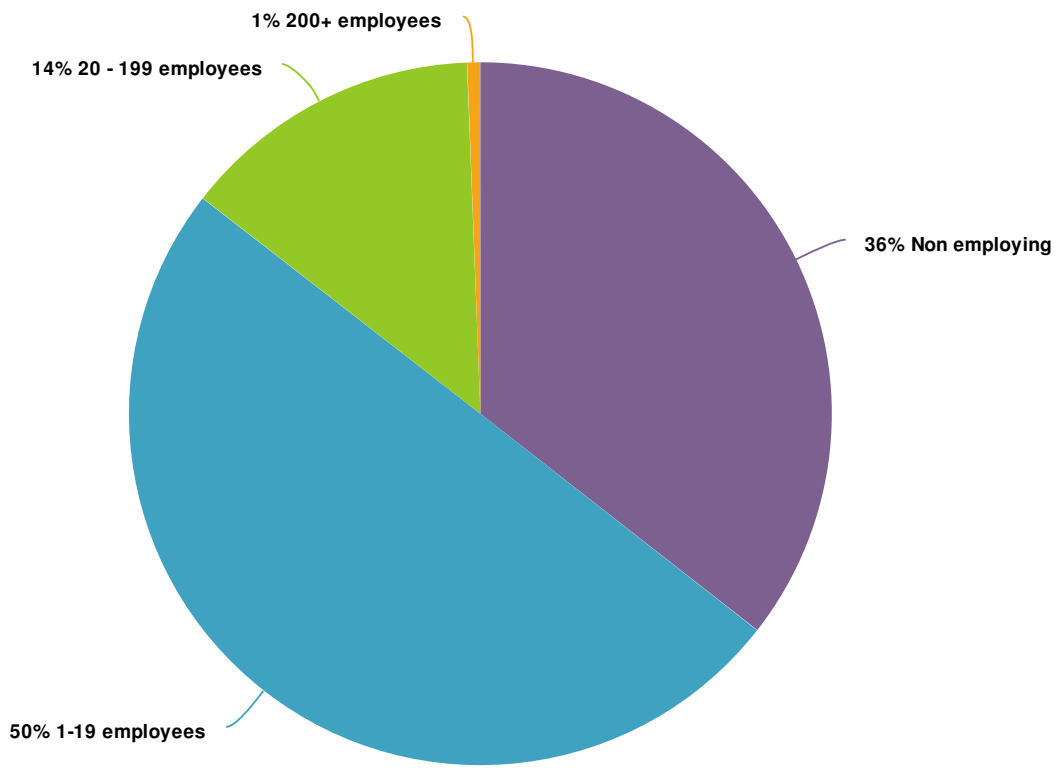
23. **Other strategies you are likely to adopt



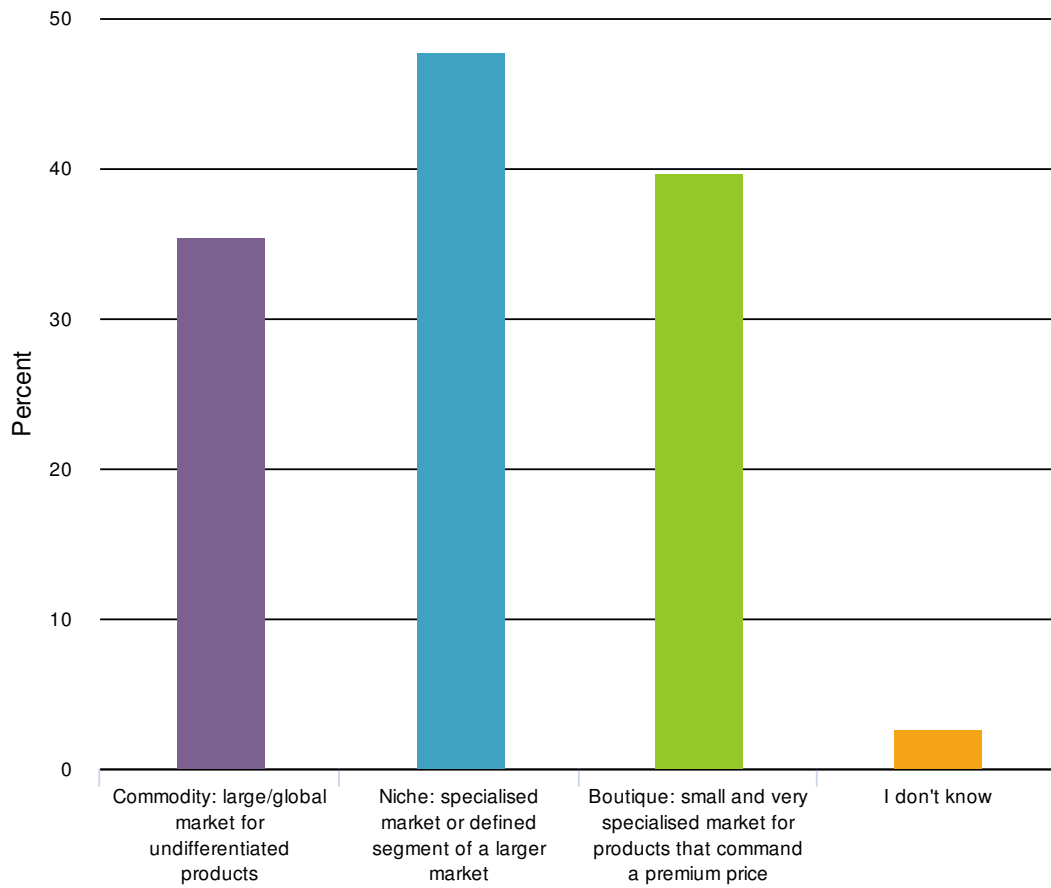
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



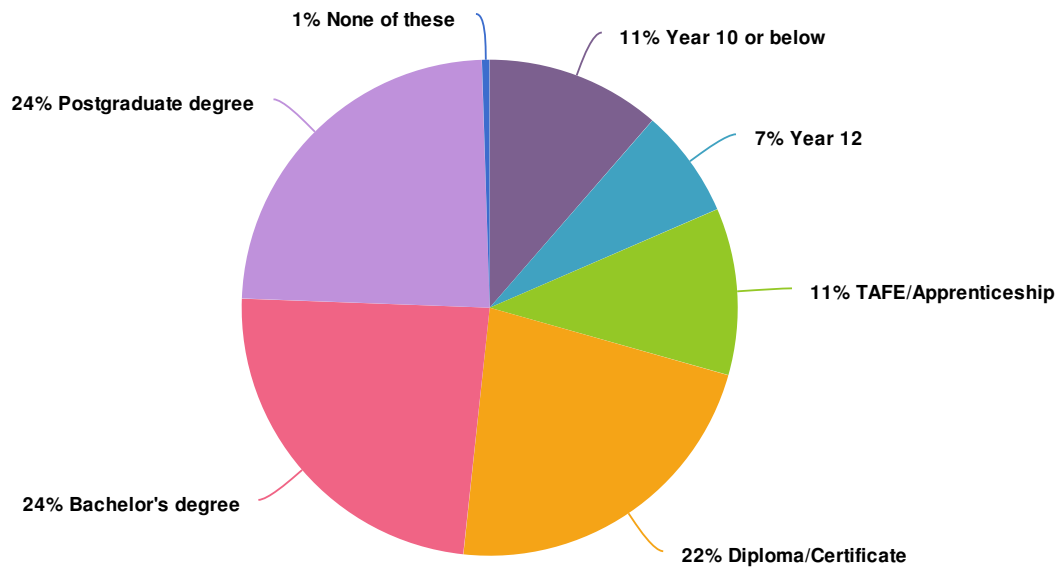
25. How many employees does the business have?



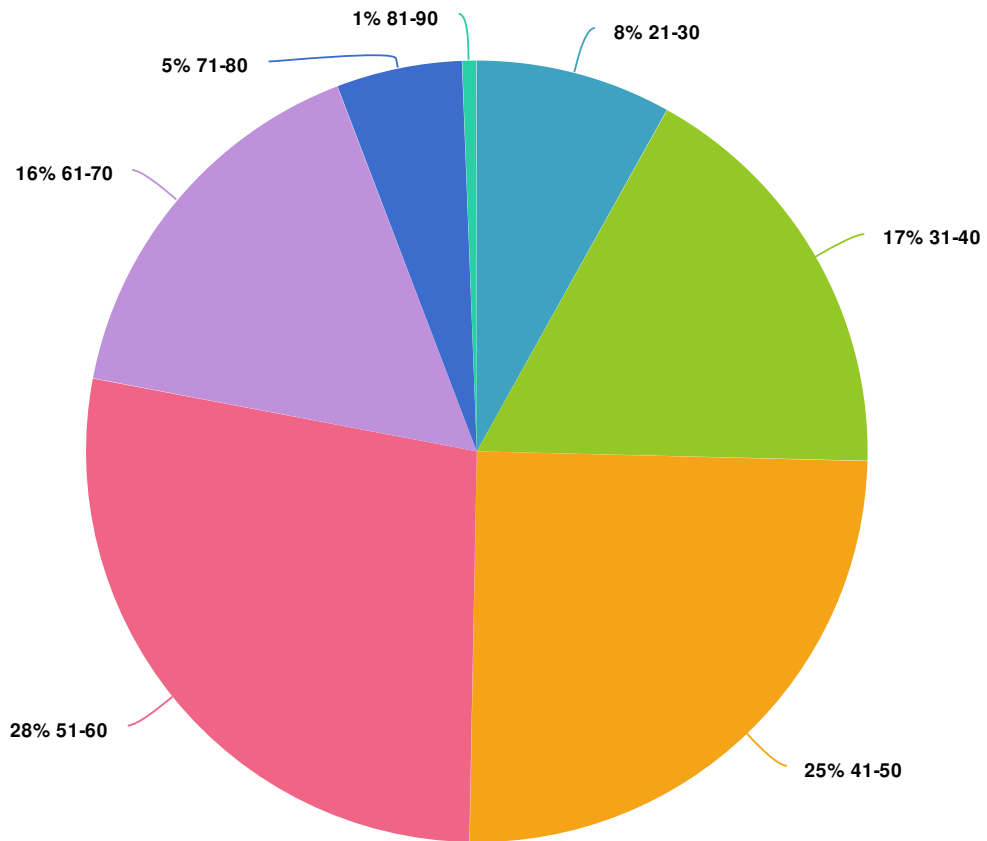
26. What sort of market do your products go into? (select all that are relevant)



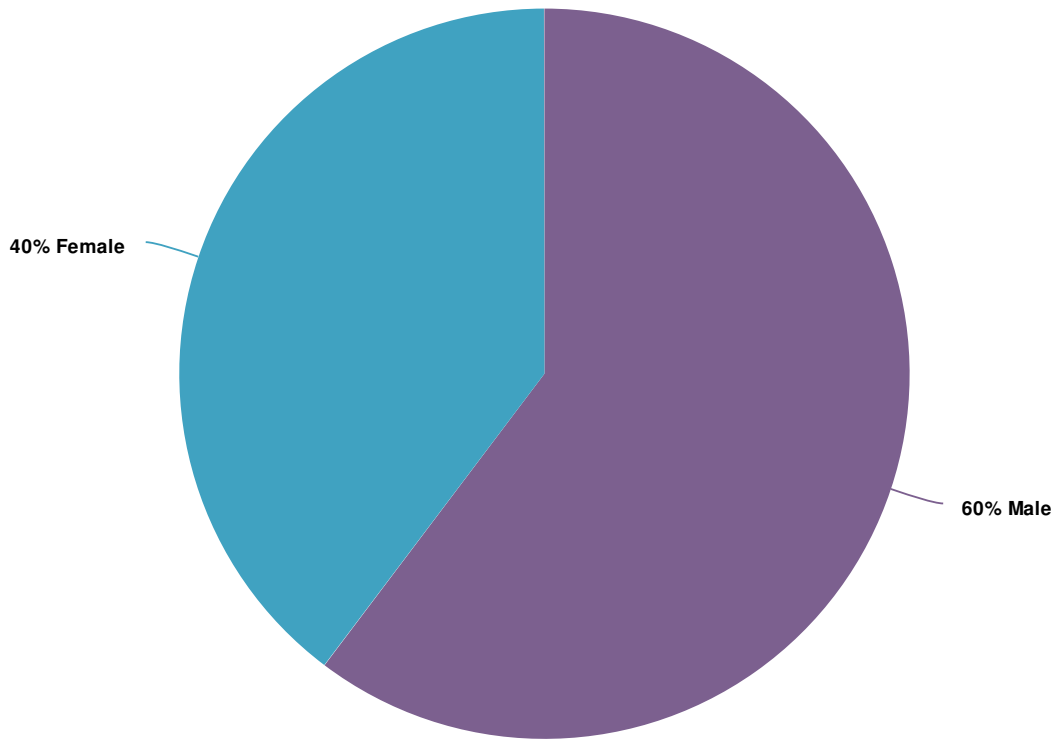
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 8



TasAgFuture Regional Report: Cradle Coast

This report provides a basic summary of the 169 responses of individuals from the Cradle Coast region. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

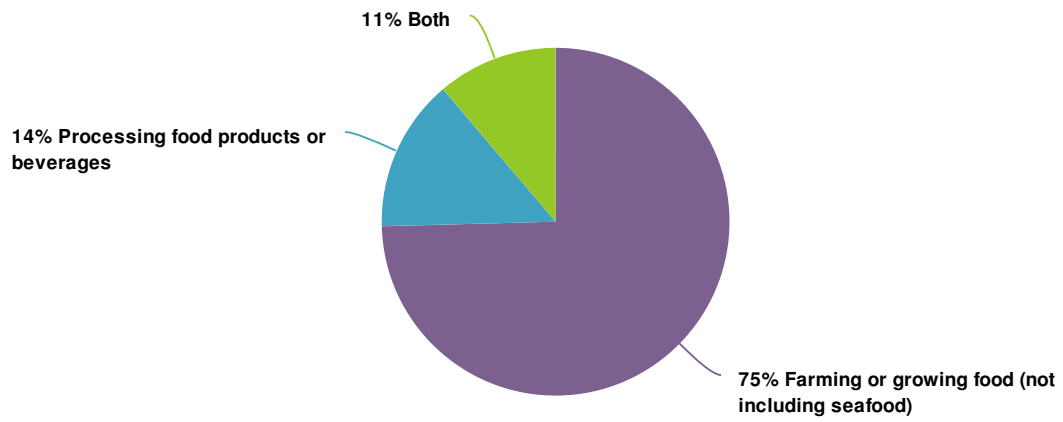
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

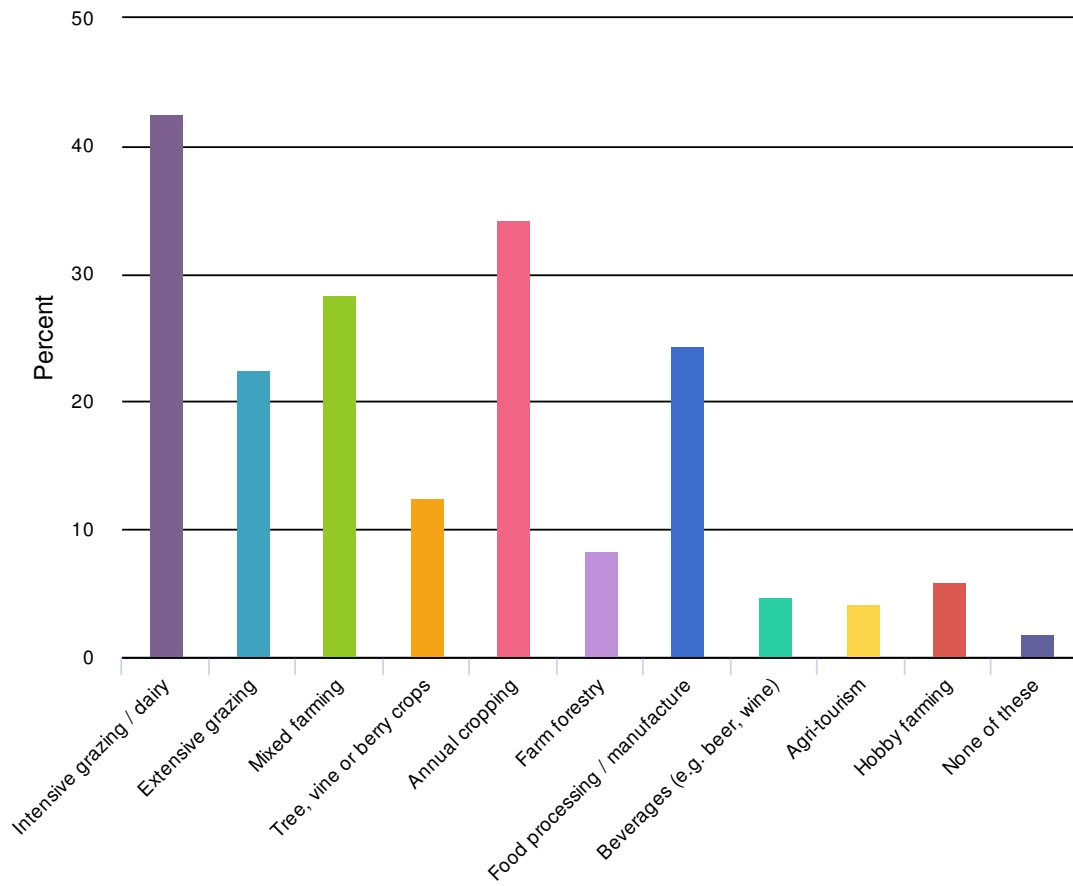
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

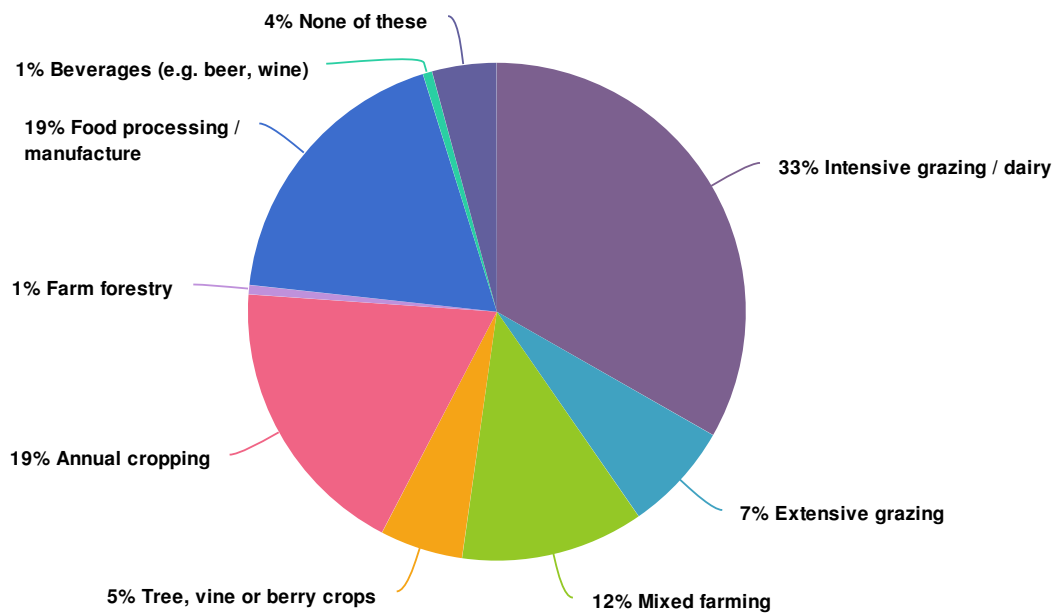
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



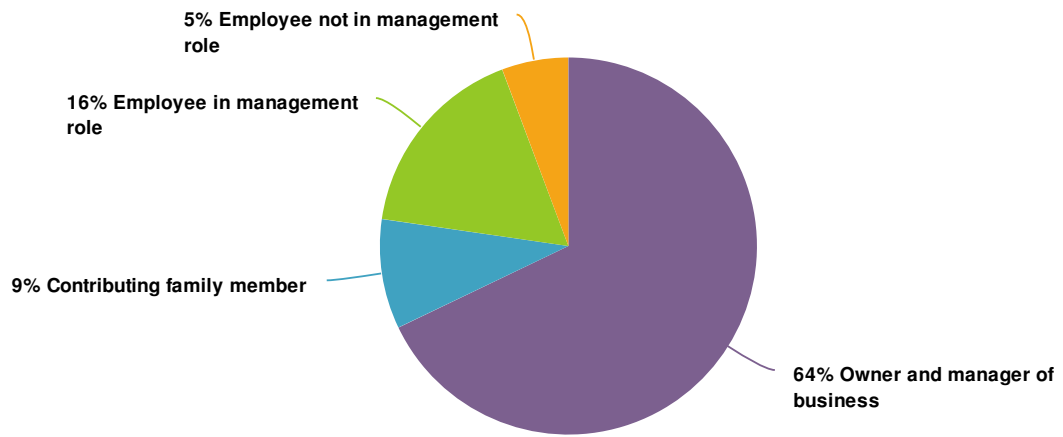
2. Which of the following are included in your business or work? (select all that are relevant)



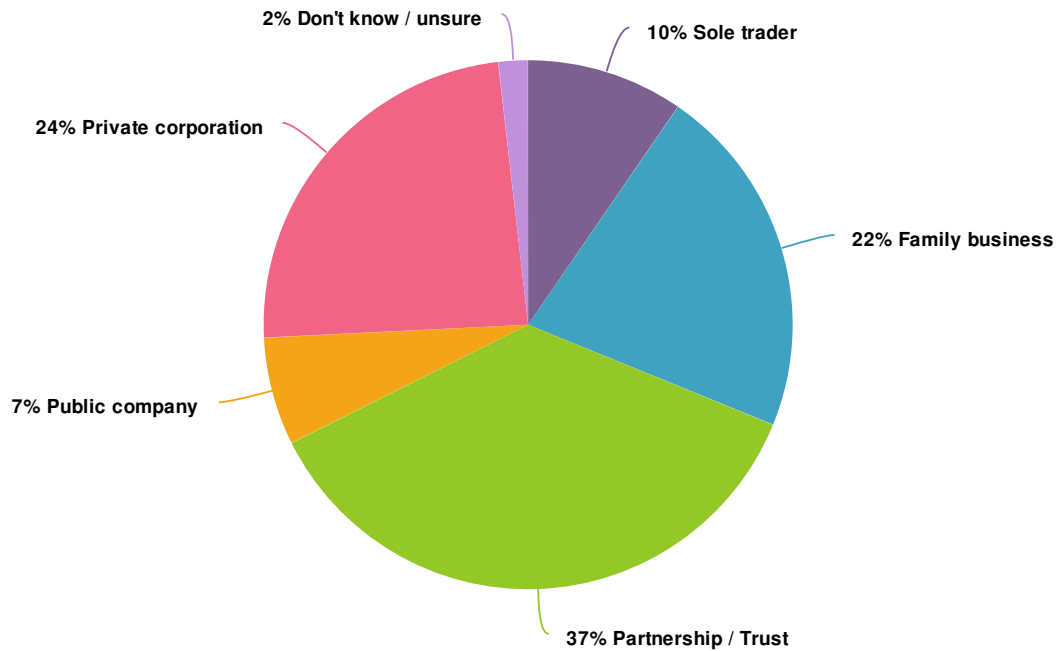
3. Which one of these is your main business or work? (select one)



7. What is your primary role in this business?



8. Which best describes the structure of the business?

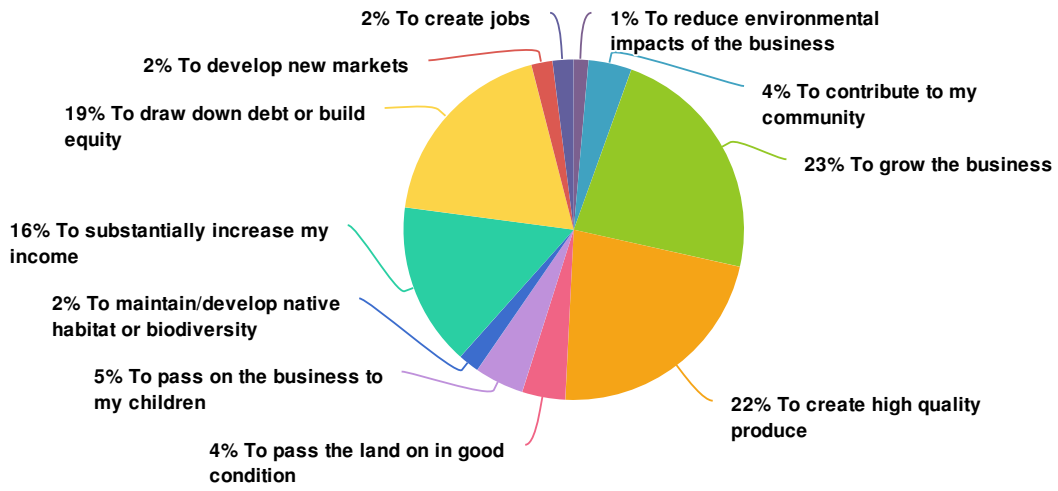


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	40.1%	40.1%	15.3%	1.9%	2.5%	157
To develop new markets Row %	35.4%	36.1%	23.4%	3.2%	1.9%	158
To substantially increase my income Row %	38.1%	39.4%	17.5%	3.8%	1.3%	160
To draw down debt or build equity Row %	44.9%	36.7%	12.9%	3.4%	2.0%	147

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	73.3%	26.1%	0.6%	0.0%	0.0%	161
To pass on the business to my children Row %	21.1%	33.8%	33.1%	9.0%	3.0%	133
To create jobs Row %	20.5%	39.7%	28.2%	9.0%	2.6%	156
To contribute to my community Row %	29.6%	50.3%	19.5%	0.6%	0.0%	159
To maintain/develop native habitat or biodiversity Row %	27.8%	45.6%	22.8%	3.2%	0.6%	158
To look after the land Row %	64.0%	31.1%	3.7%	0.6%	0.6%	164
To reduce environmental impacts of the business Row %	38.9%	48.8%	10.5%	1.9%	0.0%	162
To pass the land on in good condition Row %	59.2%	35.7%	3.2%	1.3%	0.6%	157
Totals Total Responses						164

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	23.8%	49.4%	18.9%	7.3%	0.6%	164
Making high profits or being well-paid Row %	21.1%	50.9%	23.0%	3.7%	1.2%	161
Being able to stay on the farm / in this place Row %	35.5%	45.2%	16.8%	1.9%	0.6%	155

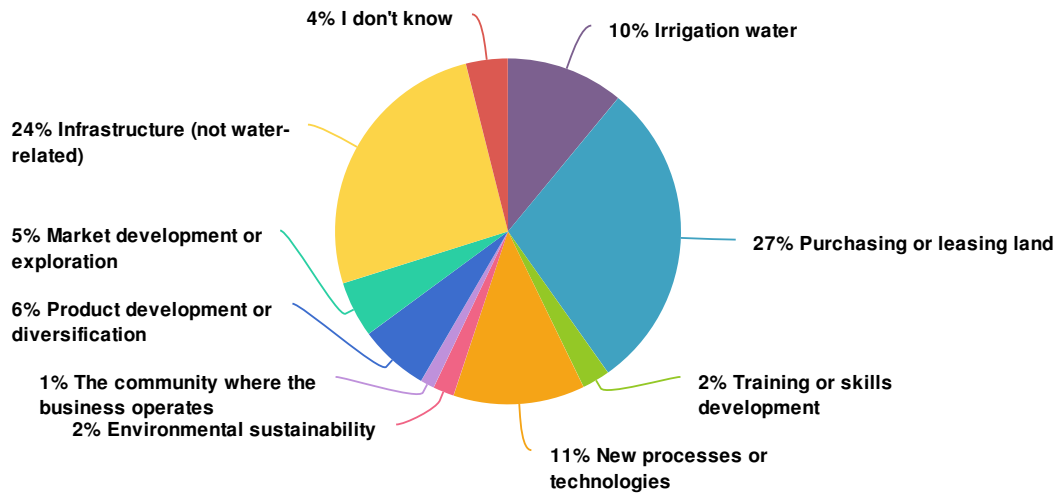
270

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	27.4%	54.3%	17.1%	0.6%	0.6%	164
Creating high quality produce / products Row %	58.2%	38.8%	3.0%	0.0%	0.0%	165
Doing work I enjoy Row %	58.7%	38.3%	3.0%	0.0%	0.0%	167
Being my own boss Row %	32.9%	44.5%	18.7%	3.2%	0.6%	155
Working outdoors Row %	27.8%	48.8%	19.8%	3.1%	0.6%	162
Having a lifestyle I enjoy Row %	52.1%	40.6%	7.3%	0.0%	0.0%	165
Totals Total Responses						167

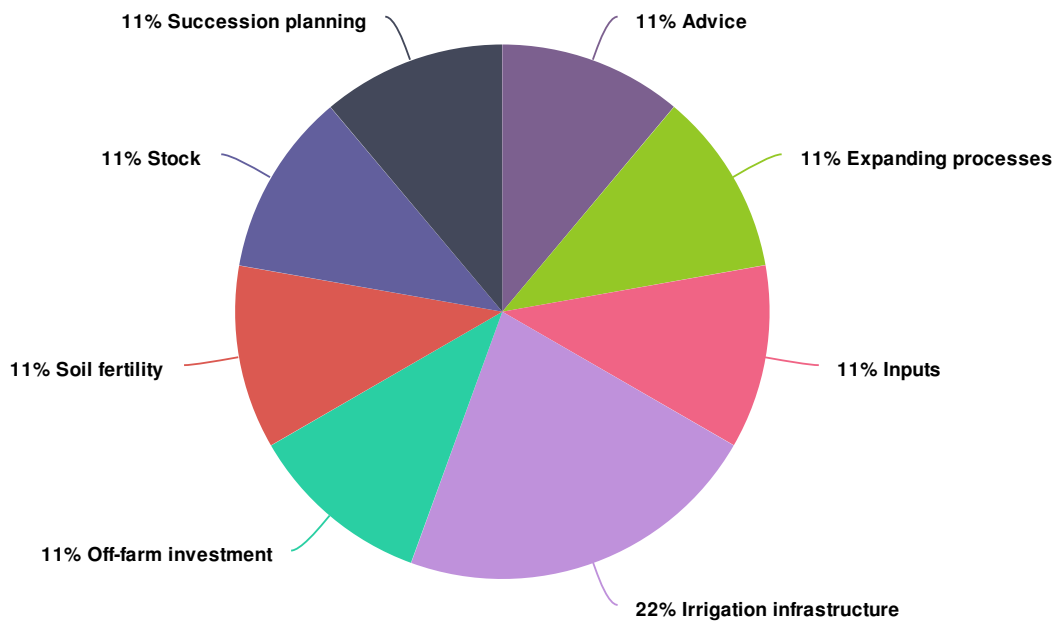
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	26.4%	57.1%	14.1%	1.8%	0.6%	163
I plan carefully before taking action Row %	28.9%	62.7%	7.2%	1.2%	0.0%	166
I spend time thinking about the future of the business Row %	44.2%	52.7%	1.8%	1.2%	0.0%	165
My actions are guided by what I've learnt from experience Row %	37.3%	53.6%	8.4%	0.6%	0.0%	166
I try to follow industry best practice Row %	33.1%	58.4%	7.2%	0.6%	0.6%	166
I often go with my gut feeling when making big decisions Row %	14.2%	44.4%	25.9%	14.2%	1.2%	162
I try new ways of doing things Row %	29.8%	58.4%	10.6%	1.2%	0.0%	161
I take measured risks Row %	19.4%	62.5%	11.9%	6.3%	0.0%	160
I invest time to learn new things Row %	32.9%	56.1%	9.8%	0.6%	0.6%	164
Totals Total Responses						166

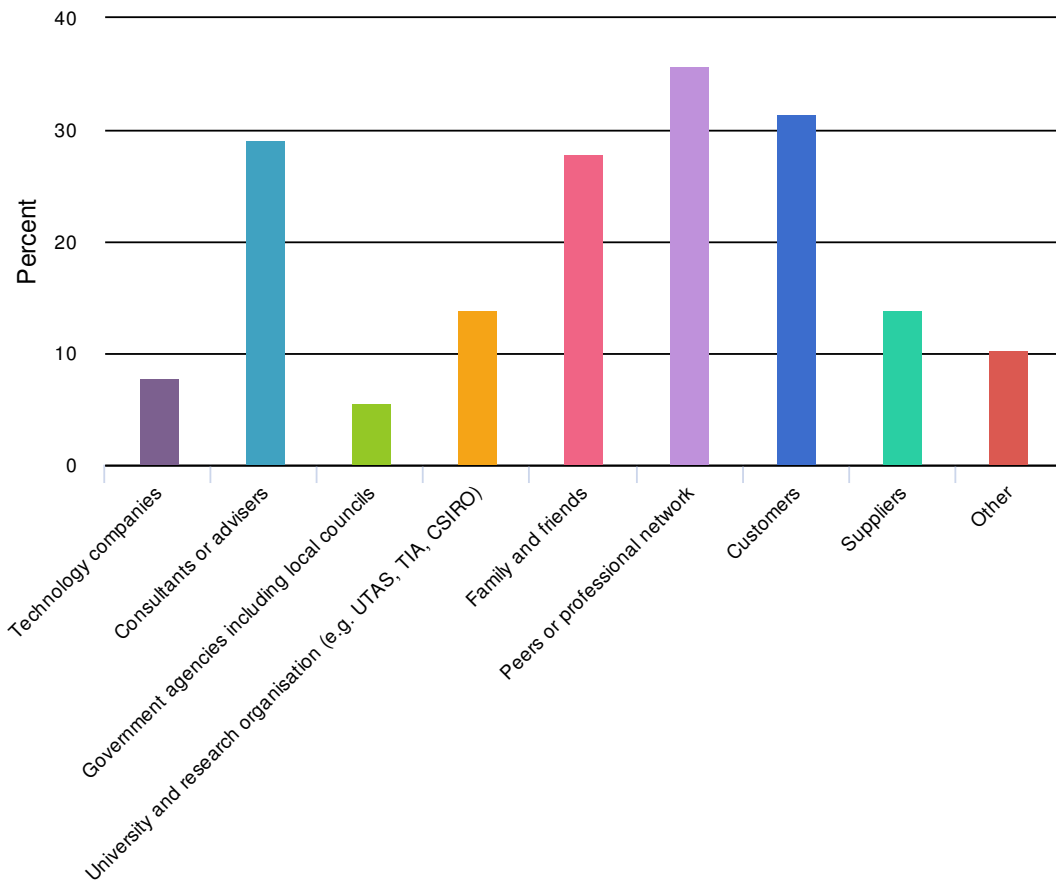
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



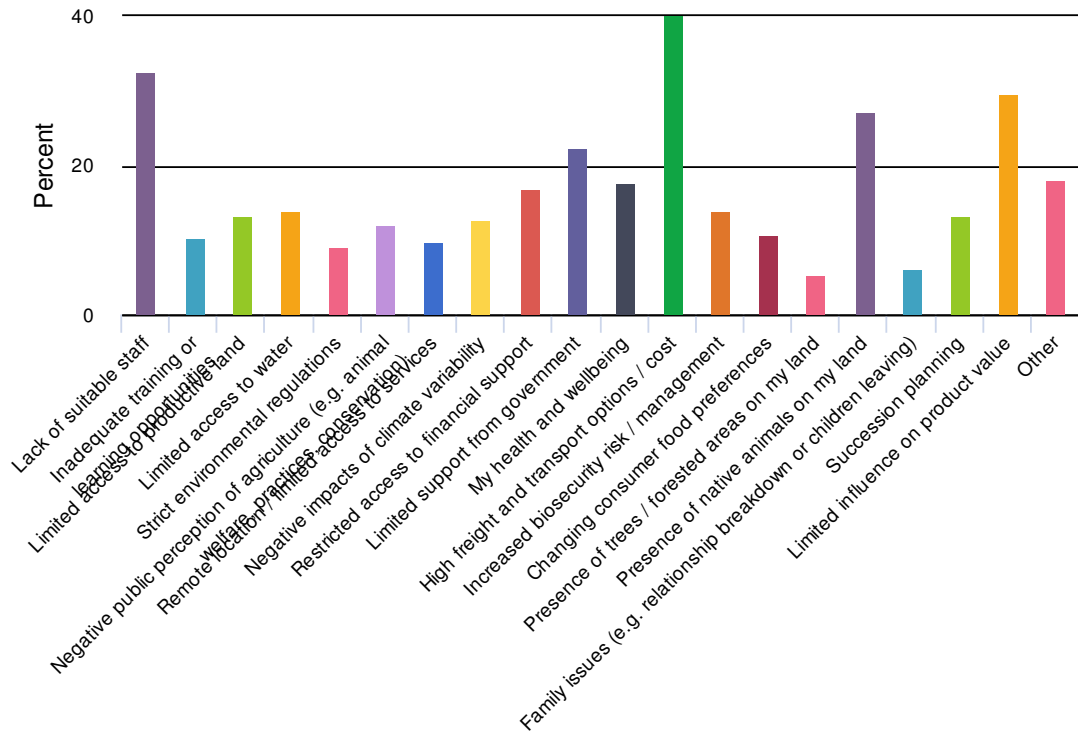
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



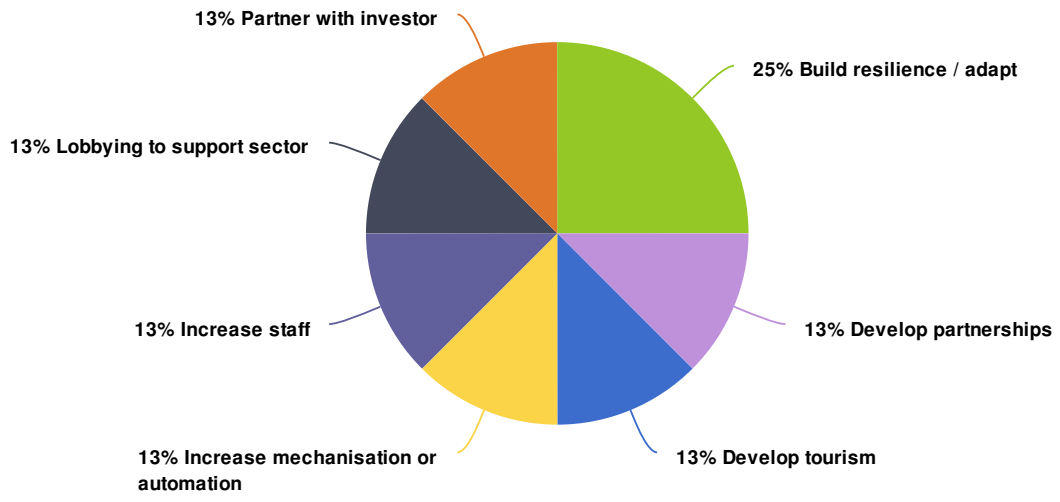
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	25.9%	50.0%	16.9%	1.8%	0.6%	4.8%	166
I often work alongside my neighbours or peers without expecting any financial return Row %	23.9%	42.9%	24.5%	1.8%	0.0%	6.7%	163
My social connections enable me to influence decisions in my region Row %	8.0%	31.9%	39.3%	11.0%	4.3%	5.5%	163
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	21.7%	28.0%	21.7%	18.0%	5.0%	5.6%	161
Totals Total Responses							166

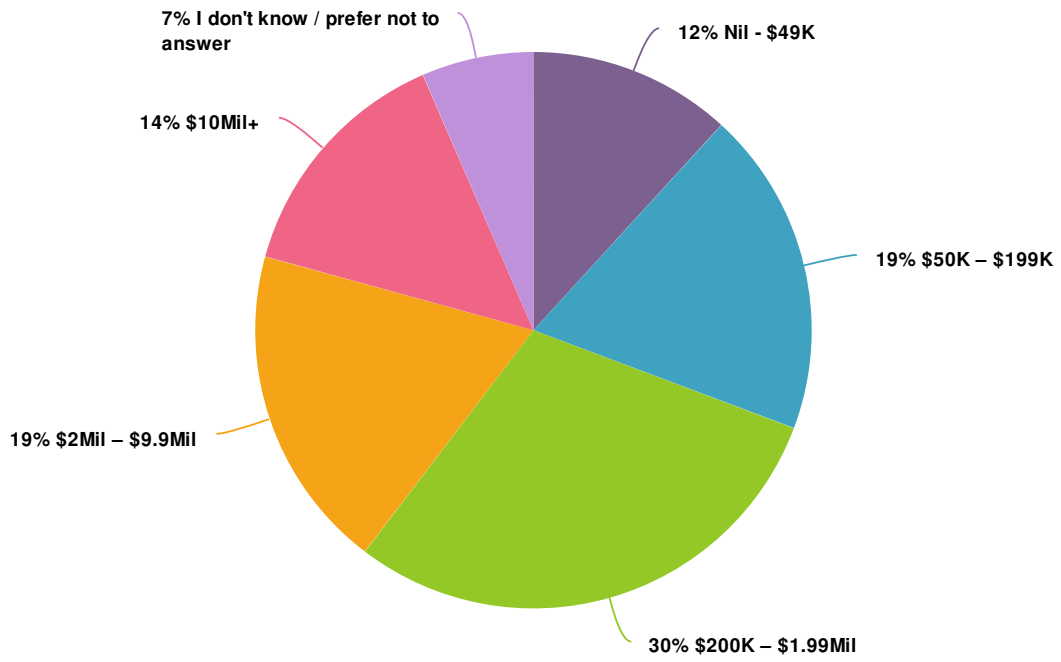
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	20.8%	32.7%	25.8%	15.1%	5.7%	159
Expand current operations Row %	27.0%	31.4%	25.2%	9.4%	6.9%	159
Develop new products Row %	19.1%	26.8%	19.7%	24.2%	10.2%	157
Increase liquid assets Row %	9.5%	25.7%	40.5%	21.6%	2.7%	148
Sell the business Row %	7.2%	9.2%	19.6%	34.6%	29.4%	153
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	18.6%	16.0%	24.4%	27.6%	13.5%	156
Explore new markets for products Row %	28.0%	31.2%	15.9%	19.1%	5.7%	157
Invest in new technologies Row %	26.6%	37.3%	19.0%	13.9%	3.2%	158
Owners to retire soon Row %	9.2%	18.4%	16.3%	29.8%	26.2%	141
Diversify the business Row %	14.1%	35.3%	24.4%	17.3%	9.0%	156
Keep the business as it is now Row %	12.0%	20.9%	21.5%	32.3%	13.3%	158
Increase off-farm income (any income earned from work not related to the farm) Row %	13.0%	31.2%	21.0%	26.8%	8.0%	138
Totals Total Responses						159

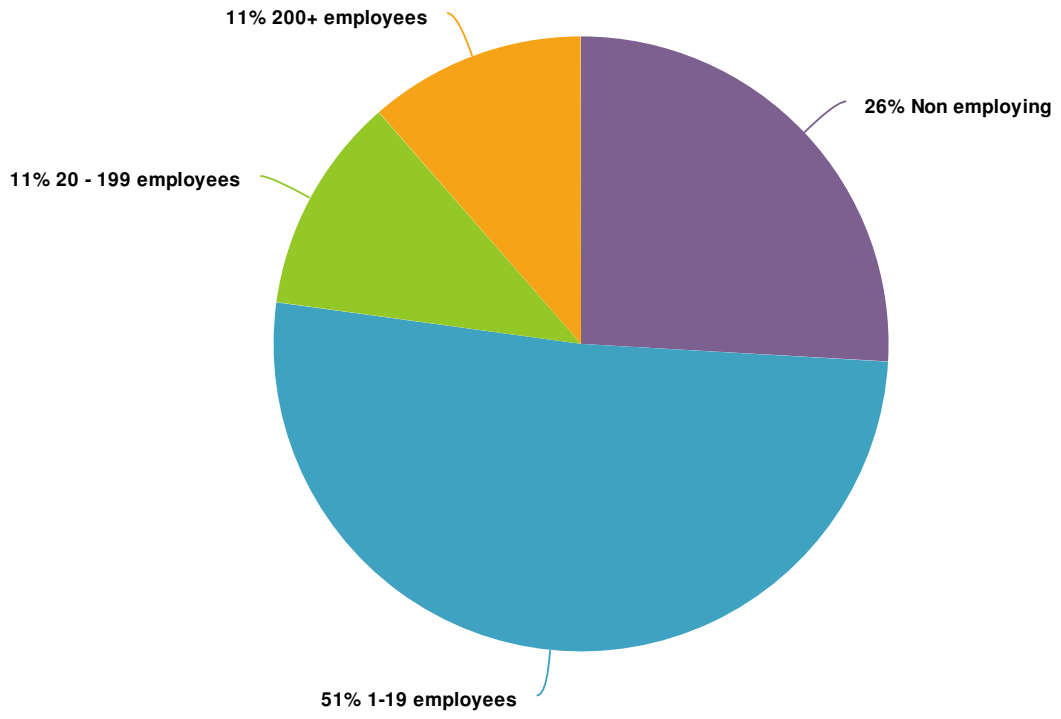
23. **Other strategies you are likely to adopt



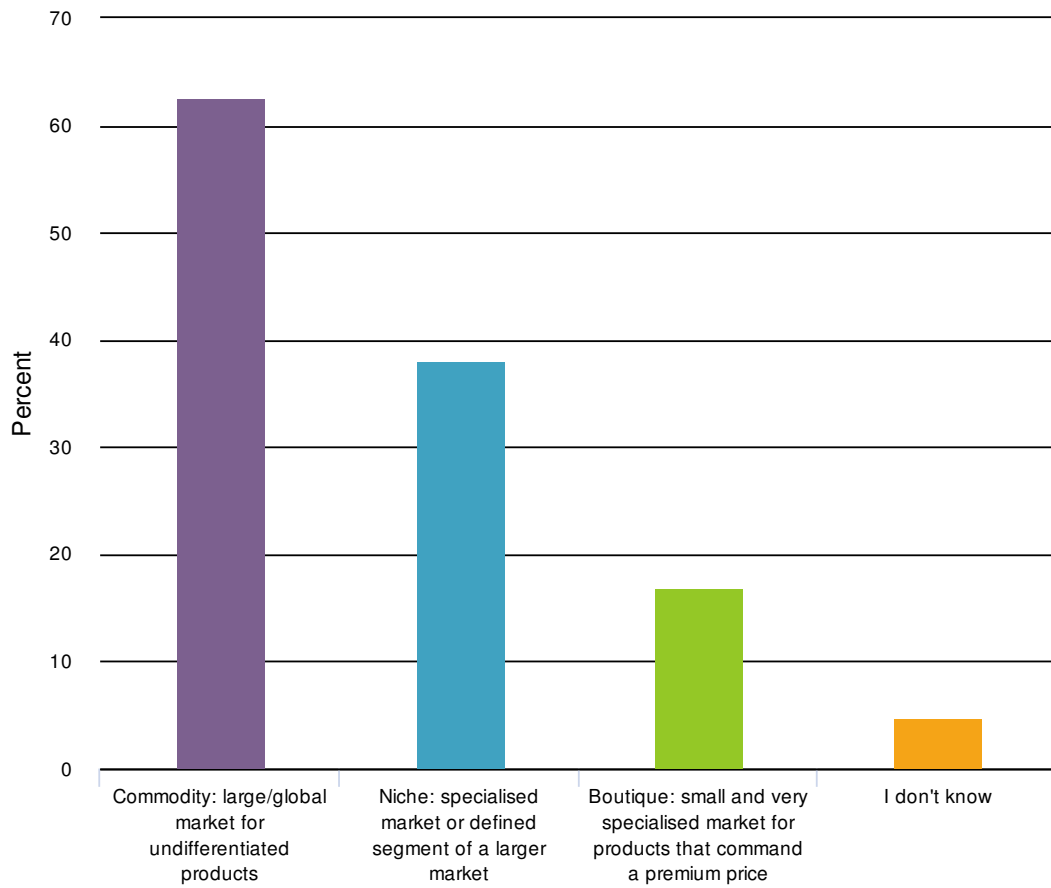
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



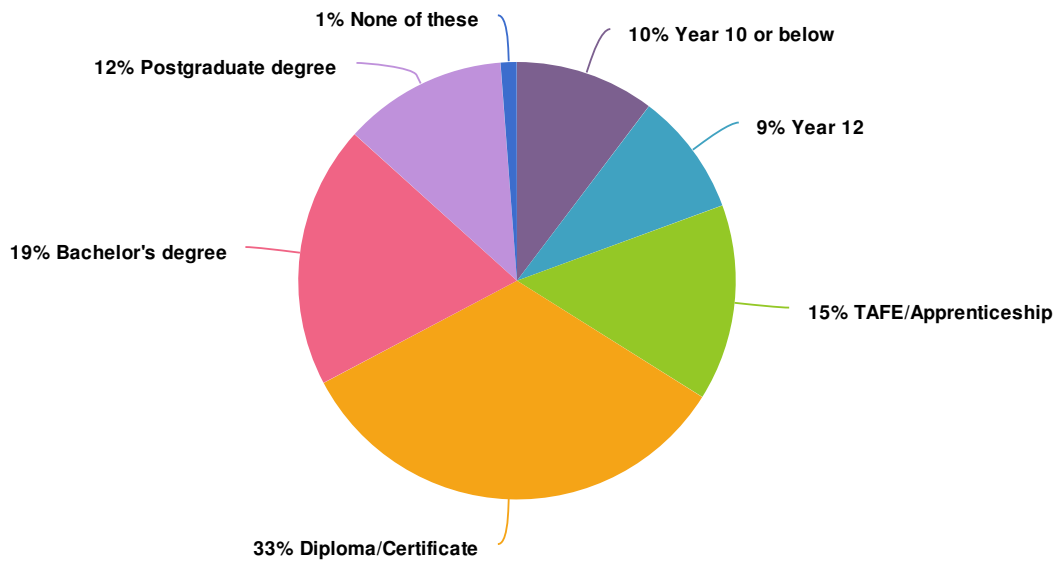
25. How many employees does the business have?



