

Tasmanian Local Food Supply Project

Final Report



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May 2015**

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List of abbreviations and acronyms

DPIWE Department of Primary Industry Water and Environment

IPM Integrated pest management

HFAT Healthy Food Access Tasmania

HFAB Health Food Access Basket

LFS Local food system

LGAs Local government areas

LFSP Local Food System Project

NRM Natural Resource Management

TFGA Tasmanian Farmers and Graziers Association

TML Tasmanian Medicare Local

UTas University of Tasmania

Glossary

Community

A specific group of people, often, but not necessarily, living in a defined geographical area, who share common culture, values and norms. Communities exhibit some awareness of their identity as a group, and share common needs and a commitment to meeting them.

Community Food Security

An extension of the food security concept, community food security exists when all citizens obtain a safe, personally acceptable, nutritious diet through a sustainable food system that maximizes healthy choices, community self-reliance and equal access for everyone."

Food Access

The socio-economic determinants that influence a person's ability to acquire fresh and nutritious food. This includes physical access, financial access, and other access issues.

Food Affordability

Affordability is defined as the cost of the diet of a household relative to the household's income (Lee et al, 2013).

Food Literacy

Food literacy relates to a person's food-related knowledge, attitudes, and skills. It is one part of how individuals make food-related decisions required to plan, manage, select, prepare and eat food to meet needs and determine intake. It includes activities such as how individuals choose nutritious foods; how individuals read and understand food labels and government-developed food guide (i.e. Australian Guide to Healthy Eating); how individuals store and prepare food safely, and how advertising affects individuals.

Food System Literacy

Food system literacy involves understanding the broader food system and how our food choices impact our own health as well as the well-being of the wider society and environment. It is a broader definition of food literacy and involves understanding where food comes from, the impacts of food on health, the environment and the economy, and how to grow, prepare, and prefer healthy, safe and nutritious food (Sustain Ontario, 2014).

Food Security

The ability of individuals, households and communities to acquire food that is healthy, sustainable, affordable appropriate and accessible (Rychetnik et al, 2003).

Food Sovereignty

Food Sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.

Food Tourism and Agritourism

The definition of both Food Tourism and Agritourism varies from region to region globally. Food Tourism can be considered a component of the tourism experience and can be defined as the pursuit and enjoyment of unique and memorable food and drink experiences. Whereas Agritourism can be defined as any agriculturally-based operation or activity that brings visitors to a farm. For the purposes of this report Food Tourism and Agritourism are combined and refer to the tourism experience from 'paddock through to plate'.

Fruit and vegetables

This study has interviewed key stakeholder from the 'fruit and vegetable' industry in Tasmania which includes produce which has been produced in Tasmania include potato, carrots, onions beans, cherries, berries and apples.

Healthy Diet

A 'healthy' diet is defined as one that provides recommended amounts of foods, nutrients and other food components, within estimated energy requirements, to promote normal growth and development in children, reduce risk of obesity and non-communicable diseases, and promote optimum well-being, consistent with national dietary guidelines/recommendations (NHMRC, 2013).

Local Food

There is no legal or universally accepted definition on of local food this is partially because there is no commonly agreed definition of 'local' in terms of food. Local food can be a geographical concept related to the distance between food producers and consumers. It can also be defined in terms of social and supply chain characteristics such as who has produced the food and the story behind the food (Martinez et al, 2010).

Local Food Systems

Local food systems are used to describe a method of food production and distribution that is geographically localized, rather than national and/or international. Food is grown (or raised) and harvested close to consumers' homes, then distributed over much shorter distances than is common in the conventional national and global food systems.

Local Government Area

The Local Government Area (LGA) is a geographical area under the responsibility of an incorporated local government council or municipality.

Map/mapping

A technique used to collect, document, analyse and present information needed to produce a product or service.

Social Capital

Social capital represents the degree of social cohesion which exists in communities. It refers to the processes between people which establish networks, norms and social trust.

Social Enterprise

A social enterprise is a revenue-generating business with primarily social objectives whose surpluses are reinvested for that purpose in the business or in the community, rather than being driven by the need to deliver profit to shareholders and owners.

Social Inclusion

A state in which all members of society have fair access to a decent education, skills, meaningful work, access to services, good relationships and an opportunity to have a say on what matters to them.

Value adding

Is the process of changing or transforming a product from its original state to a more valuable state; typically this may occur through special manufacturing, marketing, or processing.

Acknowledgements

The Local Food Supply project was undertaken by the School of Health Science, University of Tasmania (UTas) from September 2014 to April 2015.

Funding for this project was gratefully received from the Australian Government's Department of Health through Tasmania Medicare Local. UTas has been responsible for undertaking various components of the delivery of the larger project "Poor Diet, Nutrition, Food Security and Obesity Project" in collaboration with Heart Foundation (Tasmanian Division) as lead agency and Leah Galvin the Heart Foundation's Project Manager for this project. The original project title "Poor Diet, Nutrition, Food Security and Obesity Project" was amended to the "Healthy Food Access Tasmania Project (HFAT)" as it was deemed that this project title better reflected the key aims and objectives of the project and provided greater clarity at the community level.

This report relates specifically to one of the key project initiatives, the Tasmanian Local Food Supply Project (LFSP). The LFSP was the second deliverable under the broader HFAT Project.

This project received ethics approval from the Tasmania Social Sciences Human Research Ethics Committee (Ethics Ref: H14167) on the 4th July, 2014.

The authors of this report would like to thank the many individuals and organisations who generously gave their time to share their thoughts about the range of challenges and opportunities relating to local food production and supply. These individuals included representatives from peak grower organisations, local councils, State government employees, wholesale and processing businesses, academics, community organisations and Tasmanian fruit and vegetable producers. The authors would particularly like to acknowledge the enthusiasm and passion that all contributors to the study showed towards the subject matter.

Sincere gratitude must also go to Ms Sue Hinton and Ms Caroline Brown, members of the external reference group who provided specialist advice to the LFSP and also to the Healthy Food Access Tasmania Advisory Committee who provided valuable input at all stages of the project.

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Executive Summary

The Local Food Supply project (LFSP) has been a crucial step in the path towards building a picture of current food systems in Tasmania. The project, a collaboration between the University of Tasmania and the National Heart Foundation, draws on the body of knowledge generated through other Tasmanian and interstate food security initiatives such as the *Tasmanian Food Access Research Coalition (TFARC)* (Le, et al, 2013) and the *Food for All Food Security Strategy* (DPAC, 2012) as well as the *Victorian Casey Food Hub initiative* (Larsen, et al, 2012). Importantly, the LFSP seeks to explore the opportunities and challenges for local food systems in Tasmania, specifically with regards to fruit and vegetables, as presented through the views and perceptions of key stakeholders. Three research questions were developed from the project aims;

1. What types and quantities of fruit and vegetables are grown in Tasmania, and what types and quantities of fruits and vegetables are consumed in Tasmania?
2. What local food systems already exist, what do they look like and what do participants tell us about their strengths, weaknesses, opportunities and challenges?
3. What are the potential opportunities and challenges for individual communities and Tasmania in establishing local food systems?

The project is part of a broader multi-dimensional food security initiative known as Healthy Food Access Tasmania (HFAT) which aims to increase access to fruit and vegetables (preferably locally grown) within communities across Tasmania as an important determinant of people's nutrition and health outcomes.

The original scope of the project included mapping locally grown fruit and vegetable production in 13 local government areas. This scope was subsequently modified to focus on three regions of the state (North West, North/North East, and Southern), as reliable production data was only available to Statistical Area 4 (SA4) level (ABS, 2011).

The findings from project are based on information provided by 55 interviews conducted with 64 stakeholders from five distinct stakeholder groups; community organisations, local government and consultants, fruit and vegetable growers, peak grower organisations, and wholesalers and processors. These stakeholder groups were identified as key informants with specialist knowledge of various points of the food supply chain.

The findings also draw on literature relating to the production of fruit and vegetables in Tasmania. The literature review found that whilst there was a variety of sources of information and data relating to the production, supply and seasonality of commercially grown produce there was limited information relating to the economic, social and environmental factors that support the development and operation of local food systems. Importantly, the findings revealed that the term "local food systems" is an over-used and under defined term with informants providing a variety of interpretations on the concept. The authors of this report acknowledge that a singular definition of LFS that is accepted by

food producers, marketers and consumers, is problematic, as it is dependent on the measure or descriptor used to define 'local'. Aside from geographic descriptor of local food relating to the distant between where food is produced and where it is consumed, local food can also be conceptualised in terms of scale, provenance, social and supply chain characteristics (Martinez et al, 2010).

The absence of a clear and common understanding of what constituted local food systems was not seen as a major barrier; informants drew on their own understandings and perspectives of local food systems to describe what local food systems existed in the state, their characteristics, who needed to be involved and the opportunities and challenges they saw for further development.

The researchers sought to gain a deeper understanding of the factors that shaped the informants' views of local food systems. The transcripts of the interviews were analysed using an inductive thematic analysis approach. Key themes were then identified according to the following criteria:

- *relevance* – how well the theme addresses the research questions;
- *breadth* – an issue or topic mentioned or explored by a large number of participants;
- *depth* – individual participants gave extensive detail about the issue, and it was a focus of their attention; and
- *practicability* – how usefully a theme informs implications for future directions

A number overarching themes were identified as primary influencing factors on the design, scale and operation of local food supply/distribution systems. These themes are summarised below (Figure 1).



Figure 1 Key themes identified as having influence on the Tasmanian Local Food System

1. Relationships and collaboration

Relationships between growers themselves and between growers and other links in the supply chain was seen as an essential prerequisite for the collective ability to determine what was needed and determine a means to achieve it. There was a clear emphasis on the benefits from working in genuine partnerships, both formal and informal. A key challenge was to identify the processes that needed to put in place to enable stakeholders to work alongside existing groups engaged in local food systems in a collaborative fashion, rather than competing against them or duplicating systems. The report recommends that programs be put in place to **support and strengthen relationships** between stakeholders working within local food systems.

2. Education

Participants identified a need for more education around local food systems. There was a recognised need for education about healthy eating and cooking, along with an added dimension around education on what happens to food between paddock and plate. There was an identified need for food system literacy and not just food literacy. The report recommends that educational programs promoting healthy eating should **incorporate information about key elements of local food systems** including local food supply and distribution.

3. Economic sustainability

Stakeholders discussed the importance of achieving economic sustainability to ensure the long-term viability of local food systems. There was a strong sense that a sustainable local food system would need to be financially stable, and have no reliance on ongoing support from the government. The issue of economies of scale was identified as challenge to creating an economically sustainable local food system. Central to this issue was a disparity between Tasmania's high capacity for production, and the small population base of the State. Local food systems were seen as having finite potential in terms of economic viability, and ensuring a reliable, loyal and consistent customer base was seen as a crucial to the sustainability of local food systems. The report recommends that strategies aimed at **building economic sustainability** must consider the needs of both producers and consumers. This may include further research into which local food enterprise models would be viable for strengthening Tasmania's local food economy.

4. Value-adding

The study revealed that Tasmanian fruit and vegetable growers regarded value-added production and niche markets as integral parts of local food systems. Whilst this view was generally held by most participants, the study also revealed an inherent tension between producers' aspirations to value-add and sell premium product to international and mainland markets; and the need for affordable and accessible locally-produced food within the state. The conflicting needs of producers and consumers should be considered in order to build a resilient and economically sustainable local food system. The report acknowledges the pivotal role value-adding plays in local food systems and supports further investigation and support for **value-adding opportunities** in order to build a resilient and vibrant local food system within the state.

5. Accessibility

Informants expressed broad and discordant views around the topic of food accessibility within Tasmania, with split opinions over whether it was easy or difficult to access locally grown food. The findings showed that there were misconceptions amongst stakeholder groups about the idea of food access, and common misunderstandings about the broader determinants of food security. This finding indicates the need for ongoing advocacy and education to address the **misconceptions about accessibility** by raising awareness of the challenges around healthy food access, and addressing the causes of this inaccessibility.

6. Second-grade produce and waste

Second grade produce was recognised as a significant challenge within the food system. Participants generally viewed that local food systems could play a role in increasing growers' income from second grade produce. These opportunities were identified both in terms of fresh and value added produce. The report recommends further investigation of market opportunities for second-grade produce particularly in the value-adding space.

7. Food tourism

Food tourism (sometimes known as agri tourism) was recognised as a significant opportunity within the food system. The majority of participants interviewed identified Food tourism as an important activity that could support existing and new local food initiatives to ensure a sustainable local food economy. Previous research in the UK has identified a correlation between increased levels of food tourism interest and the retention and development of regional identity, the enhancement of environmental awareness and sustainability, an increase in social and cultural benefits celebrating the production of local food and the conservation of traditional heritage, skills and ways of life (Everett & Atchison, 2008).

However it should also be recognised that food tourism may pose a risk to local food systems, if it detracts from the local market. Food tourism may increase value-added and niche production at the expense of production of healthier products which can be sold to the local market.

8. Transport, logistics and infrastructure

The vexed issue of transport and infrastructure such as packing sheds and cool storage facilities were identified as core challenges to creating successful local food systems. Whilst a number of informants acknowledged the existing road networks and infrastructure as being conducive to the development of effective local food systems, the prohibitive costs of transport in rural and remote areas was seen as a significant impediment at all points of the supply chain. The study recommends that future planning for local food systems consider existing transport, logistics and infrastructure systems to ensure efficient utilisation of existing infrastructure and road networks.

Further considerations for strengthening Local Food Systems

Our findings regardless of stakeholder group consistently suggested that a successful Tasmanian local food system included the following themes:

1. Existing systems need to be strengthened;
2. Local government needs to be involved;
3. The broader social determinants of health need to be addressed;
4. Don't take a one-size-fits-all approach;
5. Consumers need to be engaged to meet the needs of the market;
6. Changes need to be made incrementally; and
7. Smaller growers & community groups need to be involved.¹

The study demonstrated that Tasmania is well positioned in terms of its production capacity, infrastructure and community connectedness to further develop local food systems.

The report recommends that strategies aimed at improving local food systems should target the specific needs of each community rather than taking a one-size-fits-all approach. Importantly, there was a sense that communities had already put in place a range of traditional and innovative ways to enhance the availability of local food and that these systems should be further supported and strengthened in order to create a sustainable long-term solution.

Consumers were seen as driving food systems, as purchasing habits of the community would have a direct influence on which businesses thrived and which failed. Convenience from both a grower and consumer perspective was seen as being at the heart of successful local food systems. The report supports on-going initiatives aimed at engaging with consumers, in order to gain market intelligence and understand the needs of the market.

There was a strong view that Local Governments were an important source of support and advice to growers and other food-related businesses in their area. Local government was seen as having intimate knowledge of, and strong connections with major stakeholders groups and local enabling factors within local communities. The report recommends that this advantage be operationalised and consideration given to the role of local government as a broker or facilitator for the further development of local food systems.

The authors of this report were heartened by the level of interest in local food systems by all stakeholder groups irrespective of the nature of their business or scale of their enterprise. However, it should be noted that almost all participants expressed a view that the growers most likely to be involved in a local food system were small to medium-size farming enterprises. These smaller enterprises were seen as having more flexibility than larger enterprises, particularly as they were considered less likely to be under contract with large processing or supermarket chains. This means that smaller growers have a greater degree of flexibility, and are more likely to be responsive to market changes. The report recommends that the small to medium size fruit and vegetable enterprises be targeted for piloting future local food systems.

¹ It should be noted that a local food system doesn't preclude larger producers from being involved as it is not just about scale of production. It is also about 'mindset' and attitude. Larger producers may still choose to be involved depending on their own business model or personal circumstances.