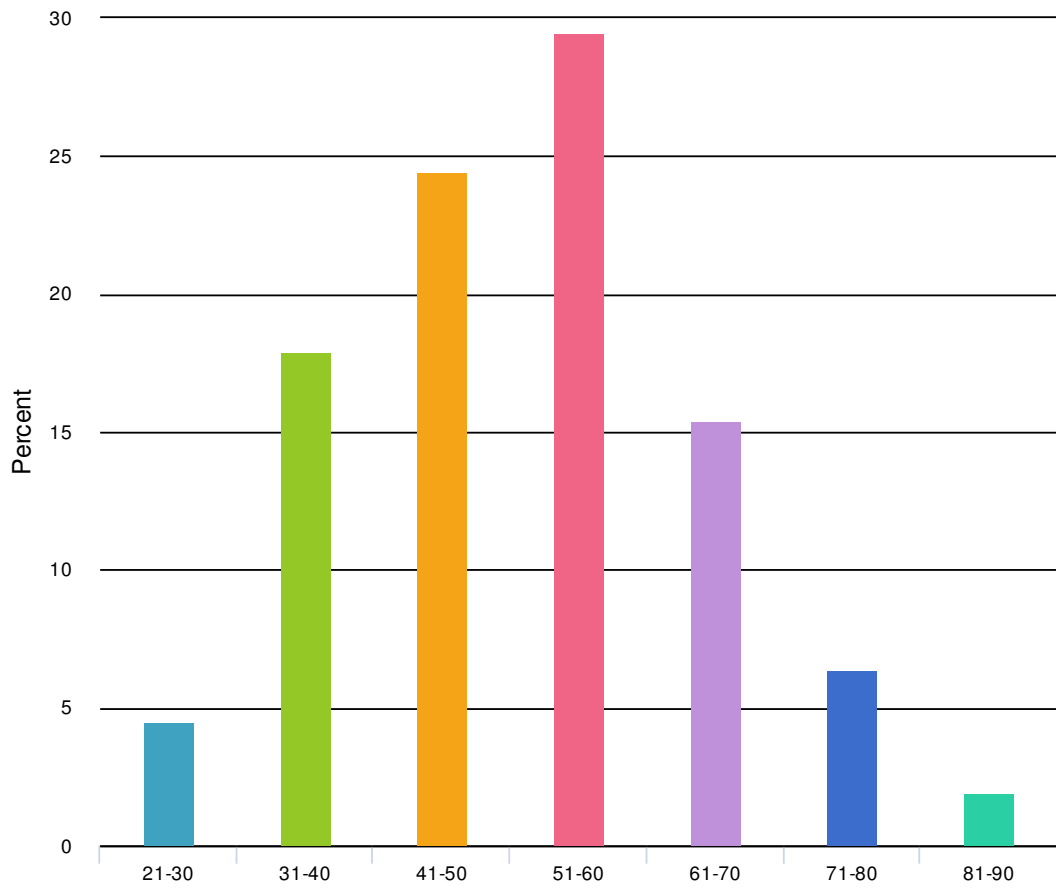
26. What sort of market do your products go into? (select all that are relevant)



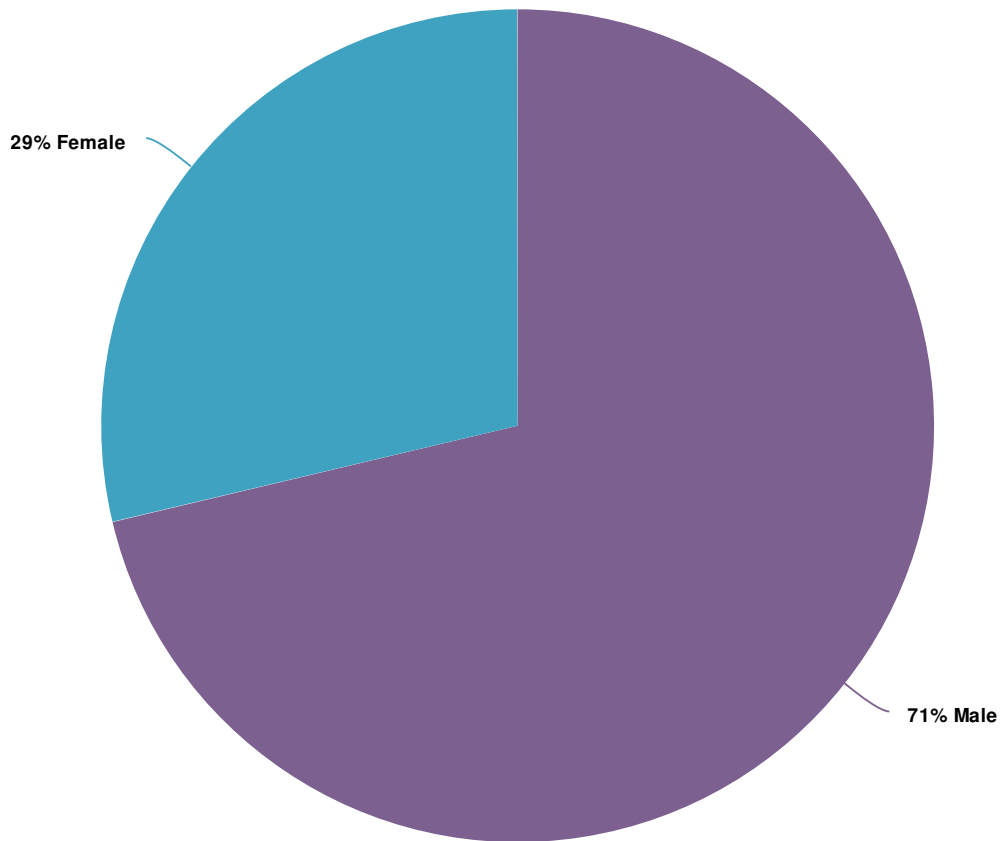
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)

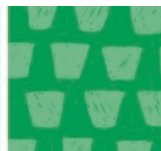


32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 9



TasAgFuture Survey Sector Report: Extensive Grazing

This report provides a basic summary of the 81 responses of individuals who selected *extensive grazing* as their *main* business. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

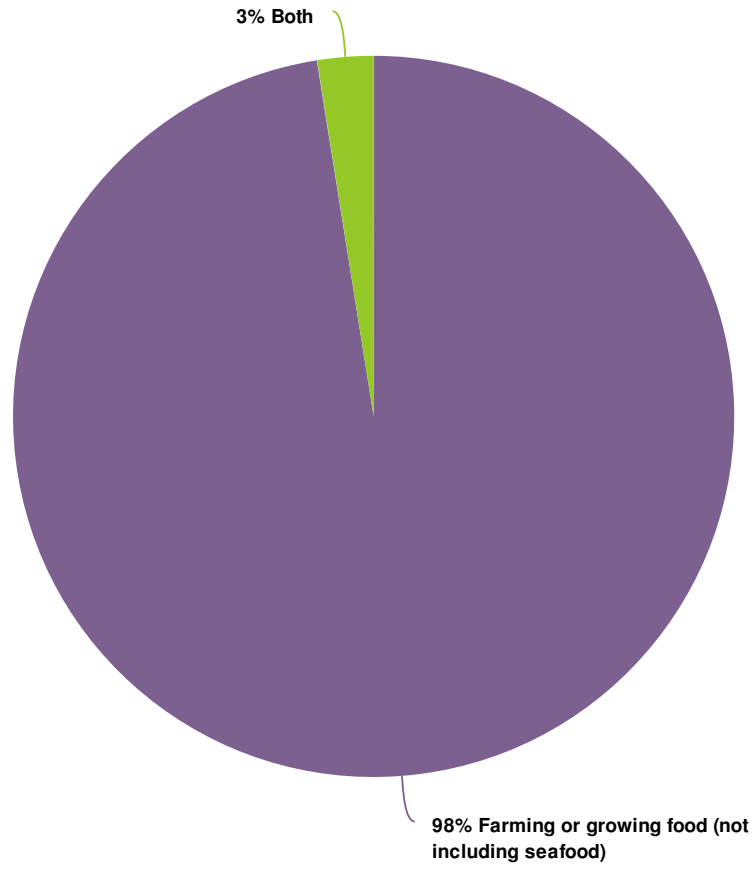
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

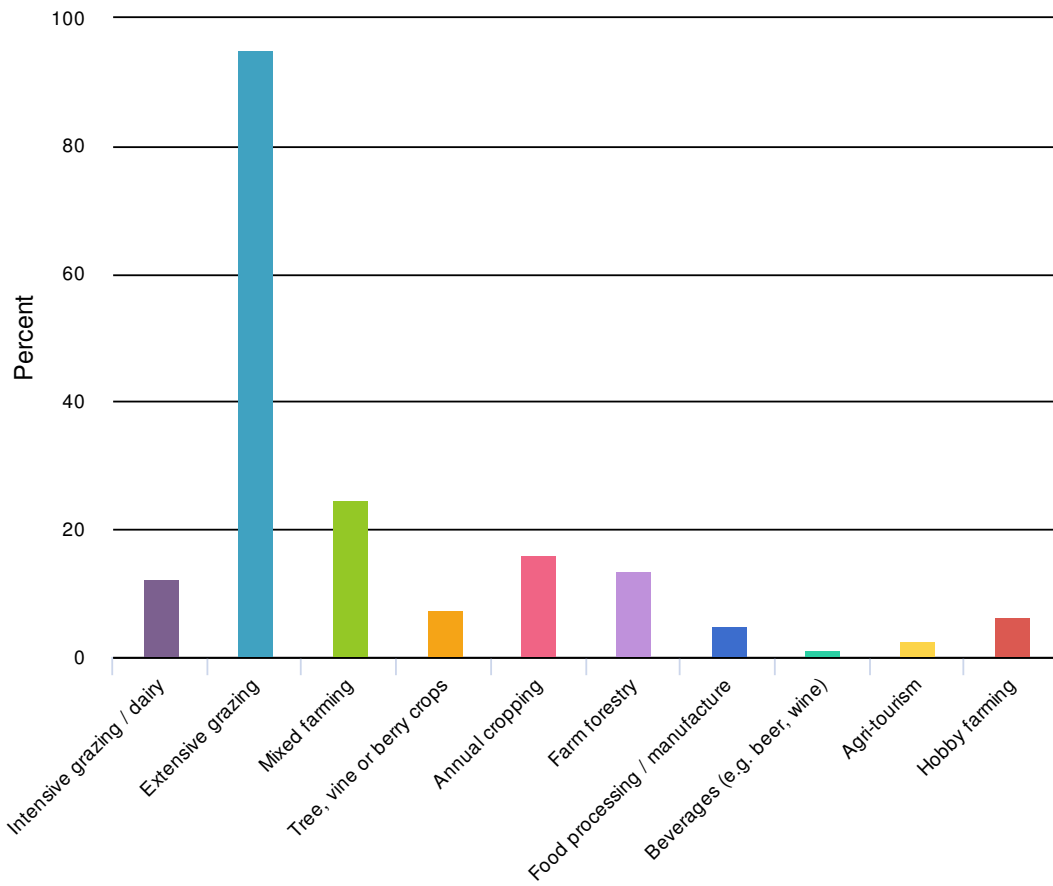
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

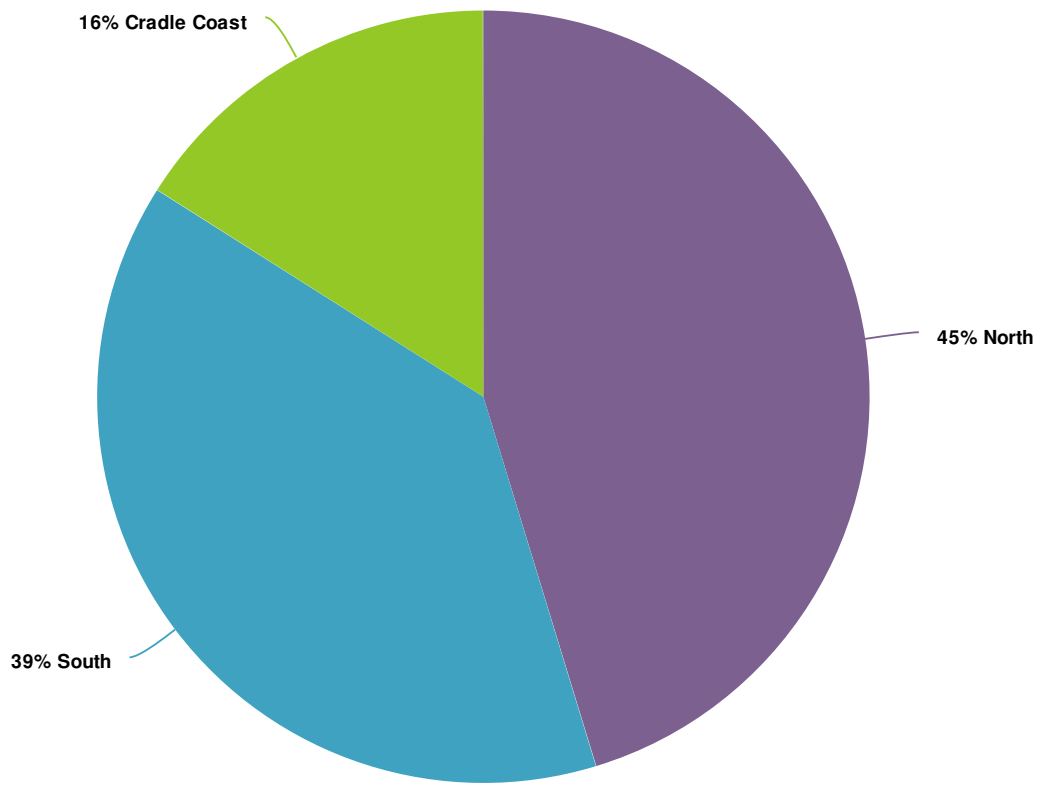
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



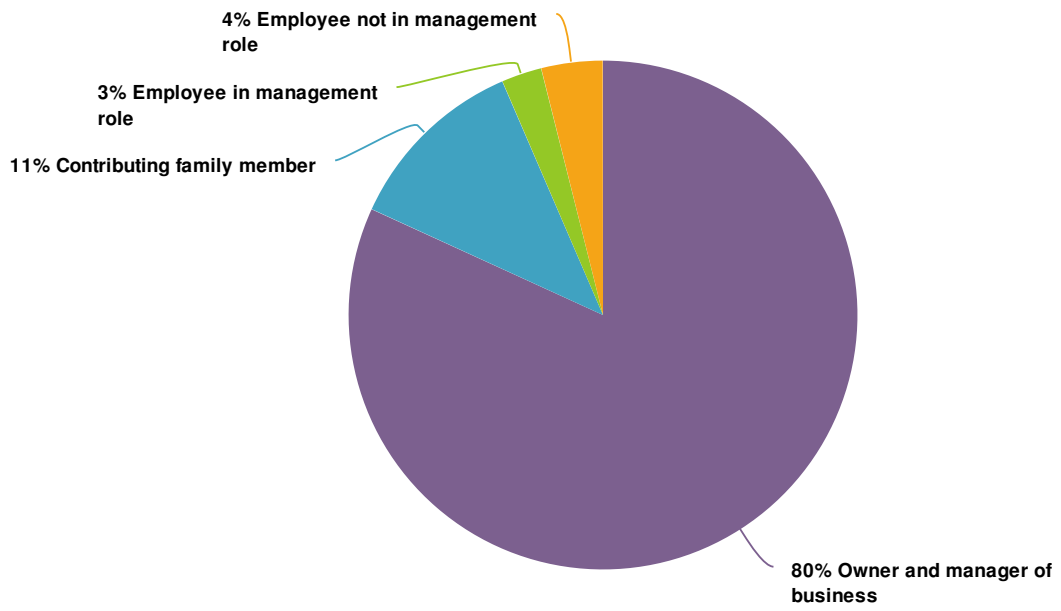
2. Which of the following are included in your business or work? (select all that are relevant)



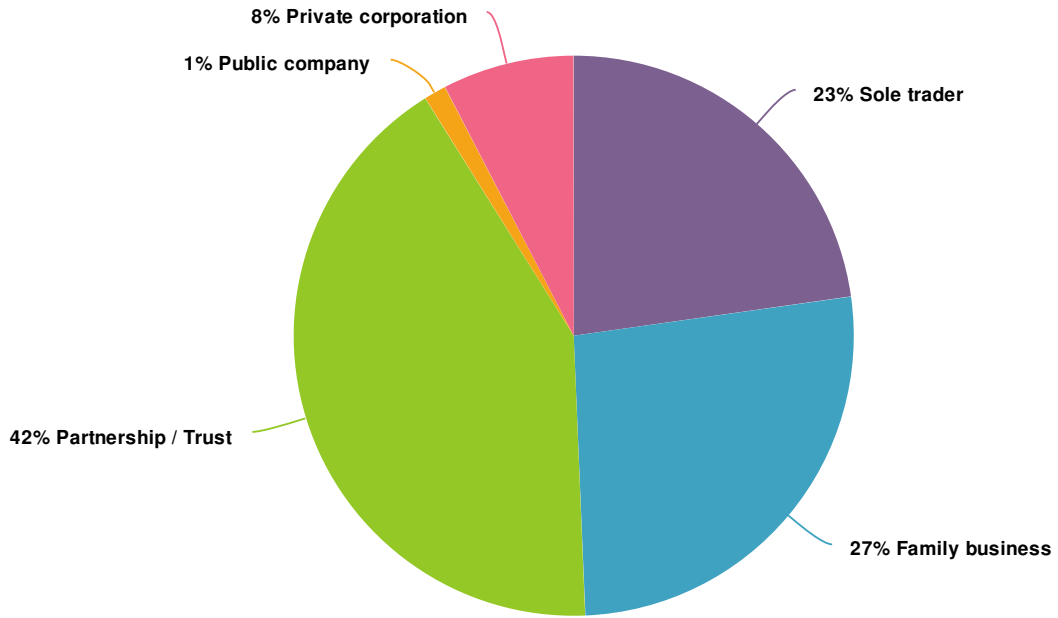
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

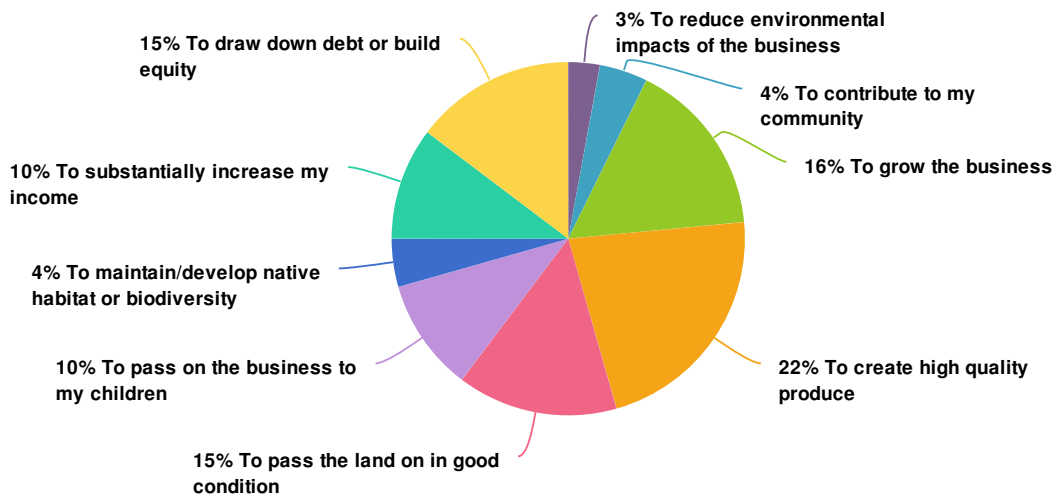


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	37.0%	42.5%	16.4%	2.7%	1.4%	73
To develop new markets Row %	20.3%	40.5%	32.4%	5.4%	1.4%	74
To substantially increase my income Row %	34.2%	44.7%	14.5%	5.3%	1.3%	76
To draw down debt or build equity Row %	54.1%	31.1%	12.2%	2.7%	0.0%	74

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	76.6%	22.1%	1.3%	0.0%	0.0%	77
To pass on the business to my children Row %	45.1%	31.0%	16.9%	4.2%	2.8%	71
To create jobs Row %	14.5%	36.2%	34.8%	13.0%	1.4%	69
To contribute to my community Row %	28.6%	50.6%	15.6%	5.2%	0.0%	77
To maintain/develop native habitat or biodiversity Row %	42.9%	41.6%	15.6%	0.0%	0.0%	77
To look after the land Row %	77.9%	20.8%	1.3%	0.0%	0.0%	77
To reduce environmental impacts of the business Row %	40.8%	50.0%	7.9%	1.3%	0.0%	76
To pass the land on in good condition Row %	72.7%	26.0%	1.3%	0.0%	0.0%	77
Totals Total Responses						77

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	17.9%	43.6%	30.8%	5.1%	2.6%	78
Making high profits or being well-paid Row %	26.9%	44.9%	20.5%	5.1%	2.6%	78
Being able to stay on the farm / in this place Row %	48.7%	43.6%	7.7%	0.0%	0.0%	78

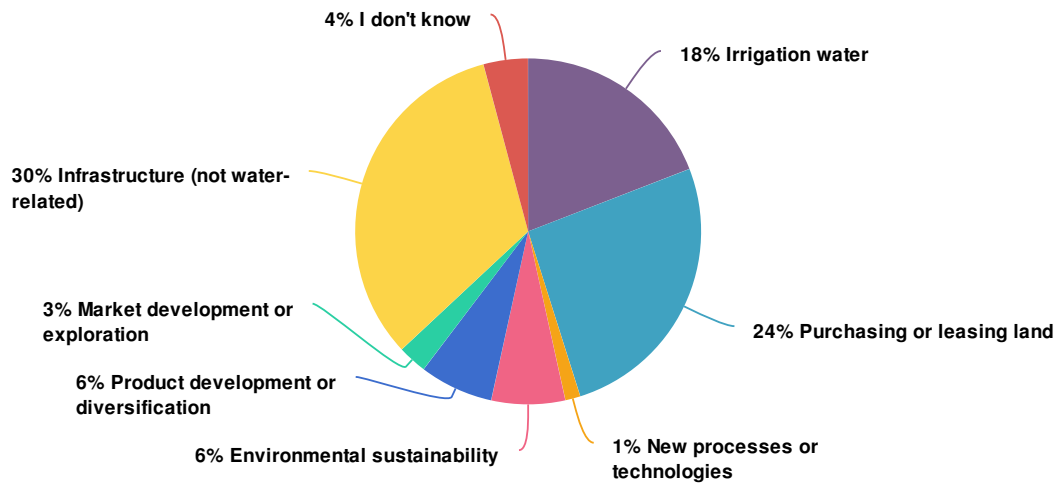
293

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	39.2%	50.6%	8.9%	1.3%	0.0%	79
Creating high quality produce / products Row %	57.5%	38.8%	3.8%	0.0%	0.0%	80
Doing work I enjoy Row %	67.5%	30.0%	2.5%	0.0%	0.0%	80
Being my own boss Row %	38.8%	43.8%	16.3%	1.3%	0.0%	80
Working outdoors Row %	39.0%	41.6%	18.2%	1.3%	0.0%	77
Having a lifestyle I enjoy Row %	62.8%	34.6%	2.6%	0.0%	0.0%	78
Totals Total Responses						80

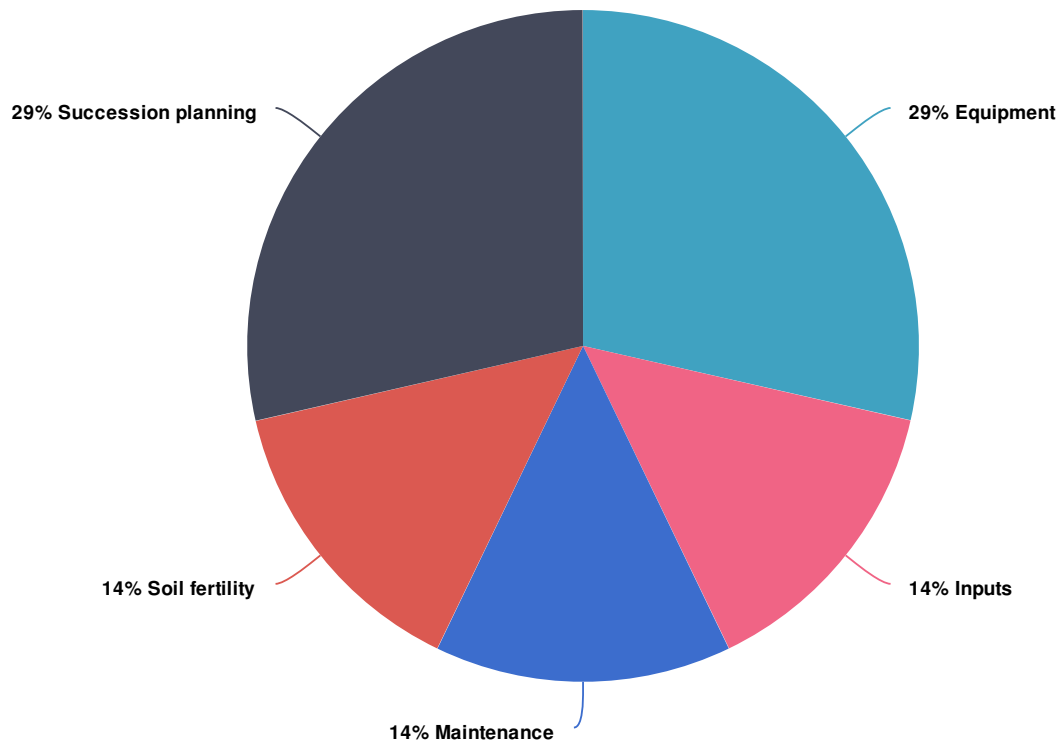
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	46.2%	39.7%	14.1%	0.0%	0.0%	78
I plan carefully before taking action Row %	44.9%	44.9%	10.3%	0.0%	0.0%	78
I spend time thinking about the future of the business Row %	48.1%	48.1%	3.8%	0.0%	0.0%	79
My actions are guided by what I've learnt from experience Row %	47.5%	50.0%	2.5%	0.0%	0.0%	80
I try to follow industry best practice Row %	41.0%	52.6%	6.4%	0.0%	0.0%	78
I often go with my gut feeling when making big decisions Row %	20.5%	42.3%	29.5%	6.4%	1.3%	78
I try new ways of doing things Row %	33.8%	50.6%	15.6%	0.0%	0.0%	77
I take measured risks Row %	24.4%	60.3%	14.1%	1.3%	0.0%	78
I invest time to learn new things Row %	37.2%	48.7%	14.1%	0.0%	0.0%	78
Totals Total Responses						80

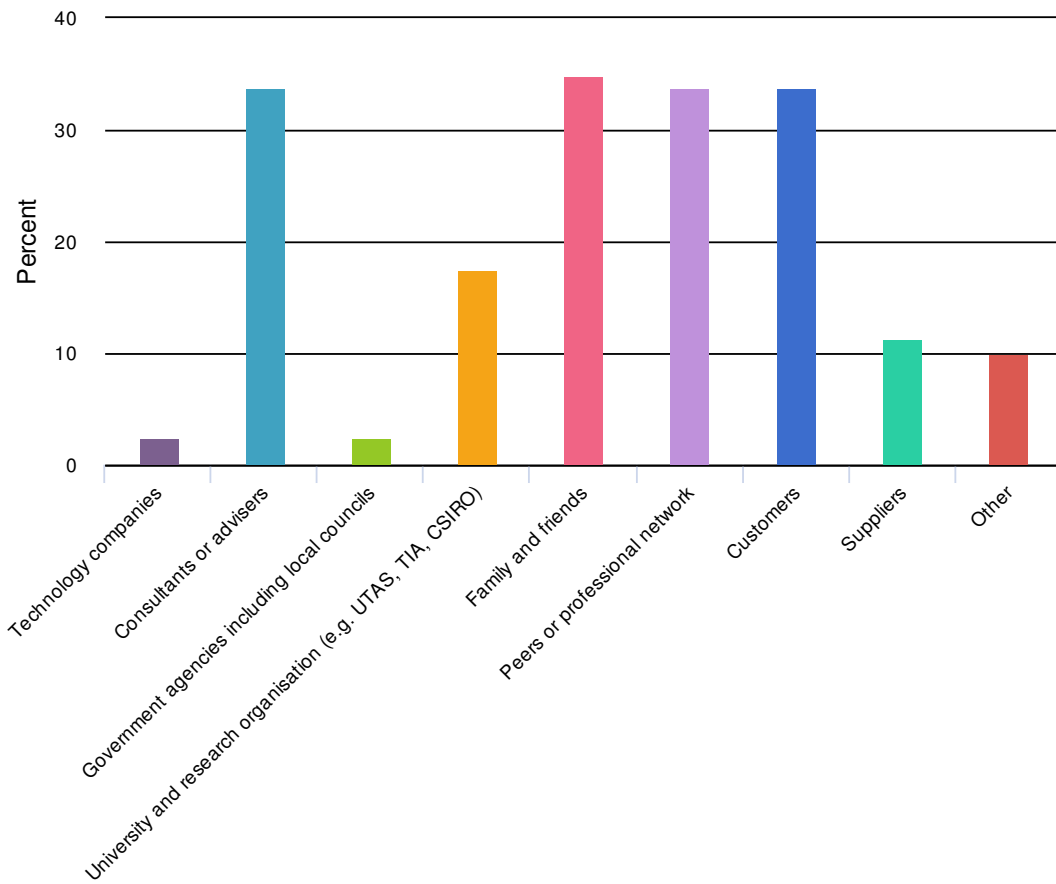
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



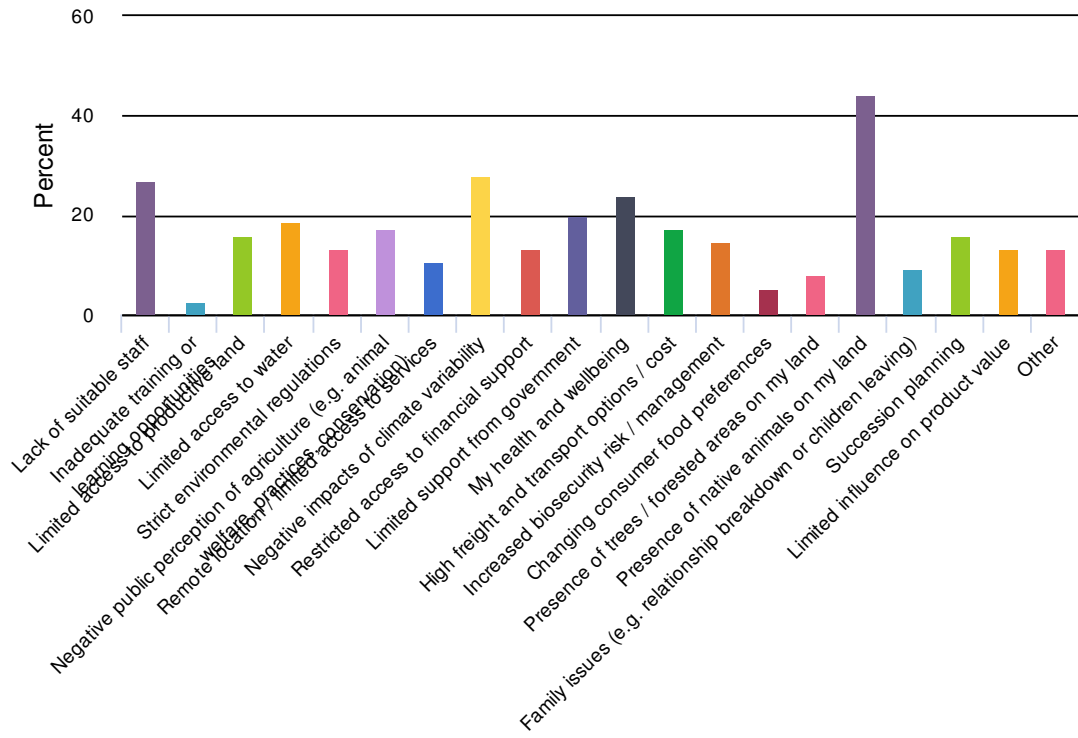
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



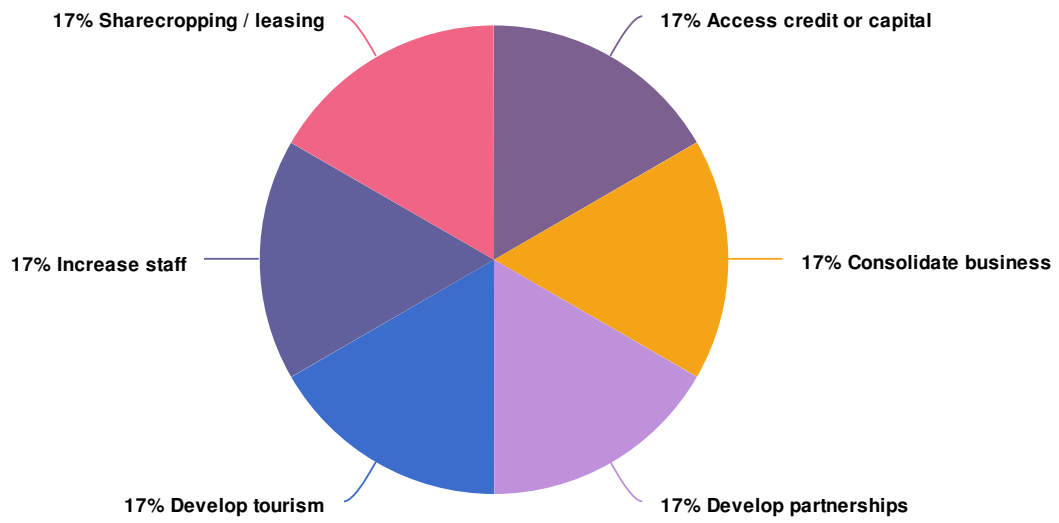
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	31.6%	48.1%	15.2%	2.5%	2.5%	0.0%	79
I often work alongside my neighbours or peers without expecting any financial return Row %	28.9%	35.5%	28.9%	3.9%	0.0%	2.6%	76
My social connections enable me to influence decisions in my region Row %	13.2%	30.3%	39.5%	10.5%	5.3%	1.3%	76
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	34.6%	32.1%	17.9%	9.0%	5.1%	1.3%	78
Totals Total Responses							79

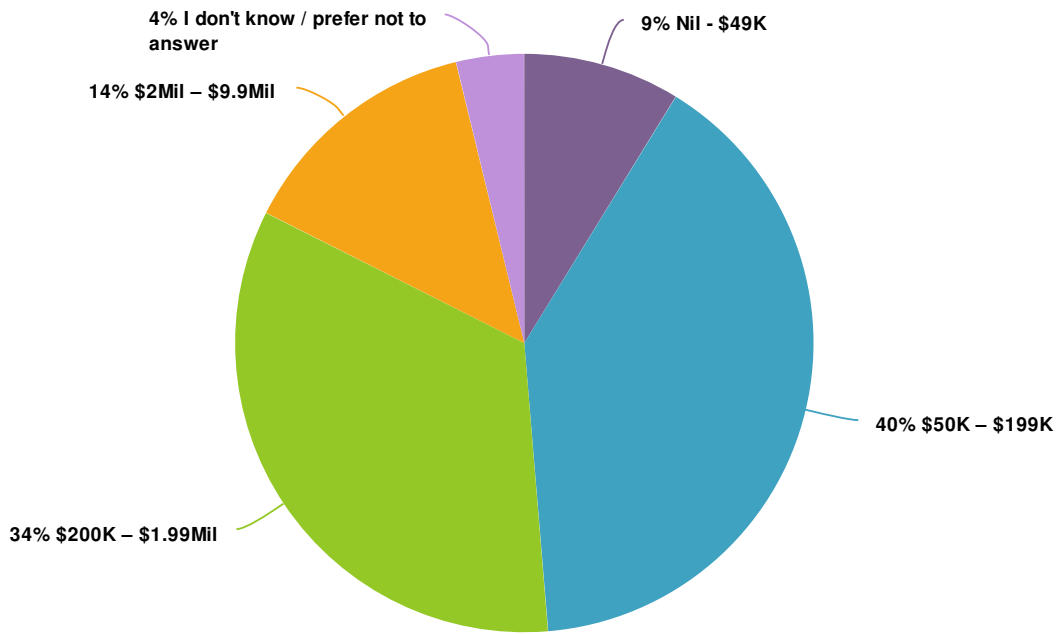
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	12.5%	22.2%	36.1%	23.6%	5.6%	72
Expand current operations Row %	22.5%	29.6%	22.5%	21.1%	4.2%	71
Develop new products Row %	7.0%	21.1%	26.8%	35.2%	9.9%	71
Increase liquid assets Row %	10.0%	37.1%	30.0%	17.1%	5.7%	70
Sell the business Row %	2.8%	2.8%	22.2%	27.8%	44.4%	72
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	5.7%	15.7%	34.3%	28.6%	15.7%	70
Explore new markets for products Row %	16.4%	30.1%	28.8%	17.8%	6.8%	73
Invest in new technologies Row %	18.3%	35.2%	26.8%	15.5%	4.2%	71
Owners to retire soon Row %	8.5%	16.9%	22.5%	23.9%	28.2%	71
Diversify the business Row %	13.9%	27.8%	31.9%	19.4%	6.9%	72
Keep the business as it is now Row %	13.7%	34.2%	23.3%	20.5%	8.2%	73
Increase off-farm income (any income earned from work not related to the farm) Row %	15.9%	34.8%	23.2%	17.4%	8.7%	69
Totals Total Responses						73

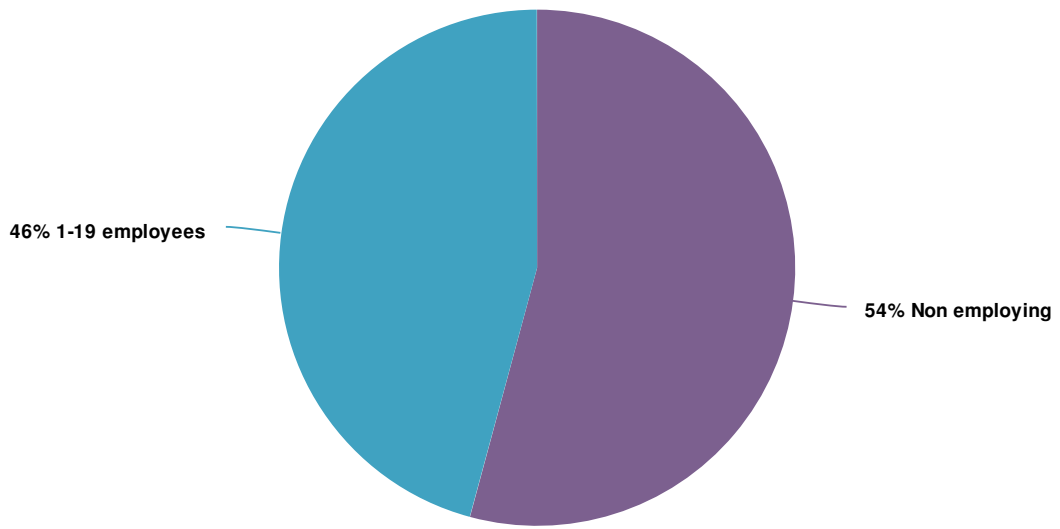
23. **Other strategies you are likely to adopt



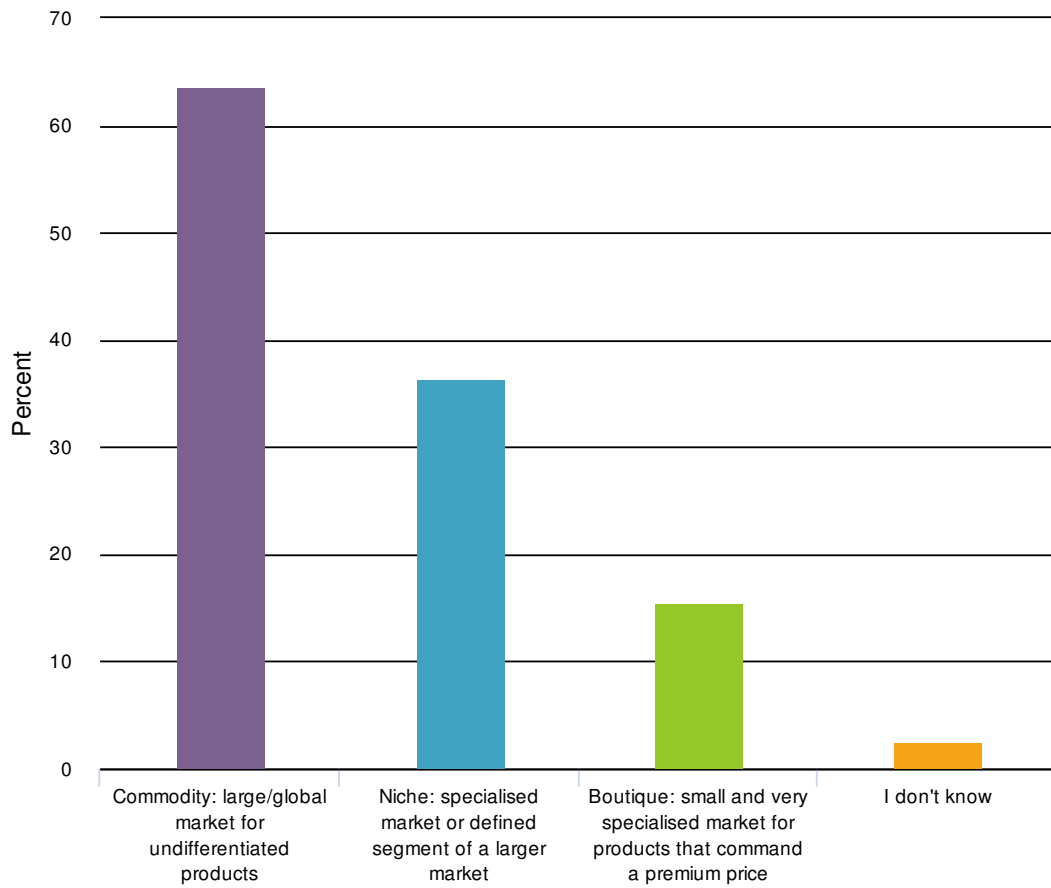
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



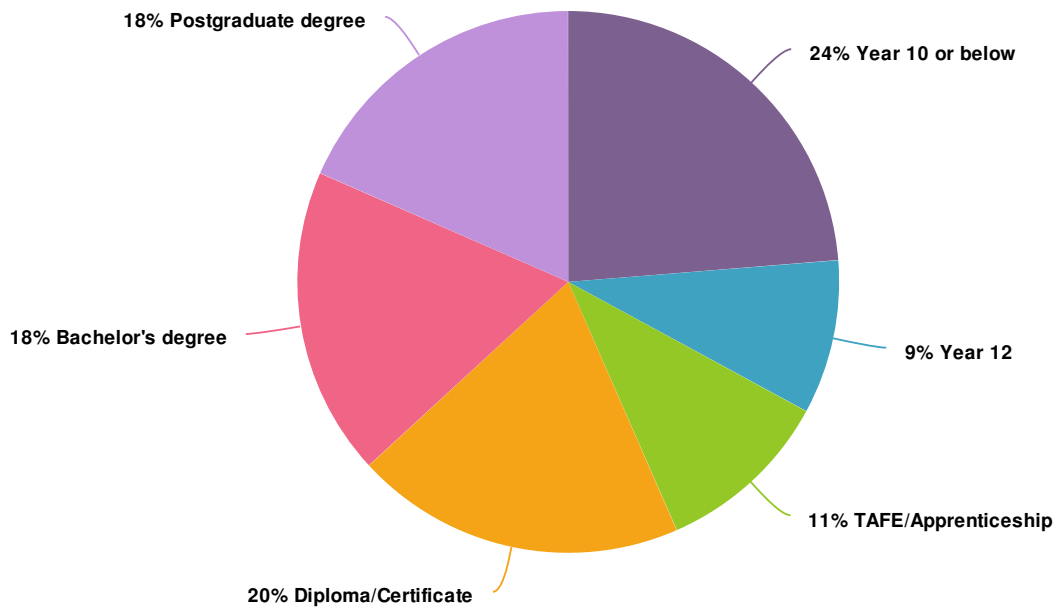
25. How many employees does the business have?