1. INTRODUCTION

1.1 Funding

Funding for this project was received from the Australian Government's Department of Health through Tasmania Medicare Local as part of a larger food security research project – the Healthy Food Access Tasmania (HFAT) Initiative.

The Local Food Supply Project (LFSP) is a collaboration between the University of Tasmania and lead agency Heart Foundation Tasmania, which has also received funding from TML for this project.

1.2 Healthy Food Access Tasmania Initiative

Health Food Access Tasmania (HFAT) is a multi-dimensional food security initiative aimed at supporting projects that make healthy food choices easy choices through building local solutions which increase access to fruit and vegetables (preferably locally grown) within communities across Tasmania. HFAT works within a collaborative framework and builds on the body of food security research, policy and practice undertaken in Tasmania over the past decade; in particular the research by the *Tasmanian Food Access Research Coalition* (Le, et al, 2013) and the *Food For All Tasmanians* Food Security Strategy (DPAC, 2012).

The HFAT initiative is comprised of a number of sub-projects each with specific aims and objectives. A key point of reference for HFAT is to work within a Social Determinants of Health framework (Wilkinson & Marmot, 1998); this project seeks to address important health, economic, and social issues impacting on food security at a local level.

The Local Food Supply (LFSP) project is one of several projects funded under the HFAT initiative. The LFSP has a particular focus on researching the production and processing/wholesale component of the local fruit and vegetable supply chain in Tasmania.

1.3 Local Food Supply Project

1.3.1 Rationale

Access to an affordable and nutritious food supply has been recognised as an important determinant of people's nutrition and health outcomes (Wilkinson & Marmot, 1998). In Australia there is no regular national survey to monitor and compare food costs, availability and variety in both metropolitan and regional areas. Out of necessity, most Australian states and territories have developed separate surveys conducted from time to time (Landrigan & Pollard 2010).

The Tasmanian Food Access Research Coalition (TFARC) (Le, et al, 2013) undertook a detailed mapping process of local-level healthy food access in two local government areas

(LGAs) in Tasmania during 2011 to 2012. This project focussed on the LGAs of Dorset and Clarence. This community-based investigation found that there was a wide variation in availability of and physical and financial access to healthy food across local government areas (LGAs).

LFSP brings together information relating to the production of local fresh fruit and vegetables across the state, and also provides information about the supply of fresh fruit and vegetables from the farm gate to the distribution point.

1.3.2 Scope and setting

The original scope of the project included mapping locally grown fruit and vegetable production in 13 local government areas. This scope was subsequently modified to focus on three regions of the state (North West, North/North East, and Southern), as it was recognised that reliable production data was only available to Statistical Area 4 (SA4) level (ABS, 2011) (refer to Figure 2).



Figure 2: Location of LGA and regional study areas

The aim was to build a picture of the current food systems in Tasmania, with a specific focus on fruit and vegetables. Researchers also aimed to explore the possible opportunities and challenges for local food systems to Tasmania.

Data was collected through a desk-top review of existing information, followed by gathering information through guided interviews with key stakeholder groups. These data were then analysed to identify opportunities to improve fruit and vegetable access to Tasmanian communities. Interviews were conducted with key stakeholders from 13 LGAs across the state, from each of the three regions (North West, North/North East, and Southern).

The project was scoped so as to maximise data collection opportunities while managing a short timeframe of 7 months, from October 2014 to April 2015.

A key deliverable of the project was to collate data which helped to build a picture of local food supply in Tasmania – from production through to wholesalers and processors. This was achieved through the collection of regional and State-level data on fresh fruit and vegetable production, local food economies, local fruit and vegetable supply and marketing policies and processing and value adding activities.

Selection of study sites was informed by local knowledge. The sites were based primarily on major fruit and vegetable growing regions of the state, and were designed to support the scoping of the project. There was an even spread of LGAs chosen in each of the three regions of the state, with stakeholders from 13 LGAs included in the interview process.

The regions and corresponding local government areas which were selected as the project study sites are shown in Table 1.

Table 1: Regions and LGA project study sites and examples of produce commonly grown

REGION	LOCAL GOVERNMENT AREA	EXAMPLES OF CROPS IN THE REGION
North West	Latrobe, Devonport, Kentish, Central Coast and Burnie	Beans, onions, capsicums, carrots, potatoes
North/North East	Meander, West Tamar, and Dorset, Launceston	Strawberries, pears, onions, potatoes, beans
Southern	Huon Valley, Derwent Valley, Clarence City and Sorrell	Cherries, apples, lettuce, stone fruit, olives

1.3.3 Research team

Working within a collaborative framework, the Heart Foundation engaged a multidisciplinary research team from the School of Health Sciences at the University of Tasmania (UTas) to complete tasks associated with delivery of the project. The research team was comprised of skilled practitioners from a range of food science and related disciplines including nutrition, community health, agriculture, and community development.

In addition, the LFSP research team established an external reference group comprising two representatives from the Department of Primary Industry, Parks, Water and Environment (DPIPWE) with expertise in fruit and vegetable production and business development. The external advisors provided expert advice on the Tasmanian fruit and vegetable industry including key stakeholder information and input into the design and piloting of the research tools.

The external advisors:

Ms Sue Hinton, Extension Leader, Vegetable Centre, Tasmanian Institute of Agriculture

Ms Caroline Brown, Team Leader – Industry Development, AgriGrowth Tasmania, Department of Primary Industries, Water and Environment (DPIPWE).

Representatives of the LFSP research team sat on the HFAT Advisory Committee, which had a primary role in scoping and designing key elements of the LFSP.

1.3.4 Key project stages

The LFSP was planned, developed and implemented over a period of approximately 9 months (August 2014 – April 2015). Project commencement coincided with the completion of the final stage of the Healthy Food Access Basket (HFAB) project, elements of which informed the design of the LFSP. The LFSP involved six key stages which are summarised in Table 2.

Table 2: Overview of key project stages and responsibilities

Project stage	What was involved
Scoping of project and establishment of project governance structures and agreement on the research questions	Preliminary discussions with the HFAT Advisory Group, University ethics approval sought and finalised, environmental scan of current local fruit and vegetable industry sectors, employment of project staff including research assistant, definitions and understandings of project terminology including “local food systems”, “mapping” and stakeholders, establishment of project specialist reference panel. Agreement on the research questions.
Desktop study and stakeholder profile/mapping	Existing information sources on the Tasmanian fruit and vegetable industry sectors accessed and reviewed, information collected, collated and analysed to provide context to study. Gaps in information and knowledge identified. Profile of Tasmanian fresh fruit and vegetable industry sectors established.
Design of project methodology, survey instruments and project milestones/timeline. Piloting survey tool with specialist reference panel.	Project methodology established including drafting of survey instruments, action and planning timelines created. Approaches to and methods of collecting information about local food production and supply systems identified and designed by project team. Piloting survey tool with specialist reference panel.
Data collection	Survey instrument used to collect information (i.e. interviews conducted). Interviews recorded and transcribed.
Data analysis	Information and data generated from interviews and desk top study collated, interpreted and analysed by project team. Key themes influencing local food production and supply identified.
Report presentation and dissemination	Report drafted written and distributed to project partners and funding body for internal review and editing. Findings disseminated to stakeholders.

1.4 Local Food Systems

1.4.1 Definition

The term “local food system” (or “regional food system” as it is known in some countries) is used to describe a method of food production and distribution that is geographically localized, rather than national and/or international. Food is grown (or raised) and harvested close to consumers' homes, then distributed over much shorter distances than is common in the conventional national and global food systems which are frequently observed as being controlled by a handful of larger transnational corporations (Martinez et al, 2010).

Conventional national and global food system advocates concern themselves with the provision of a regular supply of affordable food for the general population, free from seasonality (Morgan et al 2006) and location (Murdoch et al, 2000) in terms of globalisation, industrialisation and standardisation. In general, local food systems are associated with sustainable agriculture, while the national and global food systems are reliant upon industrial agriculture (Martinez, et al, 2010).

Local food systems or localisation of food supply chains means simply that food should be consumed as close to the point of origin as possible (Seyfang, 2008). They are defined as a collaborative effort to build more locally based, self-reliant food economies, in which sustainable food production, processing, distribution and consumption is integrated to enhance the economic, environmental and social health of a particular place (Feenstra, 2002). Technically though, the term “local” doesn’t provide any indication of food qualities such as freshness, nutritional value, or production practices, and can’t be used as a reliable indicator of sustainability (Budge et al, 2010).

It’s important to note that local food systems cannot exist in isolation. Every food system needs to be considered as part of a whole within a wider or even global context. Therefore substitution in one local economy can inadvertently create displaced and unsustainable labour outcomes, unequal participation in the benefits, and less environmentally sound production practices (Feagan, 2007) as well as advantages.

1.4.2 Essential features

Local food systems value a shorter distribution distance between grower/producer and consumer compared to the national and global conventional food system which relies upon centralised processing and packaging facilities that are often located far from the grower and the consumer but enable food to be shipped very long distances at a fairly low cost to producers (Halweil, 2002; Martinez et al, 2010). In addition, local food systems often cut out the intermediaries involved in processing, packaging, transporting, and selling food.

Local food systems are important in their capacity to stimulate a vibrant local economy (Martinez, et al 2010). Essential features of a local food system include the following aspects (Feenstra 2002; Rose & Larsen, 2012):

1. Equitable access to healthy food by all community members

Local food systems have many benefits including health and wellbeing and the building of social capital. They can help improve food security by improving affordable access to local fresh food. For all of these reasons, local governments throughout Australia such as the City of Melbourne (2012) are starting to look at ways to support and finance the expansion of local food economies in their municipalities.

2. Sustainable farming practices used by a core number of family farms

Local food systems rely upon a network of small, usually sustainably run, family farms (rather than large industrially run farms) as the source of farm products.

3. The creation of direct links between producers and consumer.

By selling directly to consumers, farmers bypass intermediaries and thus can develop autonomous marketing strategies based on differentiation. This can mean that farmers keep a larger share of the value-added within the farm and within the local economies.

4. Food business that create jobs and input financial capital into local economy

Evidence indicates that local food systems support local economies (Martinez et al., 2010, Tregear, 2007). For example, farmers' markets positively affect the businesses surrounding them, while also providing significant sources of income for local farmers, thus maintaining the viability of many small, local farms (Brown & Miller 2008). Unlike large industrial farms, small family farms are more likely to spend their dollars in the community on farm-related inputs (e.g., machinery, seeds, farm supplies, etc.). In addition, food grown locally, processed locally, and distributed locally (for example, to local restaurants) generates jobs and subsequently helps stimulate local economies (Halweil, 2002). A key distinguishing feature of local food economies is the higher level of trust and more intimate connection that purchasers have with the producers of food, as demonstrated by the relationship facilitated in farmers' markets (Tregear 2007, Kneafsey, 2012).

Whilst the scope and size of the local food economy in Australia is under-researched compared to the US and the UK, a published report from the Australian Bureau of Agriculture and Resource Economics (DAFF, 2012) estimates that alternative fresh food markets such as farmers' markets account for 7 per cent of all fresh food sales.

Another benefit is job creation. Production for local food economies appears to be numerically dominated by smaller to medium size farms, specialising in horticulture and organic / non-chemical production methods. The labour intensive nature of these operations means that they create many times more jobs than larger, more capital-intensive farms (Rose & Larsen, 2011). This is evident in the UK where farms under 100 acres provide five times more jobs per acre than those over 500 acres (Norberg-Hodge & Gorelick, 2010).

A further benefit of local food economies is the multiplier effect; that is, the capacity of locally-owned and operated businesses to circulate and return money spent in their operations within the local economy (Rose & Larsen, 2011).

5. Supportive food and agricultural policies

Loss of farmers and declining viability of farms is a persistent and serious issue across Australia. An example of where food and agricultural policies have supported local food systems is in the US, where local food marketing is becoming a mainstay for growing numbers of farms – mainly small farms but also larger ones. According to the USDA, local and regional food economies keep mid-sized farmers viable, which is why the USDA supports these economies (USDA, 2009).

Another example is in Ontario, Canada, where a Local Food Act (Legislative Assembly of Ontario, 2013) was passed with unanimous, bi-partisan support in November 2013. The Local Food Act mandates the Minister of Agriculture and Food to set goals or targets for improving food literacy in respect of local food, encouraging increased use of local food by public sector organisations, and increasing access to local food. In turn this will increase demand of home-grown food, create jobs and boost the agri-food sectors contribution to the economy.

1.4.3 Key concepts and questions about local food systems

This report doesn't suggest that the emerging local food economy in Tasmania will displace or replace the existing conventional food system. This report does however see local food systems and national/global food systems as 'inseparable, though different and often conflicting' (Feagan, 2007). Evidence from other developed countries such as the US, UK and Canada suggest that it is possible that both systems can contribute to a diverse and resilient food economy that provides broader benefits to the community than simply focussing on the conventional food system alone. The evidence is also increasingly suggesting that a focus on local and regional food systems can generate significant regional economic benefits in very diverse geographical, social and economic contexts (Rose & Larsen, 2011).

Creating and expanding a resilient local food economy is not without its challenges. As a result of the consolidation of food processing, small, local farms may have difficulty finding a local slaughterhouse for their pastured animals or a local food processor (e.g., canner, bottler, commercial kitchen, etc.) for added-value farm products (Halweil, 2002).

As large corporate entities begin to capitalize on the "local" food movement, small farmers may have difficulty competing with large-scale producers with large-scale marketing apparatuses (Mitchell, 2009).

Finally, farmers may have logistical problems finding reliable and convenient transport for their farm products, especially during the growing season. However, there is an emerging network of small-scale, local (and even mobile) slaughterhouses, a growing trend of farms processing their own added-value products (e.g., jams, pickles, etc.), and the creation of food hubs to solve the dual challenges of transportation and marketing for small family farms.

2. RESEARCH DESIGN

2.1 Research vision, aim and objectives

The vision of the Local Food Supply Project was to inform local solutions for building improved local food systems in order to help local communities to access to locally grown fruit and vegetables.

The aim of the project is to build a picture of the production, supply and distribution of fresh fruit and vegetables from producer to wholesaler/distributors in the selected 13 LGAs, which comprise the main fruit and vegetable growing areas in Tasmania.

The objectives are as follows:

- To create a picture of the stakeholders, programs, policies, food production and other activities which support easy and affordable access to fresh fruit and vegetables for Tasmanians.
- To gather and analyse the knowledge and views of key stakeholders, so as to develop an understanding of the practicalities of current food systems in Tasmania, and explore the opportunities and challenges for local food systems in the state.

2.2 Research questions

The project sought to answer three research questions:

1. What types and quantities of fruit and vegetables are grown in Tasmania, and what types and quantities of fruits and vegetables are consumed in Tasmania?
2. What local food systems already exist, what do they look like and what do participants tell us about their strengths, weaknesses, opportunities and challenges?
3. What are the potential opportunities and challenges for individual communities and Tasmania in establishing local food systems?