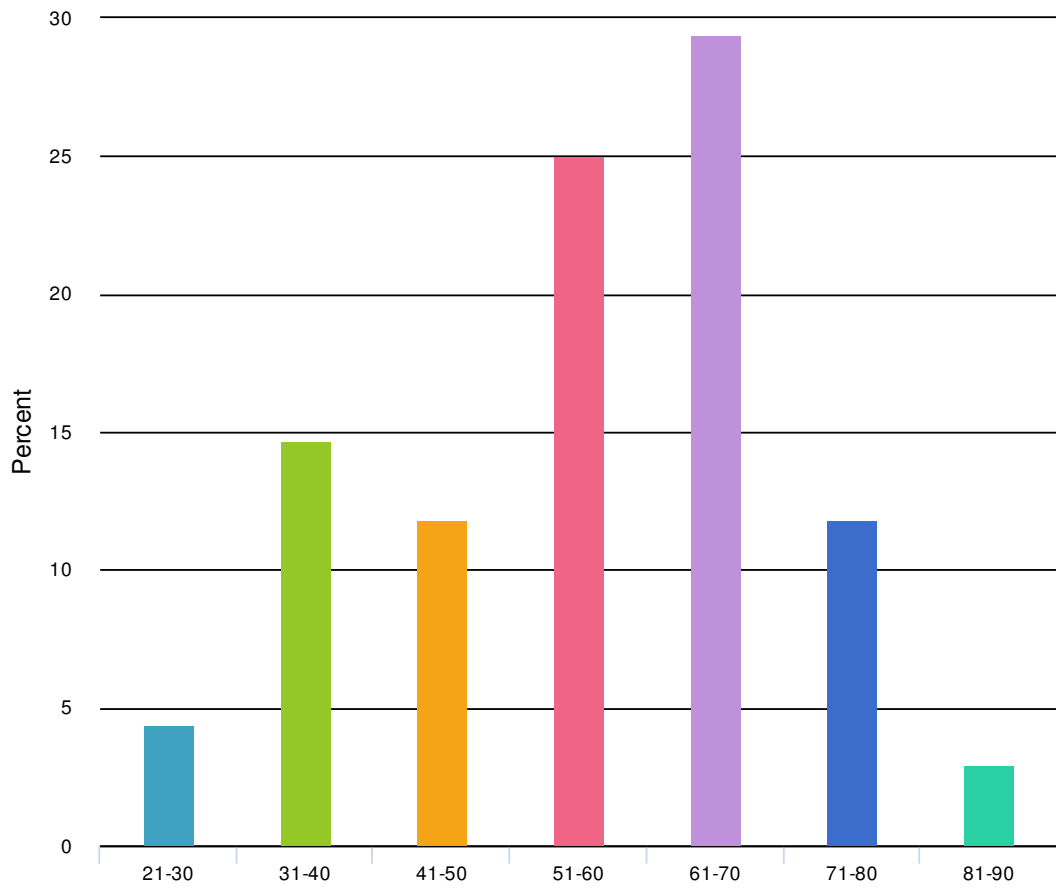
26. What sort of market do your products go into? (select all that are relevant)



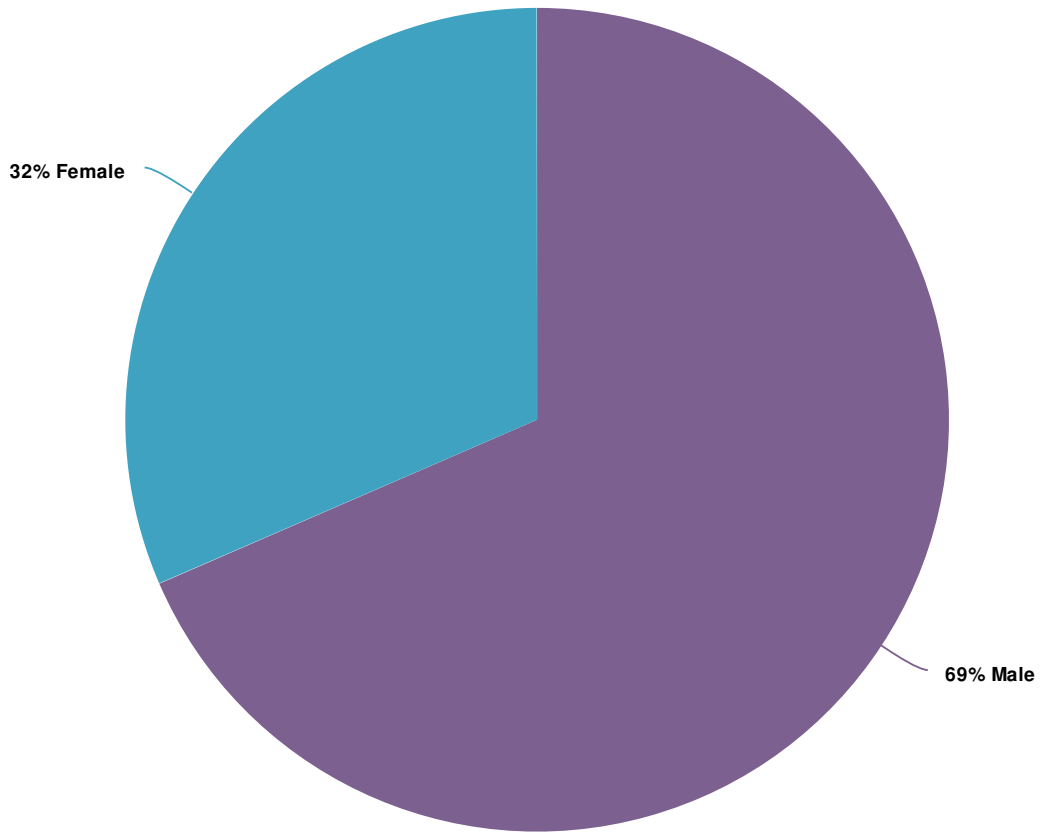
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 10



TasAgFuture Survey Sector Report: Food and beverage processing

This report provides a basic summary of the 78 responses of individuals who selected *food or beverage processing* as their *main* business. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

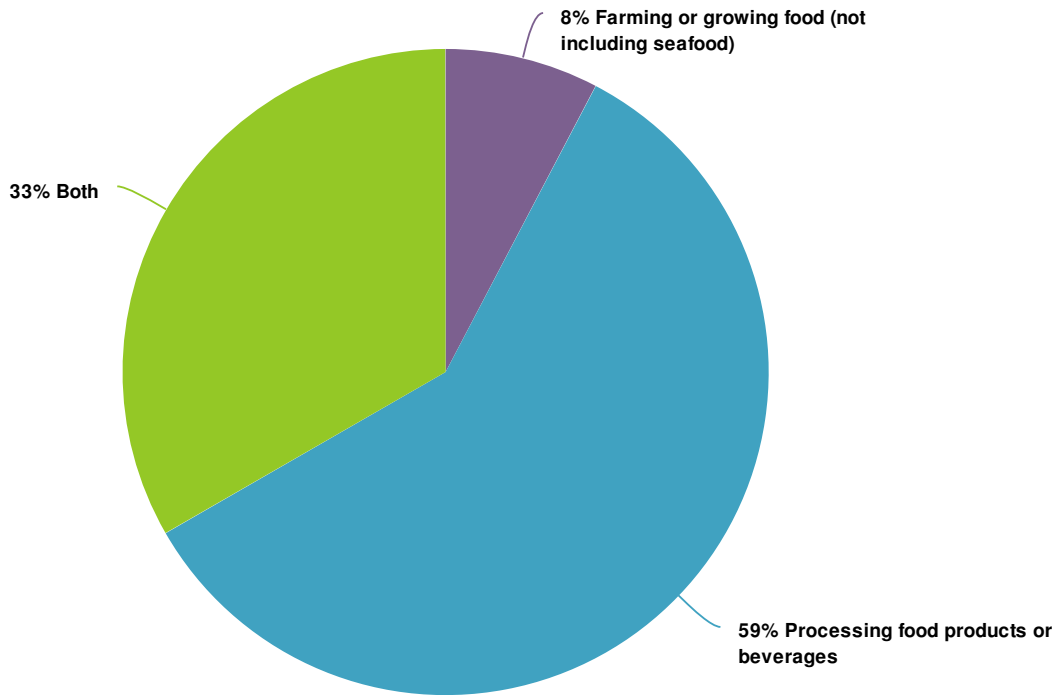
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

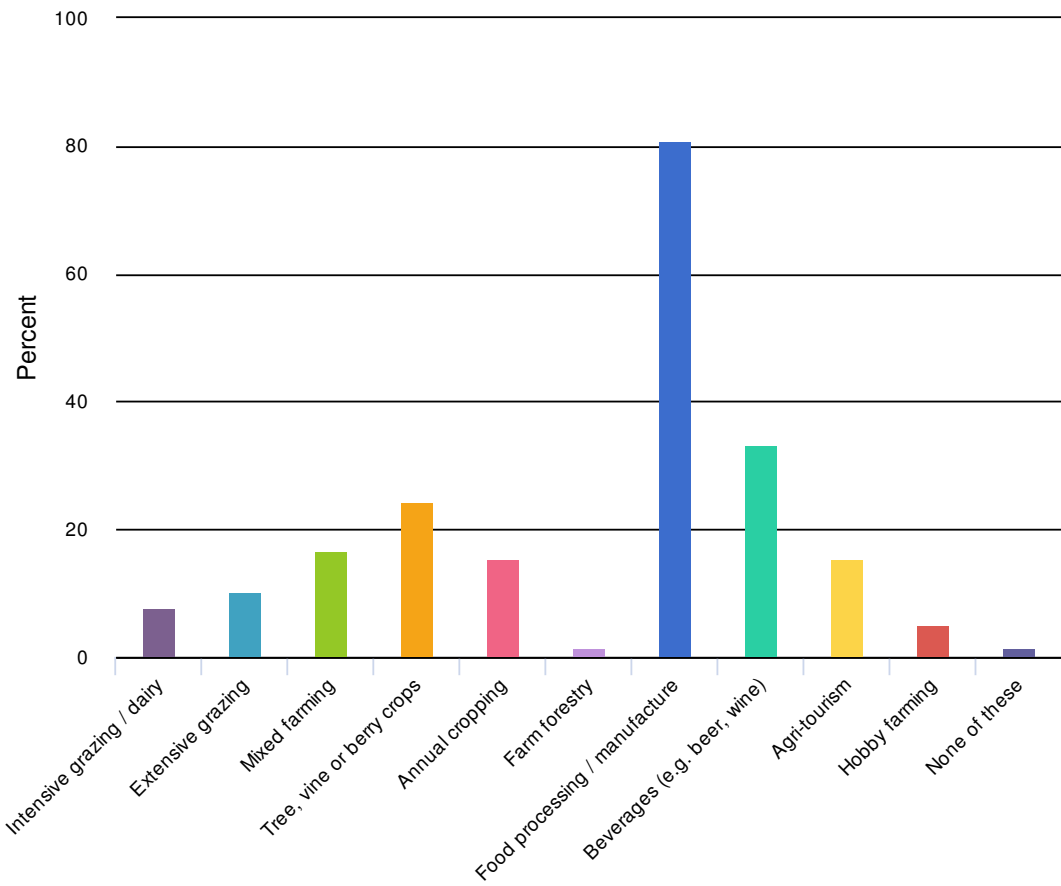
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

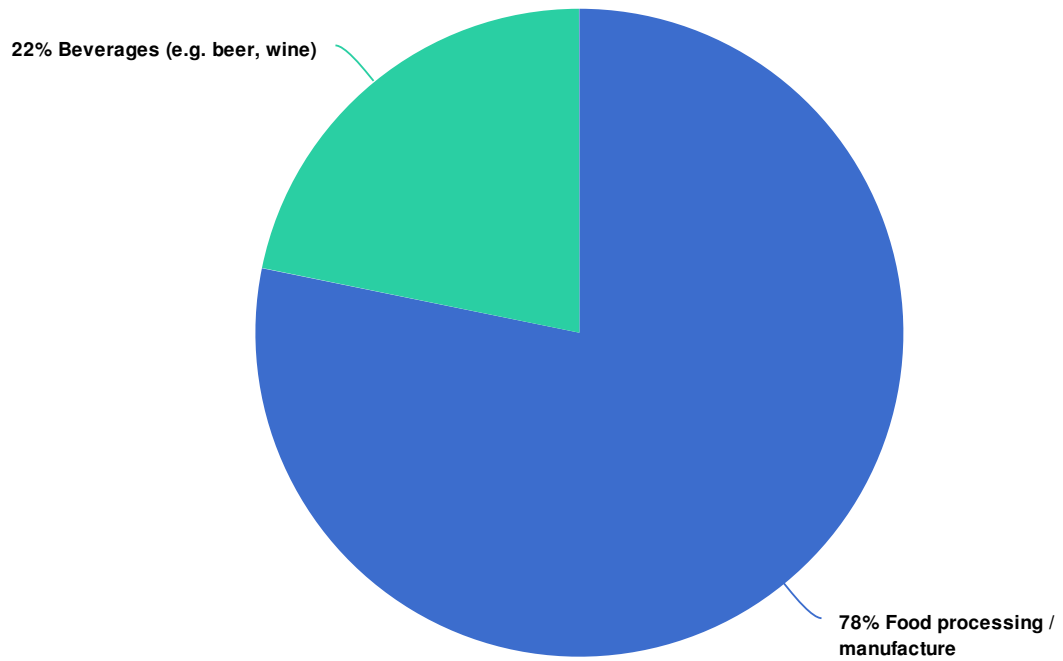
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



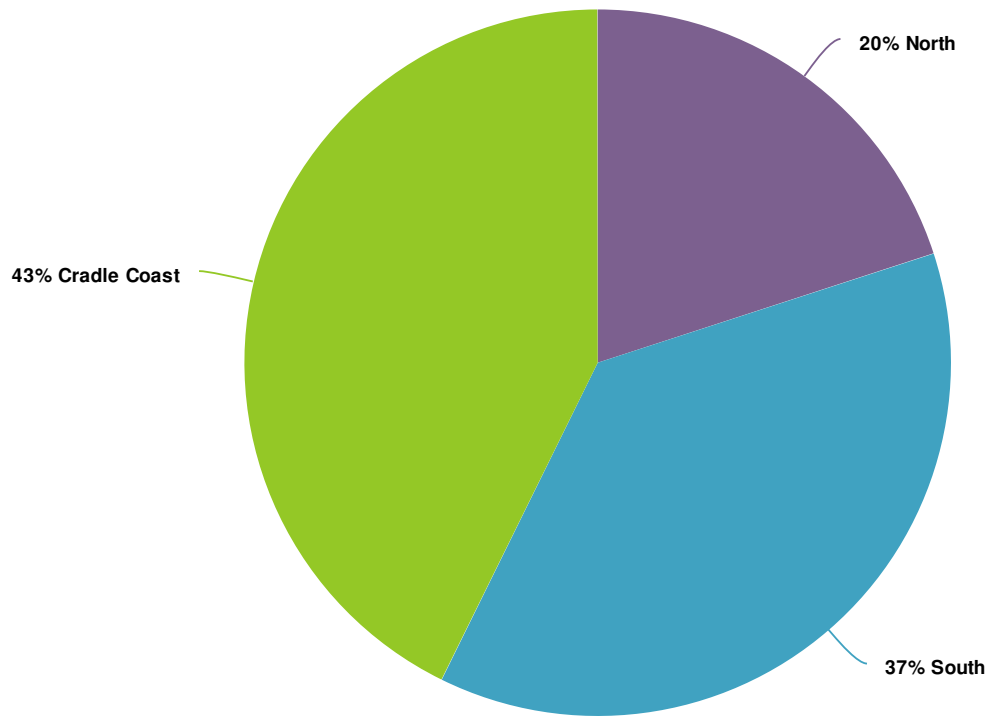
2. Which of the following are included in your business or work? (select all that are relevant)



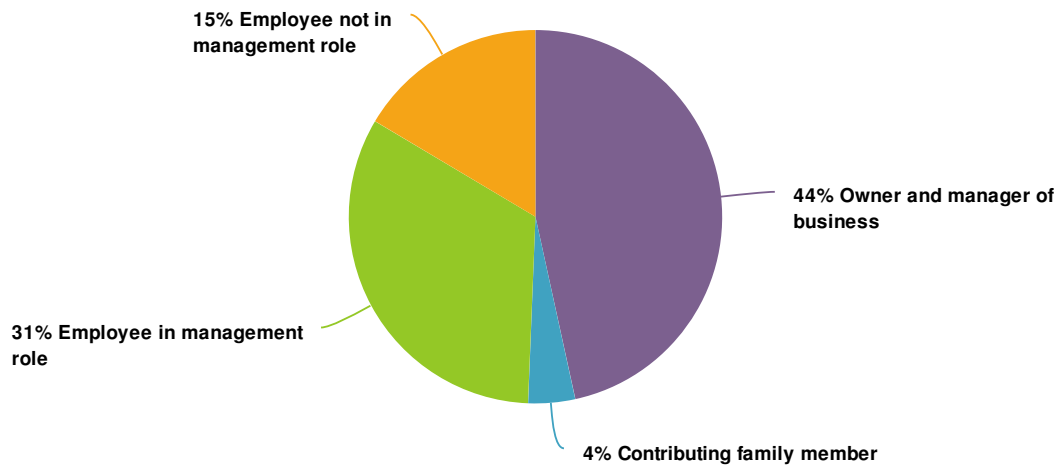
3. Which one of these is your main business or work? (select one)



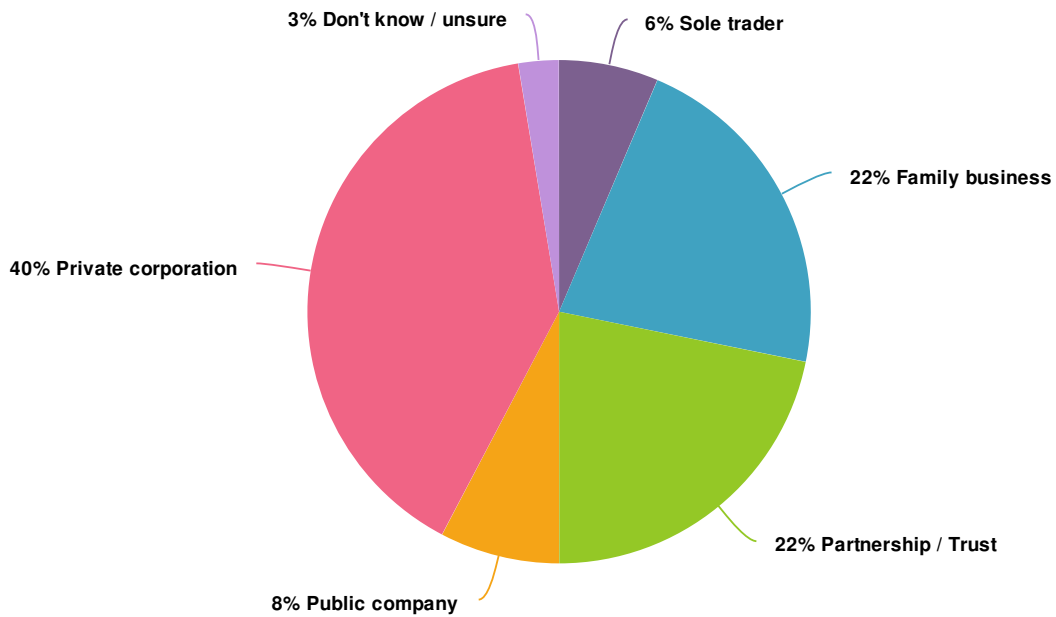
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

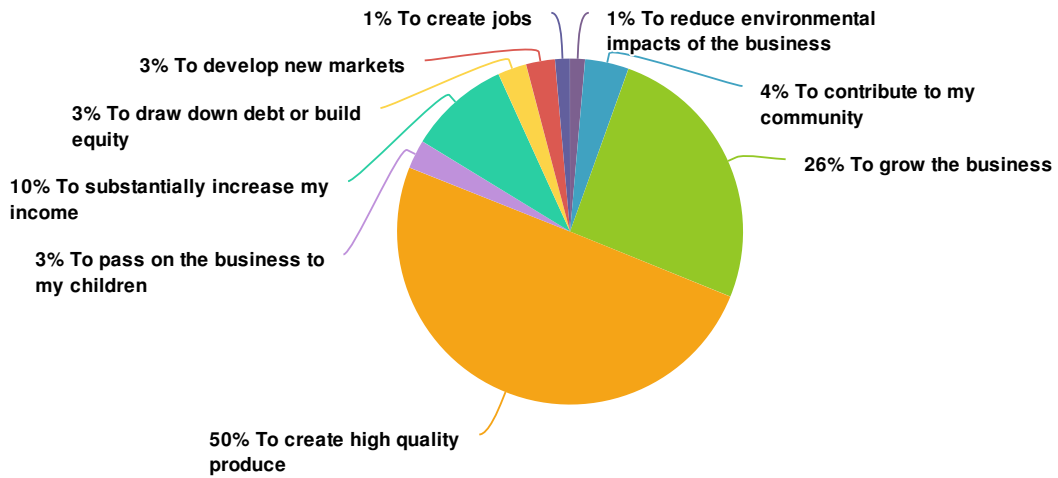


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	61.5%	35.9%	2.6%	0.0%	0.0%	78
To develop new markets Row %	48.7%	41.0%	10.3%	0.0%	0.0%	78
To substantially increase my income Row %	35.5%	40.8%	21.1%	1.3%	1.3%	76
To draw down debt or build equity Row %	22.2%	50.0%	18.1%	8.3%	1.4%	72

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	90.9%	9.1%	0.0%	0.0%	0.0%	77
To pass on the business to my children Row %	17.3%	21.2%	42.3%	11.5%	7.7%	52
To create jobs Row %	27.3%	49.4%	18.2%	3.9%	1.3%	77
To contribute to my community Row %	37.7%	51.9%	10.4%	0.0%	0.0%	77
To maintain/develop native habitat or biodiversity Row %	36.2%	40.6%	18.8%	2.9%	1.4%	69
To look after the land Row %	54.2%	38.9%	5.6%	0.0%	1.4%	72
To reduce environmental impacts of the business Row %	55.3%	38.2%	6.6%	0.0%	0.0%	76
To pass the land on in good condition Row %	56.7%	34.3%	9.0%	0.0%	0.0%	67
Totals Total Responses						78

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

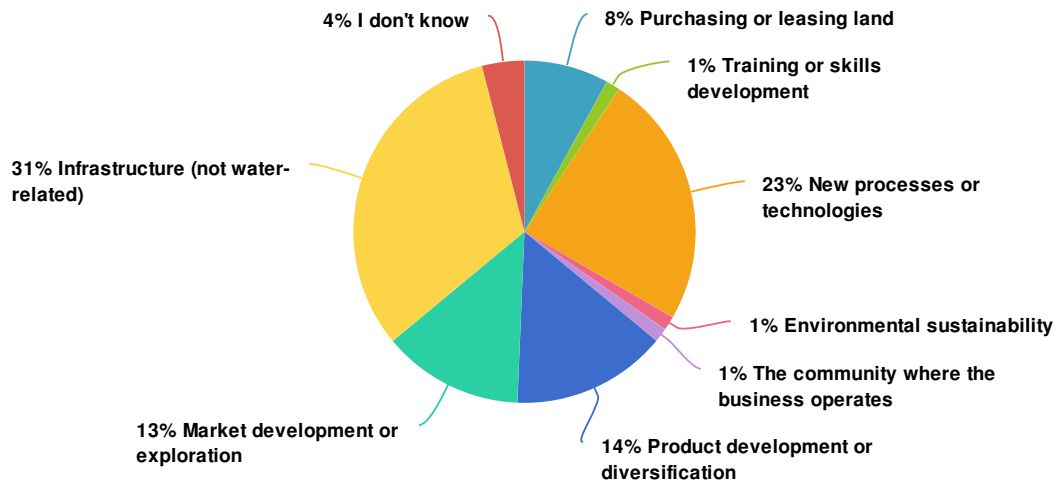
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	33.3%	50.0%	11.5%	5.1%	0.0%	78
Making high profits or being well-paid Row %	16.7%	51.3%	24.4%	5.1%	2.6%	78
Being able to stay on the farm / in this place Row %	28.6%	31.4%	30.0%	7.1%	2.9%	70

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	28.9%	51.3%	17.1%	1.3%	1.3%	76
Creating high quality produce / products Row %	79.2%	20.8%	0.0%	0.0%	0.0%	77
Doing work I enjoy Row %	57.7%	39.7%	2.6%	0.0%	0.0%	78
Being my own boss Row %	26.8%	45.1%	18.3%	8.5%	1.4%	71
Working outdoors Row %	19.1%	33.8%	36.8%	7.4%	2.9%	68
Having a lifestyle I enjoy Row %	53.8%	42.3%	3.8%	0.0%	0.0%	78
Totals Total Responses						78

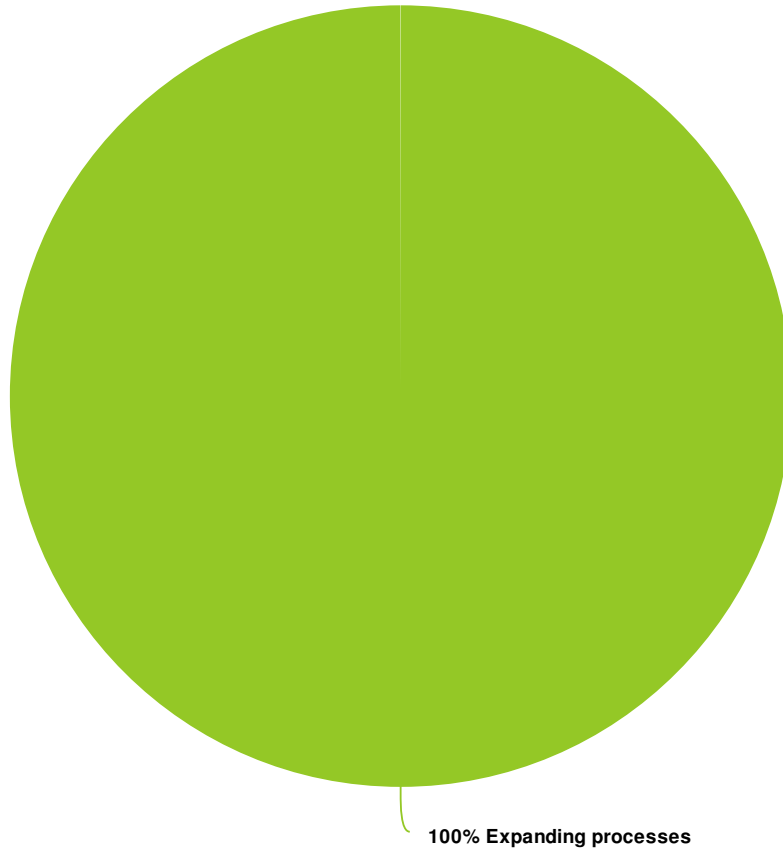
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	38.5%	41.0%	15.4%	5.1%	0.0%	78
I plan carefully before taking action Row %	32.1%	57.7%	7.7%	2.6%	0.0%	78
I spend time thinking about the future of the business Row %	50.0%	46.2%	3.8%	0.0%	0.0%	78
My actions are guided by what I've learnt from experience Row %	35.9%	52.6%	10.3%	1.3%	0.0%	78
I try to follow industry best practice Row %	34.2%	55.3%	9.2%	1.3%	0.0%	76
I often go with my gut feeling when making big decisions Row %	19.5%	41.6%	20.8%	18.2%	0.0%	77
I try new ways of doing things Row %	37.2%	56.4%	6.4%	0.0%	0.0%	78
I take measured risks Row %	28.9%	57.9%	10.5%	2.6%	0.0%	76
I invest time to learn new things Row %	36.4%	55.8%	7.8%	0.0%	0.0%	77
Totals Total Responses						78

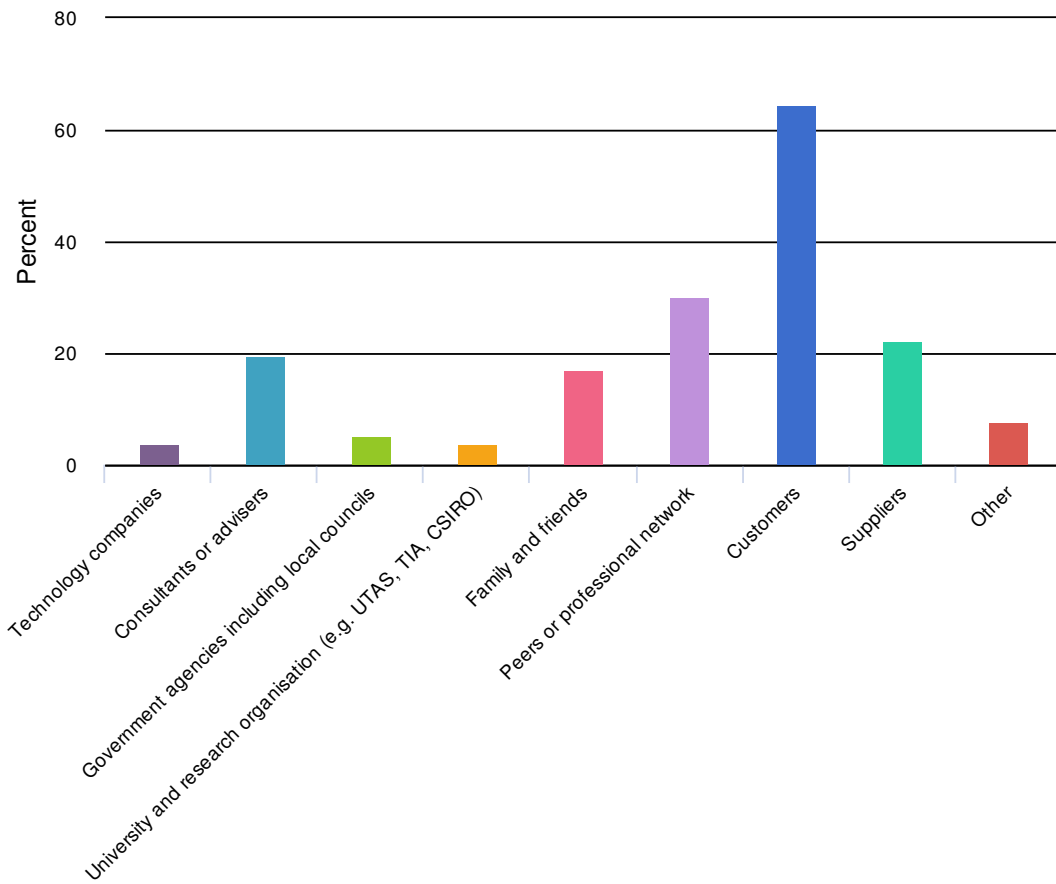
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



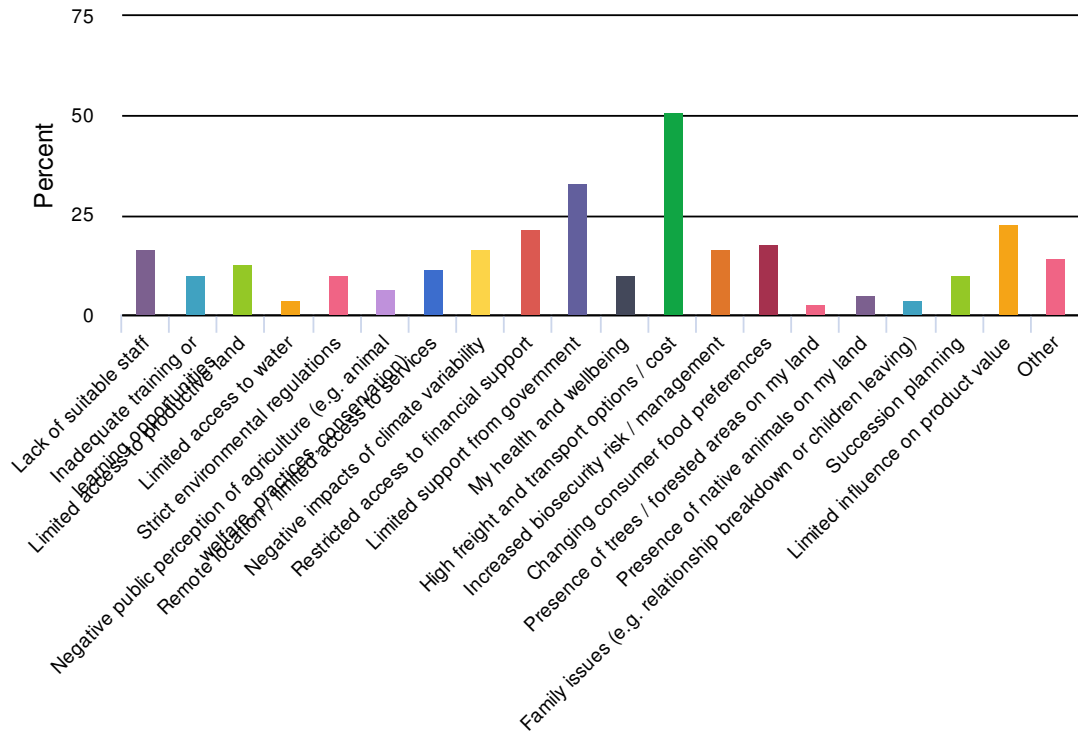
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



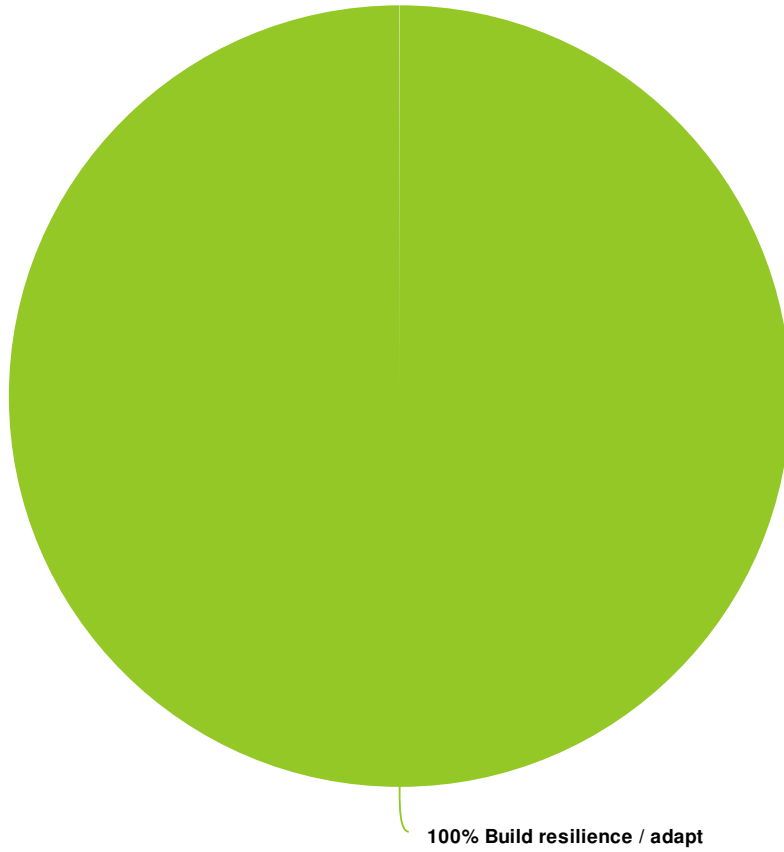
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	31.2%	44.2%	15.6%	2.6%	0.0%	6.5%	77
I often work alongside my neighbours or peers without expecting any financial return Row %	20.5%	49.3%	15.1%	4.1%	1.4%	9.6%	73
My social connections enable me to influence decisions in my region Row %	13.5%	29.7%	31.1%	18.9%	4.1%	2.7%	74
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	26.0%	23.3%	15.1%	24.7%	5.5%	5.5%	73
Totals Total Responses							77

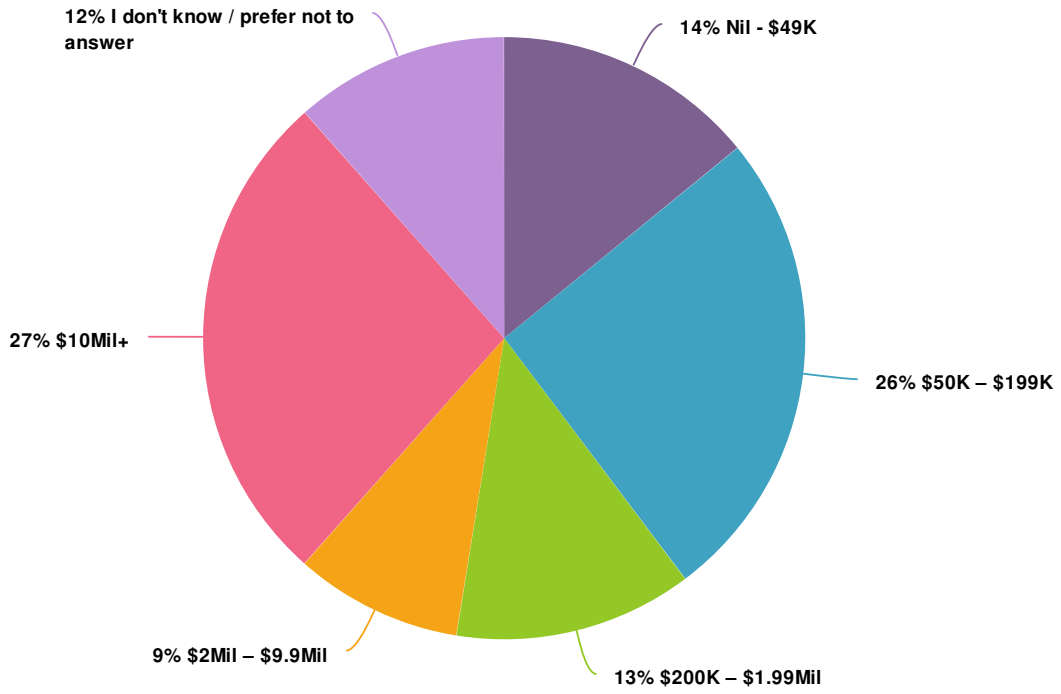
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	25.0%	43.1%	19.4%	9.7%	2.8%	72
Expand current operations Row %	40.5%	41.9%	10.8%	6.8%	0.0%	74
Develop new products Row %	42.9%	44.2%	9.1%	3.9%	0.0%	77
Increase liquid assets Row %	13.0%	15.9%	40.6%	27.5%	2.9%	69
Sell the business Row %	5.3%	10.7%	16.0%	30.7%	37.3%	75
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	30.6%	36.1%	16.7%	11.1%	5.6%	72
Explore new markets for products Row %	50.0%	42.1%	3.9%	3.9%	0.0%	76
Invest in new technologies Row %	24.0%	53.3%	13.3%	6.7%	2.7%	75
Owners to retire soon Row %	5.3%	10.5%	14.0%	26.3%	43.9%	57
Diversify the business Row %	14.9%	44.6%	23.0%	10.8%	6.8%	74
Keep the business as it is now Row %	10.8%	18.9%	17.6%	35.1%	17.6%	74
Increase off-farm income (any income earned from work not related to the farm) Row %	10.5%	22.8%	29.8%	26.3%	10.5%	57
Totals Total Responses						77

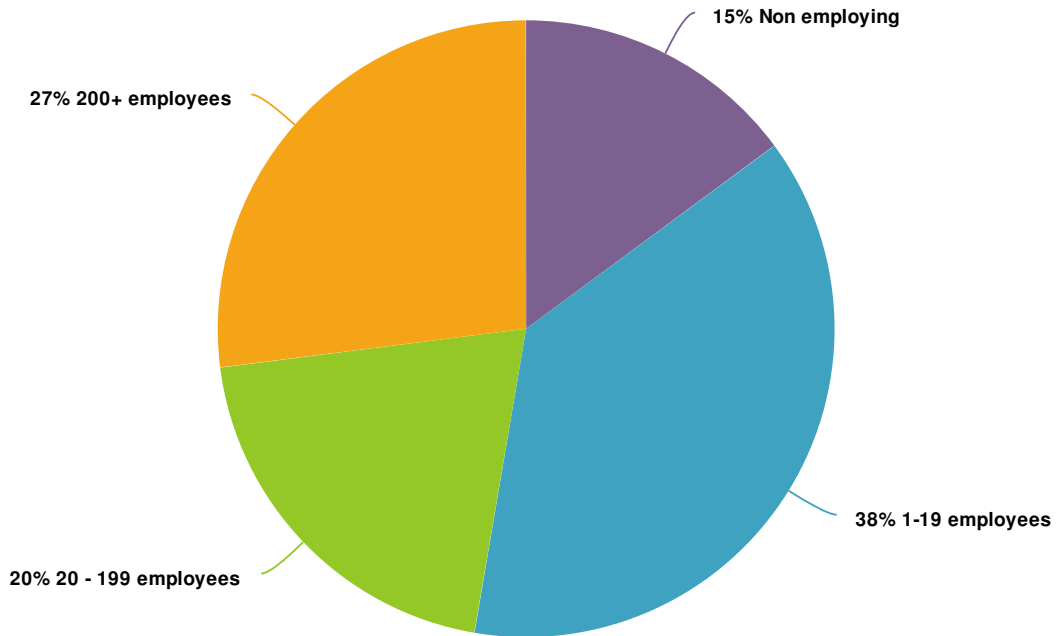
23. **Other strategies you are likely to adopt



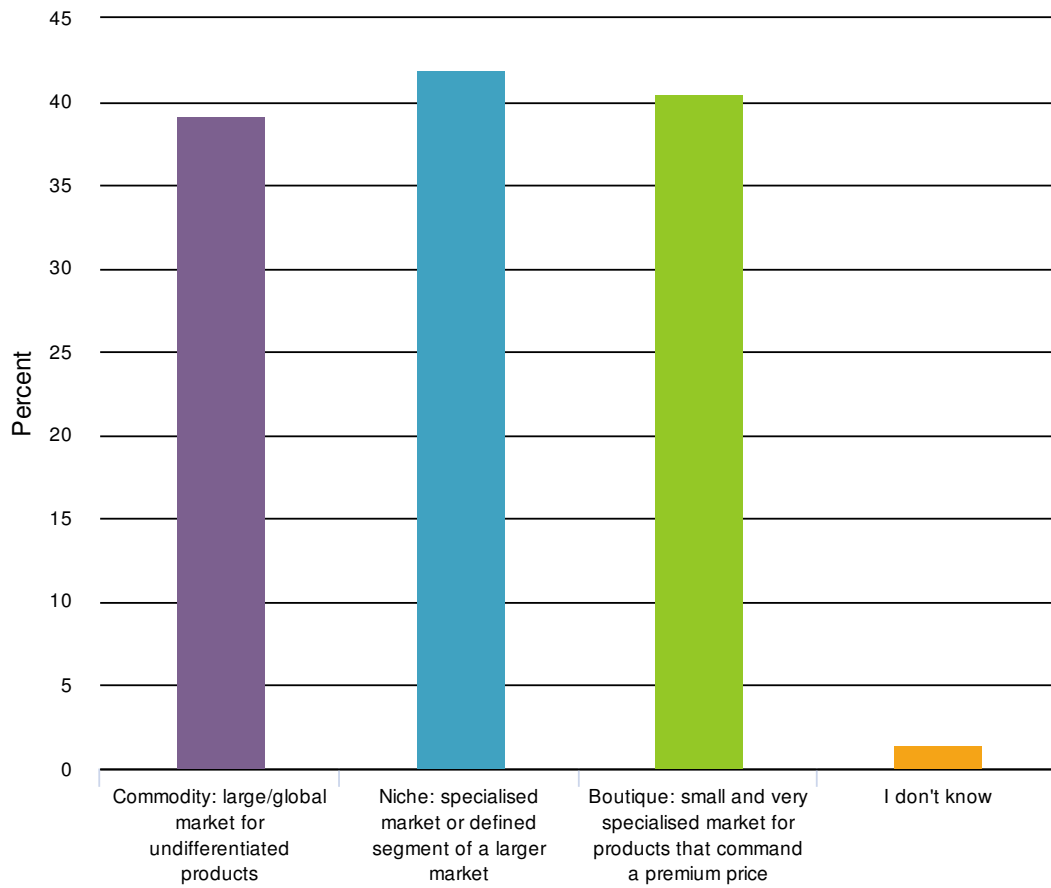
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



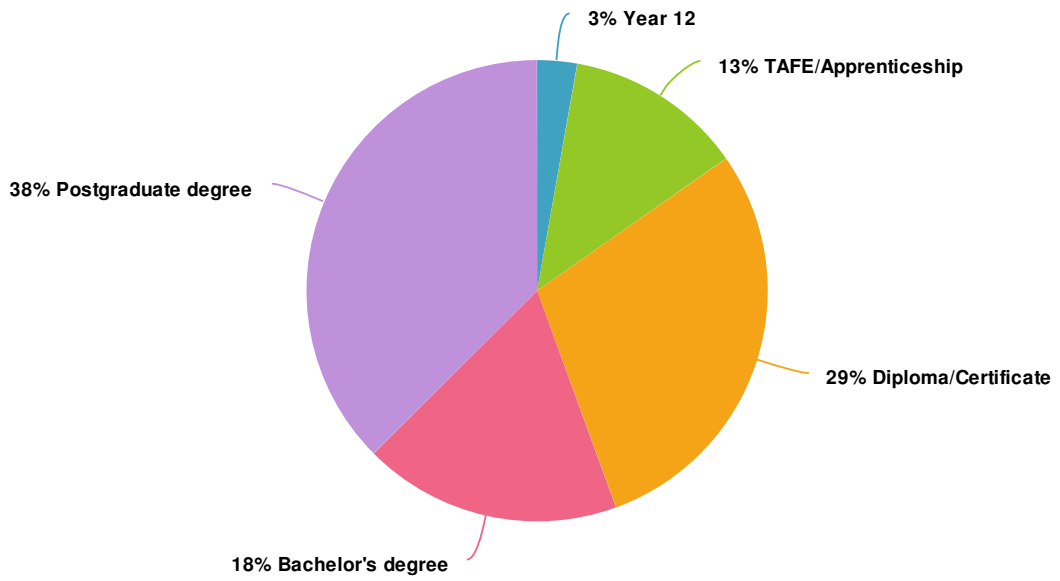
25. How many employees does the business have?



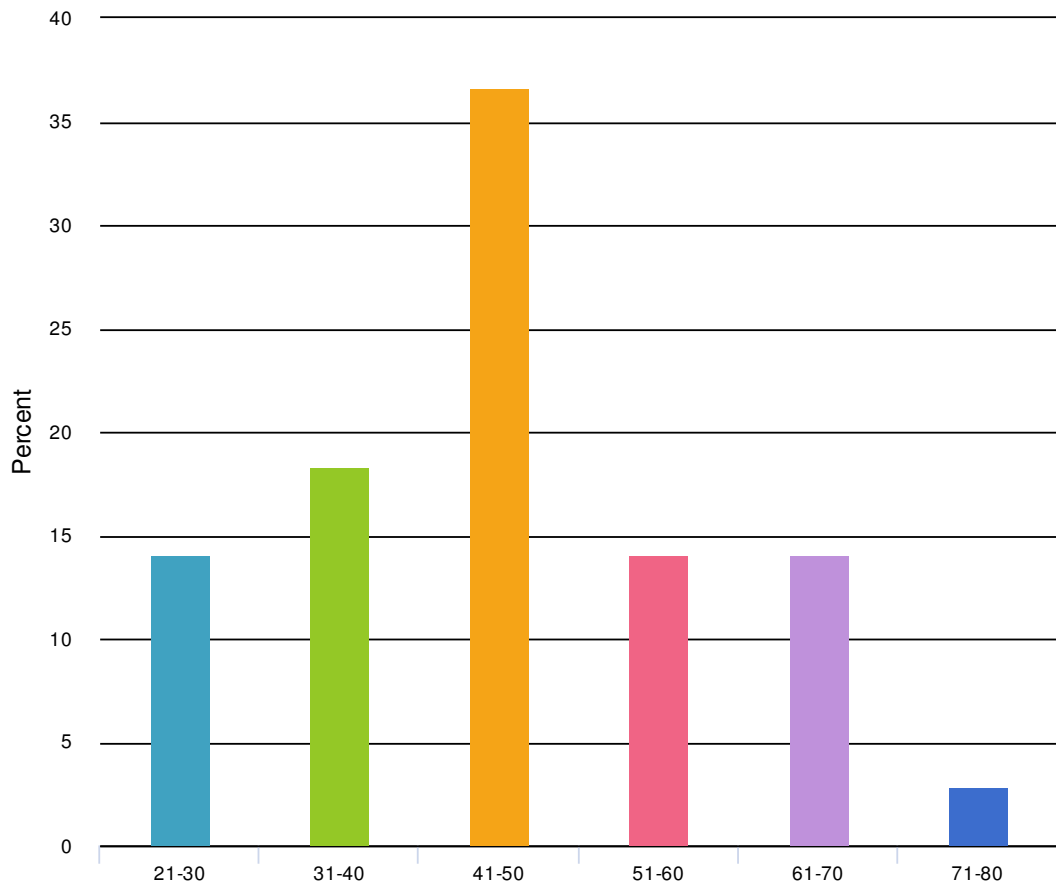
26. What sort of market do your products go into? (select all that are relevant)



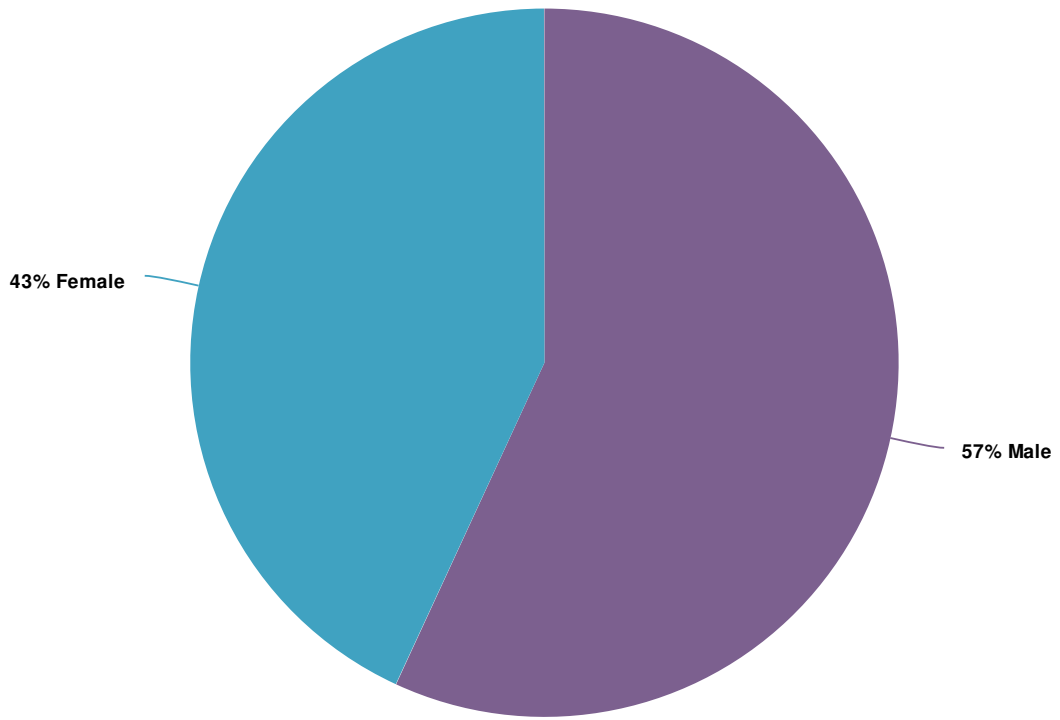
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 11



TasAgFuture Survey Sector Report: Intensive Grazing

This report provides a basic summary of the 115 responses of individuals who selected *intensive grazing* as their *main* business or work. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

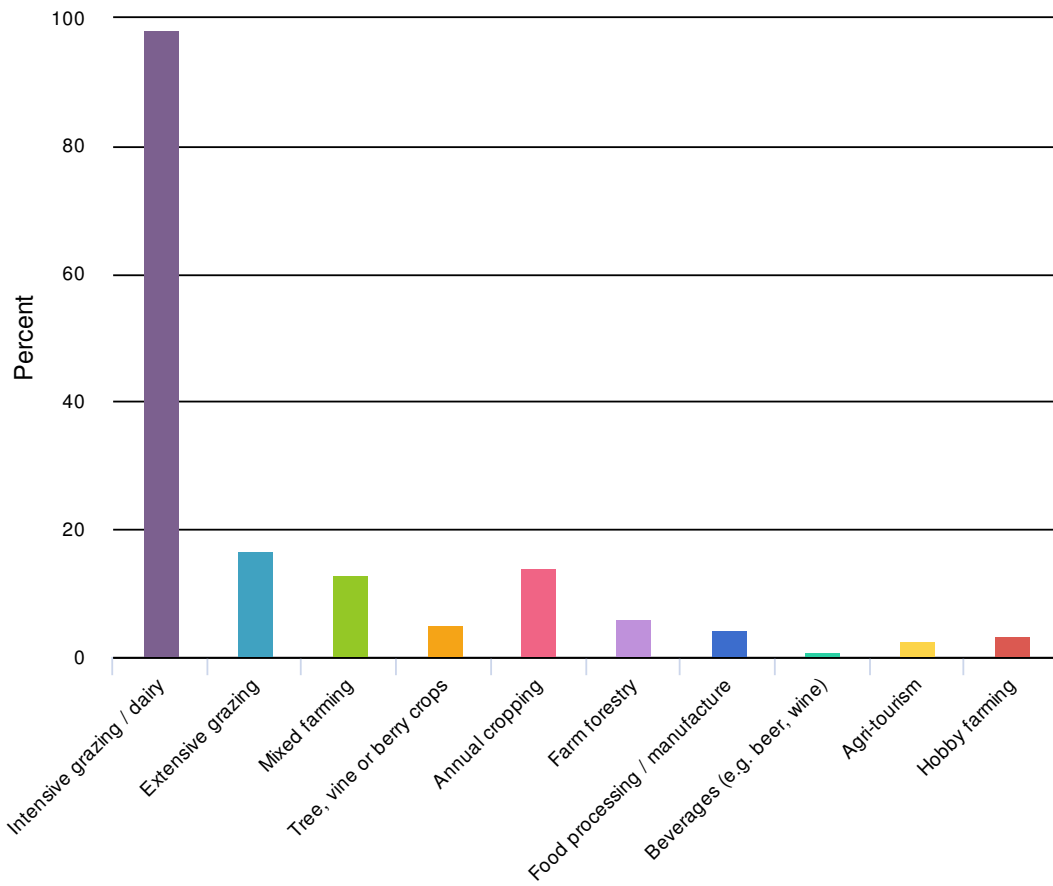
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

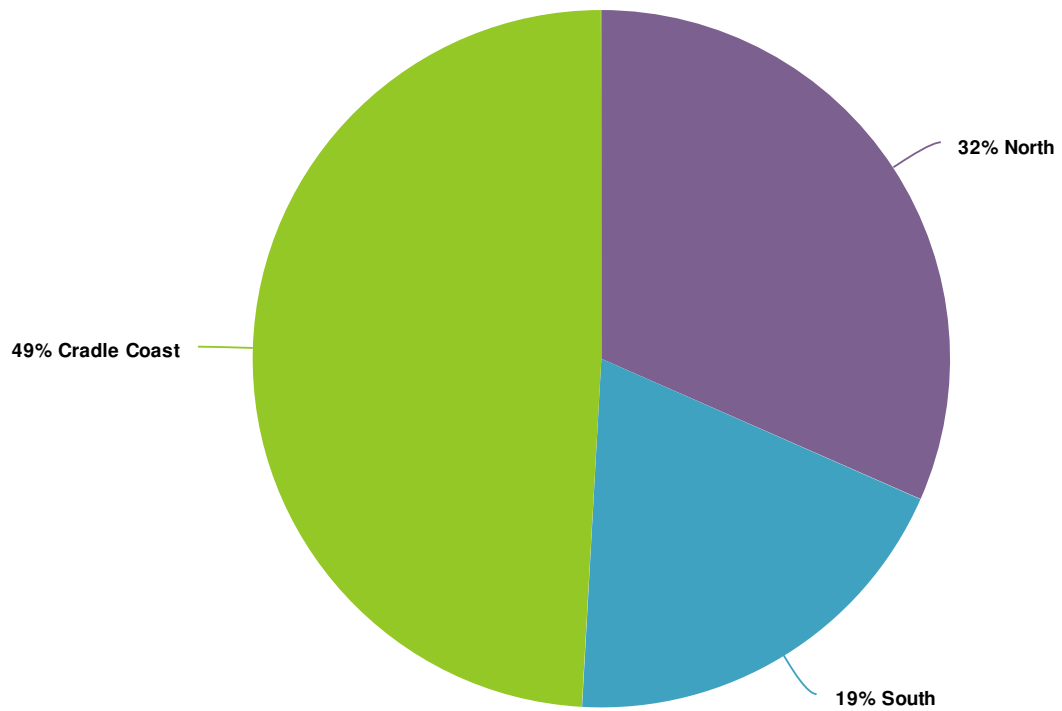
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

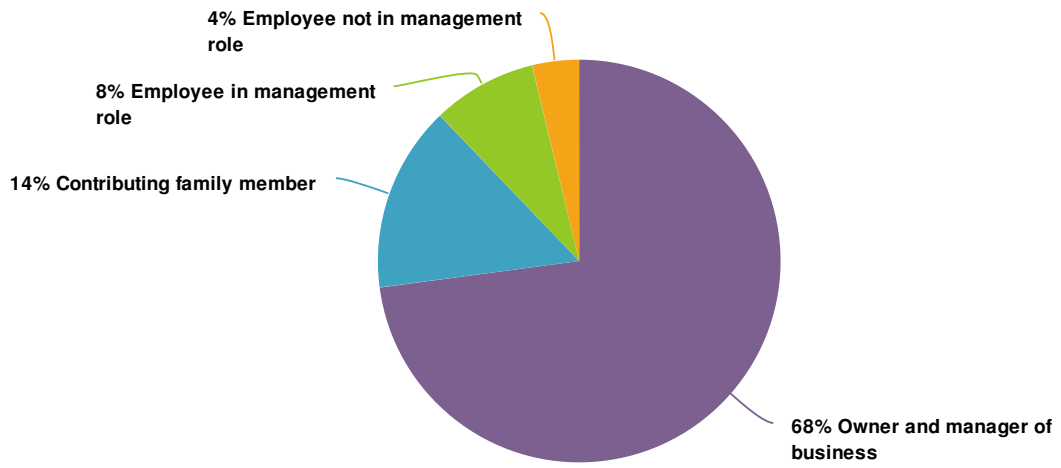
2. Which of the following are included in your business or work? (select all that are relevant)



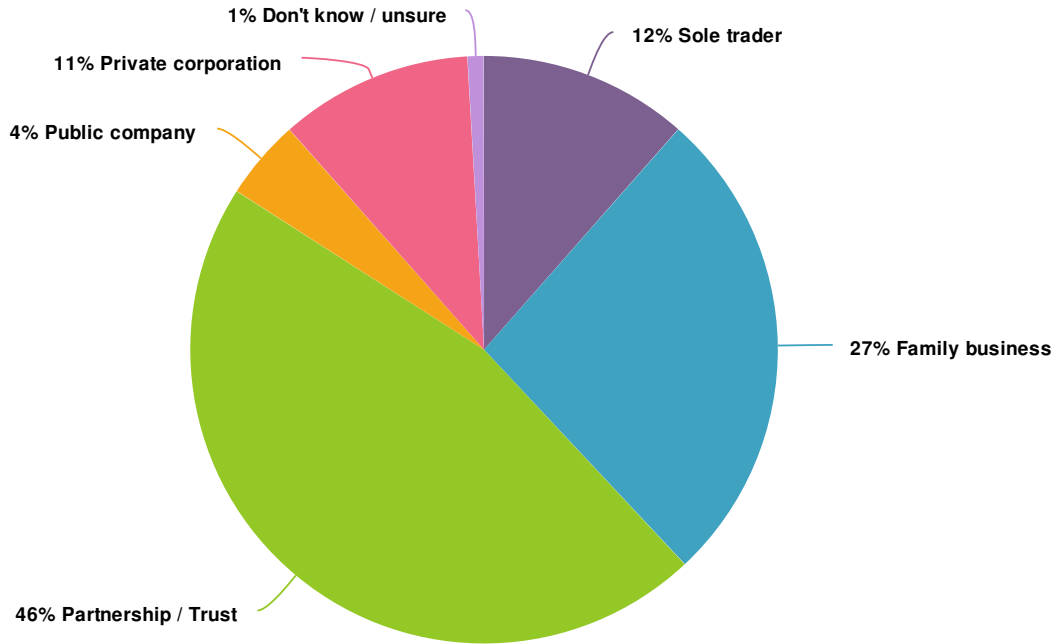
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

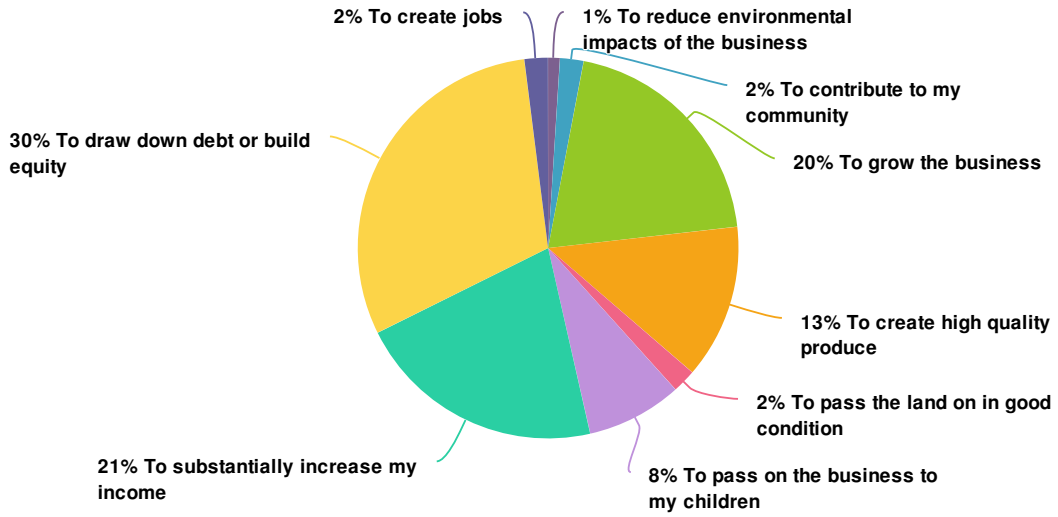


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	31.5%	47.2%	16.7%	2.8%	1.9%	108
To develop new markets Row %	19.4%	33.0%	33.0%	13.6%	1.0%	103
To substantially increase my income Row %	32.4%	46.8%	17.1%	2.7%	0.9%	111
To draw down debt or build equity Row %	47.6%	40.0%	6.7%	4.8%	1.0%	105

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	67.9%	29.5%	2.7%	0.0%	0.0%	112
To pass on the business to my children Row %	24.7%	29.9%	34.0%	6.2%	5.2%	97
To create jobs Row %	17.3%	31.7%	43.3%	6.7%	1.0%	104
To contribute to my community Row %	26.6%	46.8%	21.1%	5.5%	0.0%	109
To maintain/develop native habitat or biodiversity Row %	23.4%	47.7%	18.9%	7.2%	2.7%	111
To look after the land Row %	71.9%	26.3%	1.8%	0.0%	0.0%	114
To reduce environmental impacts of the business Row %	36.0%	49.5%	10.8%	3.6%	0.0%	111
To pass the land on in good condition Row %	64.9%	33.3%	1.8%	0.0%	0.0%	111
Totals Total Responses						114

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

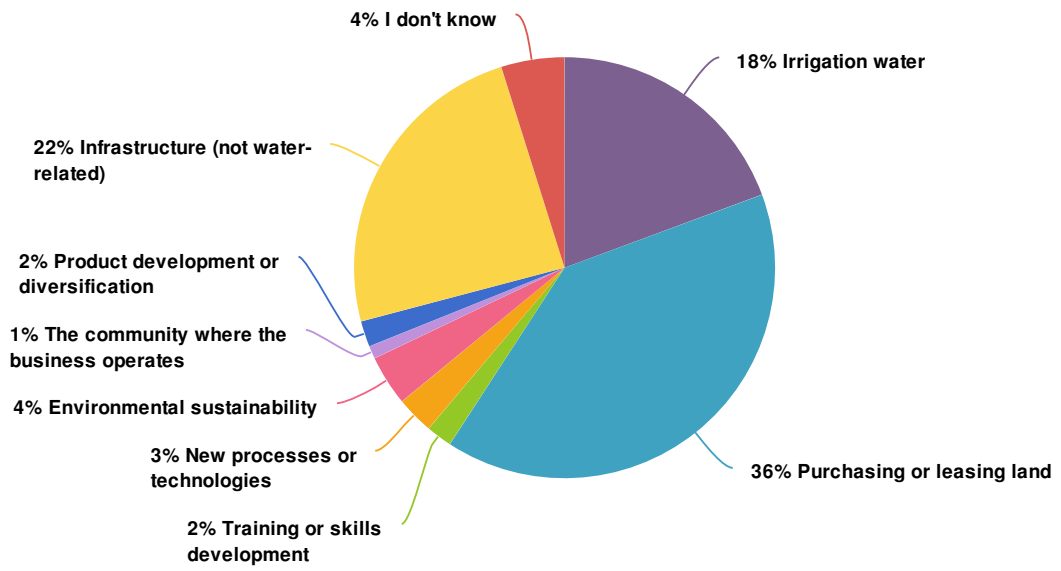
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	20.0%	44.5%	25.5%	8.2%	1.8%	110
Making high profits or being well-paid Row %	17.6%	63.0%	16.7%	1.9%	0.9%	108
Being able to stay on the farm / in this place Row %	46.3%	45.4%	7.4%	0.9%	0.0%	108
						339

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	23.6%	59.1%	15.5%	0.9%	0.9%	110
Creating high quality produce / products Row %	47.3%	48.2%	3.6%	0.9%	0.0%	112
Doing work I enjoy Row %	55.8%	42.5%	1.8%	0.0%	0.0%	113
Being my own boss Row %	38.1%	46.7%	12.4%	1.9%	1.0%	105
Working outdoors Row %	31.5%	56.8%	11.7%	0.0%	0.0%	111
Having a lifestyle I enjoy Row %	52.3%	40.5%	6.3%	0.0%	0.9%	111
Totals Total Responses						113

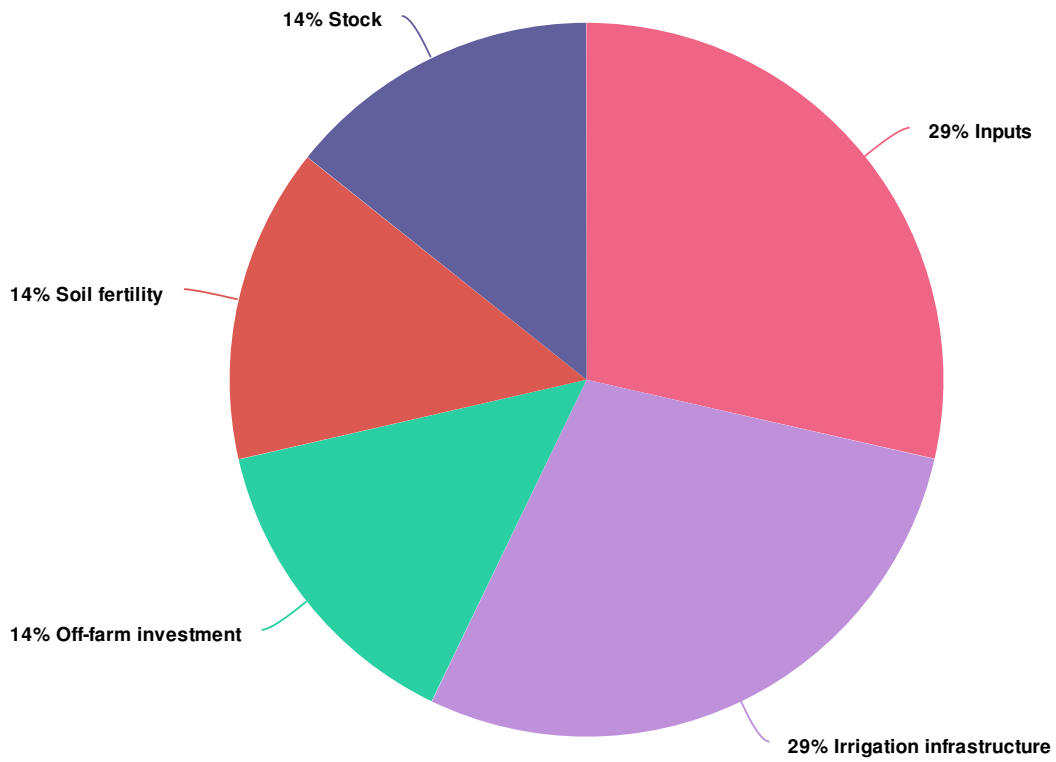
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	29.7%	59.5%	9.0%	1.8%	0.0%	111
I plan carefully before taking action Row %	25.7%	66.4%	8.0%	0.0%	0.0%	113
I spend time thinking about the future of the business Row %	39.3%	56.3%	2.7%	1.8%	0.0%	112
My actions are guided by what I've learnt from experience Row %	37.2%	54.9%	6.2%	1.8%	0.0%	113
I try to follow industry best practice Row %	29.8%	60.5%	7.9%	0.9%	0.9%	114
I often go with my gut feeling when making big decisions Row %	9.9%	43.2%	35.1%	11.7%	0.0%	111
I try new ways of doing things Row %	21.4%	62.5%	15.2%	0.9%	0.0%	112
I take measured risks Row %	14.5%	65.5%	14.5%	5.5%	0.0%	110
I invest time to learn new things Row %	27.9%	58.6%	12.6%	0.0%	0.9%	111
Totals Total Responses						114

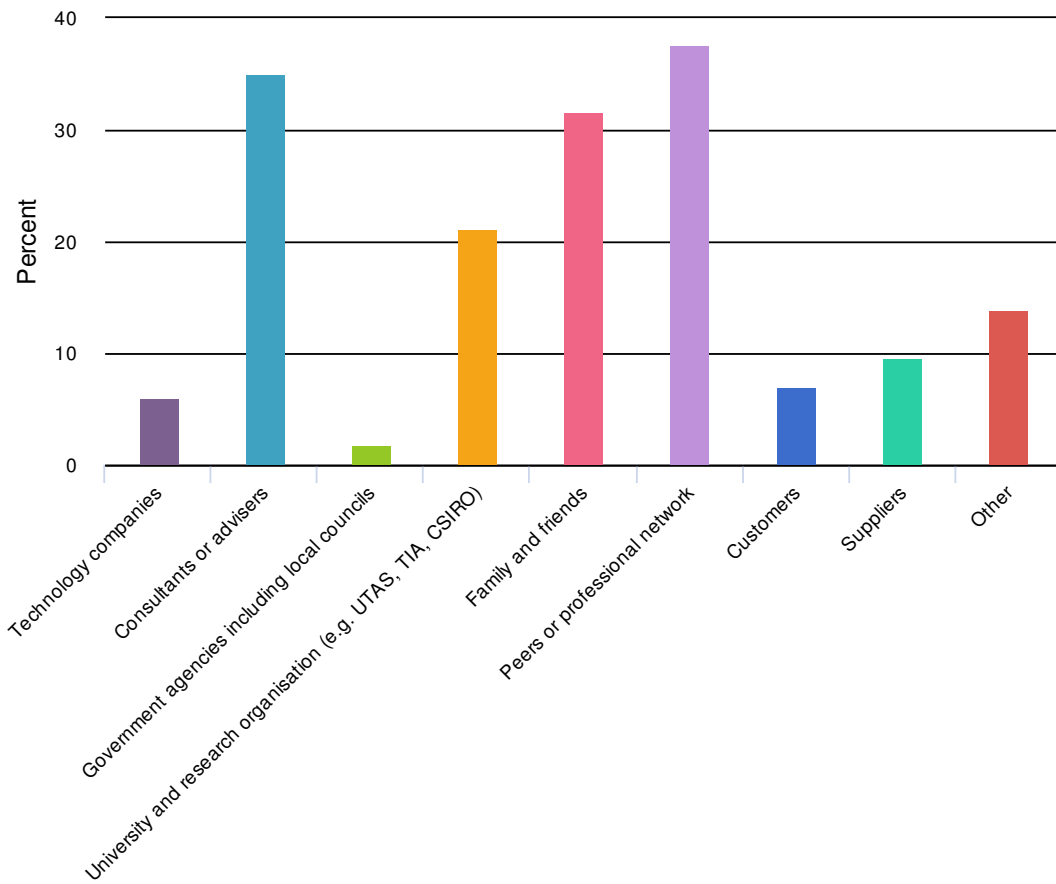
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



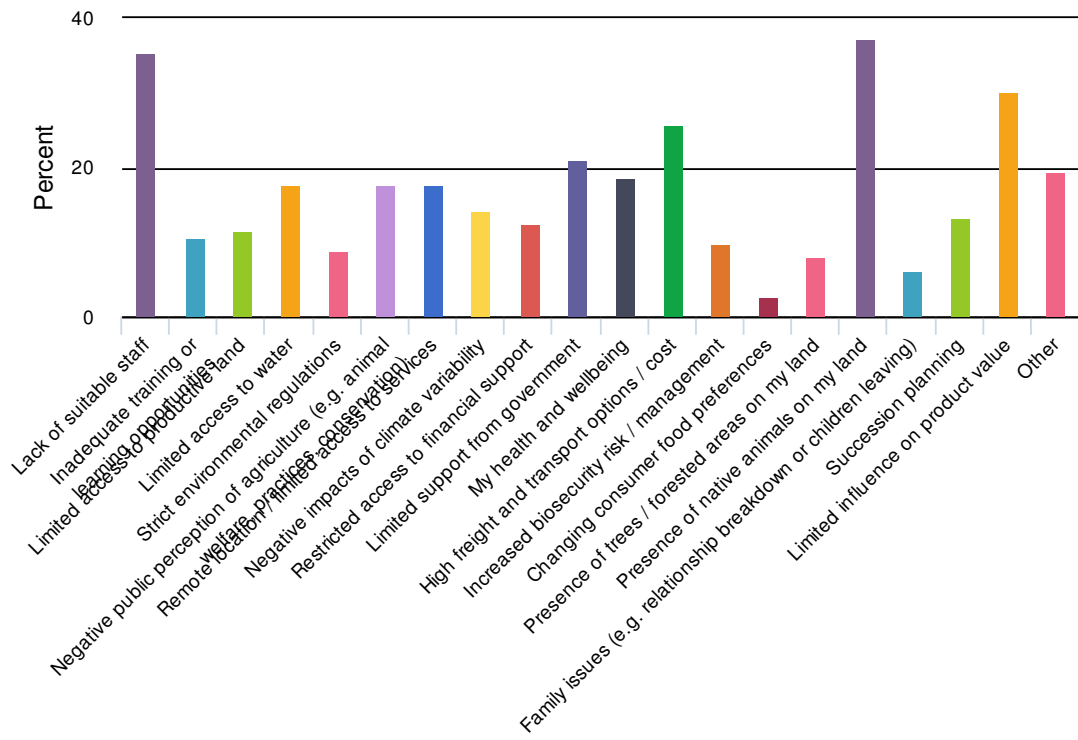
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



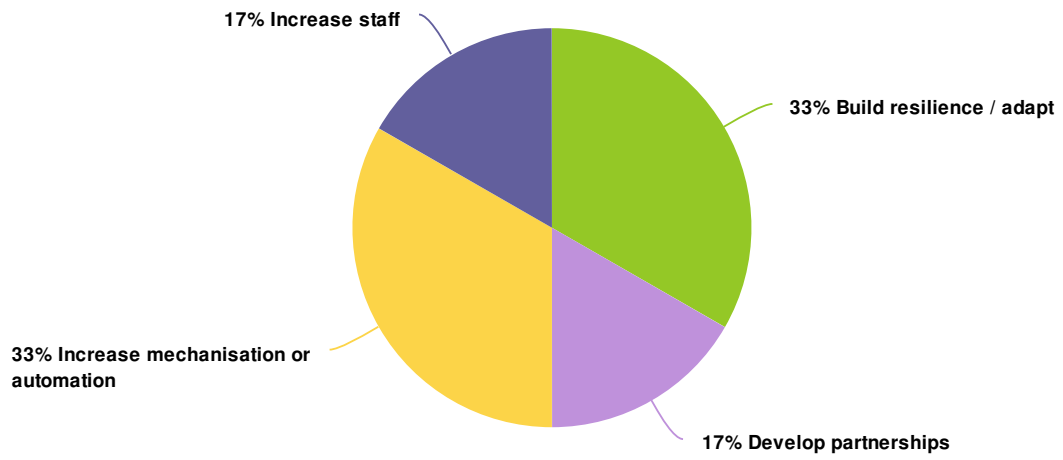
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	27.2%	48.2%	14.9%	3.5%	1.8%	4.4%	114
I often work alongside my neighbours or peers without expecting any financial return Row %	19.3%	36.8%	33.3%	5.3%	0.0%	5.3%	114
My social connections enable me to influence decisions in my region Row %	4.4%	33.3%	37.7%	14.0%	2.6%	7.9%	114
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	17.7%	33.6%	22.1%	17.7%	3.5%	5.3%	113
Totals Total Responses							114

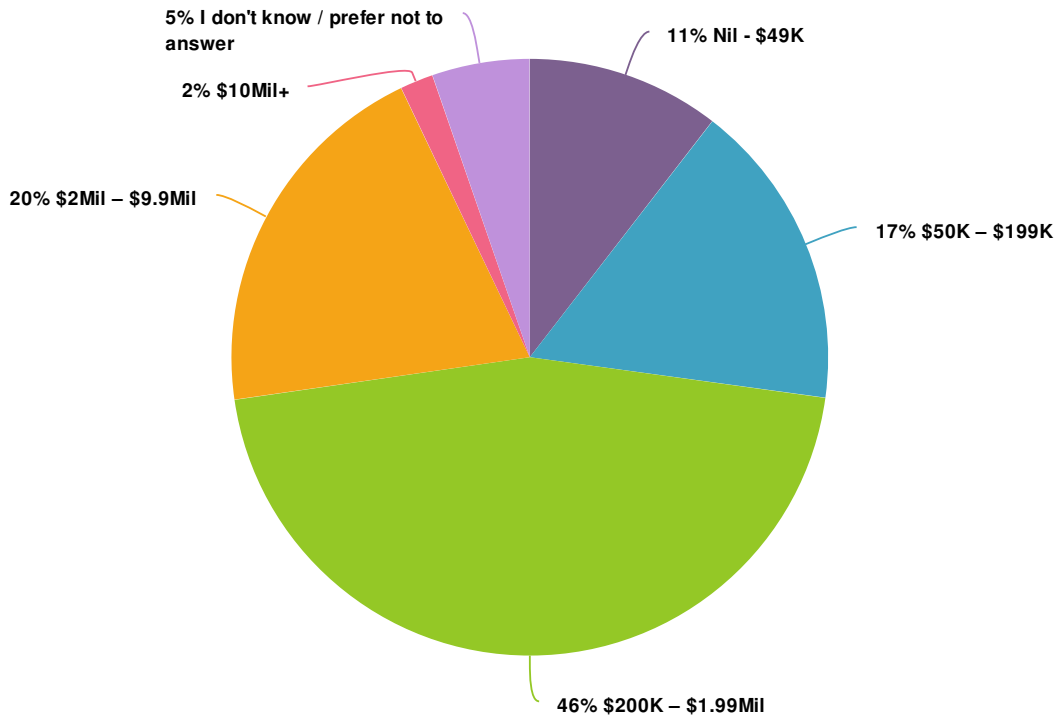
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	6.6%	28.3%	29.2%	25.5%	10.4%	106
Expand current operations Row %	15.0%	37.4%	24.3%	15.0%	8.4%	107
Develop new products Row %	5.0%	15.0%	21.0%	38.0%	21.0%	100
Increase liquid assets Row %	5.9%	27.7%	39.6%	21.8%	5.0%	101
Sell the business Row %	9.3%	15.7%	21.3%	25.0%	28.7%	108
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	5.9%	10.8%	22.5%	36.3%	24.5%	102
Explore new markets for products Row %	11.0%	24.0%	22.0%	29.0%	14.0%	100
Invest in new technologies Row %	15.2%	42.9%	19.0%	19.0%	3.8%	105
Owners to retire soon Row %	9.8%	19.6%	17.6%	28.4%	24.5%	102
Diversify the business Row %	4.8%	26.9%	21.2%	31.7%	15.4%	104
Keep the business as it is now Row %	8.3%	39.8%	15.7%	27.8%	8.3%	108
Increase off-farm income (any income earned from work not related to the farm) Row %	5.9%	26.5%	16.7%	36.3%	14.7%	102
Totals Total Responses						108

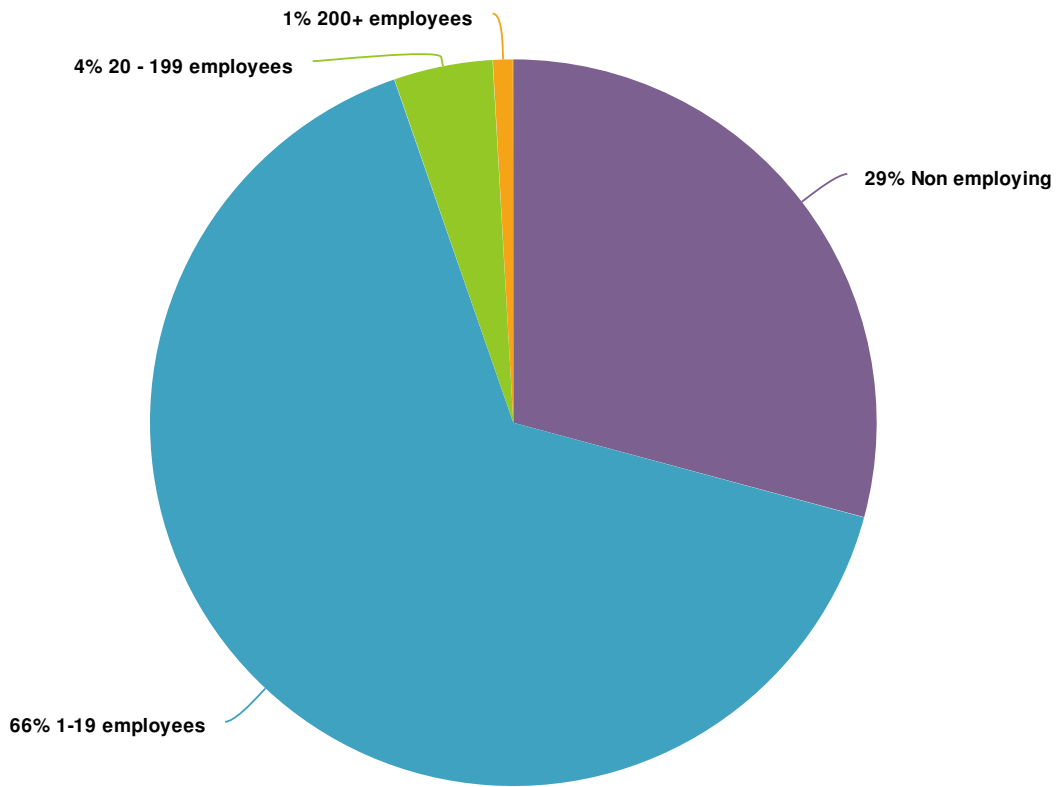
23. **Other strategies you are likely to adopt



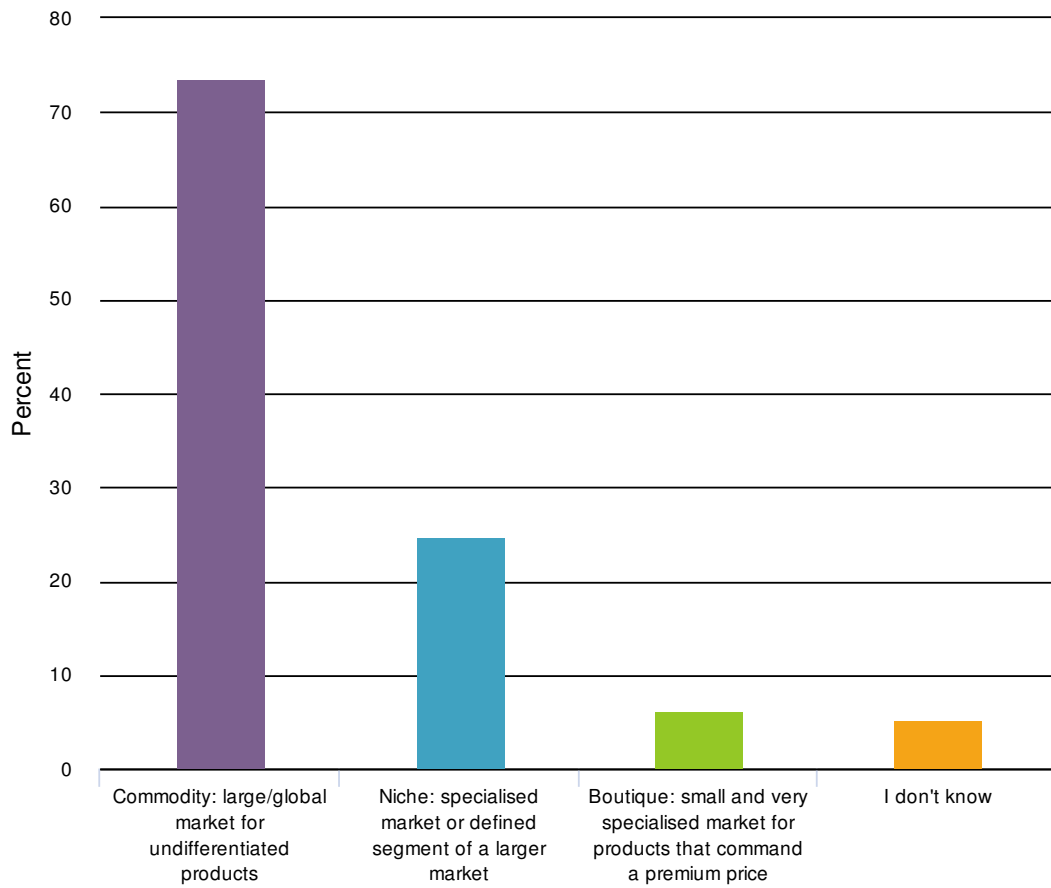
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



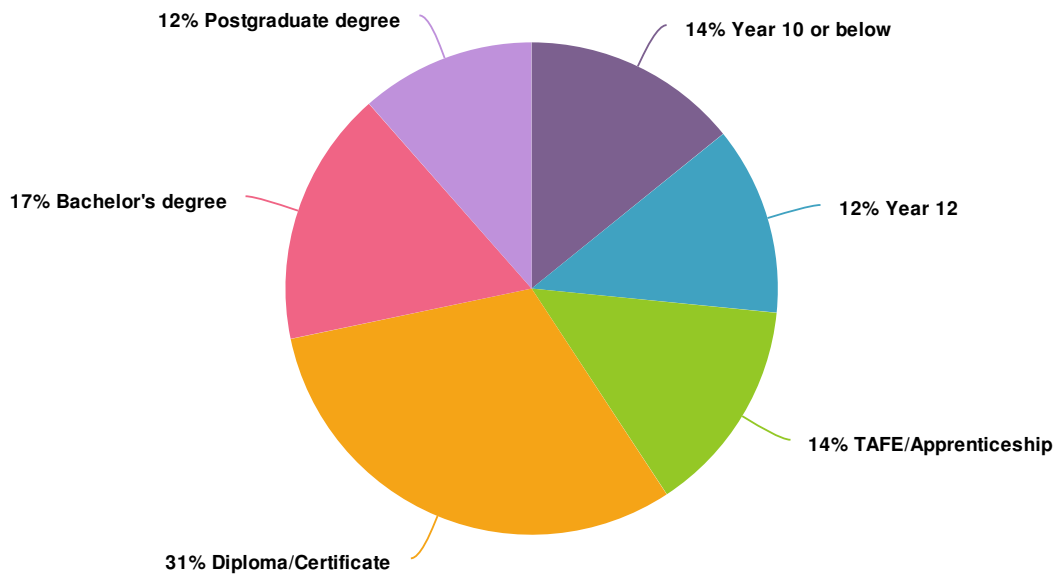
25. How many employees does the business have?