2.3 Approach

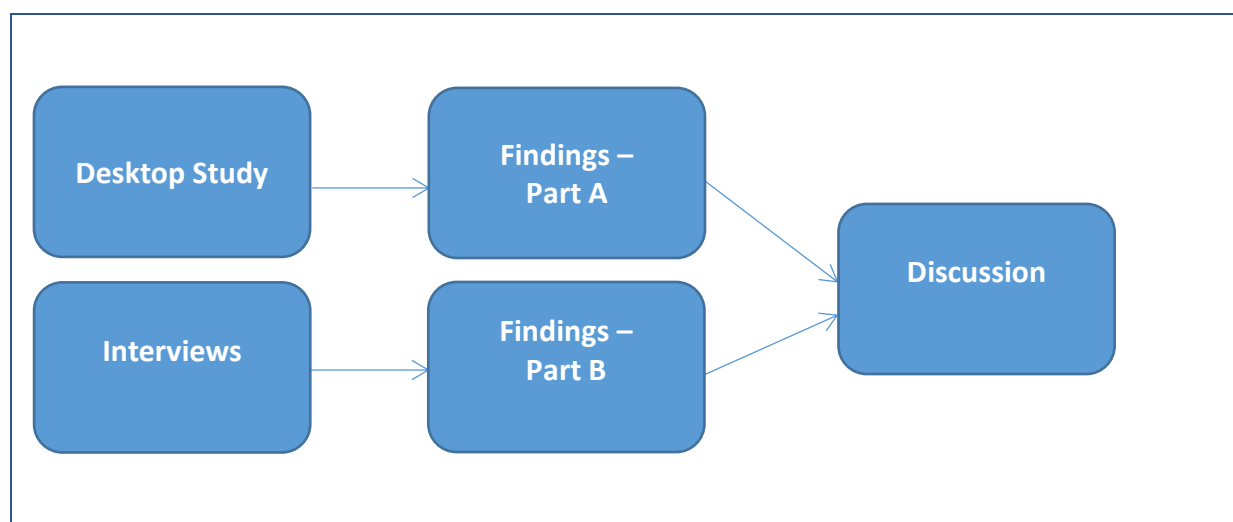
2.3.1 Two-part design

This project has two distinct but complimentary and sequential parts, as illustrated in Figure 3:

Part A –The Food Landscape. Collating information on food production and consumption in Tasmania, and identifying key stakeholders.

Part B – The Conversation. Gathering views, attitudes and perceptions of key stakeholders on the challenges and opportunities facing local food systems in Tasmania.

Figure 3: Two-part project design



2.3.2 Multiple methods

The project employs two distinct research methods - a desktop study and a series of semi-structured interviews. As shown in Figure 2 above, these methods align with the two parts of the project. The use of multiple methods within a project design is a well-recognised research strategy which allows two different sub-topics to be addressed by different methods, in a sequential and additive manner (Bloor & Wood, 2006). Importantly, the findings generated by these two methods are presented separately in the Findings section but are integrated in the Discussion section of the report, as shown in Figure 3.

2.4 Part A – Desktop Study

The research team conducted a desk-top study, which is also known as secondary research. It entailed identifying and collating relevant secondary data on fruit and vegetable production in Tasmania. This data was primarily sourced from published Australian Bureau of Statistics datasets, the Tasmanian Department of Primary Industry, Parks, Water and Environment (DPIPWE) and the various fruit and vegetable peak body organisations' information briefs. A desk-top study was warranted because of the pre-existing availability of data sets and the infeasibility of the project team generating comprehensive primary data on food production given the scope and timelines of this project.

The information gathered during this phase of the project informed the questions developed for the Interview Guides for the semi-structured interviews, as well as informing the Findings – Part A and the Discussion.

As indicated above data and information for the desk top study was gathered from a range of sources, including, but not restricted to the following sources:

The Australian Bureau of Agricultural and Resource Economics and Science² (ABARES) produces annual regional profiles of agricultural industries in regions across Australia. The profiles present an overview of the agriculture sector in each region, and provide financial performance of broad acre and vegetable industries. This data is useful for assessing the economic situation of agriculture in different regions, but does not provide details of volume or types of crops produced.

The Tasmanian Institute of Agriculture³ (TIA) and some peak industries conduct research into specific crops, such as measuring yields of different varieties under different conditions. While this data is very accurate, it is too specific to be used for a broad review of fruit and vegetable production in the state.

The Department of Primary Industries, Parks, Water and Environment⁴ (DPIPWE) releases Industry ScoreCards every few years, which measure growth, value-adding and opportunities in the agriculture industry in the state. These ScoreCards bring together information from other sources, including ABS and ABARES, and as such the current project has not used these as a primary source of information.

The Australian Bureau of Statistics (ABS) collects data on agricultural commodities in Australia through the five-yearly Agricultural Census. The census focusses on the most commonly grown crops by weight (personal communication; ABS, 2011). This data is considered the most comprehensive and relevant, and has been used for this report. However there are some limitations to this data.

The ABS collect data at a regional level referred to as a Statistical Area 4 or 'SA4' level. There are four SA4 regions in Tasmania. It is not possible to isolate production data to Local

² The Australian Bureau of Agricultural and Resource Economics and Science (ABARE) <http://www.agriculture.gov.au/abares/about>

³ The Tasmanian Institute of Agriculture (TIA) <http://www.utas.edu.au/tia>

⁴ The Department of Primary Industries, Parks, Water and Environment (DPIPWE) <http://dPIPWE.tas.gov.au/agriculture/facts-figures/industry-scorecards>

Government Area level, however in Tasmania the boundaries of most SA4 regions fall along LGA boundaries.

Data is collected on the six most commonly produced fruit varieties in the state (apples, pears, strawberries, cherries, nectarines and peaches), as well as eight vegetable varieties (beans, peas, onions, potatoes, carrots, lettuce, tomatoes, capsicums and olives). Because data is based on weight of product (measured in tonnes), heavier fruits and vegetables such as potatoes, onions and apples are overemphasized in the data at the expense of products with a lower weight, such as berries and lettuce.

2.5 Part B – The Conversation

2.5.1 Semi-structured Interviews

The decision to use a qualitative research method for Part B of LFSP was informed by a number of key factors. The project team was focussed on engaging stakeholders from a number of different industries/sectors, and recognised that qualitative information could provide a deeper and more illuminating understanding of the challenges and opportunities for local food systems in Tasmania.

Semi-structured interviews were chosen because they allow researchers flexibility to follow topical trajectories, or to probe for details about issues that deviate from the specifics of questions (Mason, 2004). Accordingly, the researchers shaped, rephrased, left out or added questions to the Interview Guide during each interview. Semi-structured interviews were also considered the most suitable for the engaging research participants, as time-constraints and conflicting schedules for growers meant that travelling to attend scheduled group interviews was deemed to be unfeasible. .

Content for the interview questions was prepared in advance of the interviews. The questions drew on literature relating to similar research activities conducted within Australia for example the project work conducted by Kirsten Larson and her colleague at the University of Melbourne Victoria titled *How Can Food Hubs Catalyse Healthy and Resilient Local Food Systems in Victoria: Developing a Food Hub in the City of Casey* (Larsen & Ryan, 2014). The Interview Guide was piloted with members of the project reference group and HFAT Advisory Committee and amended based on feedback. The intent of the semi-structured interviews was to conduct them in a conversational rather than formal manner. Five separate Interview Guides were developed; one for each of the five stakeholder groups – these can be found in Appendix 7.4. While the content of each of the Interview Guides were similar, however individual Interview Guides contained a distinct set of questions that related directly to the core business of the stakeholder group. This process allowed the study to capture concerns and perceptions that may be specific to particular stakeholder groups.

2.5.2 Desktop Stakeholder Analysis

A stakeholder analysis was performed to provide an overview of potential informants for the project. This analysis identified individuals and groups who were likely to affect or be affected by the project (see Table 3).

- Producers, community groups, processors and wholesalers were identified as groups with significant influence upon challenges and opportunities relating to the operation or outcomes of the project.
- Local Government Areas (LGAs), wholesalers and distributors were identified as likely to be affected (either positively or negatively) by the project actions.
- Government departments, researchers at the University of Tasmania, and consultants were identified as potentially likely to be indirectly affected by the project actions.

Table 3: List of stakeholder groups and description of interests

STAKEHOLDER GROUP	DESCRIPTION OF INTERESTS
Community groups	Mentoring and advocacy, local knowledge
Commercial industry/Consultants/University of Tasmania/State and Local Government	Information transfer, identifying potential markets, economic feasibility studies. Promotion, monitoring, quality assurance and extension to targeted fruit and veg industries. Research in food security, agri-food value chains, fresh food production, regional development and marketing. Informants within their LGA in terms of relevant policies and strategies that impacts on production & supply of fresh fruit and vegetables.
Growers of Fruit and vegetables	Information relating to production and supply, barriers and enablers.
Peak grower organisations	Local knowledge around production within respective industries. Engage directly with producers. Scoping fruit and veg supply chain
Wholesalers (including retail wholesalers)/processors and distributors	Information on purchase arrangement, supply, volume, logistics, seasonality, markets and consumer trends etc.

2.5.3 Selection of participants

Participants were selected from each of the stakeholder groups listed in Table 3. Selection of participants was based on their perceived knowledge and understanding of local food systems. This was determined by their positions (either paid or voluntary), activities and responsibilities. However, it is important to note that the research team also focussed on selecting participants with an intimate knowledge of local food systems within the three study regions.

Selection was based on purposeful sampling methodology in the first instance, with snowballing techniques. Researchers purposefully aimed to conduct interviews with an even spread of participants from each of the three regions, and to ensure a fair representation of each stakeholder group. Representatives of relevant businesses, committees or organisations were asked to suggest respondents who they believed could provide valuable input into the study.

The snowballing method was used to identify people who know other people who may be knowledgeable about fruit and vegetable production and supply.

2.5.4 Contacting participants

A Letter of Invitation (see Appendix 7.2) and an Information Sheet (see Appendix 7.3) were sent to potential participants via email, inviting them to participate in an interview. If no response was received, researchers followed up with a telephone call within two weeks of sending the email.

An interview time was scheduled with each participant after they agreed to participate. Of the 68 key stakeholders who were notified about the project and invited to participate, 65 agreed to participate in the interview process. Sixty-four of these stakeholders (94 per cent of those contacted) were interviewed during the study period. One stakeholder who accepted the initial invitation to participate was unable to be interviewed during the research period due to time constraints relating to their business (refer to figure 4).

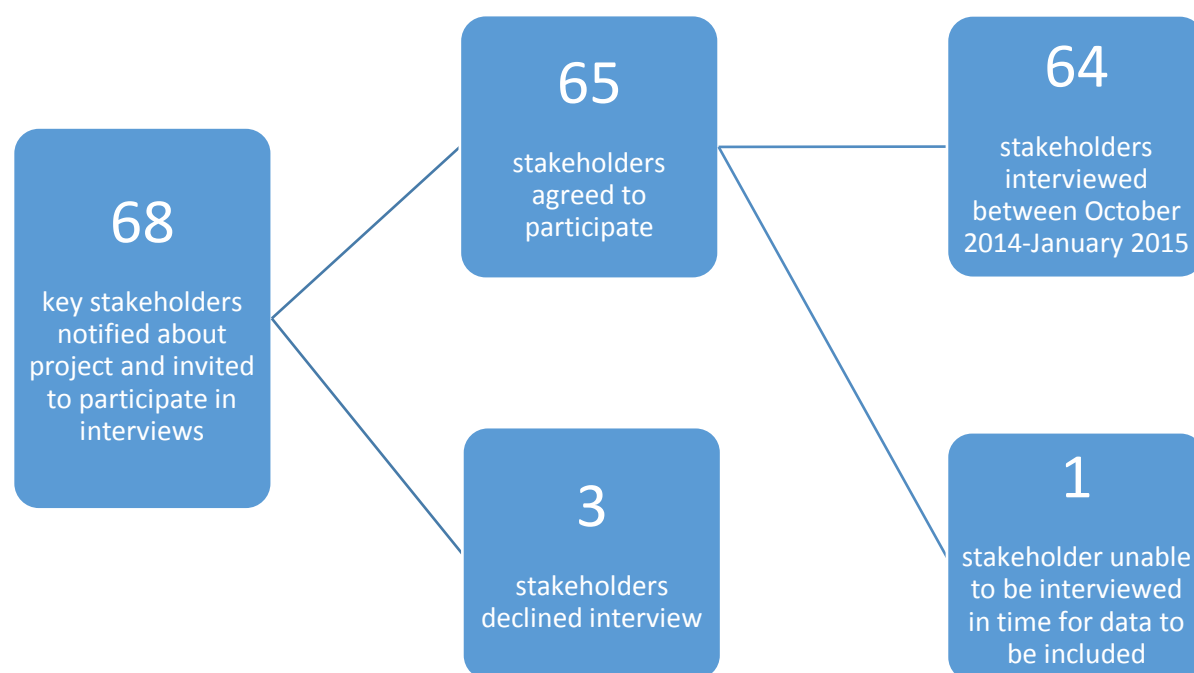


Figure 4: Interview schedule

Three stakeholders declined to be interviewed for various reasons:

- One wholesaler declined an interview due to having sold the business and no longer working in a related field.
- One wholesaler declined an interview as they did not feel the research was relevant to their work.
- One grower declined an interview due to time constraints relating to harvesting season.

The challenges and opportunities that emerged from the interviews with all 64 key stakeholders are included in the thematic analysis in section 4 of this report.

2.5.5 Description of interview participants

There was a relatively balanced spread of participants from each of the three regions in the state. The most represented region was the North with 30 participants, accounting for nearly half of those interviewed. A third of participants (21) came from the South of the state, and the remaining 20 per cent of participants (13) were from the North West region (refer to Table 4).

Table 4: Total number of stakeholders interviewed by region

Region	No.
North	30
South	21
North West	13
TOTAL	64

Of the 64 participants, the largest stakeholder group interviewed were growers (16) accounting for 25 per cent of those interviewed. Local government staff (14) made up a further 21 per cent.

The remaining stakeholder groups were all represented in smaller numbers, with six community groups, six consultants, five sellers, four peak industry representatives, four state government employees, four wholesalers, three university staff and two processors interviewed.

Table 5: Total number of people interviewed by stakeholder group

Stakeholder group	No
Community groups	6
Commercial industry/Consultants/University of Tasmania/State and Local Government	26
Growers of Fruit and vegetables	16
Peak grower organisations	4
Wholesalers (including retail wholesalers ⁵)/processors and distributors	11
TOTAL	64

⁵ Retail wholesalers refer to supermarkets that may buy directly from producers and on-sell to their customers.

2.5.6 Interview process

A total of 55 interviews were conducted over three months from October 2014-December 2014. The majority of these (48) were conducted as one-on-one interviews with stakeholders. Seven of the interviews were conducted with pairs of stakeholders for logistical reasons, specifically as a time-saving method where two stakeholders worked for the same organisation or business.

Interviews were conducted by three members of the Research Team – Sandra Murray, Stuart Auckland and Caitlin Saunders.

Prior to commencement of each interview, participants provided written consent to be interviewed after reading an Information Sheet and Consent Form (see Appendix 3). Interviews were all conducted face-to-face, digitally recorded with permission from participants, and each interview lasted between 30 and 90 minutes.

Participants were asked about their experience, knowledge, perceptions and attitudes towards production and supply of local fresh fruit and vegetables in Tasmania, and their understanding of local food systems. Questions were modified for each stakeholder group to increase relevance.

Data collected through the interviews was de-identified, to ensure participants remain confidential. All recorded interviews including transcriptions were held in a locked, secure location within the School of Health Science, UTas.

All of the recorded interviews were transcribed, resulting in 292,740 words or 678 pages of transcripts. Participants were de-identified in the transcripts to reduce the risk of bias during the data analysis process.

2.5.7 Data analysis for interviews

An inductive thematic analysis of the textual data in the interview transcripts was undertaken. This exploratory analytical approach allows for themes and patterns to emerge from the data, rather than allocating data to prescribed categories informed by research literature or pre-defined models. This analysis was undertaken by one team member, using the qualitative data analysis software package NVivo™ version 10. The process involved reading and re-reading the transcripts, discussing the data with other team members to assist with sense-making, and then assigning descriptive (first-level) codes and analytical (second-level) codes to segments of the textual data, so as to identify emergent themes in the interviews (Cope, 2010; Tracy, 2012; Guest et al, 2012).