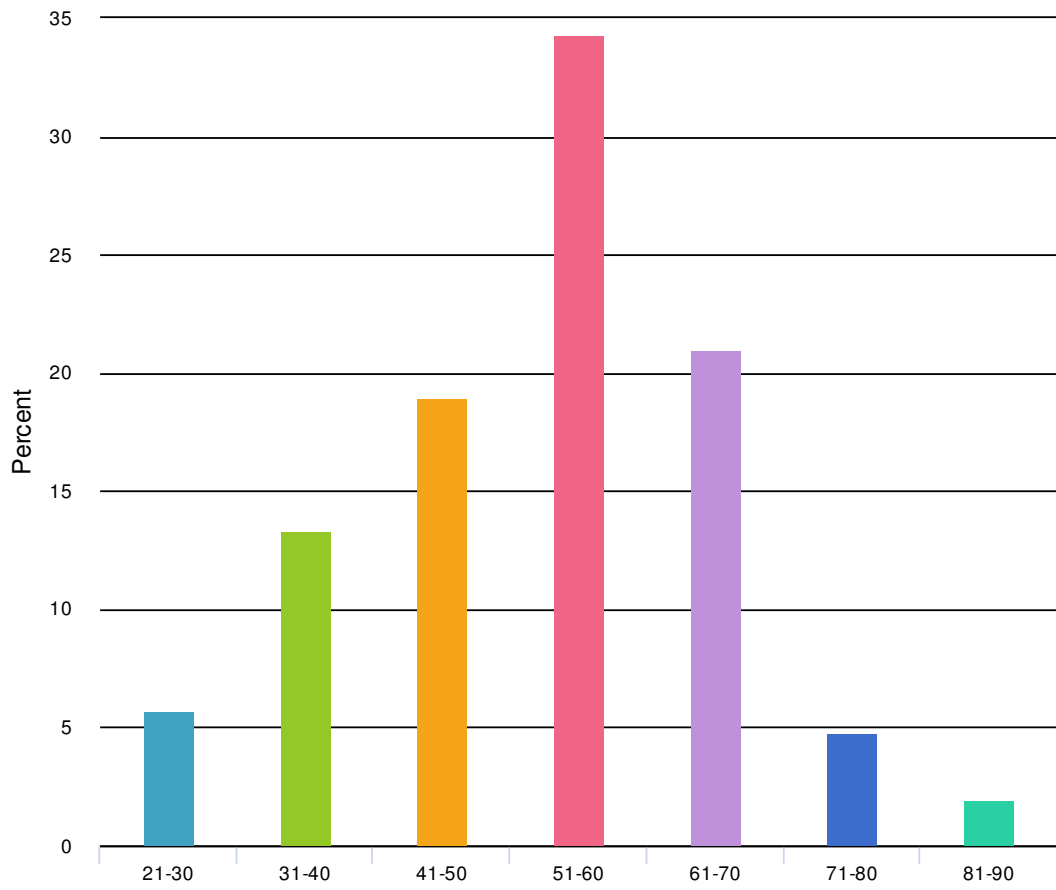
26. What sort of market do your products go into? (select all that are relevant)



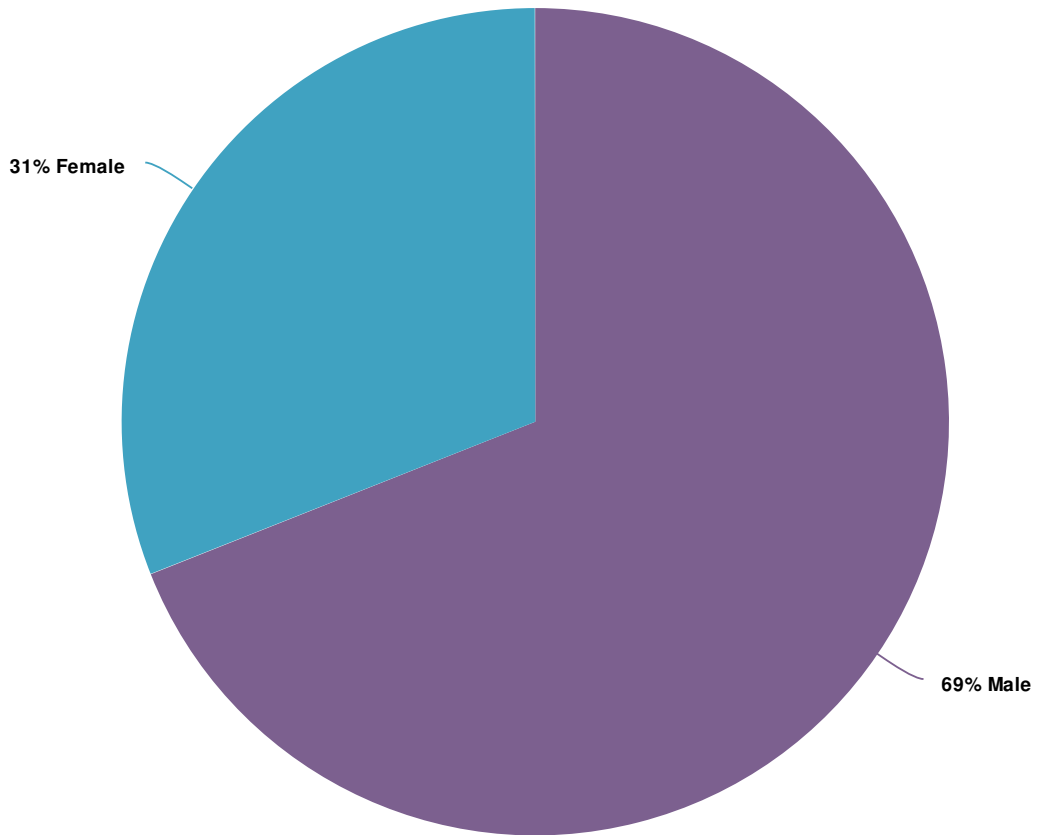
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 12



TasAgFuture Survey Sector Report: Mixed Farming

This report provides a basic summary of the 90 responses of individuals who selected *mixed farming* as their *main* business. A total of 630 individuals participated in the survey from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

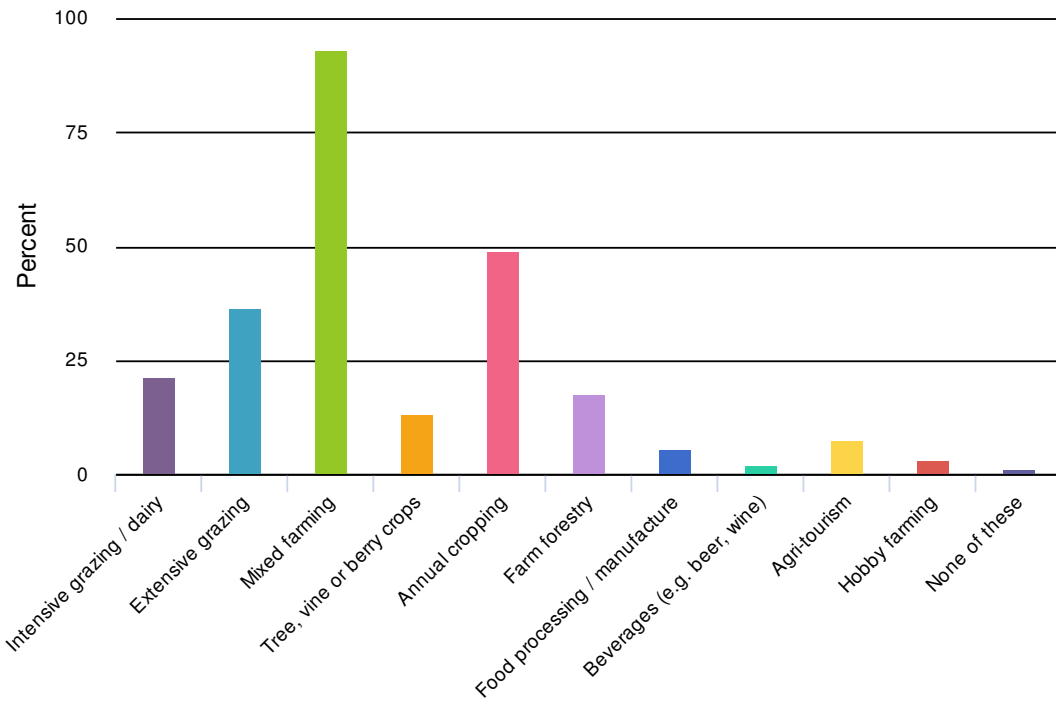
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

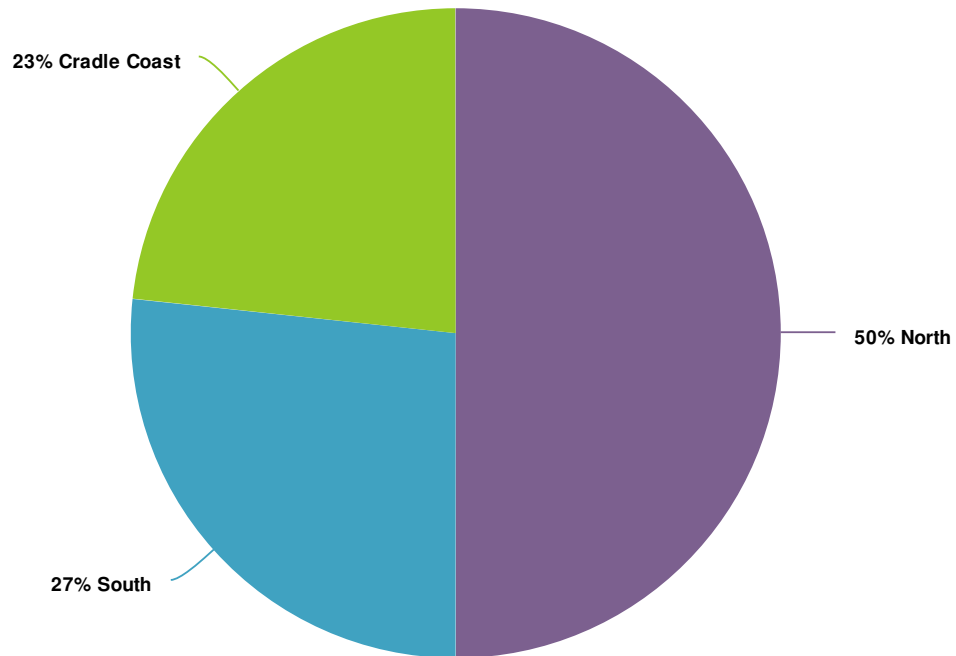
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

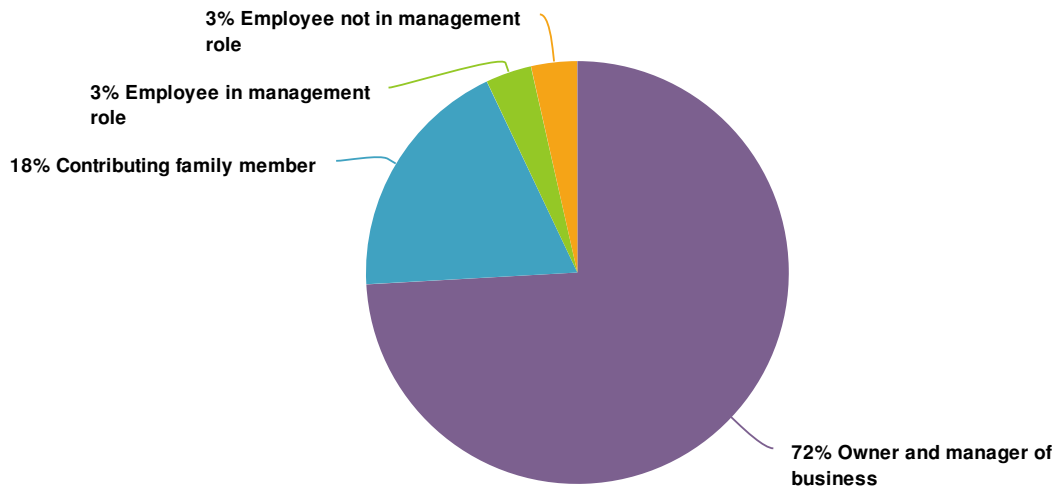
2. Which of the following are included in your business or work? (select all that are relevant)



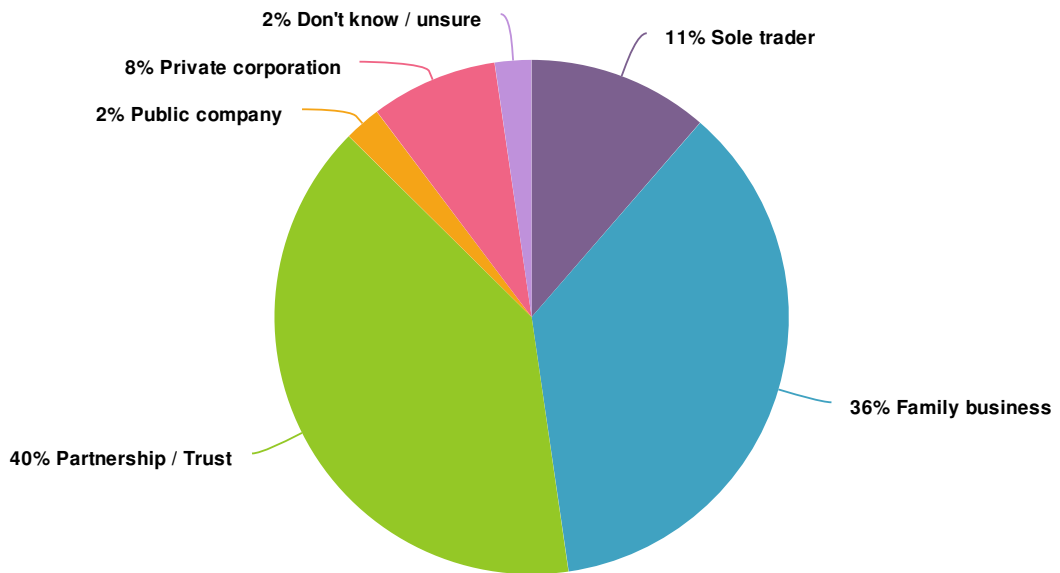
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

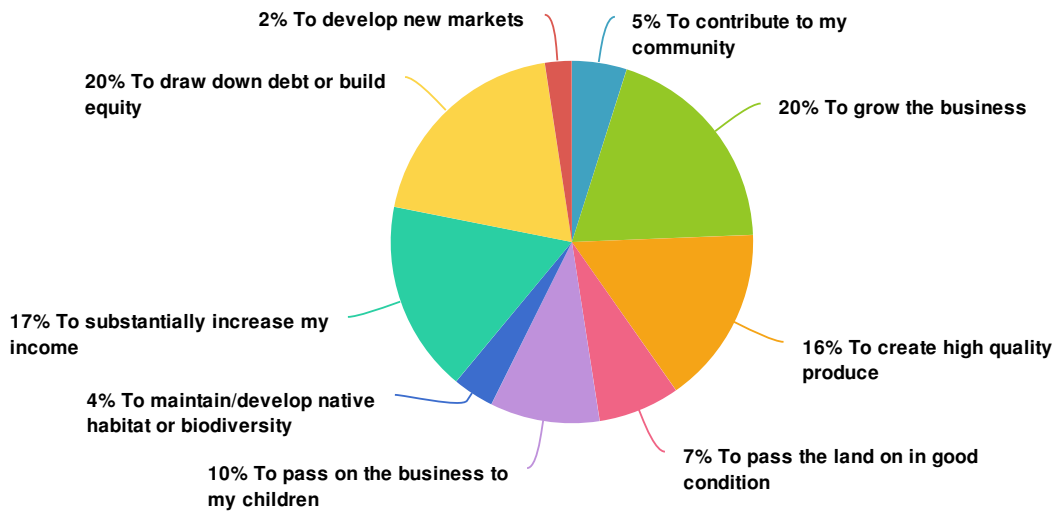


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	40.0%	47.1%	9.4%	1.2%	2.4%	85
To develop new markets Row %	28.6%	40.5%	23.8%	3.6%	3.6%	84
To substantially increase my income Row %	36.0%	39.5%	23.3%	0.0%	1.2%	86
To draw down debt or build equity Row %	55.6%	34.6%	8.6%	0.0%	1.2%	81
To create high quality produce Row %	69.8%	29.1%	1.2%	0.0%	0.0%	86
To pass on the business to my children Row %	40.3%	41.6%	15.6%	1.3%	1.3%	77
To create jobs Row %	9.6%	44.6%	34.9%	9.6%	1.2%	83
To contribute to my community Row %	31.4%	53.5%	15.1%	0.0%	0.0%	86
To maintain/develop native habitat or biodiversity Row %	26.2%	47.6%	23.8%	2.4%	0.0%	84
To look after the land Row %	69.0%	29.9%	1.1%	0.0%	0.0%	87

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To reduce environmental impacts of the business Row %	33.7%	57.0%	5.8%	3.5%	0.0%	86
To pass the land on in good condition Row %	66.3%	31.4%	1.2%	0.0%	1.2%	86
Totals Total Responses						87

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

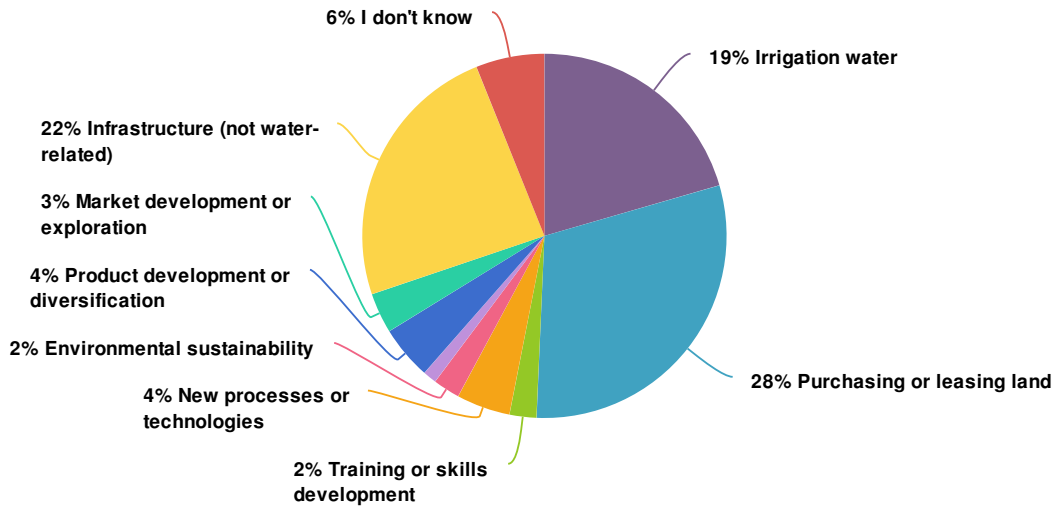
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	25.3%	50.6%	19.5%	3.4%	1.1%	87
Making high profits or being well-paid Row %	16.3%	46.5%	27.9%	7.0%	2.3%	86
Being able to stay on the farm / in this place Row %	54.0%	37.9%	6.9%	1.1%	0.0%	87
Giving something back to the land / place Row %	27.6%	64.4%	8.0%	0.0%	0.0%	87
Creating high quality produce / products Row %	53.4%	42.0%	4.5%	0.0%	0.0%	88
Doing work I enjoy Row %	53.4%	45.5%	1.1%	0.0%	0.0%	88
Being my own boss Row %	29.5%	61.4%	8.0%	1.1%	0.0%	88
Working outdoors Row %	28.7%	51.7%	18.4%	0.0%	1.1%	87

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Having a lifestyle I enjoy Row %	46.7%	47.8%	4.4%	0.0%	1.1%	90
Totals Total Responses						90

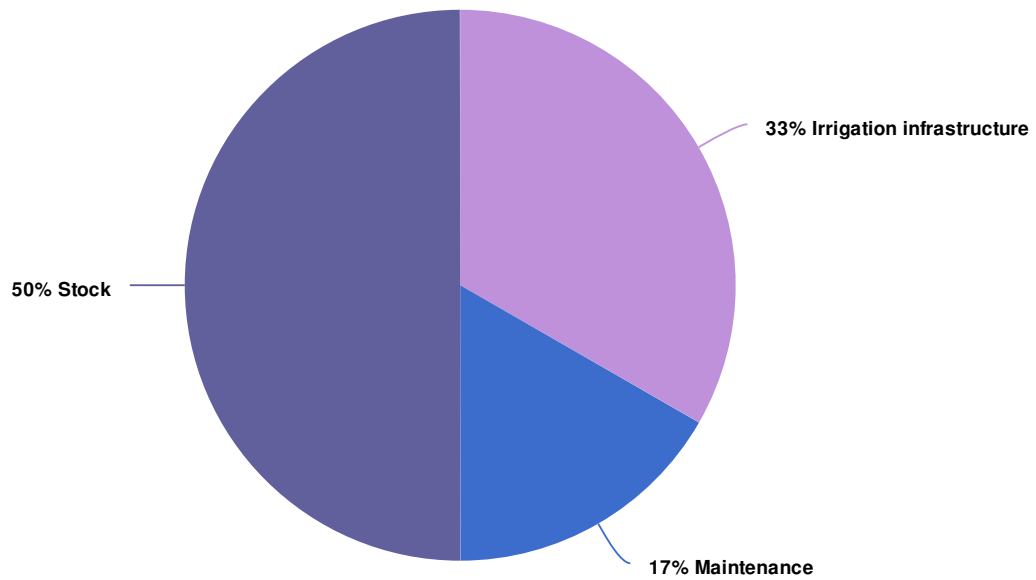
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	31.0%	52.9%	11.5%	4.6%	0.0%	87
I plan carefully before taking action Row %	33.0%	56.8%	8.0%	2.3%	0.0%	88
I spend time thinking about the future of the business Row %	50.6%	42.5%	6.9%	0.0%	0.0%	87
My actions are guided by what I've learnt from experience Row %	43.2%	54.5%	2.3%	0.0%	0.0%	88
I try to follow industry best practice Row %	36.8%	49.4%	12.6%	1.1%	0.0%	87
I often go with my gut feeling when making big decisions Row %	11.4%	60.2%	14.8%	11.4%	2.3%	88
I try new ways of doing things Row %	31.0%	57.5%	8.0%	3.4%	0.0%	87
I take measured risks Row %	25.3%	65.5%	5.7%	3.4%	0.0%	87
I invest time to learn new things Row %	40.2%	51.7%	4.6%	3.4%	0.0%	87
Totals Total Responses						88

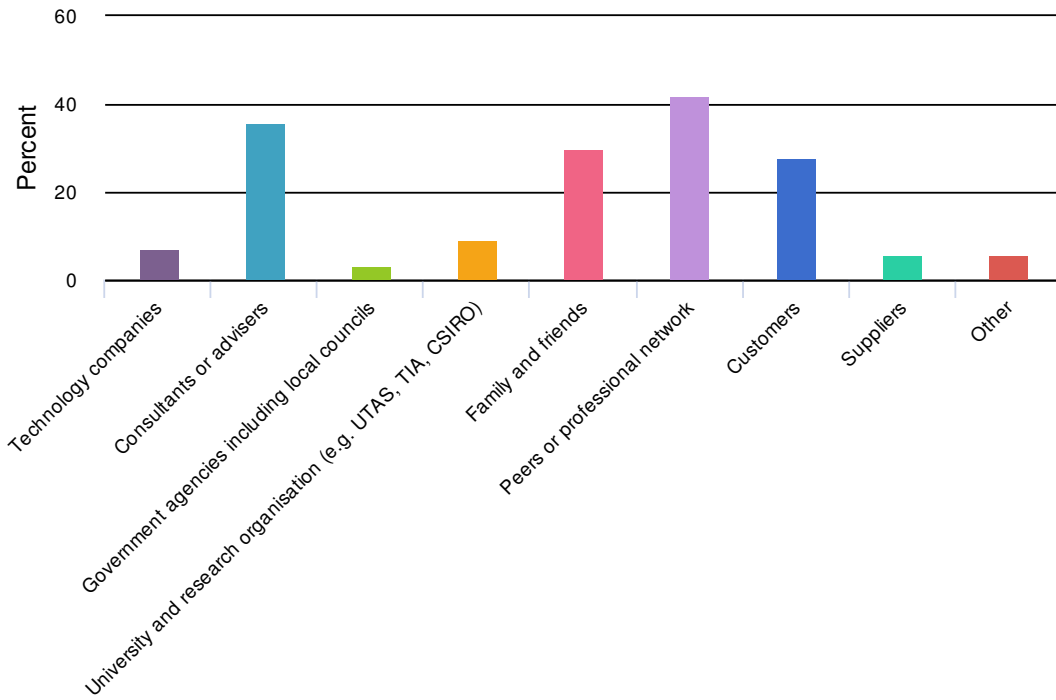
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



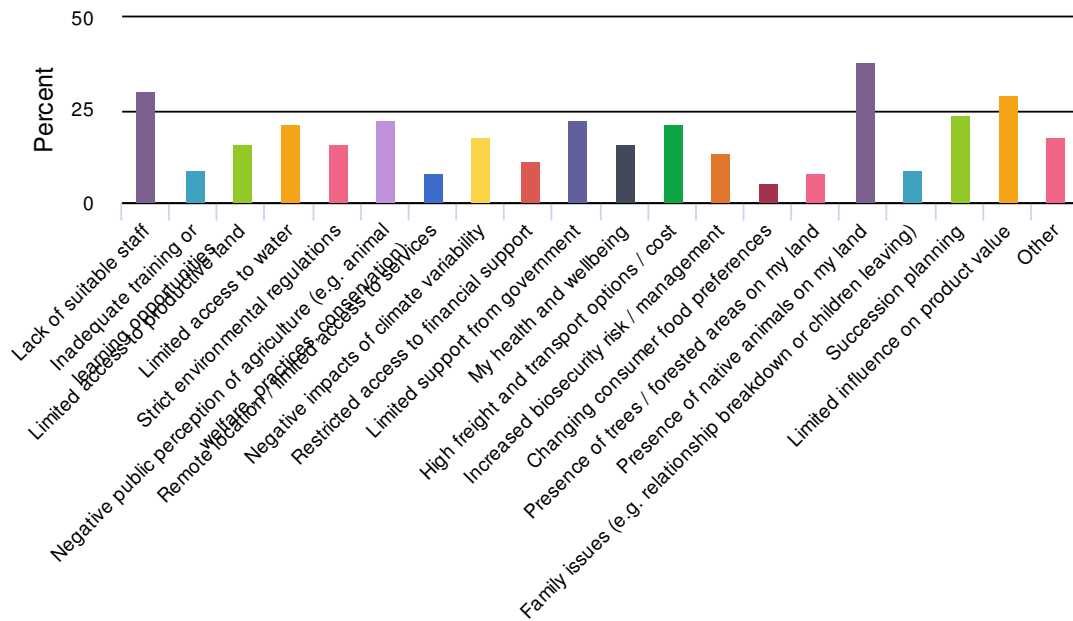
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



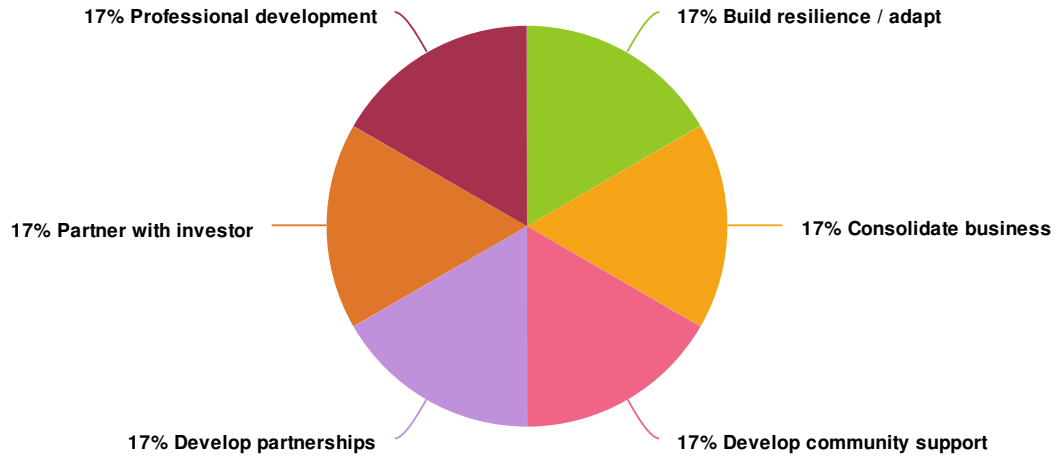
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	36.0%	47.2%	12.4%	3.4%	0.0%	1.1%	89
I often work alongside my neighbours or peers without expecting any financial return Row %	26.4%	48.3%	16.1%	5.7%	1.1%	2.3%	87
My social connections enable me to influence decisions in my region Row %	16.3%	38.4%	24.4%	17.4%	1.2%	2.3%	86
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	32.6%	30.2%	14.0%	15.1%	4.7%	3.5%	86
Totals Total Responses							89

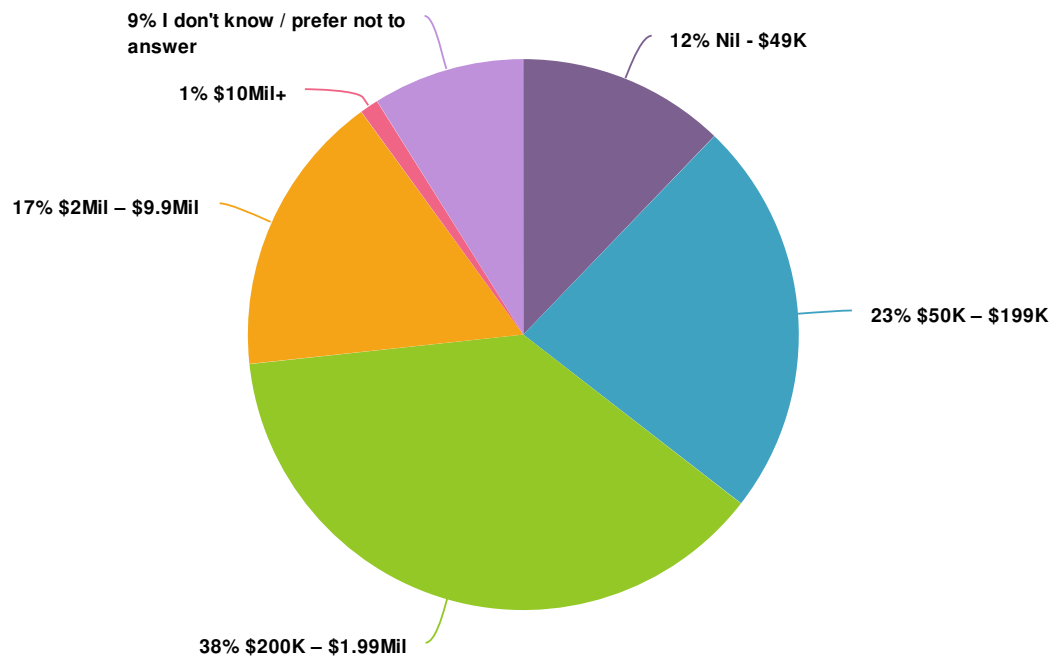
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	12.0%	31.3%	33.7%	15.7%	7.2%	83
Expand current operations Row %	28.7%	33.3%	20.7%	11.5%	5.7%	87
Develop new products Row %	15.3%	24.7%	24.7%	22.4%	12.9%	85
Increase liquid assets Row %	8.4%	33.7%	37.3%	14.5%	6.0%	83
Sell the business Row %	0.0%	4.9%	11.0%	28.0%	56.1%	82
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	11.9%	21.4%	23.8%	28.6%	14.3%	84
Explore new markets for products Row %	18.6%	50.0%	14.0%	9.3%	8.1%	86
Invest in new technologies Row %	29.4%	35.3%	21.2%	7.1%	7.1%	85
Owners to retire soon Row %	8.3%	10.7%	13.1%	36.9%	31.0%	84
Diversify the business Row %	12.9%	40.0%	21.2%	20.0%	5.9%	85
Keep the business as it is now Row %	10.6%	32.9%	20.0%	32.9%	3.5%	85
Increase off-farm income (any income earned from work not related to the farm) Row %	17.6%	31.8%	17.6%	23.5%	9.4%	85
Totals Total Responses						87

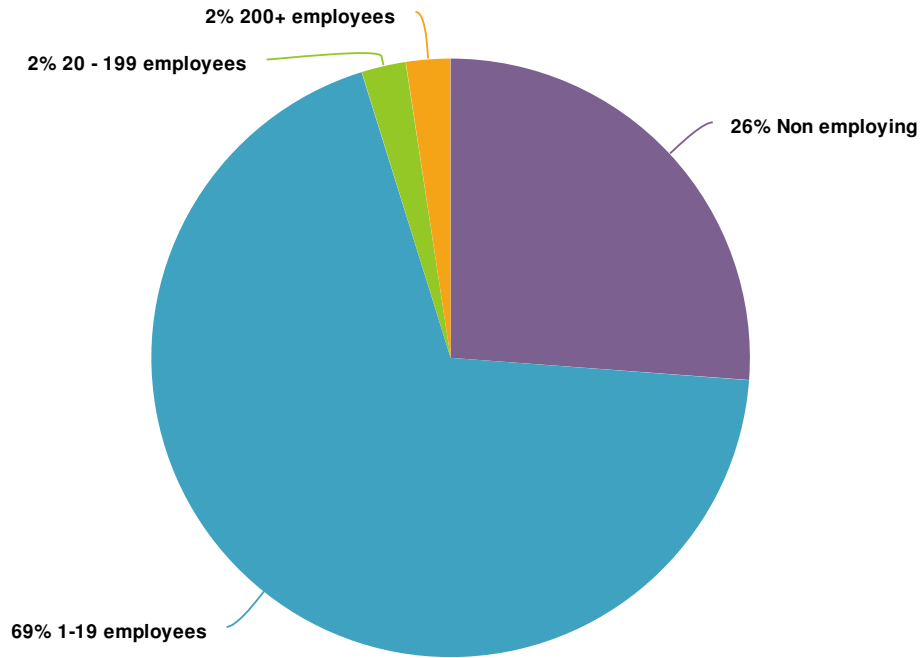
23. **Other strategies you are likely to adopt



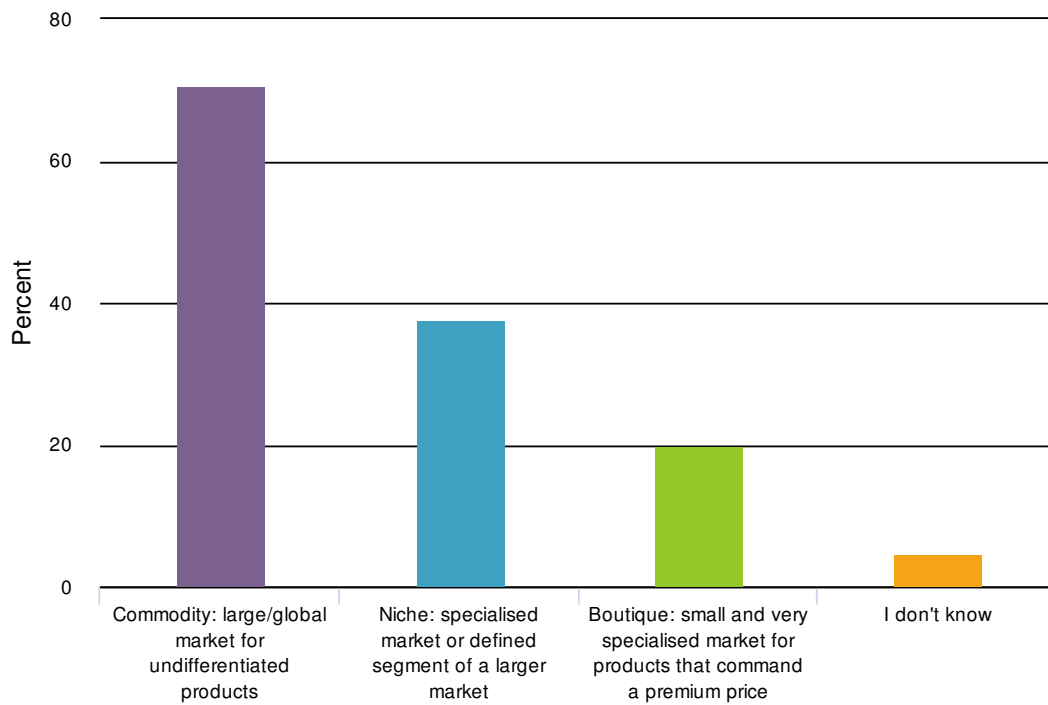
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



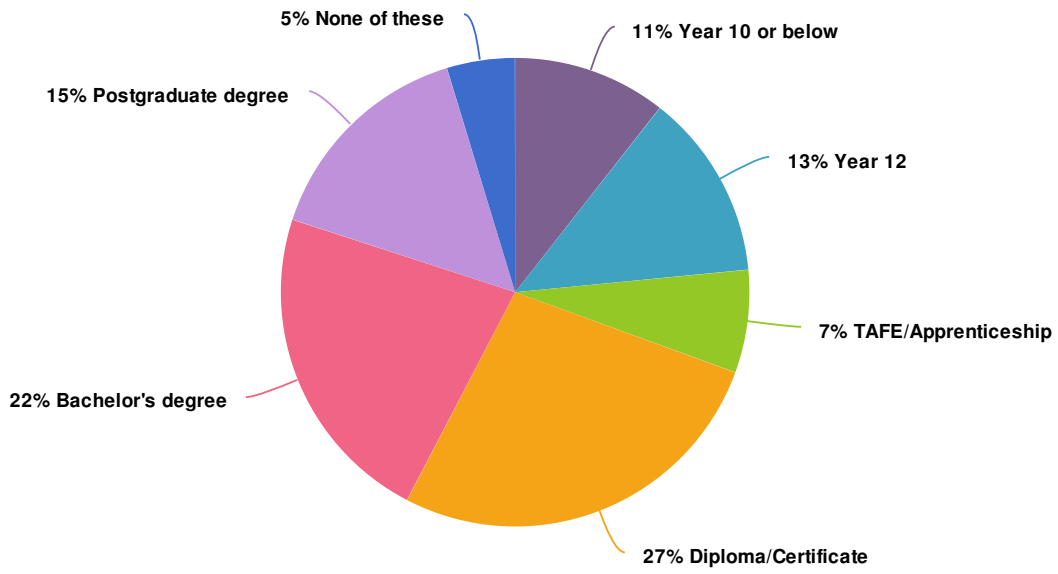
25. How many employees does the business have?



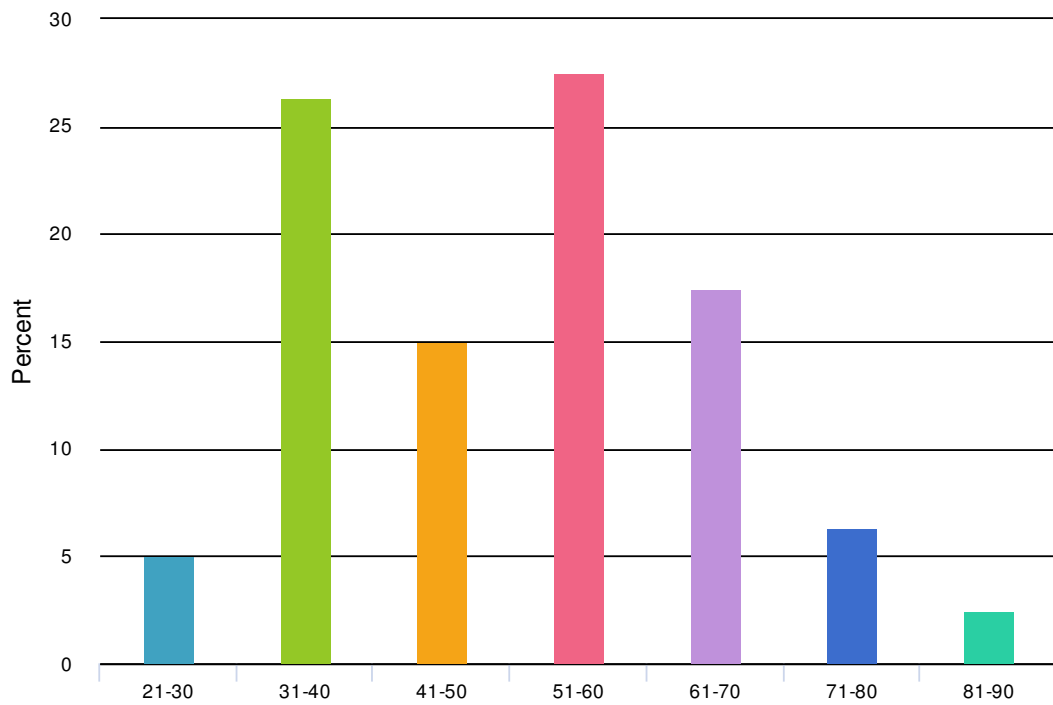
26. What sort of market do your products go into? (select all that are relevant)



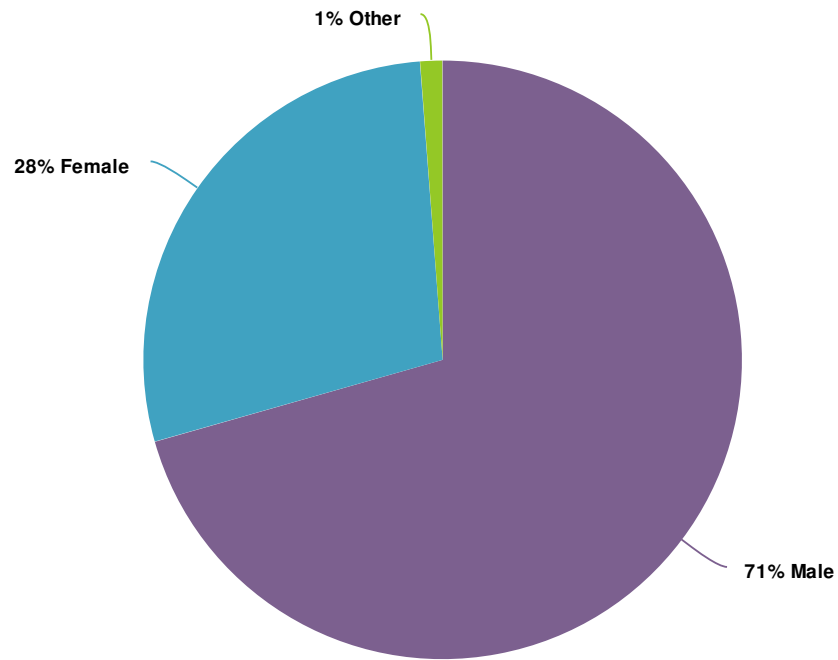
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)

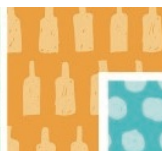
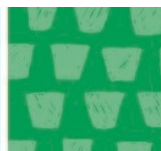


32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 13



TasAgFuture Survey Sector Report: Tree, vine or berry crops

This report provides a basic summary of the 70 responses of individuals who selected *tree, vine or berry crops* as their *main* business. A total of 630 individuals participated in the survey. More reports showing data from different regions or sector are available at utas.edu.au/tia/tasagfuture.