As part of the analytical process, an analytic memo was maintained to document reflections on the data and noting the meanings of and connections between emergent codes or themes (Tracy, 2012). To ensure reliability of the coding, the preliminary coding structure was discussed with three other team members, after which the structure was revised. In addition, another team member independently coded one of the transcripts and compared her codes with those generated earlier, checking for basic consistency between the two sets of codes to ensure inter-coder agreement (Cope, 2010).

This iterative process allowed a coding structure to emerge, in which the spoken words of interview participants was organised into meaningful categories and hierarchies. To focus the findings, the key themes emerging from the data were identified, according to several criteria:

- *Relevance* – how well the theme addresses the research questions.
- *Breadth* – an issue or topic mentioned or explored by a large number of participants.
- *Depth* – individual participants gave extensive detail about the issue, and it was a focus of their attention.
- *Practicability* – how usefully a theme informs implications for future directions.

The resultant key themes inform the rest of this report, including the findings and discussion sections, and the implications for the future of local food systems in Tasmania.

3. FINDINGS – PART A

3.1 Production - Overview of the Tasmanian fruit and vegetable industries

Tasmanian fruit and nuts comprised around three percent, and vegetables around six per cent, of the total value of Australian fruit and vegetable production in 2012–13 (ABS 2014). In the 12 months to June 2013, Tasmania exported \$44 million of fresh fruit and vegetables, 6.7 per cent of the total value of national exports of fresh fruit and vegetables (World Trade Atlas 2014).

The main Tasmanian crops are potatoes, onions, carrots, cherries, pomefruit (apples and pears) and berries. In 2012–13, the gross value production of fruit and nuts in Tasmania was \$112.6 million, vegetables \$236.6 million and nursery production (nurseries, cut flowers and cultivated turf) \$27.9 million (ABS 2014a). The historical gross value of production for Tasmanian fruit and vegetables is shown in Figure 5.

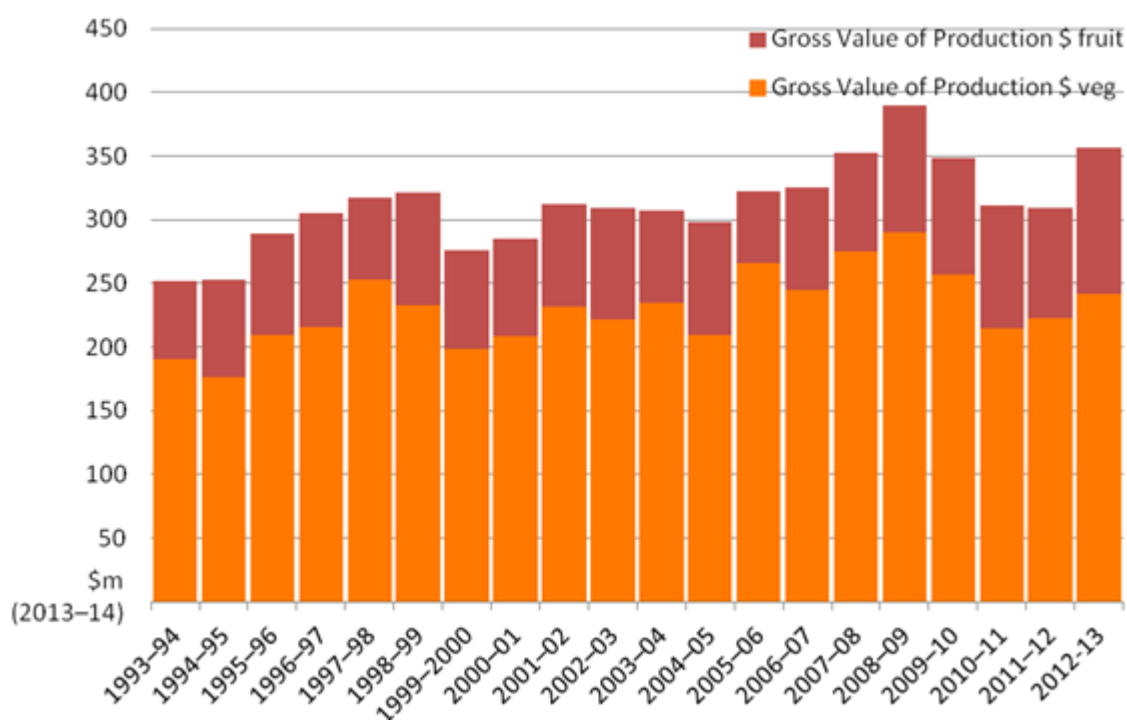


Figure 5: Gross Value of Production, Vegetables^a and Fruit^b. Tasmania, 1993–94 to 2012–13

^a Includes vegetables produced for seed as well as human consumption. ^b All fruit excluding grapes - includes Citrus fruit, Pome fruit, Stone fruit, Other orchard fruit, Berry fruit, Plantation fruit and Nuts. Note: Results are presented in 2013–14 dollars (ABS, 2014a).

3.1.1 Vegetables

The four highest value vegetable crops grown in Tasmania in 2012–13 were potatoes, carrots, onions and beans (Table 6). Other vegetable crops grown for processing includes peas, cauliflower and broccoli. In the year ending June 2013, potatoes were the third most frequently purchased fresh vegetable based on weekly purchase patterns.

Table 6: The gross value of production and production volume for the four highest value vegetable crops in Tasmania in 2012–13.

Crop	Value (\$ million)	Volume (tonnes)
Potatoes	\$ 120.10	350 470
Carrots	\$ 29.40	50 917
Onions	\$ 27.50	87 457
Beans	\$ 7.00	6 964

(DPIPWE, 2014a)

Potatoes

The Tasmanian potato industry is dominated by the processing sector with a large majority of potato production directed to the processing market; the remaining twenty per cent is divided between the fresh and seed markets. Due to disease and pest control, Tasmania does not import potatoes from the mainland; all fresh potatoes consumed in Tasmania are grown within the state. The majority of fresh potatoes are sold through retail outlets with the two major supermarket chains dominating distribution within the retail channels. Smaller independent green grocers hold about one third of market share, which is lower than their overall fruit and vegetable market share (DPIPWE, 2014a).

Processing companies' source supply from both large and smaller operations on a contract tonnage basis, however there has been an increasing tendency for processors to deal with fewer larger scale growers to gain production and supply efficiencies (DPIPWE, 2014a). Potatoes are grown across a wide area of Tasmania including the northwest, northeast and northern midlands regions where irrigation infrastructure and suitable soil types are available.

Carrots

In the year ending June 2013, Tasmania was the third largest producer of carrots with eighteen per cent of national production. The majority of carrots in Tasmania are produced under contract and primarily focused on the fresh domestic market with processing accounting for twenty-five to thirty per cent of Tasmania's annual carrot production. The production is localised around the Devonport / Forth region of northwest Tasmania in close proximity to export and processing facilities (DPIPWE, 2014a).

Carrots are considered to be one of the most versatile vegetables with the introduction of new “heirloom” coloured varieties adding appeal to the consumer. In addition, their versatility in terms of being able to be consumed raw or cooked offer convenience and minimum wastage.

Onions

Tasmania is the second largest producer of onions in Australia with twenty-eight per cent of national production. Onions are the predominant vegetable export. In 2012–13, 44 720 tonnes of onions with a value of \$22.9 million were exported, representing ninety-four per cent of the total value of Tasmanian vegetable exports. Tasmania accounted for eight-six per cent of all onions exported from Australia in 2012–13 (World Trade Atlas 2014). In 2012, the Australian exports of fresh onions accounted for 0.9 per cent of global exports of these products (World Trade Atlas 2014). The main onion producing regions in Tasmania are Scottsdale and Winnaleah in the north-east, the northern Midlands and the northwest coastal strip with a concentration around Forth close to the main vegetable packing operations (DPIPWE, 2014a). Expansion of onion cropping areas is closely driven by land availability, contract value and irrigation capacity. Most onion growers grow under contract however there are a number of smaller grower-packers that produce to specification and marketing arrangements. There are market signals that suggest some consumers will pay more for certain onion attributes (DPIPWE, 2014a).