Full analysis of the results from the Survey along with TasAgFuture's 100 interviews will be available online in early 2019.

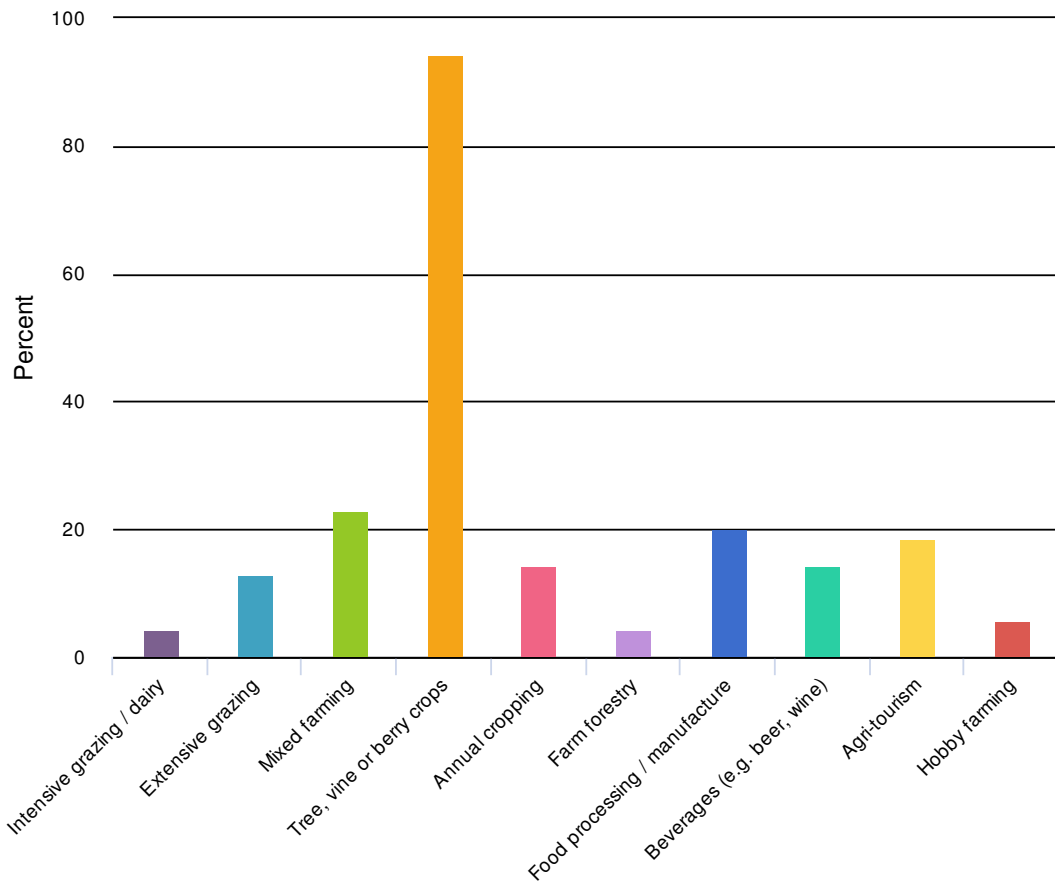
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

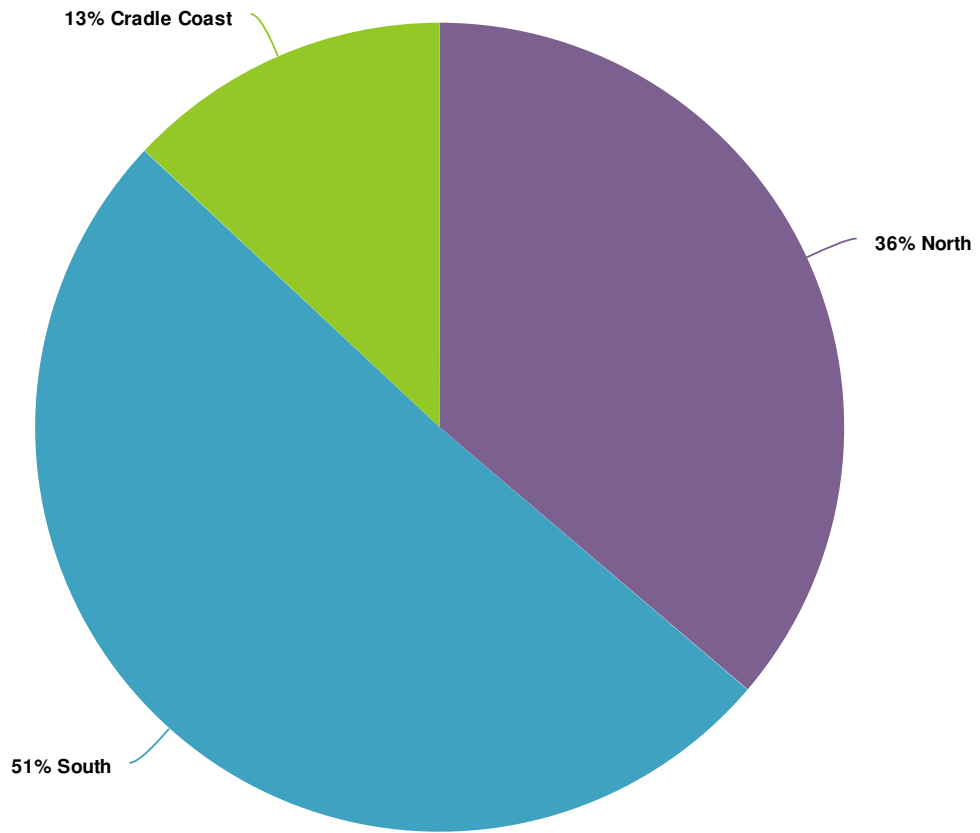
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

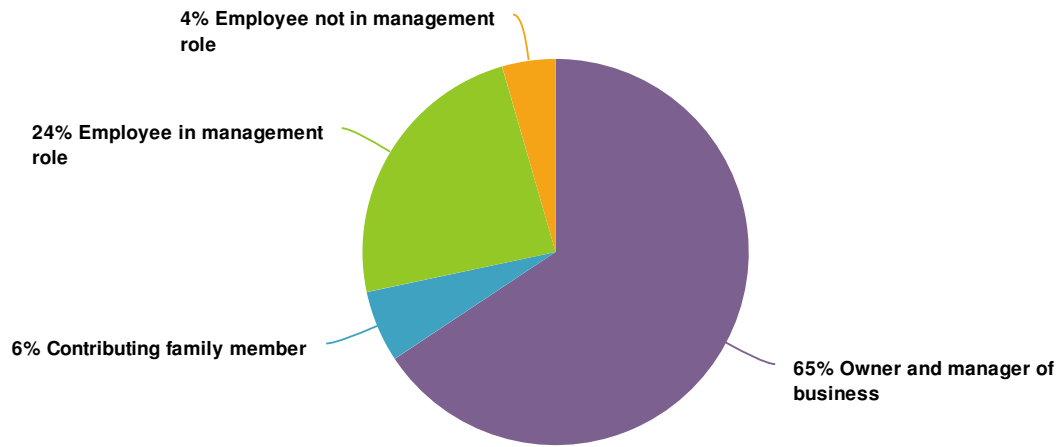
2. Which of the following are included in your business or work? (select all that are relevant)



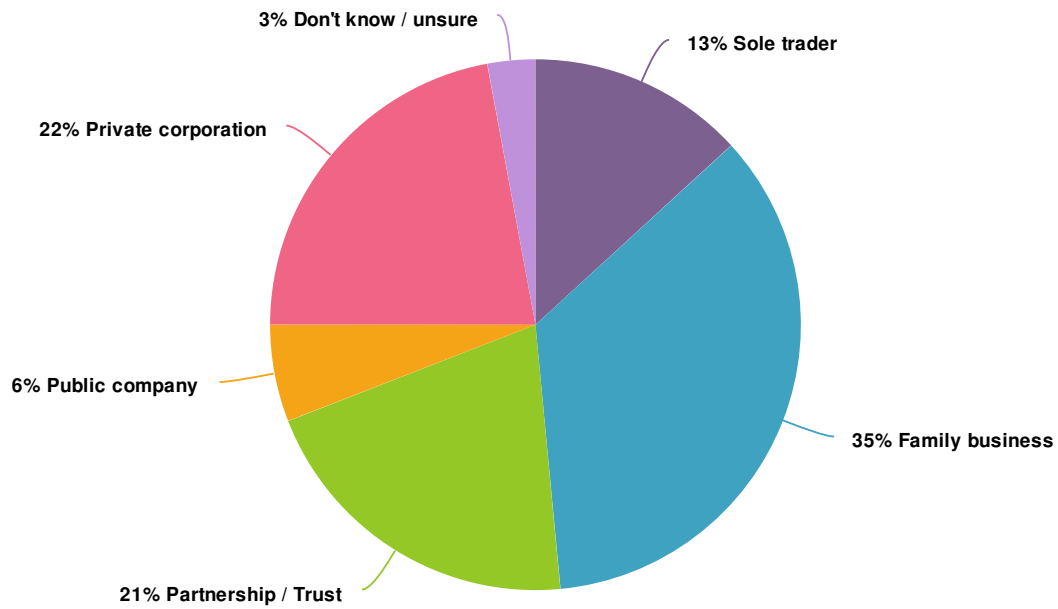
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

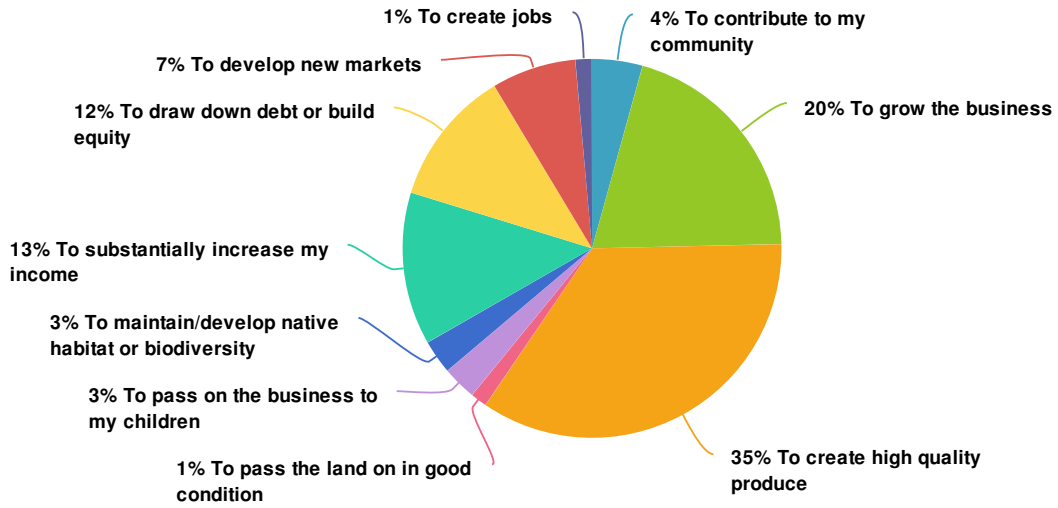


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	40.6%	39.1%	18.8%	0.0%	1.4%	69
To develop new markets Row %	30.4%	55.1%	11.6%	2.9%	0.0%	69
To substantially increase my income Row %	34.8%	42.4%	19.7%	3.0%	0.0%	66
To draw down debt or build equity Row %	43.9%	30.3%	19.7%	3.0%	3.0%	66

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	85.7%	14.3%	0.0%	0.0%	0.0%	70
To pass on the business to my children Row %	21.6%	21.6%	41.2%	9.8%	5.9%	51
To create jobs Row %	20.3%	40.6%	27.5%	11.6%	0.0%	69
To contribute to my community Row %	30.0%	54.3%	15.7%	0.0%	0.0%	70
To maintain/develop native habitat or biodiversity Row %	26.1%	42.0%	24.6%	5.8%	1.4%	69
To look after the land Row %	61.4%	35.7%	1.4%	1.4%	0.0%	70
To reduce environmental impacts of the business Row %	35.7%	47.1%	11.4%	5.7%	0.0%	70
To pass the land on in good condition Row %	53.6%	39.1%	4.3%	2.9%	0.0%	69
Totals Total Responses						70

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	26.1%	33.3%	29.0%	10.1%	1.4%	69
Making high profits or being well-paid Row %	15.9%	59.4%	18.8%	4.3%	1.4%	69
Being able to stay on the farm / in this place Row %	41.5%	33.8%	23.1%	0.0%	1.5%	65

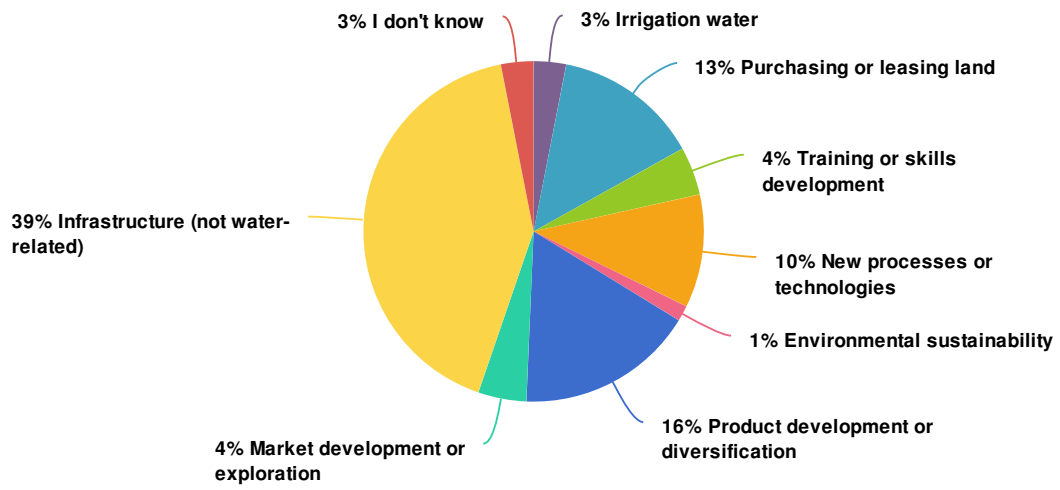
377

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	23.9%	56.7%	16.4%	3.0%	0.0%	67
Creating high quality produce / products Row %	77.1%	21.4%	1.4%	0.0%	0.0%	70
Doing work I enjoy Row %	45.6%	44.1%	10.3%	0.0%	0.0%	68
Being my own boss Row %	26.6%	51.6%	18.8%	3.1%	0.0%	64
Working outdoors Row %	20.6%	54.4%	22.1%	2.9%	0.0%	68
Having a lifestyle I enjoy Row %	42.6%	52.9%	2.9%	1.5%	0.0%	68
Totals Total Responses						70

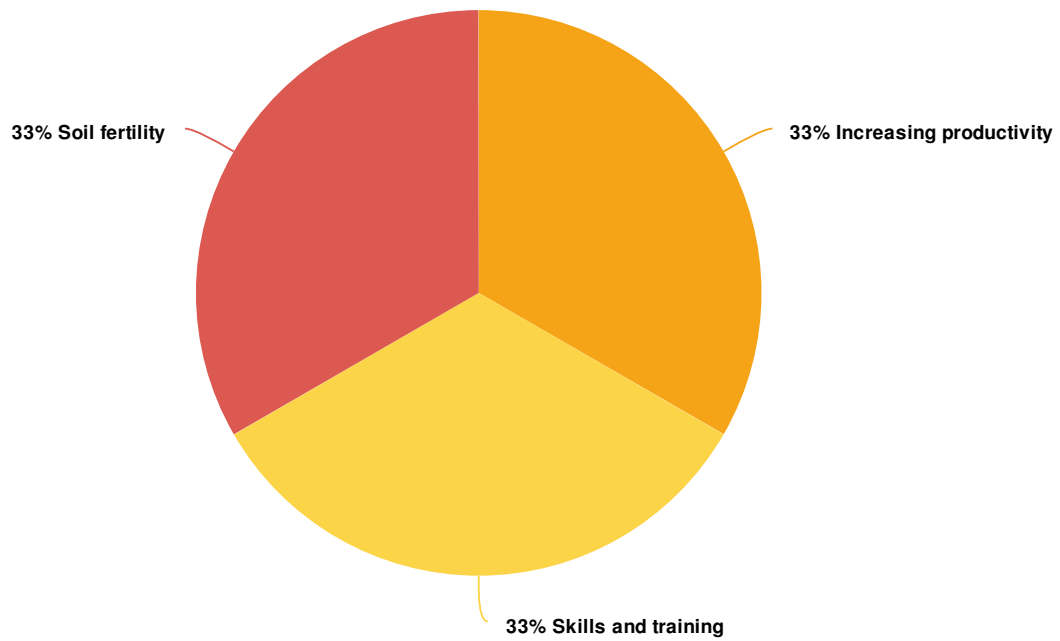
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	30.3%	57.6%	10.6%	1.5%	0.0%	66
I plan carefully before taking action Row %	29.9%	59.7%	7.5%	3.0%	0.0%	67
I spend time thinking about the future of the business Row %	46.4%	52.2%	1.4%	0.0%	0.0%	69
My actions are guided by what I've learnt from experience Row %	46.3%	49.3%	4.5%	0.0%	0.0%	67
I try to follow industry best practice Row %	37.3%	47.8%	10.4%	4.5%	0.0%	67
I often go with my gut feeling when making big decisions Row %	13.4%	46.3%	22.4%	14.9%	3.0%	67
I try new ways of doing things Row %	33.3%	55.1%	11.6%	0.0%	0.0%	69
I take measured risks Row %	25.0%	66.2%	1.5%	5.9%	1.5%	68
I invest time to learn new things Row %	34.8%	59.4%	5.8%	0.0%	0.0%	69
Totals Total Responses						69

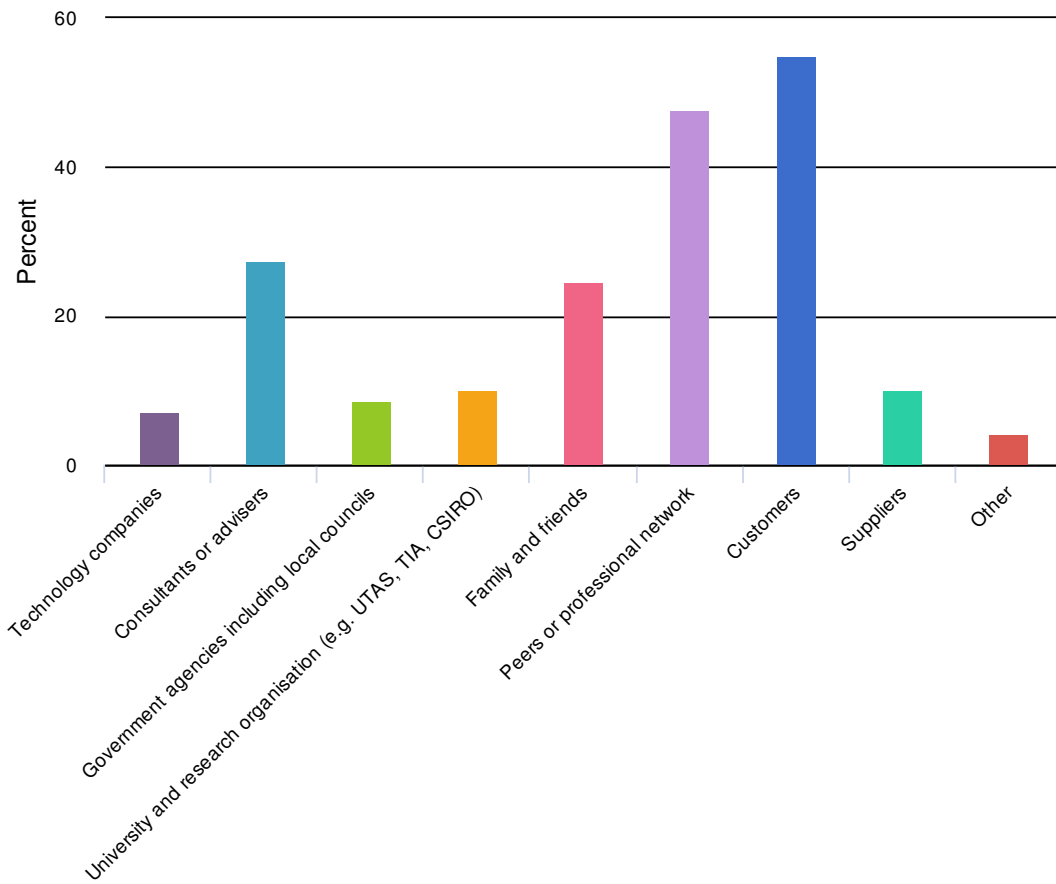
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



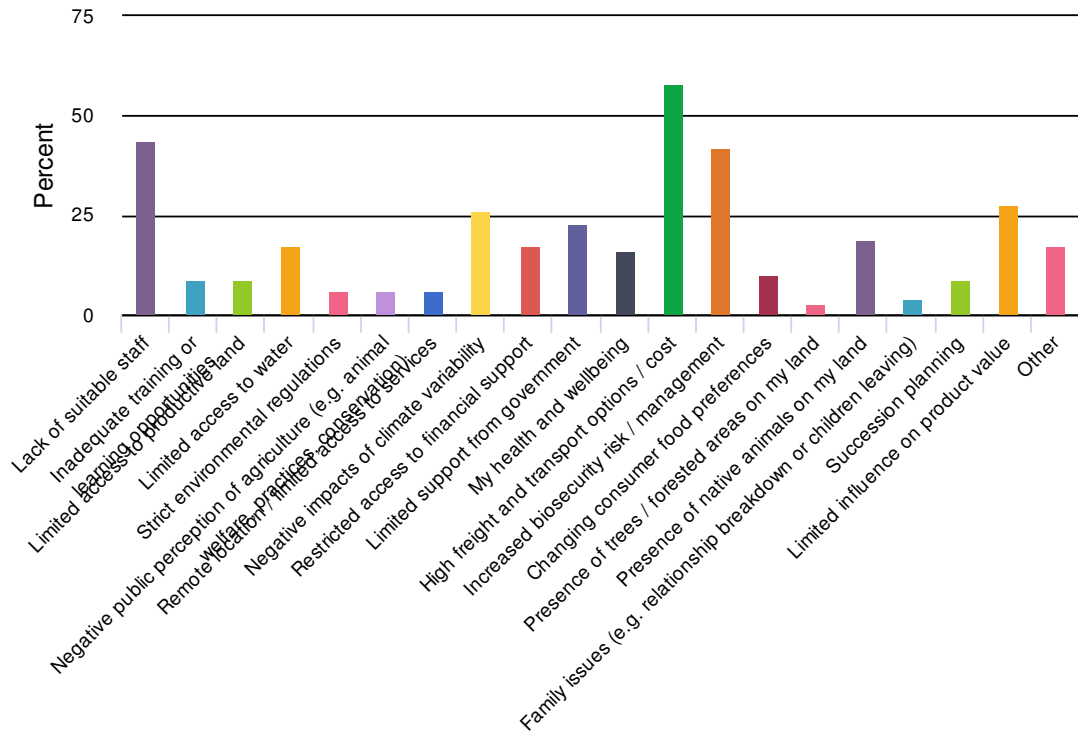
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



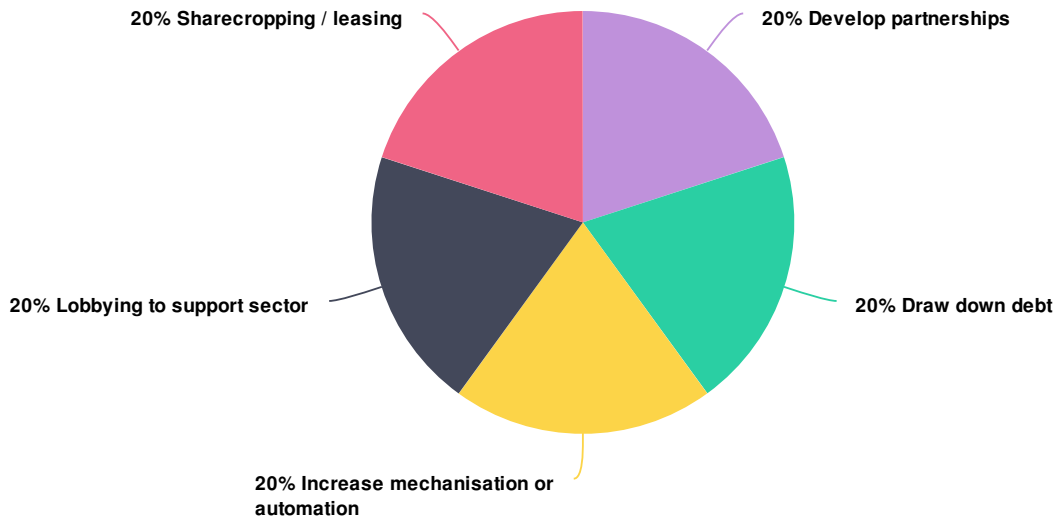
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	28.6%	45.7%	17.1%	1.4%	2.9%	4.3%	70
I often work alongside my neighbours or peers without expecting any financial return Row %	20.0%	42.9%	17.1%	5.7%	0.0%	14.3%	70
My social connections enable me to influence decisions in my region Row %	11.4%	28.6%	35.7%	8.6%	4.3%	11.4%	70
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	8.6%	24.3%	28.6%	17.1%	5.7%	15.7%	70
Totals Total Responses							70

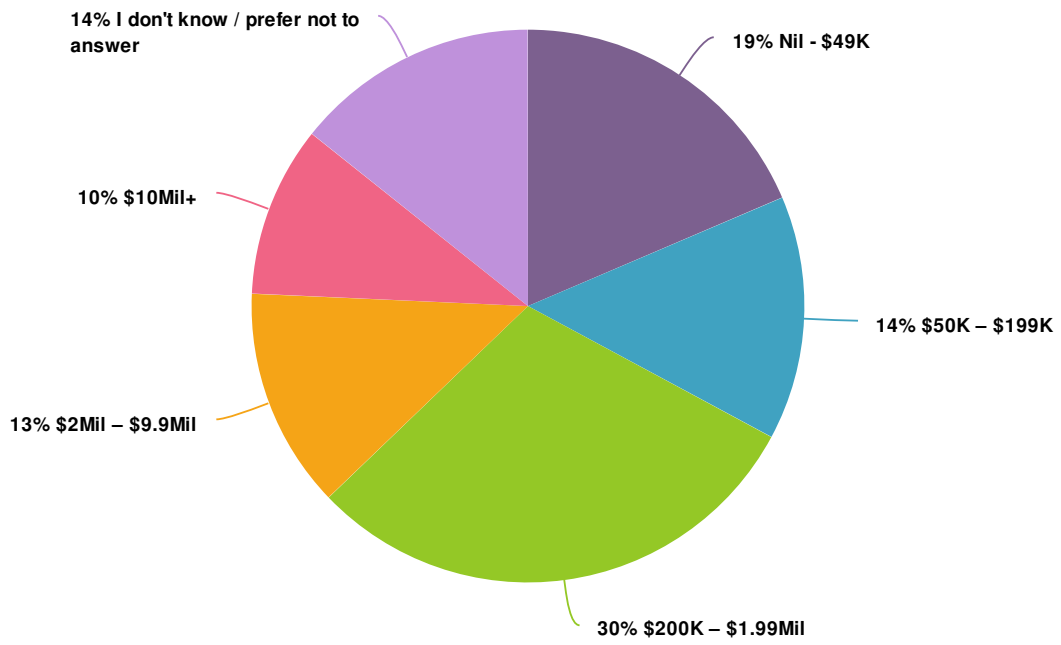
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	18.5%	30.8%	29.2%	20.0%	1.5%	65
Expand current operations Row %	31.4%	35.7%	17.1%	14.3%	1.4%	70
Develop new products Row %	20.9%	44.8%	13.4%	17.9%	3.0%	67
Increase liquid assets Row %	3.1%	25.0%	40.6%	23.4%	7.8%	64
Sell the business Row %	6.6%	6.6%	26.2%	34.4%	26.2%	61
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	23.9%	26.9%	29.9%	16.4%	3.0%	67
Explore new markets for products Row %	33.3%	49.3%	8.7%	8.7%	0.0%	69
Invest in new technologies Row %	32.8%	40.3%	14.9%	11.9%	0.0%	67
Owners to retire soon Row %	9.7%	12.9%	17.7%	38.7%	21.0%	62
Diversify the business Row %	22.4%	31.3%	26.9%	19.4%	0.0%	67
Keep the business as it is now Row %	0.0%	33.3%	24.2%	31.8%	10.6%	66
Increase off-farm income (any income earned from work not related to the farm) Row %	15.5%	13.8%	22.4%	34.5%	13.8%	58
Totals Total Responses						70

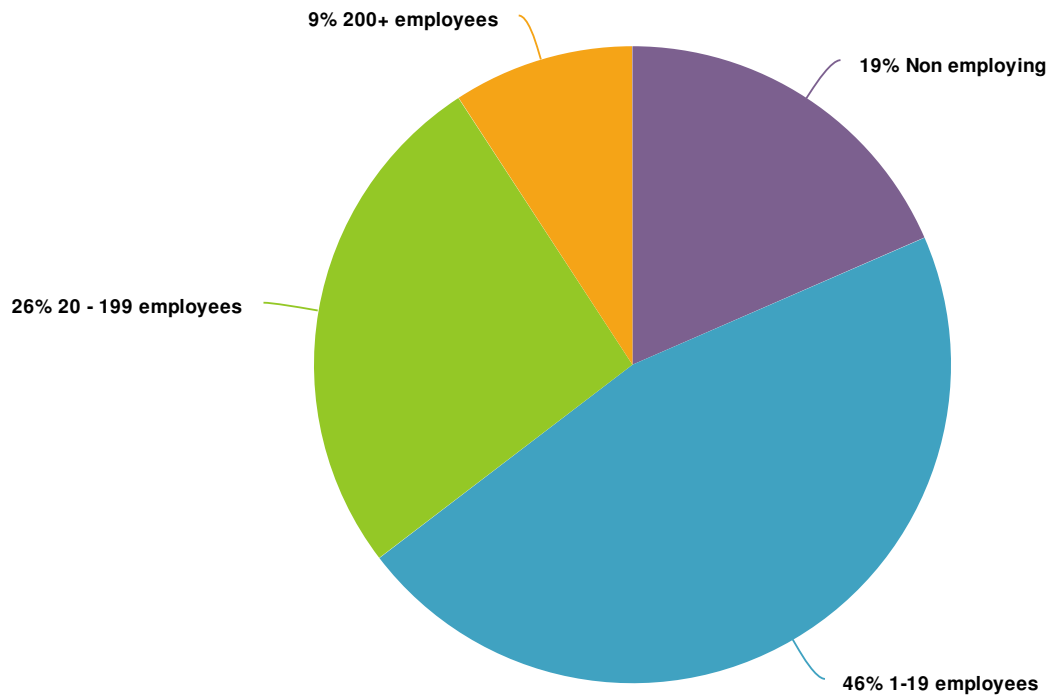
23. **Other strategies you are likely to adopt



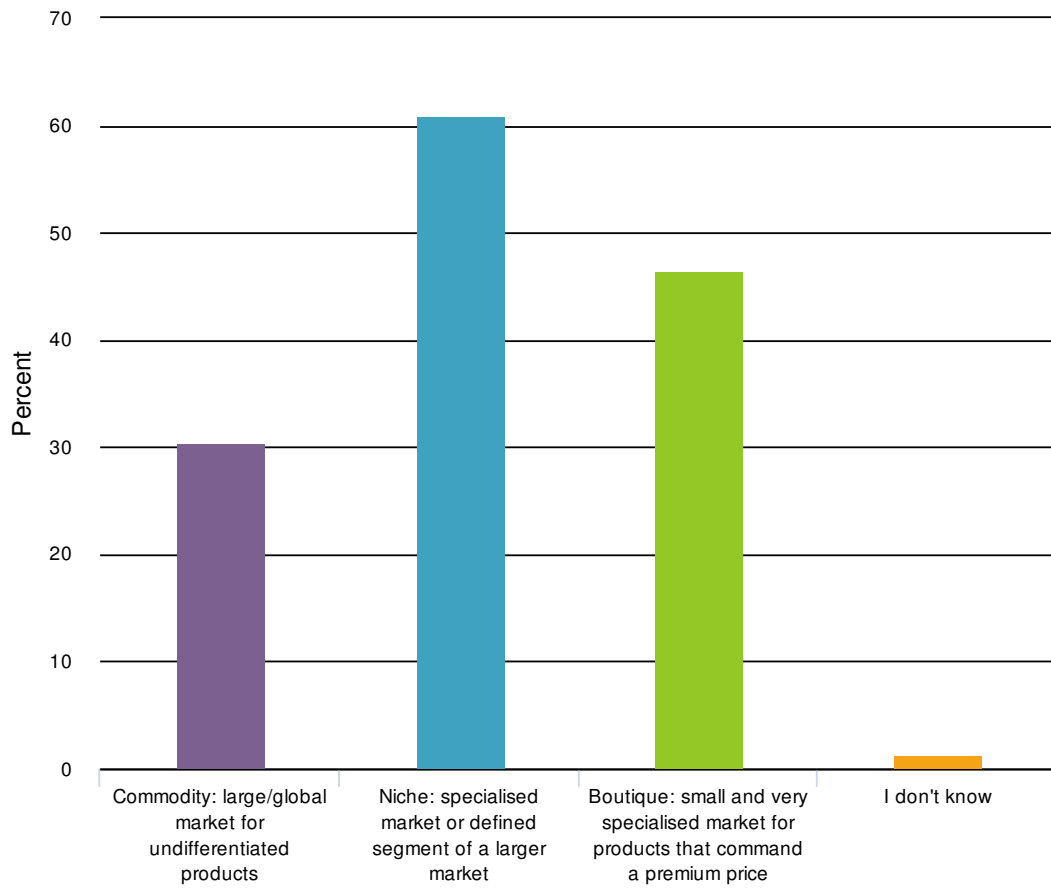
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



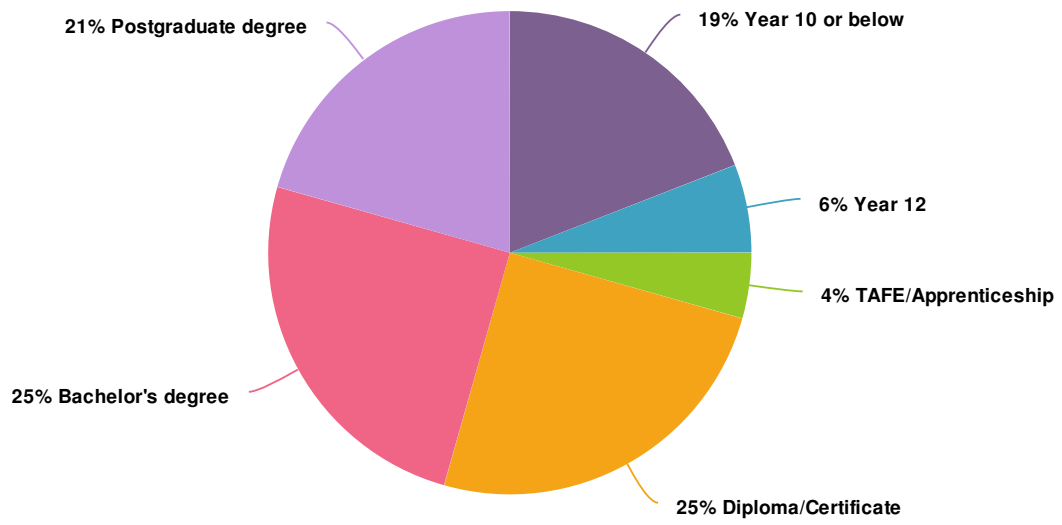
25. How many employees does the business have?



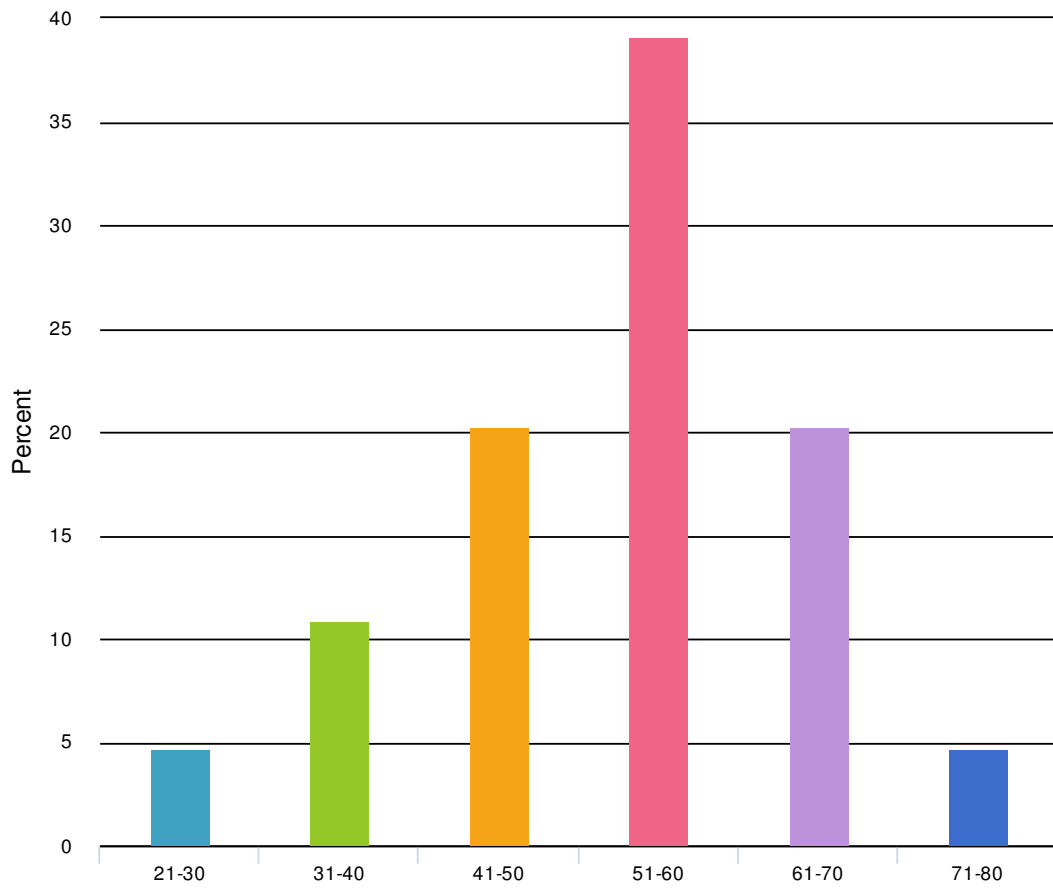
26. What sort of market do your products go into? (select all that are relevant)



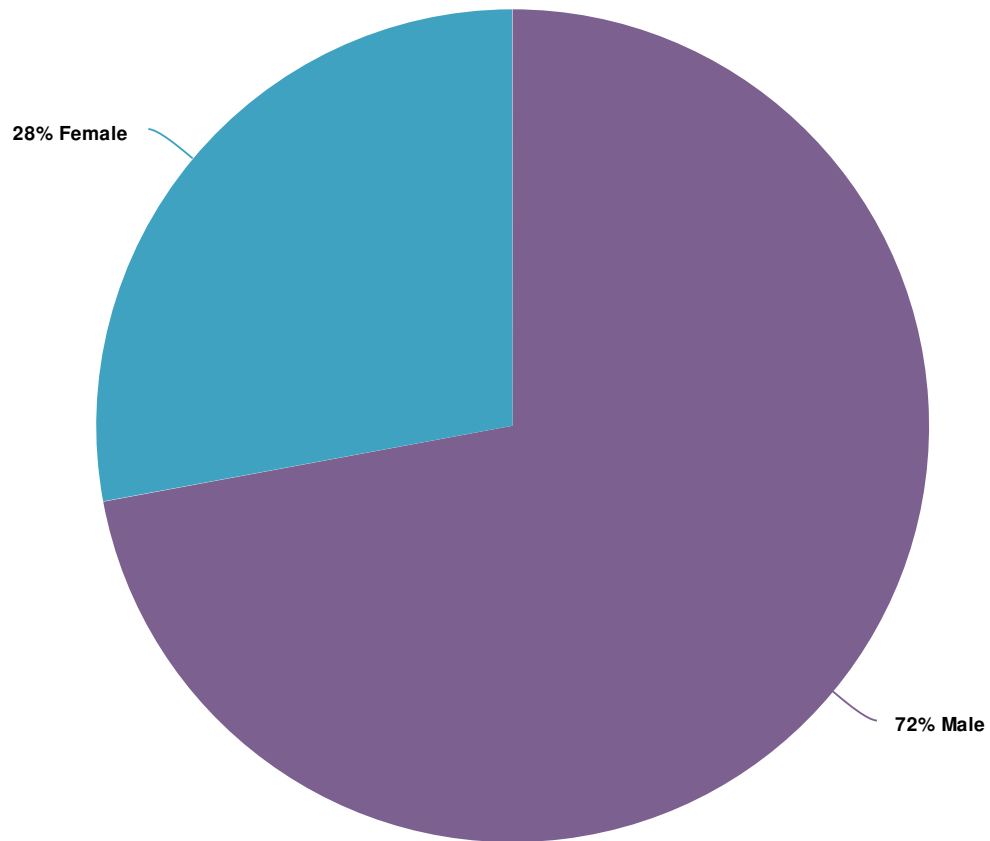
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 14



TasAgFuture Survey Sector Report: Annual cropping

This report provides a basic summary of the 53 responses of individuals who selected annual cropping as their main business. A total of 630 individuals participated in the survey, from across Tasmania. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019.

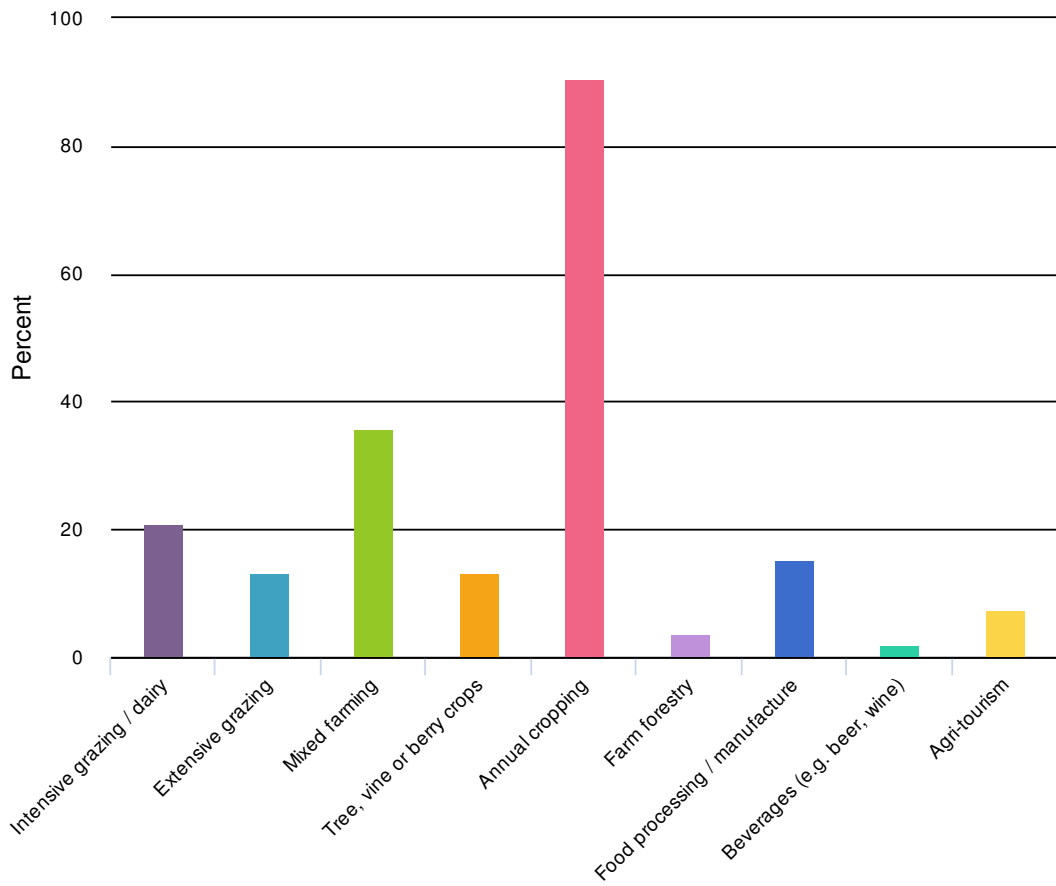
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

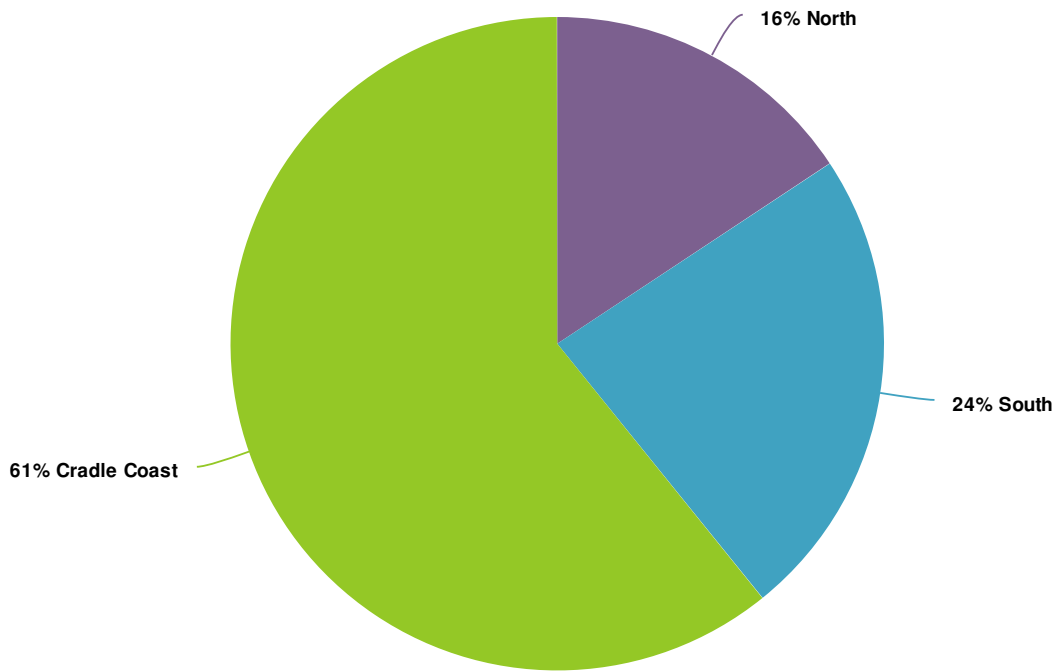
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

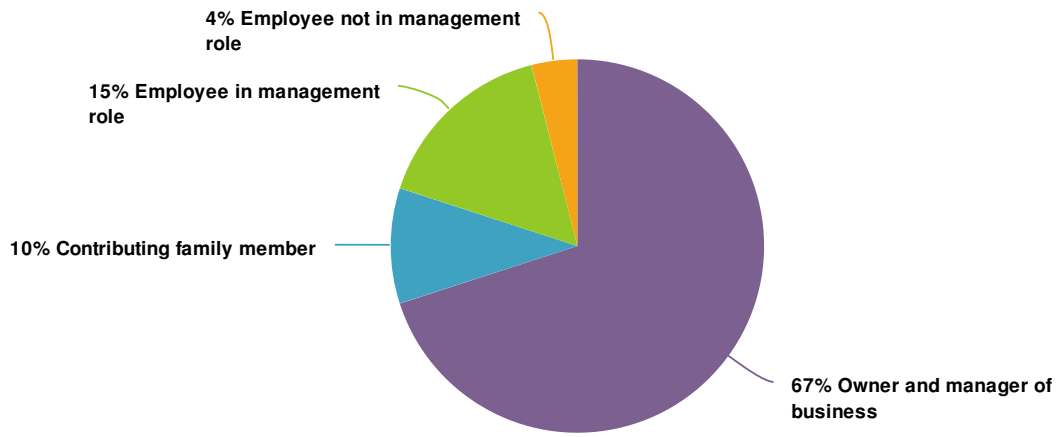
2. Which of the following are included in your business or work? (select all that are relevant)



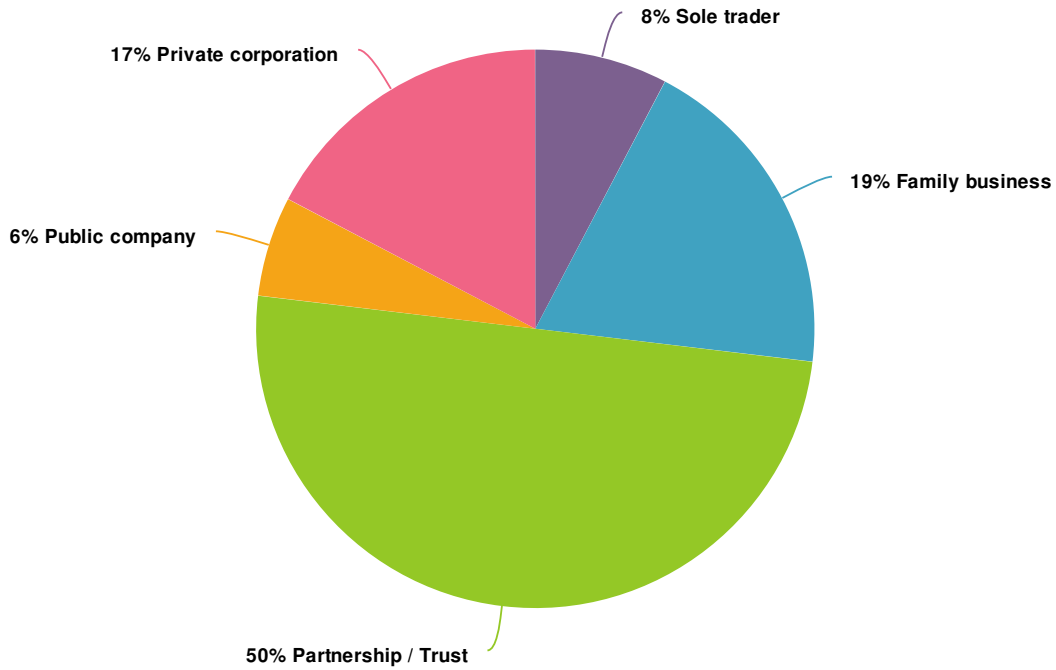
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?

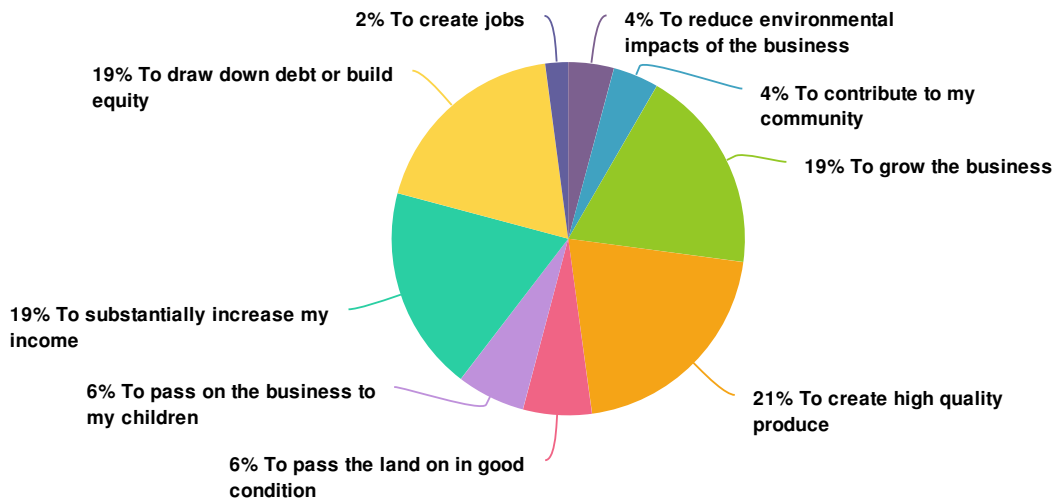


9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Row %	40.4%	38.5%	15.4%	3.8%	1.9%	52
To develop new markets Row %	38.0%	34.0%	24.0%	2.0%	2.0%	50
To substantially increase my income Row %	39.2%	43.1%	11.8%	3.9%	2.0%	51
To draw down debt or build equity Row %	51.1%	35.6%	8.9%	4.4%	0.0%	45

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To create high quality produce Row %	76.5%	21.6%	2.0%	0.0%	0.0%	51
To pass on the business to my children Row %	21.4%	19.0%	40.5%	16.7%	2.4%	42
To create jobs Row %	20.0%	46.0%	24.0%	6.0%	4.0%	50
To contribute to my community Row %	36.0%	48.0%	16.0%	0.0%	0.0%	50
To maintain/develop native habitat or biodiversity Row %	34.0%	38.0%	26.0%	2.0%	0.0%	50
To look after the land Row %	63.5%	34.6%	1.9%	0.0%	0.0%	52
To reduce environmental impacts of the business Row %	33.3%	51.0%	15.7%	0.0%	0.0%	51
To pass the land on in good condition Row %	60.0%	32.0%	8.0%	0.0%	0.0%	50
Totals Total Responses						52

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Row %	24.0%	44.0%	24.0%	8.0%	0.0%	50
Making high profits or being well-paid Row %	24.0%	46.0%	28.0%	2.0%	0.0%	50
Being able to stay on the farm / in this place Row %	34.8%	39.1%	26.1%	0.0%	0.0%	46

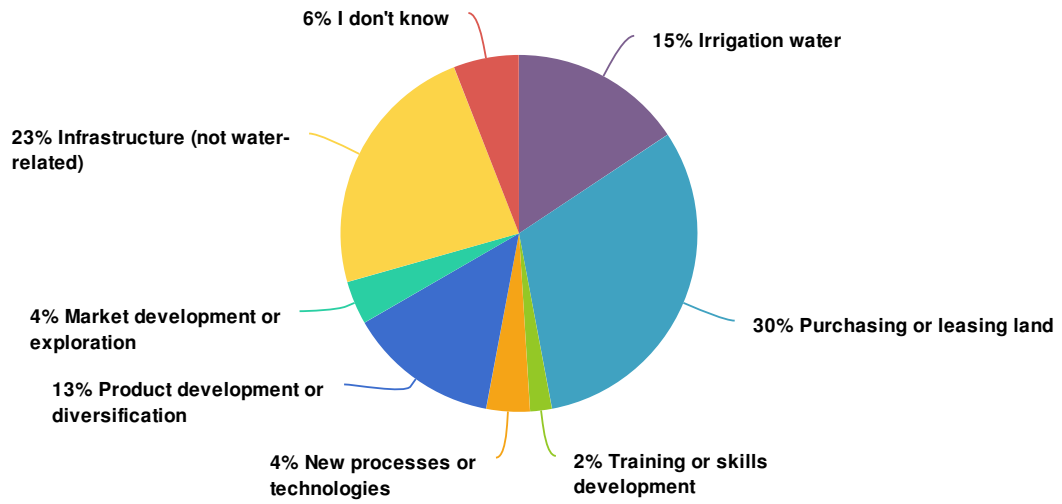
399

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Giving something back to the land / place Row %	35.3%	43.1%	19.6%	2.0%	0.0%	51
Creating high quality produce / products Row %	64.7%	33.3%	2.0%	0.0%	0.0%	51
Doing work I enjoy Row %	66.7%	31.4%	2.0%	0.0%	0.0%	51
Being my own boss Row %	27.7%	53.2%	17.0%	2.1%	0.0%	47
Working outdoors Row %	38.0%	44.0%	14.0%	4.0%	0.0%	50
Having a lifestyle I enjoy Row %	54.0%	38.0%	8.0%	0.0%	0.0%	50
Totals Total Responses						51

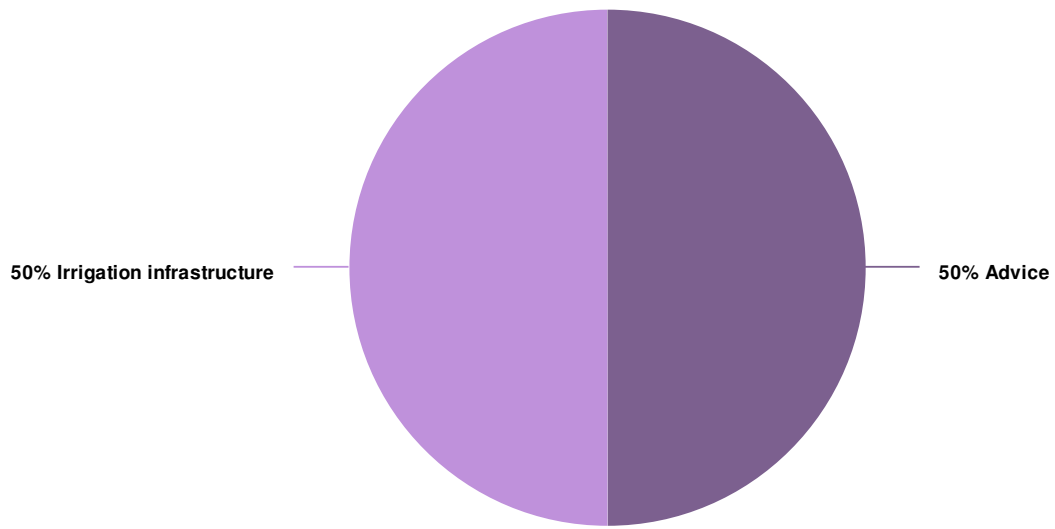
12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Row %	27.5%	62.7%	7.8%	0.0%	2.0%	51
I plan carefully before taking action Row %	32.1%	60.4%	7.5%	0.0%	0.0%	53
I spend time thinking about the future of the business Row %	55.8%	40.4%	1.9%	1.9%	0.0%	52
My actions are guided by what I've learnt from experience Row %	39.6%	50.9%	9.4%	0.0%	0.0%	53
I try to follow industry best practice Row %	37.7%	45.3%	15.1%	0.0%	1.9%	53
I often go with my gut feeling when making big decisions Row %	21.6%	35.3%	21.6%	15.7%	5.9%	51
I try new ways of doing things Row %	46.2%	36.5%	15.4%	1.9%	0.0%	52
I take measured risks Row %	32.0%	56.0%	10.0%	2.0%	0.0%	50
I invest time to learn new things Row %	41.5%	52.8%	5.7%	0.0%	0.0%	53
Totals Total Responses						53

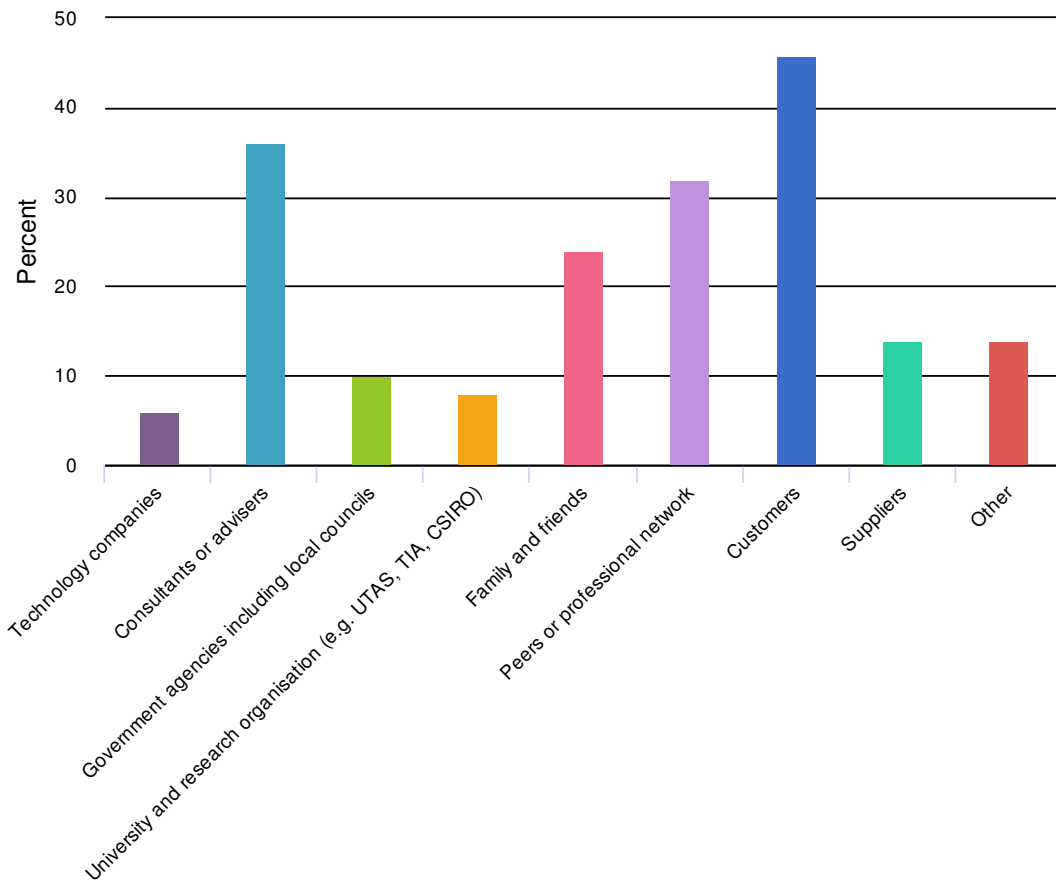
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



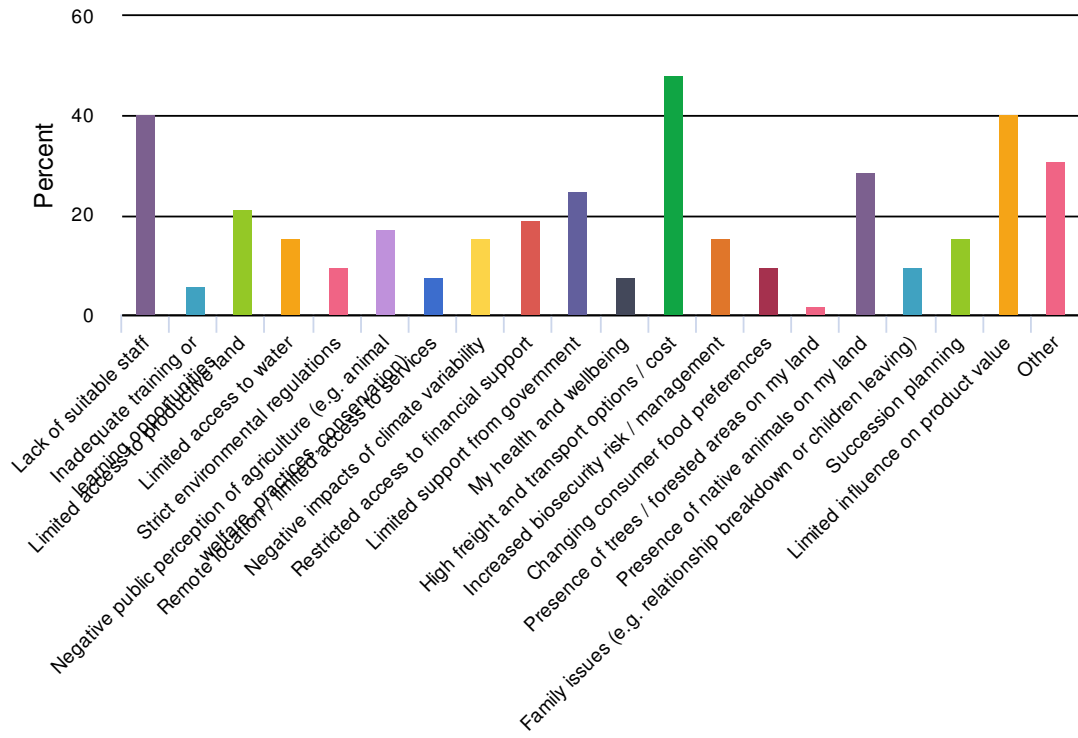
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



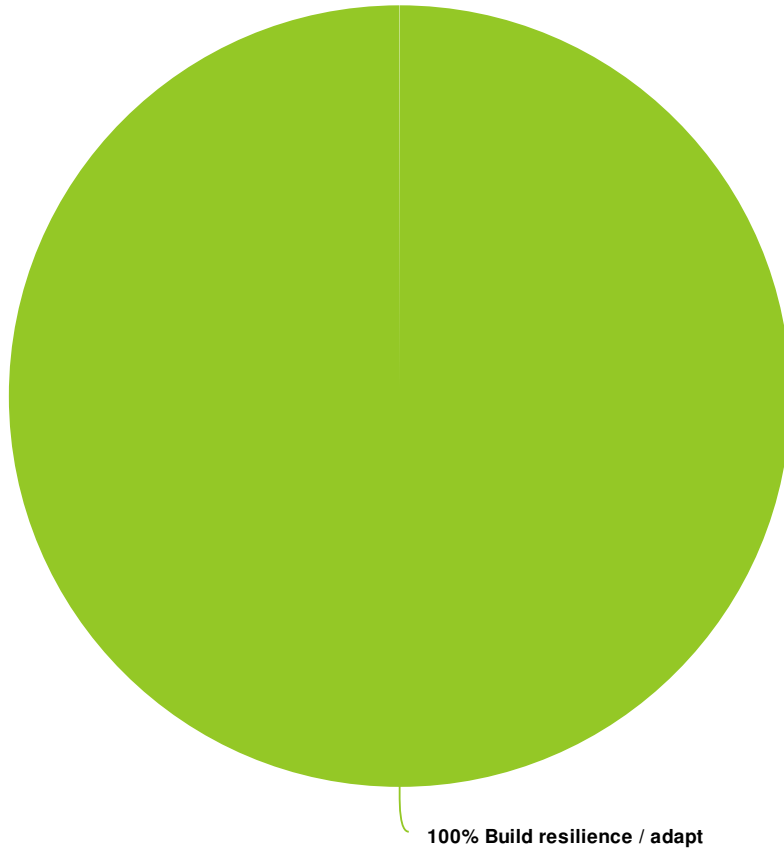
19. Please indicate how much you agree / disagree with the following statements.

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Row %	32.7%	46.2%	15.4%	1.9%	1.9%	1.9%	52
I often work alongside my neighbours or peers without expecting any financial return Row %	26.5%	44.9%	22.4%	2.0%	0.0%	4.1%	49
My social connections enable me to influence decisions in my region Row %	12.2%	26.5%	40.8%	10.2%	4.1%	6.1%	49
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Row %	34.0%	24.0%	14.0%	22.0%	2.0%	4.0%	50
Totals Total Responses							52

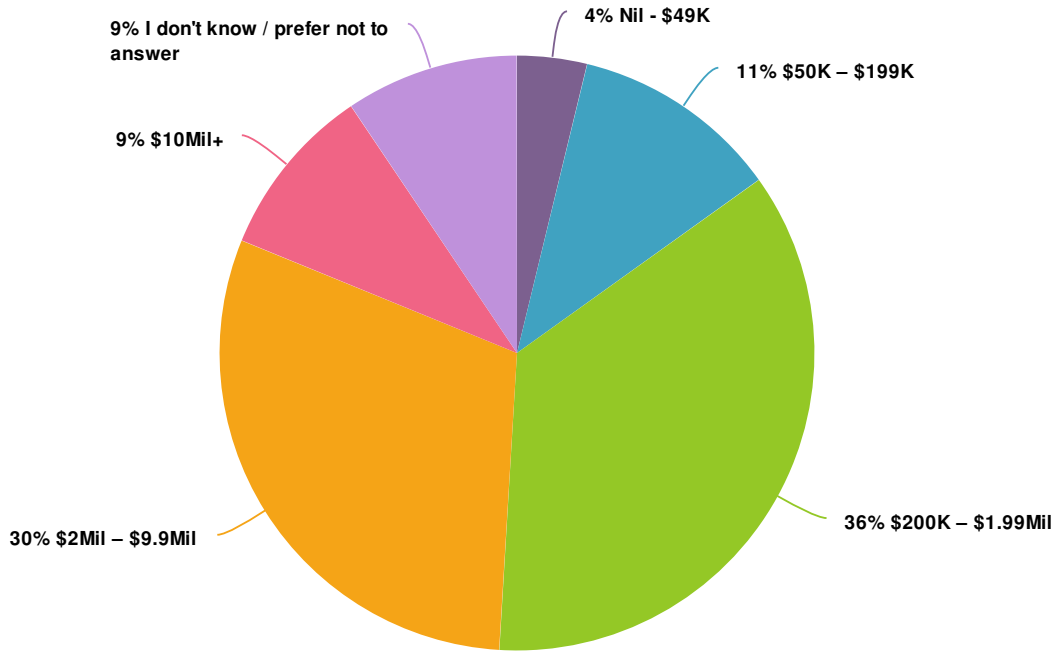
20. To prepare for the future, how likely is the business to adopt each of these strategies?

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development Row %	25.5%	45.1%	17.6%	9.8%	2.0%	51
Expand current operations Row %	26.9%	40.4%	19.2%	9.6%	3.8%	52
Develop new products Row %	12.2%	38.8%	22.4%	18.4%	8.2%	49
Increase liquid assets Row %	13.0%	28.3%	37.0%	17.4%	4.3%	46
Sell the business Row %	6.1%	10.2%	22.4%	28.6%	32.7%	49
Integrate vertically (business spans more than one step of production, processing, marketing and retail) Row %	22.4%	26.5%	14.3%	20.4%	16.3%	49
Explore new markets for products Row %	34.0%	28.0%	20.0%	14.0%	4.0%	50
Invest in new technologies Row %	33.3%	47.1%	9.8%	5.9%	3.9%	51
Owners to retire soon Row %	2.3%	20.5%	15.9%	34.1%	27.3%	44
Diversify the business Row %	15.7%	41.2%	25.5%	15.7%	2.0%	51
Keep the business as it is now Row %	2.0%	21.6%	19.6%	37.3%	19.6%	51
Increase off-farm income (any income earned from work not related to the farm) Row %	13.6%	25.0%	27.3%	20.5%	13.6%	44
Totals Total Responses						52

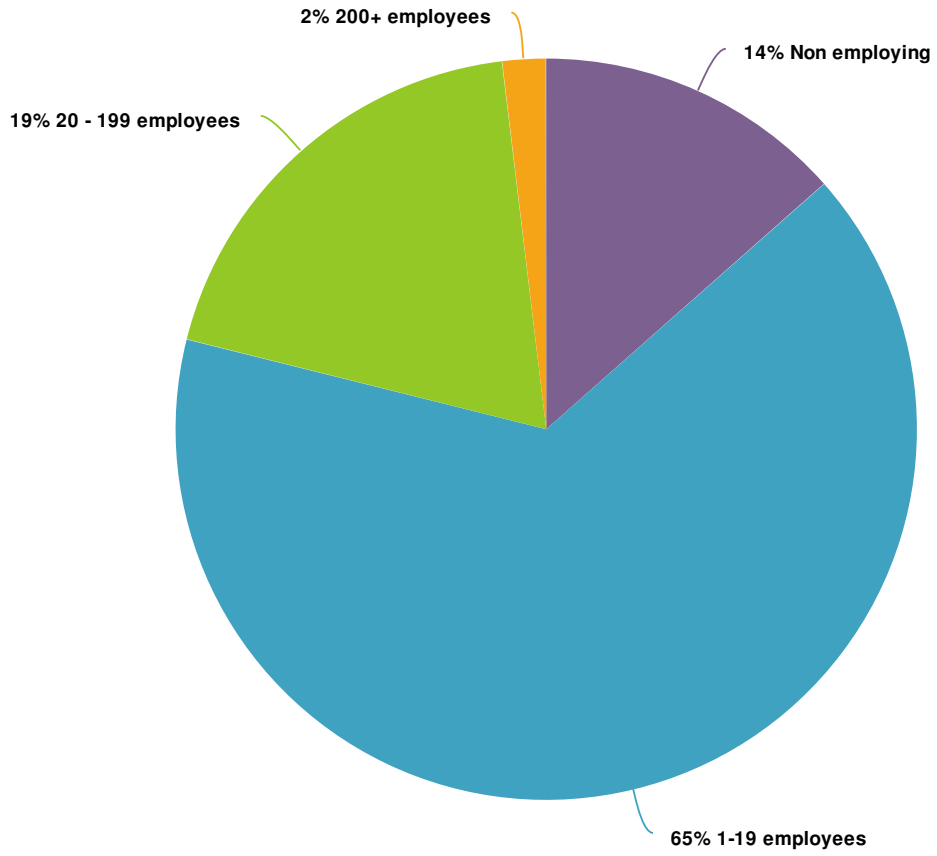
23. **Other strategies you are likely to adopt



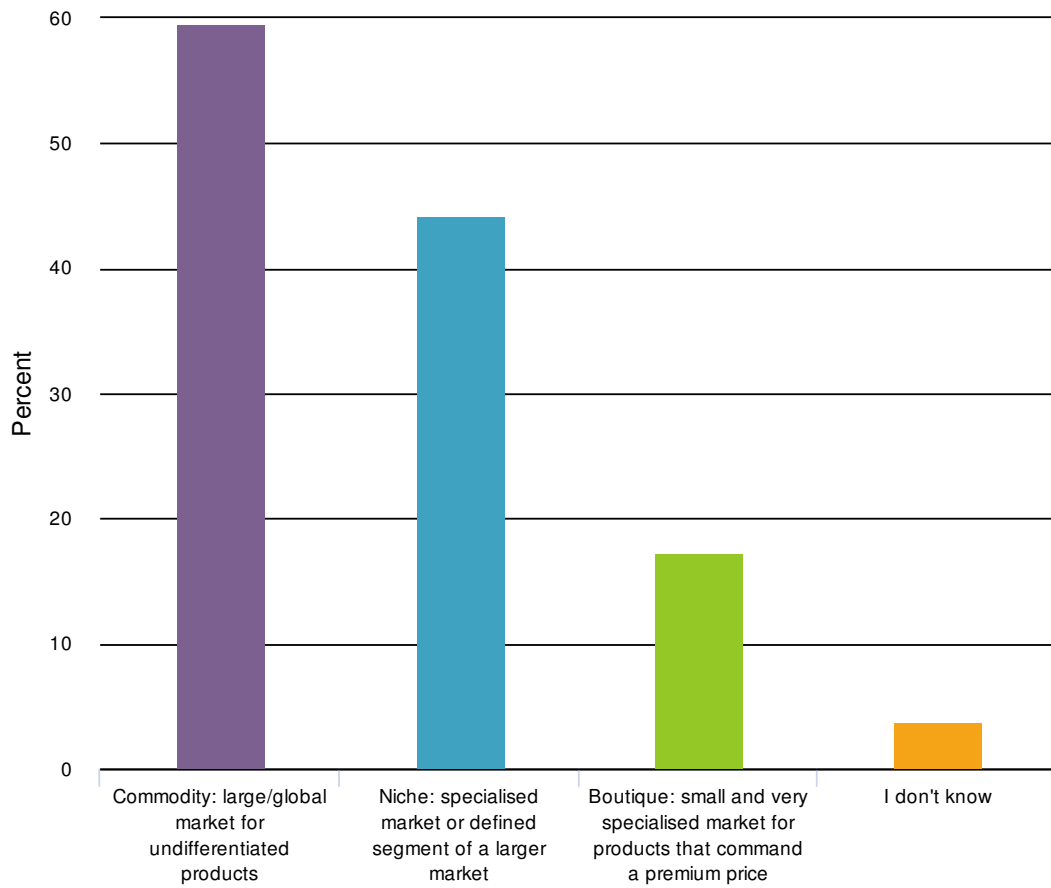
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



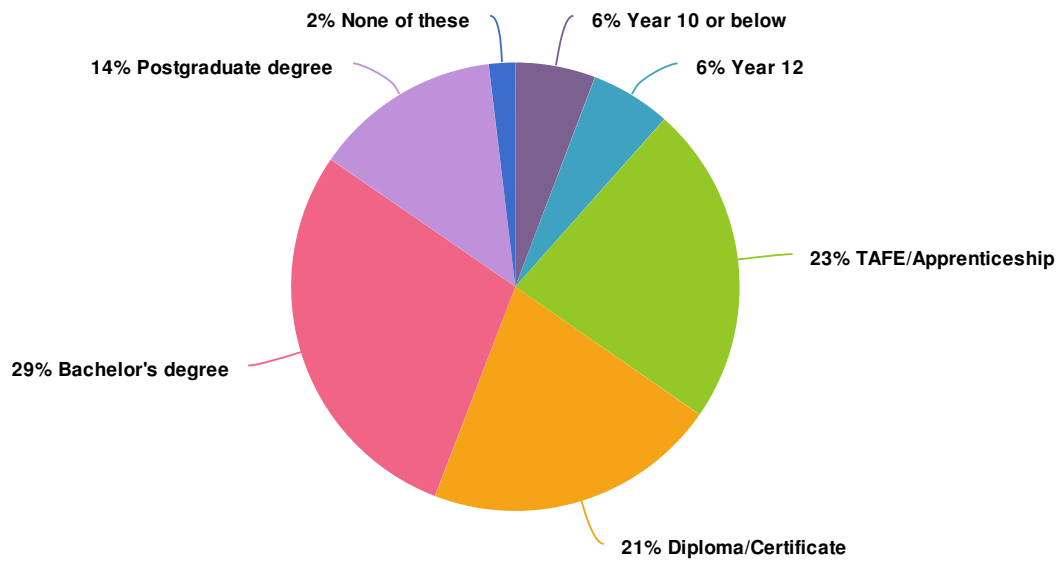
25. How many employees does the business have?



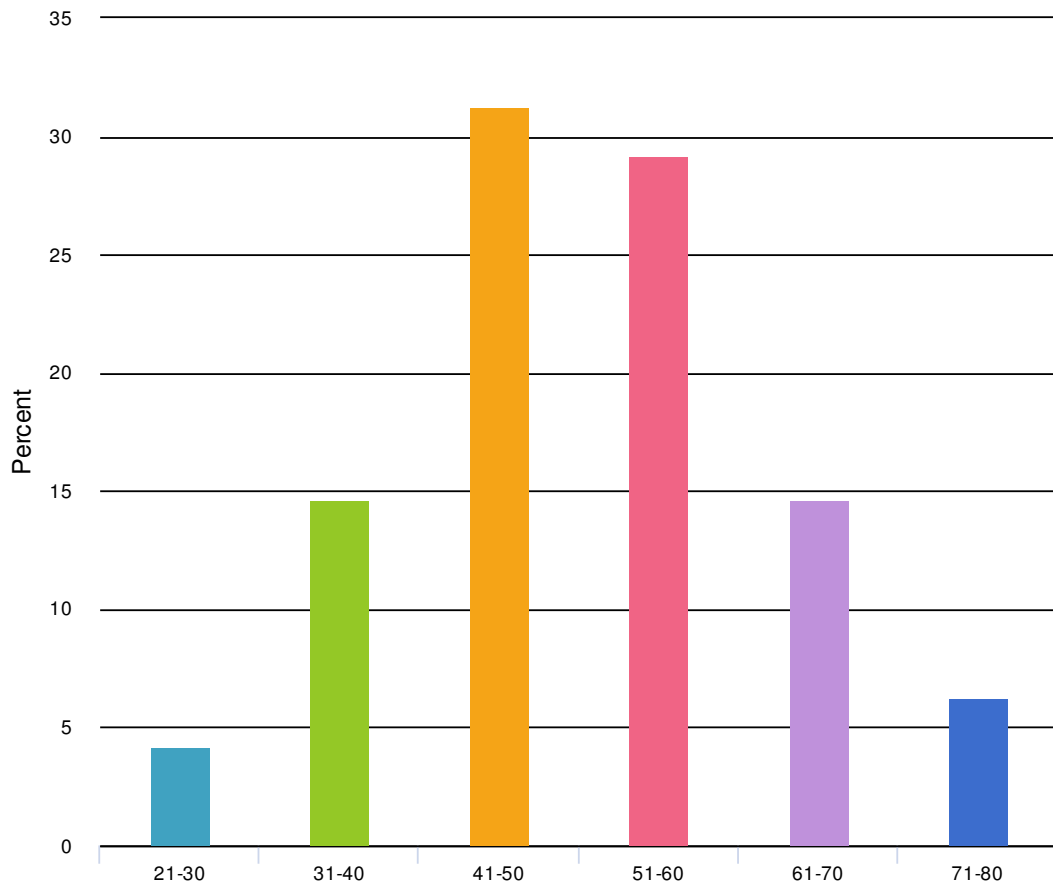
26. What sort of market do your products go into? (select all that are relevant)



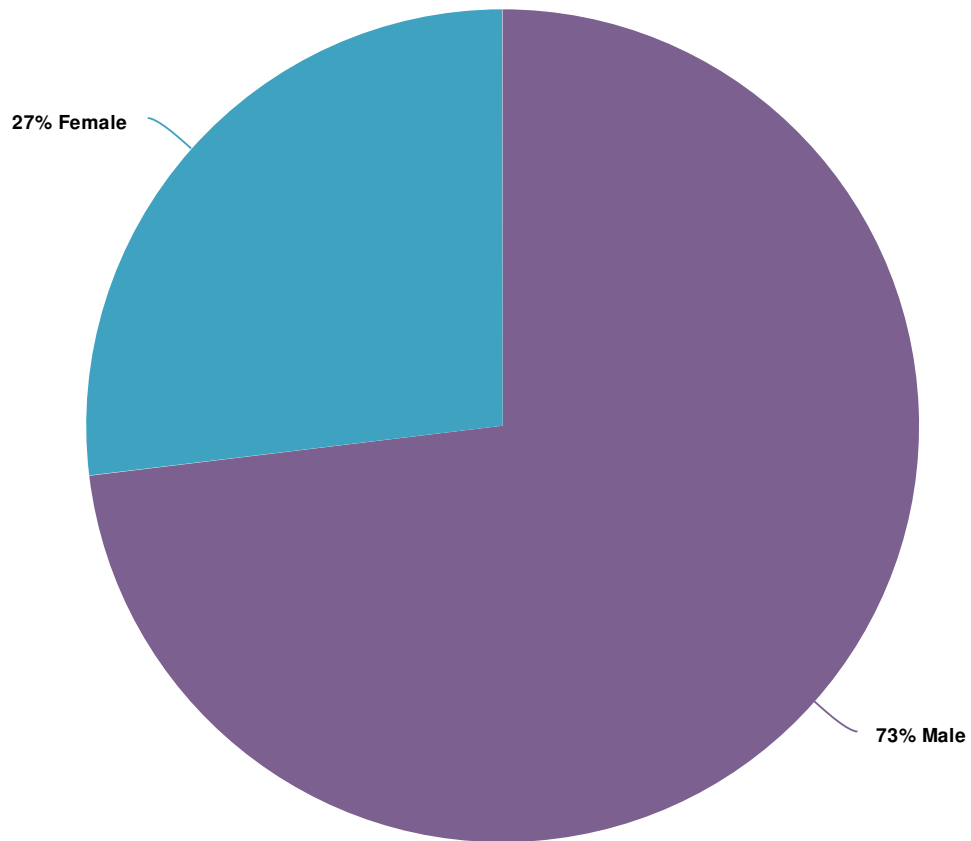
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



32. Your gender:



We hope you found this report informative. Additional reports summarising the data according to region and sector are available at utas.edu.au/tia/tasagfuture.

Appendix 15



TasAgFuture Survey Report: All respondents

This report provides a basic summary of all 630 responses of individuals who participated in the survey. Other reports showing data for specific regions and main agriculture or food business are available at utas.edu.au/tia/tasagfuture.

The final analysis of TasAgFuture survey data and the 100 in-depth interviews will be available on the TIA website in early 2019

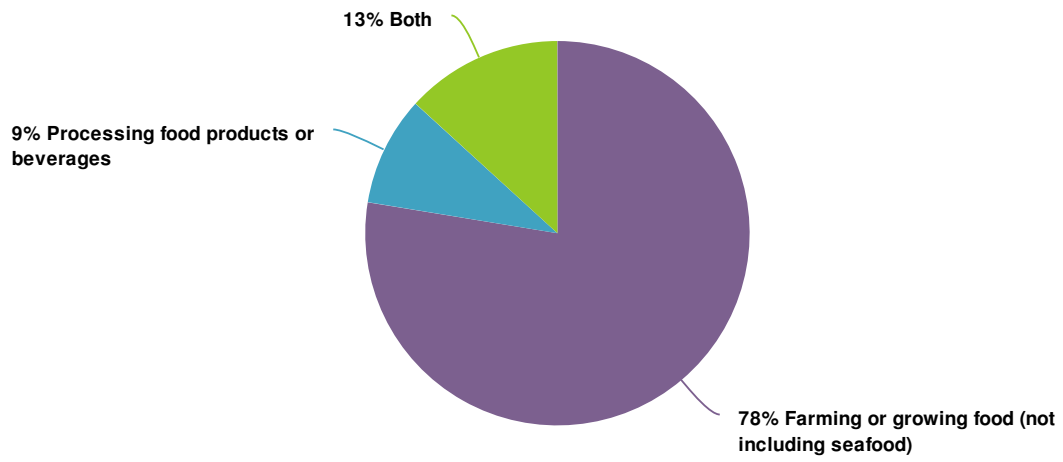
How to interpret the data contained in this report:

- Responses for each question have been summarised in a graph or data table.
- These graphs detail the percentage of individuals who responded to the relevant questions (excluding not applicable responses). It was not compulsory to answer all questions so the total number of responses is variable.
- You can access 'total responses' for each question by rolling your cursor over a specific part of any chart.
- Questions marked with ** summarise textual data that has been reclassified from questions with the "Other, please specify" option.
- In some cases, n/a responses and items with no responses have been removed for the purposes of this report.
- These preliminary results are based on raw data so should be interpreted with some caution.

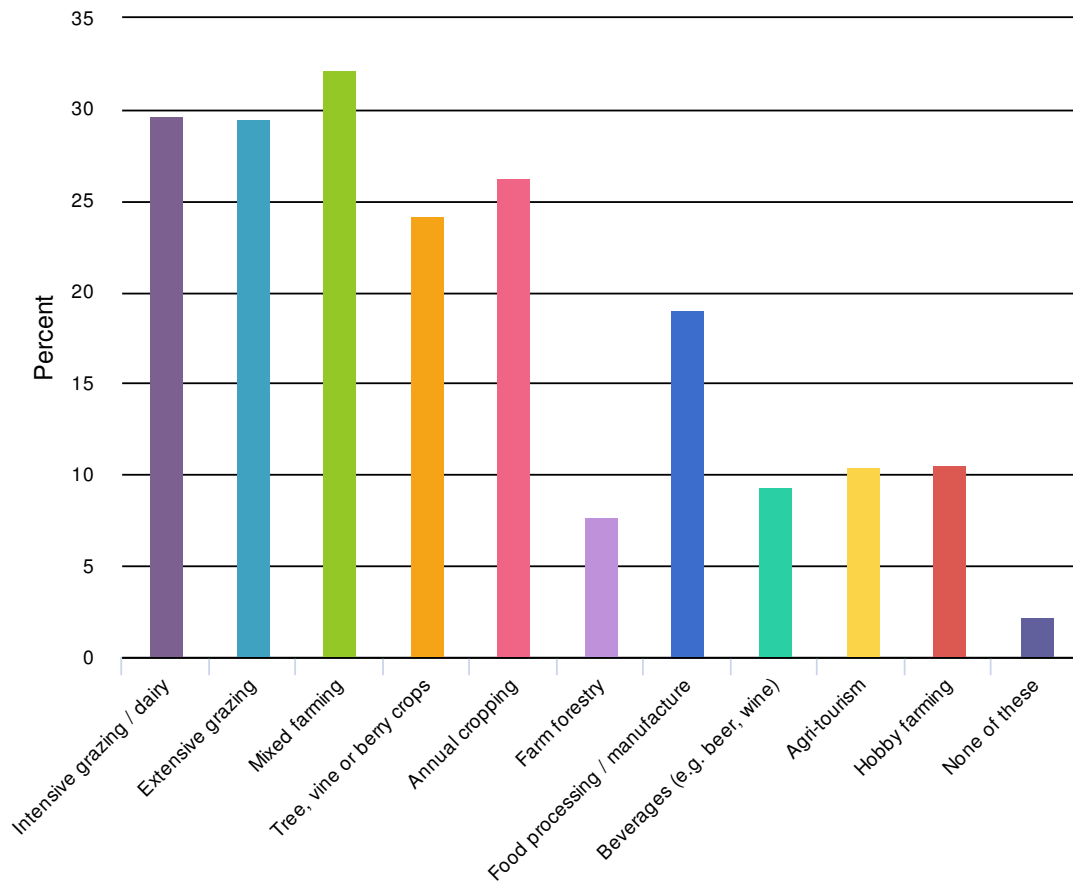
Some questions from the original survey have been omitted from this report in cases where the data was not relevant or was represented in a different question adequately.

Some questions have been added where data have been reclassified (e.g. postcodes became geographical region, year of birth became age cohorts). Question numbers in the report differ from the original survey.

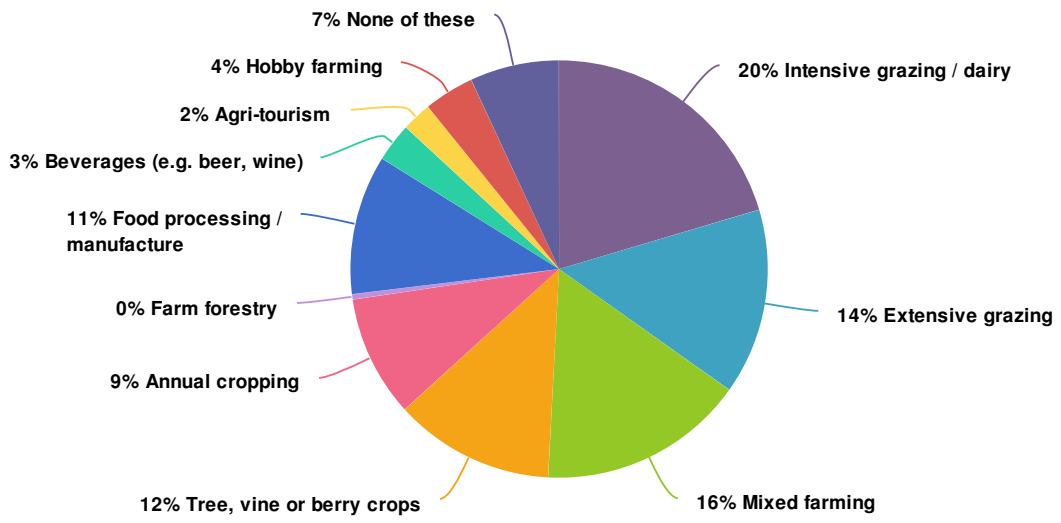
1. Do you work in, or own a business in the following sectors in Tasmania? (select all that are relevant)



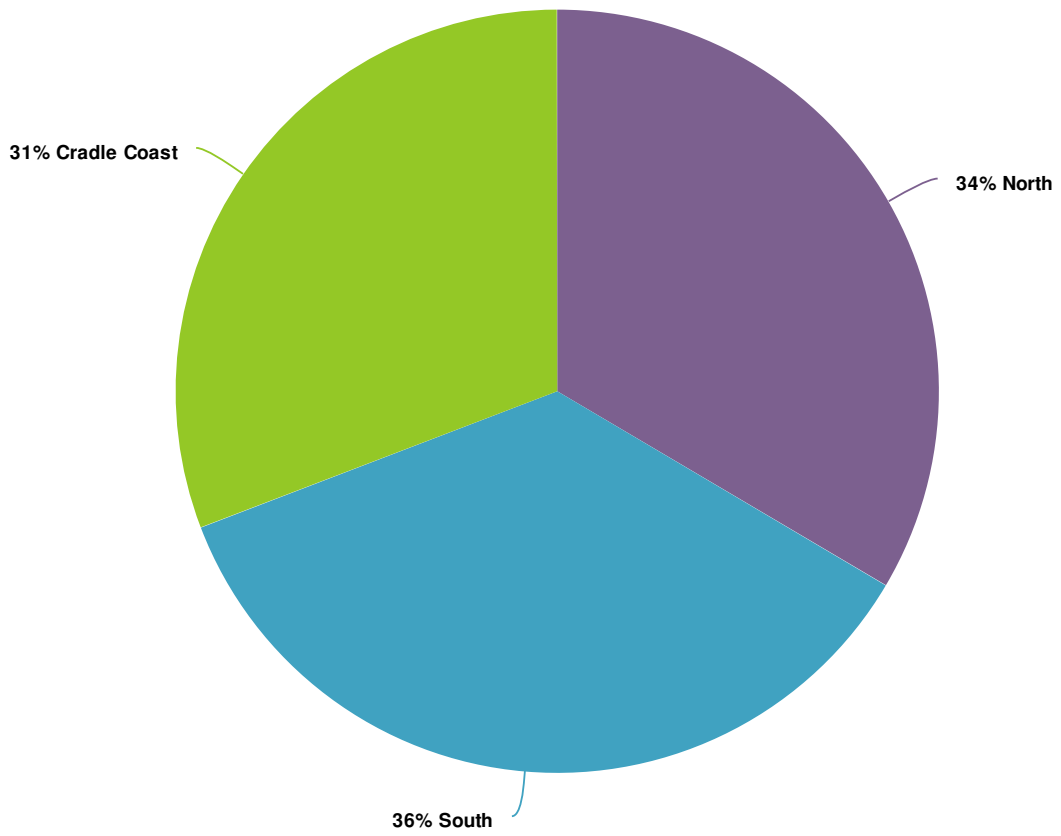
2. Which of the following are included in your business or work? (select all that are relevant)



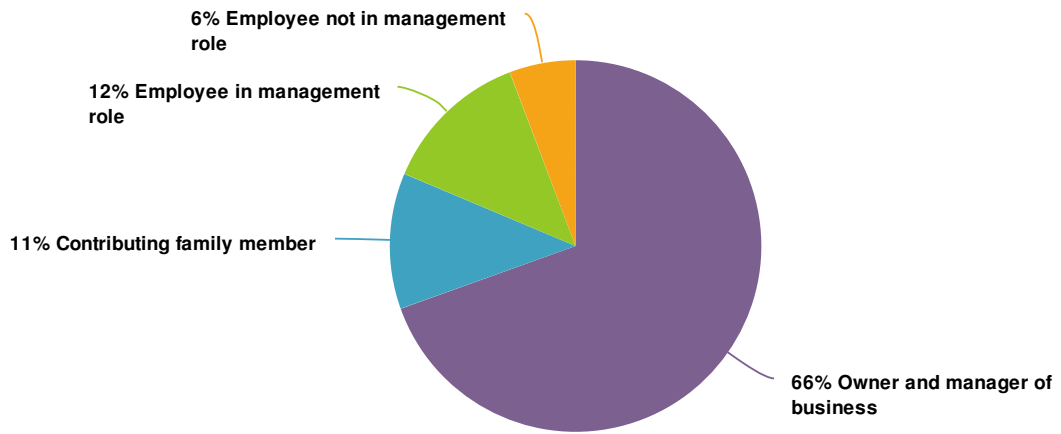
3. Which one of these is your main business or work? (select one)



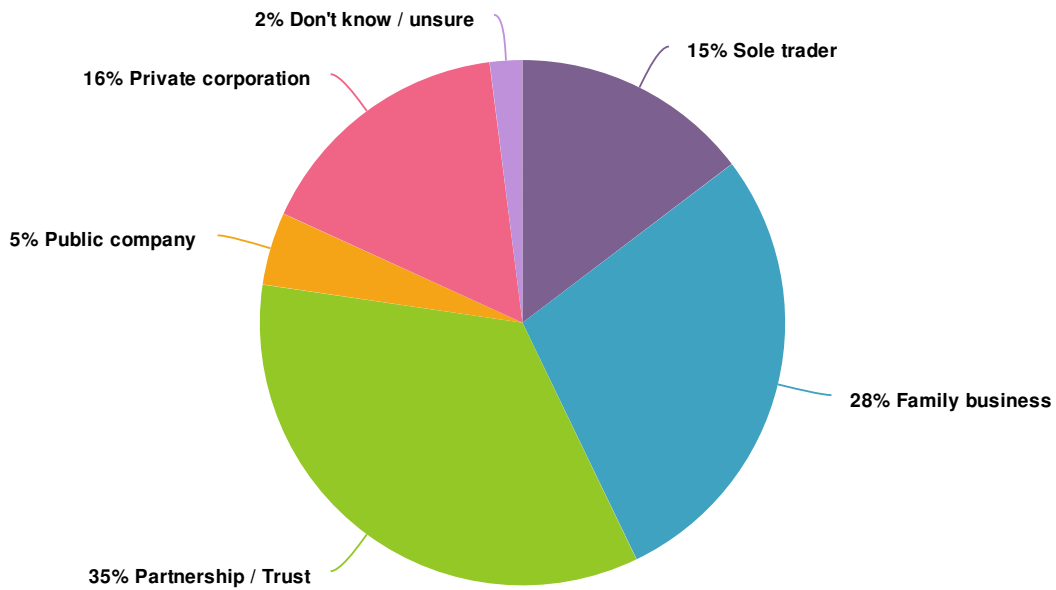
5. In which region of the state is your main business located?



7. What is your primary role in this business?



8. Which best describes the structure of the business?



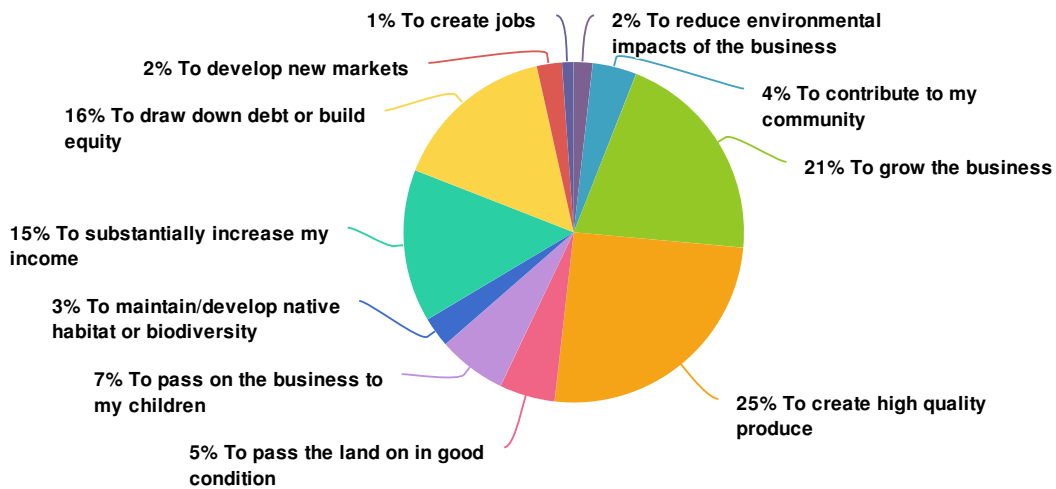
9. To you personally, how important are each of the following long-term goals?

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To grow the business Count Row %	241 40.8%	251 42.5%	74 12.5%	13 2.2%	11 1.9%	590
To develop new markets Count Row %	182 31.4%	232 40.0%	130 22.4%	28 4.8%	8 1.4%	580
To substantially increase my income Count Row %	202 34.1%	250 42.2%	116 19.6%	18 3.0%	6 1.0%	592

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To draw down debt or build equity Count Row %	251 45.4%	210 38.0%	68 12.3%	17 3.1%	7 1.3%	553
To create high quality produce Count Row %	461 77.1%	127 21.2%	9 1.5%	1 0.2%	0 0.0%	598
To pass on the business to my children Count Row %	145 29.4%	146 29.6%	146 29.6%	39 7.9%	17 3.4%	493
To create jobs Count Row %	106 18.6%	236 41.4%	174 30.5%	43 7.5%	11 1.9%	570
To contribute to my community Count Row %	193 32.4%	308 51.7%	83 13.9%	10 1.7%	2 0.3%	596
To maintain/develop native habitat or biodiversity Count Row %	189 32.4%	255 43.7%	112 19.2%	19 3.3%	8 1.4%	583
To look after the land Count Row %	403 68.1%	174 29.4%	13 2.2%	1 0.2%	1 0.2%	592
To reduce environmental impacts of the business Count Row %	247 41.4%	286 48.0%	49 8.2%	13 2.2%	1 0.2%	596

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
To pass the land on in good condition Count Row %	377 64.8%	181 31.1%	21 3.6%	2 0.3%	1 0.2%	582
Totals Total Responses						598

10. Which one of these long-term goals is most important to you at the moment? (select one)



11. What motivates you? Please rate how important these drivers are for you.

	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Being recognised for being good at what I do Count Row %	158 26.2%	260 43.1%	136 22.6%	38 6.3%	11 1.8%	603
Making high profits or being well-paid Count Row %	110 18.4%	315 52.8%	128 21.4%	32 5.4%	12 2.0%	597
Being able to stay on the farm / in this place Count Row %	266 45.7%	218 37.5%	85 14.6%	10 1.7%	3 0.5%	582
Giving something back to the land / place Count Row %	193 32.1%	321 53.3%	78 13.0%	8 1.3%	2 0.3%	602
Creating high quality produce / products Count Row %	390 63.9%	202 33.1%	17 2.8%	1 0.2%	0 0.0%	610
Doing work I enjoy Count Row %	371 60.8%	220 36.1%	19 3.1%	0 0.0%	0 0.0%	610
Being my own boss Count Row %	199 34.3%	274 47.2%	88 15.1%	16 2.8%	4 0.7%	581

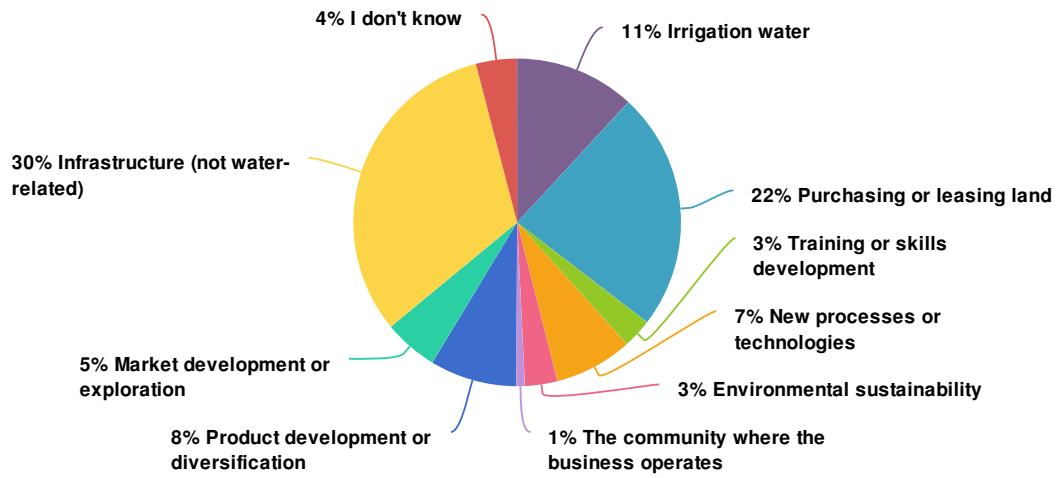
	Very important	Important	Neither important or unimportant	Unimportant	Very unimportant	Responses
Working outdoors Count Row %	191 32.3%	274 46.4%	108 18.3%	12 2.0%	6 1.0%	591
Having a lifestyle I enjoy Count Row %	334 54.9%	244 40.1%	27 4.4%	1 0.2%	2 0.3%	608
Totals Total Responses						610

12. Reflect on your role in the business. Please indicate how strongly you agree or disagree with the following statements.

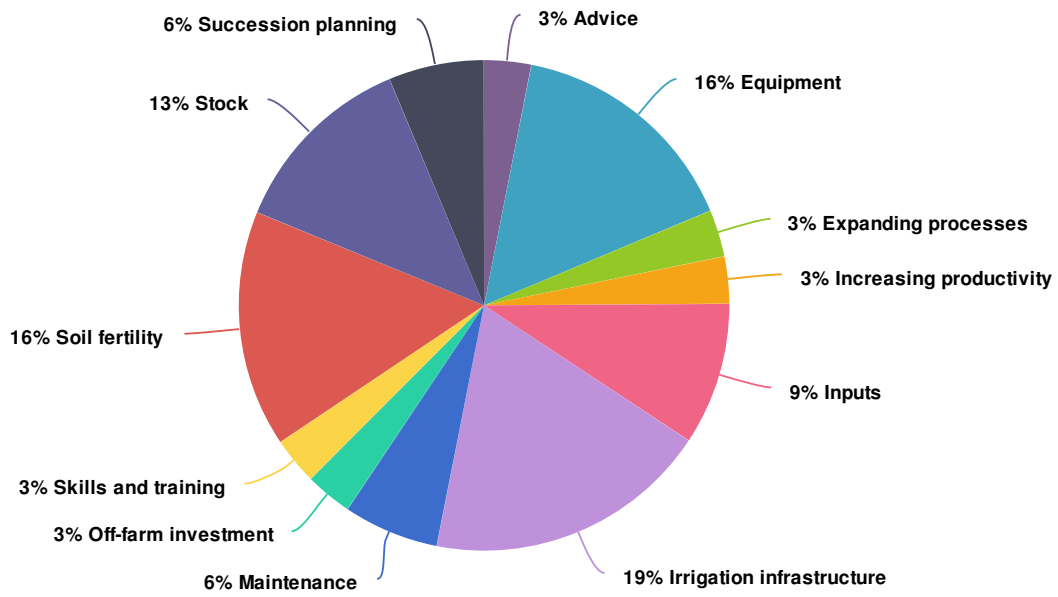
	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
Most of my business activities are guided by the long-term objectives Count Row %	193 32.0%	317 52.5%	78 12.9%	14 2.3%	2 0.3%	604
I plan carefully before taking action Count Row %	193 31.6%	358 58.6%	51 8.3%	9 1.5%	0 0.0%	611
I spend time thinking about the future of the business Count Row %	285 46.8%	295 48.4%	24 3.9%	4 0.7%	1 0.2%	609
My actions are guided by what I've learnt from experience Count Row %	256 41.7%	319 52.0%	35 5.7%	4 0.7%	0 0.0%	614

	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Responses
I try to follow industry best practice Count Row %	222 36.7%	308 50.9%	64 10.6%	8 1.3%	3 0.5%	605
I often go with my gut feeling when making big decisions Count Row %	101 16.7%	273 45.0%	147 24.3%	73 12.0%	12 2.0%	606
I try new ways of doing things Count Row %	200 32.8%	338 55.5%	65 10.7%	6 1.0%	0 0.0%	609
I take measured risks Count Row %	141 23.5%	371 61.7%	65 10.8%	22 3.7%	2 0.3%	601
I invest time to learn new things Count Row %	228 37.5%	328 53.9%	48 7.9%	3 0.5%	1 0.2%	608
Totals Total Responses						614

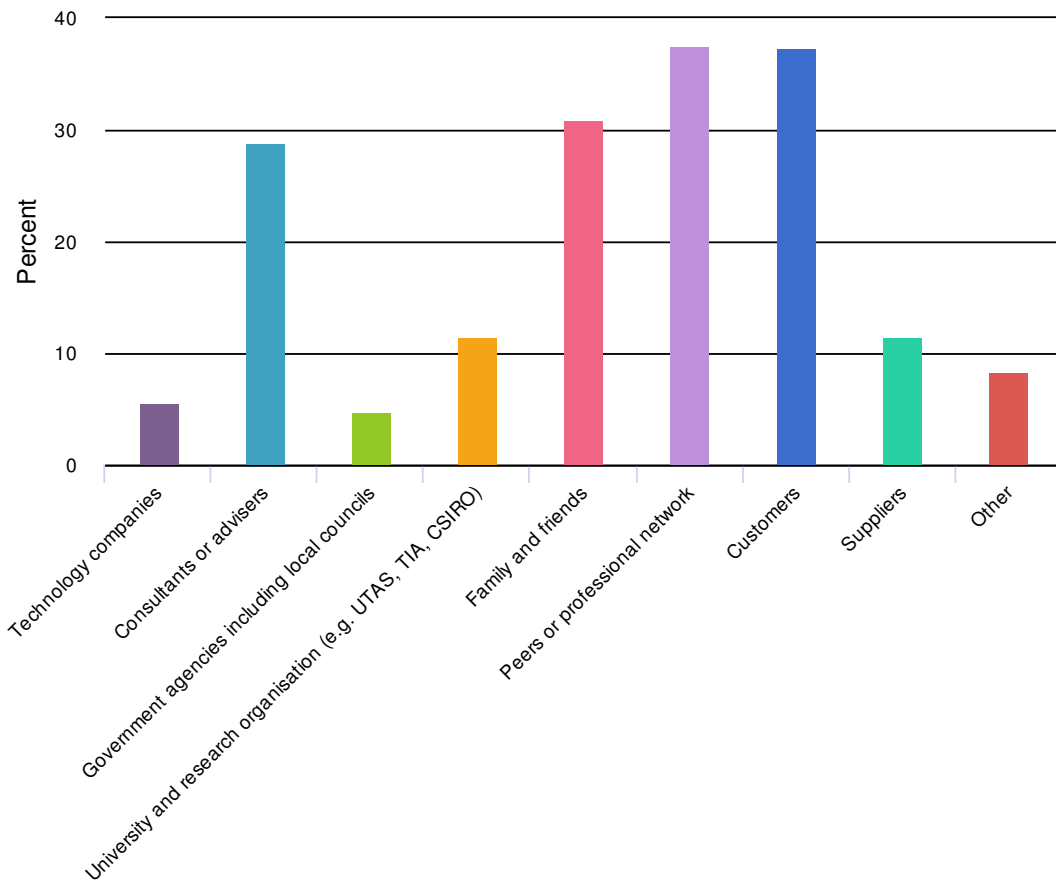
13. Over the last 5 years, in which one of the following did the business invest the MOST money? (select one)



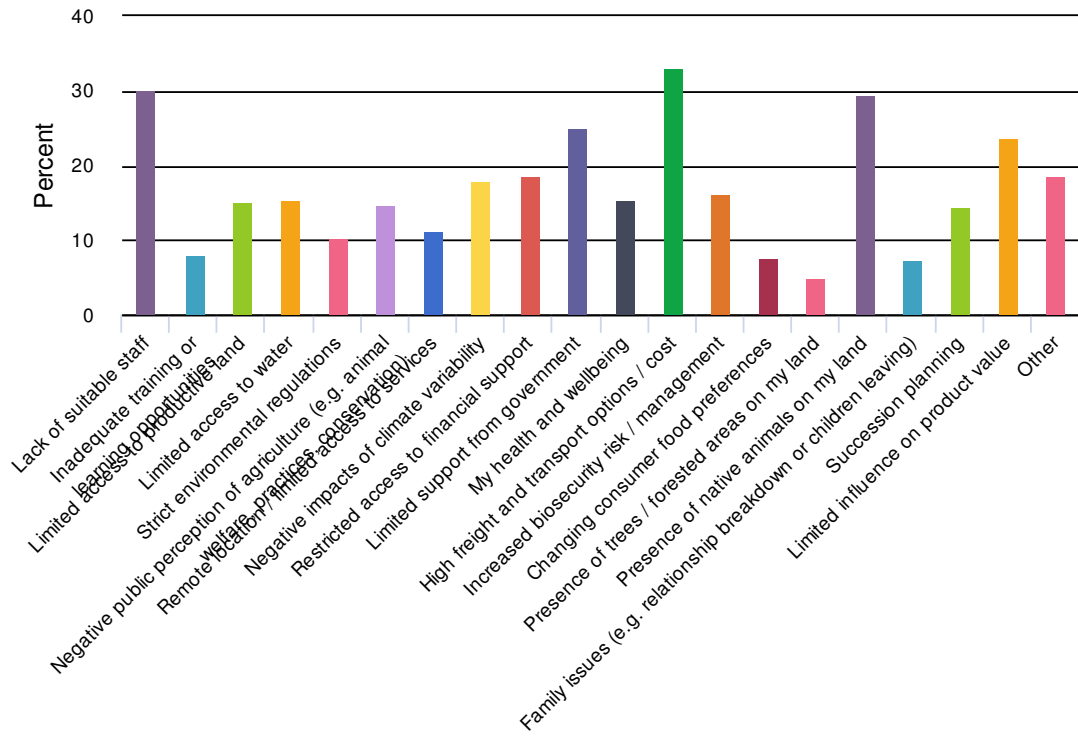
14. **Other areas of major business investment specified



15. Over the last 5 years, which of the following have influenced the business most positively? (select up to three options)



16. Please select the factors that are currently constraining the business from achieving its goals. (select as many as relevant)



19. Please indicate how much you agree / disagree with the following statements.

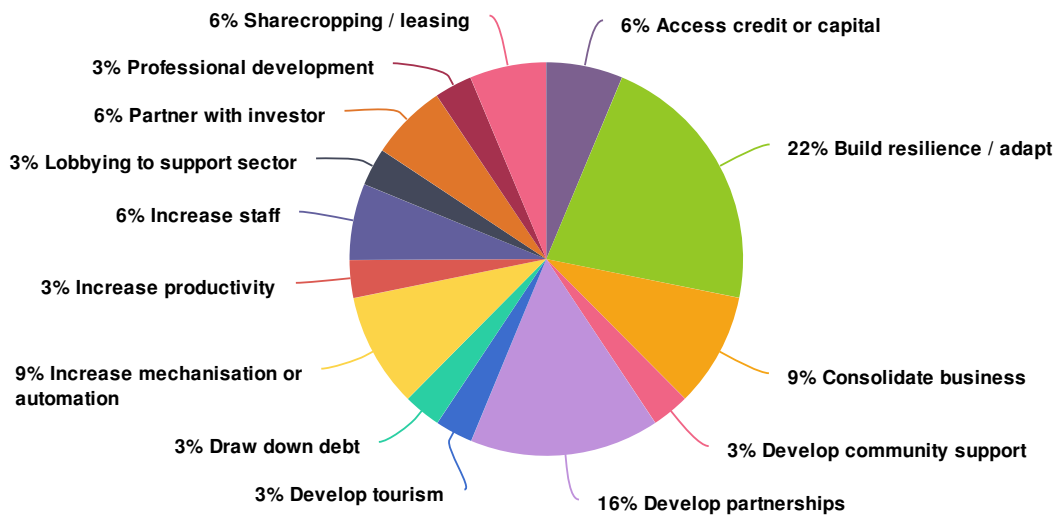
	Strongly agree	Agree	Neither agree/disagree	Disagree	Strongly disagree	Not applicable	Responses
My family and/or local community provide me with support during hard times Count Row %	198 31.9%	274 44.2%	99 16.0%	17 2.7%	10 1.6%	22 3.5%	620
I often work alongside my neighbours or peers without expecting any financial return Count Row %	141 23.6%	252 42.2%	134 22.4%	29 4.9%	4 0.7%	37 6.2%	597
My social connections enable me to influence decisions in my region Count Row %	70 11.7%	192 32.1%	207 34.6%	79 13.2%	19 3.2%	32 5.3%	599
I am actively involved in local community groups (e.g. fire brigade, school, landcare, associations, clubs) Count Row %	147 24.6%	171 28.6%	125 20.9%	93 15.6%	27 4.5%	35 5.9%	598
Totals Total Responses							620

20. To prepare for the future, how likely is the business to adopt each of these strategies?

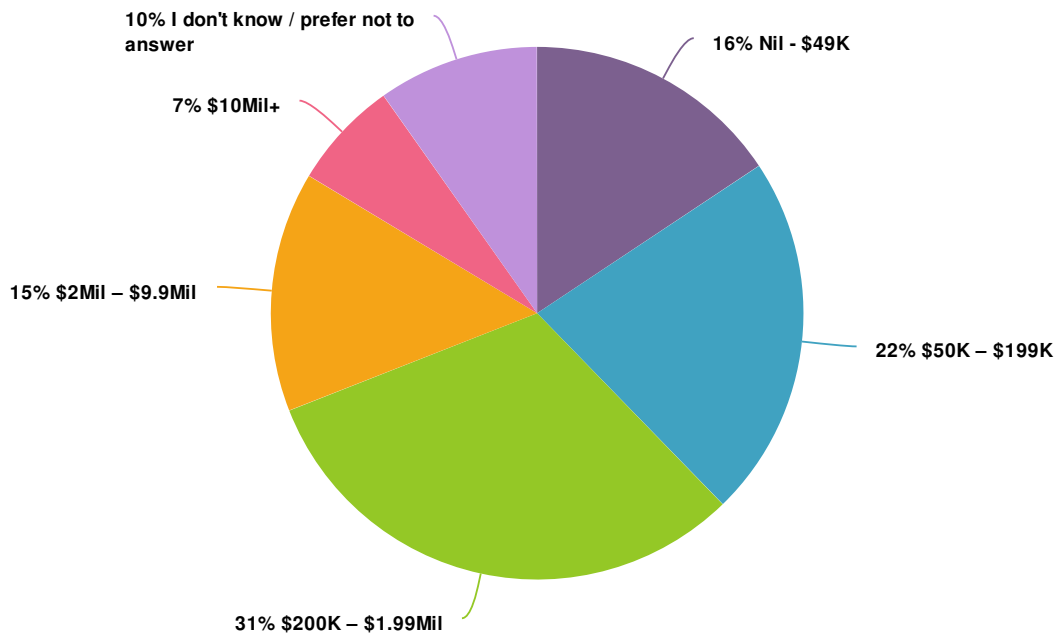
	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Invest in research and development						
Count	88	188	164	101	35	576
Row %	15.3%	32.6%	28.5%	17.5%	6.1%	
Expand current operations						
Count	151	224	114	77	26	592
Row %	25.5%	37.8%	19.3%	13.0%	4.4%	
Develop new products						
Count	99	187	114	124	49	573
Row %	17.3%	32.6%	19.9%	21.6%	8.6%	
Increase liquid assets						
Count	45	161	203	114	34	557
Row %	8.1%	28.9%	36.4%	20.5%	6.1%	
Sell the business						
Count	26	43	104	172	222	567
Row %	4.6%	7.6%	18.3%	30.3%	39.2%	
Integrate vertically (business spans more than one step of production, processing, marketing and retail)						
Count	91	130	145	125	75	566
Row %	16.1%	23.0%	25.6%	22.1%	13.3%	
Explore new markets for products						
Count	149	230	92	79	33	583
Row %	25.6%	39.5%	15.8%	13.6%	5.7%	
Invest in new technologies						
Count	138	246	113	67	20	584
Row %	23.6%	42.1%	19.3%	11.5%	3.4%	
Owners to retire soon						
Count	39	84	90	171	151	535
Row %	7.3%	15.7%	16.8%	32.0%	28.2%	
Diversify the business						
Count	83	209	137	115	38	582
Row %	14.3%	35.9%	23.5%	19.8%	6.5%	
Keep the business as it is now						
Count	49	186	115	181	60	591
Row %	8.3%	31.5%	19.5%	30.6%	10.2%	

	Highly likely	Likely	Unsure	Unlikely	Highly unlikely	Responses
Increase off-farm income (any income earned from work not related to the farm)	73	161	111	137	55	537
Count						
Row %	13.6%	30.0%	20.7%	25.5%	10.2%	
Totals						
Total Responses						592

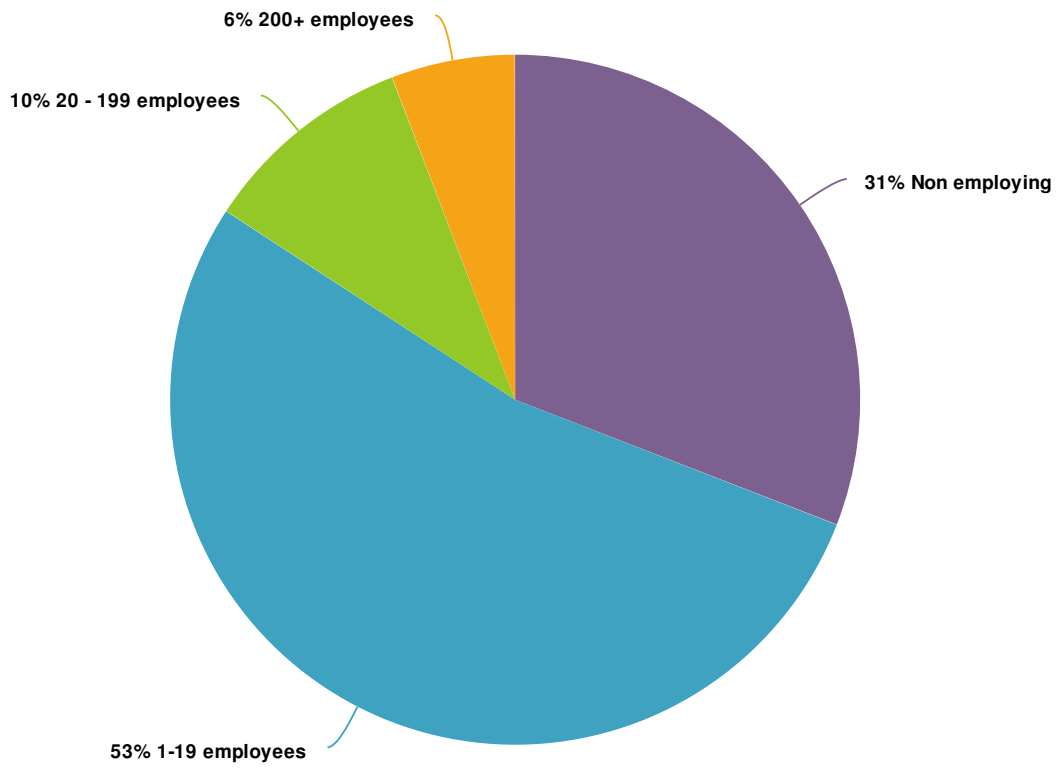
23. **Other strategies you are likely to adopt



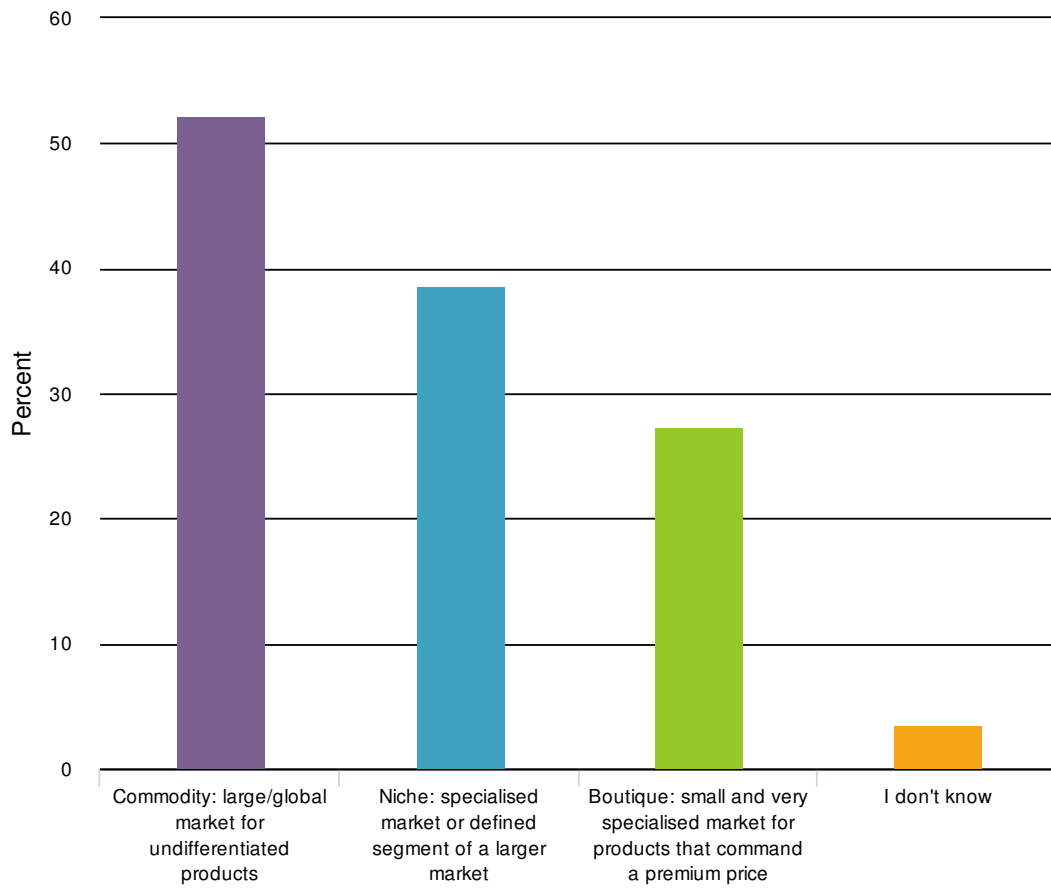
24. What was the average annual turnover of the main business you have worked at over the last 3 years?



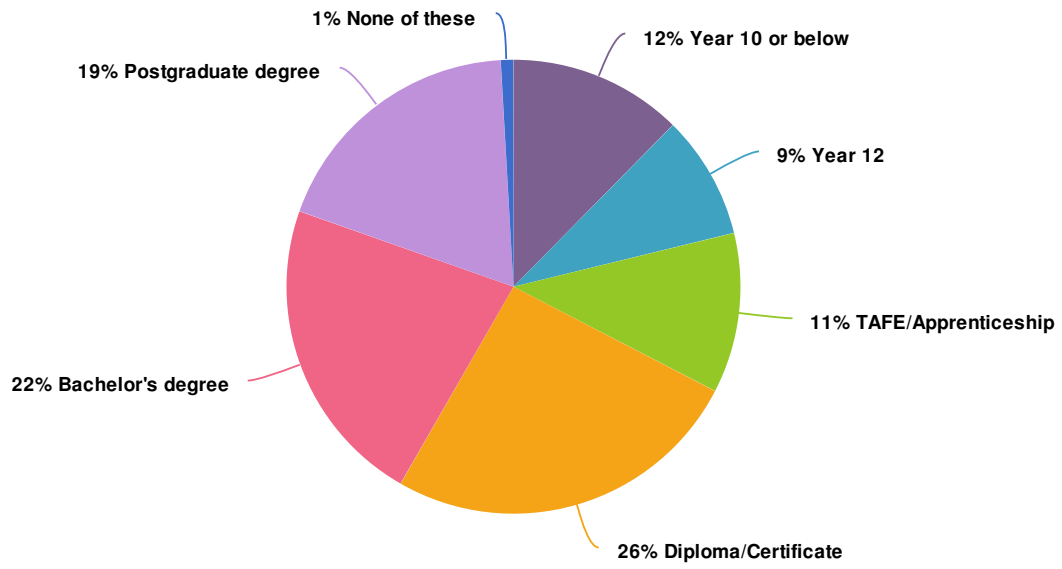
25. How many employees does the business have?



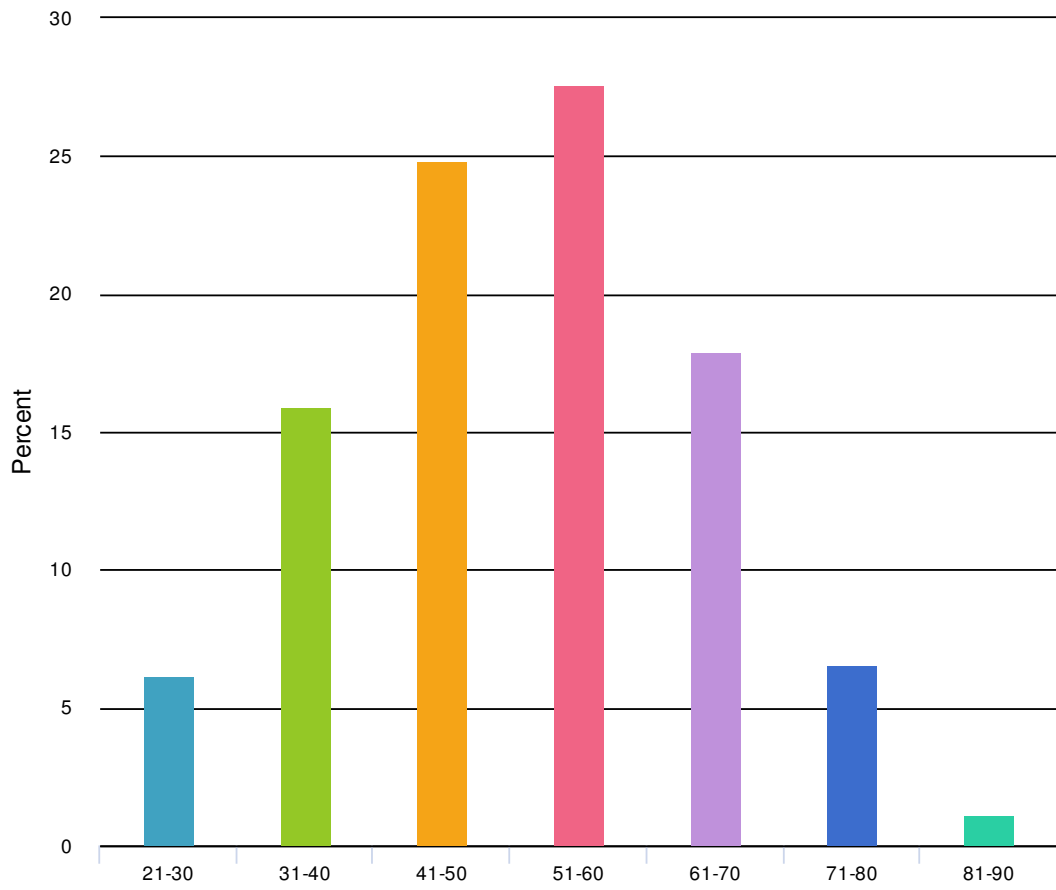
26. What sort of market do your products go into? (select all that are relevant)



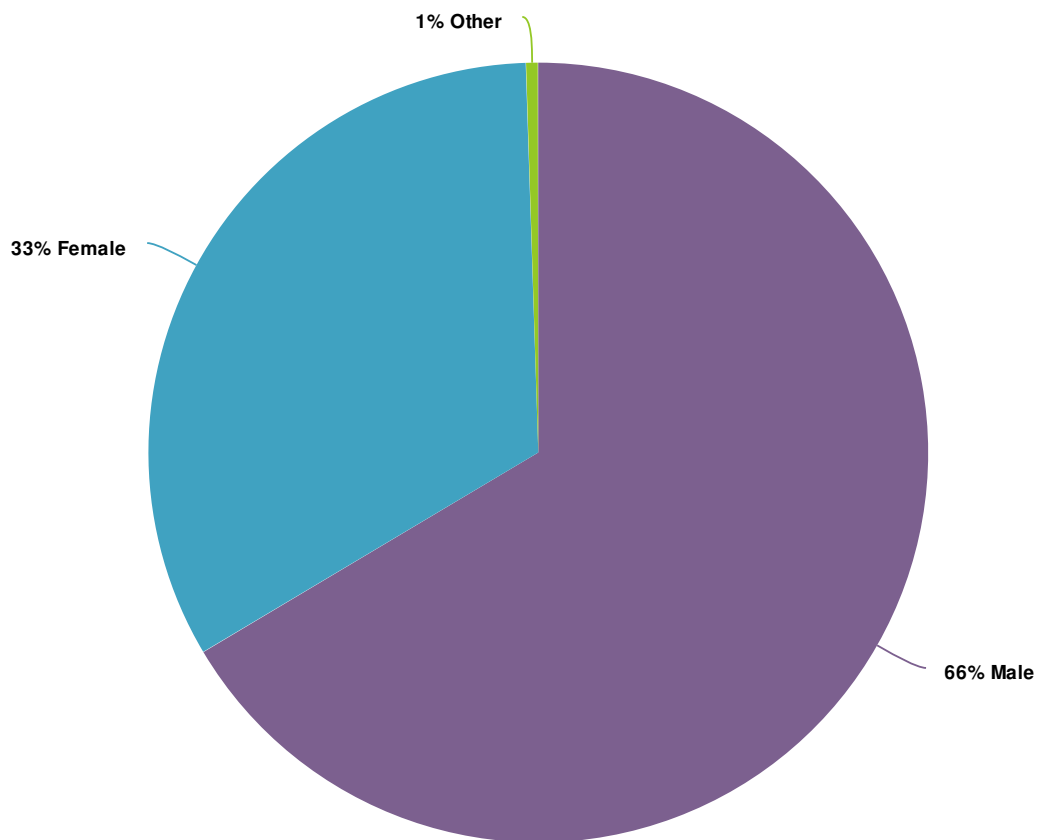
29. What is the highest level of education you have completed?



31. **What age cohort are you in? (reclassified from year of birth)



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