In contrast to other states, exporting and direct sales to processors are the predominant sales channels for fresh produce in Tasmania. For example, in 2011–12, an estimated seventy per cent of Tasmanian vegetable growers sold their produce directly to a processor and ten per cent for export (Valle et al. 2014). This compares to the national average of 26 per cent and four per cent respectively (Valle et al. 2014). In 2011–12 only five per cent of Tasmanian vegetable farms reported selling direct to state capital wholesale, compared to the national average of sixty-two per cent (Valle et al. 2014).

In summary, the key drivers of vegetable production in Tasmania and, specifically, the high value crops are market demand factors, domestic and export, versatility and adaptability of the crops to align with the consumers preference for quick and easy to prepare meals. Other factors that have influenced level of vegetable production include land availability, contract value, irrigation capacity, the value of the Australian currency and improvements in production and processing technology.

3.1.2 Fruit

The two highest value fruit crops grown in Tasmania in 2012–13 were cherries and apples (Table 7). Grapes for wine production had a gross value of \$26 million, and whilst they are not included in the gross value of production and production volume they are an important part of the perennial horticulture industry⁶. Other fruit and nuts had a value of \$22 million, with the majority of this being berries. Recent investments in berry production in Tasmania will lead to increased production and value from the sector in the near term.

Table 7: The gross value of production and production volume for the two highest value fruit crops in Tasmania in 2012–13

Crop	Value (\$ million)	Volume (tonnes)
Cherries	\$ 36.50	3 859
Apples	\$ 34.90	28 453

(DPIPWE, 2014a)

Cherries

Cherries are grown commercially in most regions of Tasmania with production typically occurring between mid-December through to late February. Cherries represented ninety-eight per cent of the total value of Tasmanian fruit exports in 2012–13, with 1 499 tonnes exported with a value of \$19.5 million. Tasmania accounted for 52 per cent of all cherries exported from Australia in 2012–13 (World Trade Atlas 2014). In 2012 the Australian exports of fresh cherries accounted for 0.4% of global exports of these products (World Trade Atlas 2014). Tasmanian production has grown rapidly in the last 2-3 years and is expected to continue to increase as orchards mature (DPIPWE, 2014a). Tasmania is currently the largest producer in Australia with around 120 growers producing thirty-five per cent of national production (DPIPWE, 2014a). However, unseasonal weather patterns at or around the time of harvest creates a level of volatility in production.

Berries

Production of strawberries, blueberries and raspberries has increased in recent years with Tasmania now the second largest producer of raspberries in Australia with thirty-one per cent of national production behind Victoria. Production of strawberries in Tasmania has increased although Tasmania still produces less than one per cent of the national production. The majority of Tasmanian production is consumed within the state with a small amounts destined for export markets (DPIPWE, 2014a). Strawberries are predominantly grown in open fields however production techniques are rapidly changing to protected cropping systems such as poly tunnels which help extend the growing season from October to April. Tasmania produces approximately five per cent of the national blueberry crop which is grown between January and March/April. The main growing regions for cherry and

⁶ Historically the grower levy for perennial horticulture and wine industry has been separate due to the differing focus around research and development and marketing.

berry production include the LFSP study regions of the Huon, Derwent and Coal River Valleys in the south of the state, the northern Midlands around Deloraine, the Tamar Valley in the north and the coastal strip in the northwest of the state.

Apples

Tasmania is known internationally as the 'Apple Isle', due to its reputation as a significant exporter of the fruit since the late 1800s (Fruit Growers Tasmania, 2015). Over recent decades, Tasmanian apple exports have been in decline, with less than one per cent of production (207 tonnes) exported in 2012–13 (DPIPWE, 2014a), compared to the height of the industry in 1967–68 when 151 322 tonnes was produced, with more than 70 per cent exported. However recent increases in processing capacity of apples in the state for both juicing and cider industries are creating new opportunities for the future (Fruit Growers Tasmania, 2015).

In summary fruit production in Tasmania has experienced unprecedented growth in recent years. Whilst much of this growth can be attributed to similar factors that have influenced the growth of the vegetable industry such as the expansion of domestic and export markets there are additional factors that are perhaps more unique to the fruit production sector such as the expanded use of protected cultivation systems such as polytunnels, the commercial release of more climate tolerant cultivars, improvements in production, packaging and transporting systems and the development of niche markets and value adding opportunities. Importantly, Tasmania continues to build its brand of 'clean and green,' an image that resonates well across both the fruit and vegetable sectors.

3.1.3 Overview of Tasmanian Fruit and Vegetable Industries

Tasmania's natural attributes, including its temperate climate, quality soils, reliable water resource and well-connected transport networks, provide the State with distinct advantages in the production and supply of fresh fruit and vegetables. Tasmanian fresh fruit and vegetable producers have taken advantage of these attributes to grow fruit and vegetable industries into one of the largest contributors, in terms income and employment, to Tasmania's economy. On a national scale Tasmania is an important producer of fruit and vegetables; mainly potatoes, onions, carrots, cherries and other stone fruit, pomefruit and berries. In 2012-13, Tasmania produced more than \$349 million worth of fruits, nuts and vegetables, with the gross value of production of vegetables being \$213 million (DPIPWE, 2014a).

Production of fresh fruit and vegetables is centred round the fertile soils of the North and North-West of Tasmania, as well as in parts of the southern regions such as the Southern Midlands, Coal River Valley, Derwent Valley, and Huon Valley areas. The fruit and vegetable industries are generally typified by small acreage and production often including other mixed farming enterprises (Valle et al 2014). The smaller production units may offer some distinct advantages for the producers in terms of risk management at the individual farm level, it presents challenges in delivering production and supply chain efficiencies that are required to meet price points set by supermarkets, exporters and processors, which are operating in a very competitive marketplace (Future Focus 2008). Fruit and vegetable industries are also experiencing rapid technological change with increased mechanisation.

There has been an increase in acreage under greenhouse production particularly in tomatoes and berry production which has allowed these industries to extend their growing season. Protected cultivation, such as poly-tunnels and glasshouse production systems in Tasmania is currently limited to a small number of producers. The sector ranks highly in terms of innovative capability, providing the potential for rapid growth.

In recent years there have been significant changes in the vegetable industries characterised by an expansion in the fresh vegetable industry with the emergence of few large vertically-integrated companies with well-developed supply chains. This trend has been largely driven by supermarkets, processors and exporters require consistent lines of product produced to tight quality specifications. Expansion of on farm production has occurred mainly through acquisitions and other avenues such as land leasing. At the same time there has been a growing interest in the local food economy with the establishment of local food supply systems such as farmers' markets, vegetable box schemes and direct from farm marketing schemes.

Despite the increase in interest in local food supply systems it is estimated that seventy per cent of Tasmanian vegetable growers sell their produce directly to a processor (this includes the manufacturing of canned, bottled, preserved, quick frozen or dried vegetable products). Only five per cent of Tasmanian vegetable farms reported selling direct to a wholesaler, compared to the national average of sixty-two per cent (Valle et al. 2014)

3.1.4 Seasonality

There is a widely held perception that seasonality is a problem in Tasmania, with a limited range of fruit and vegetables available during winter months. But the reality is quite different. Figure 8 provides an indication of the types of vegetables grown commercially in Tasmania, and the seasons in which these are harvested – this list is not exhaustive, but provides an illustration of the varieties of vegetables available throughout each season.

While some vegetables on this list are traditionally considered 'summer vegetables' (such as tomatoes, eggplant, capsicums and cucumber) the vast majority of vegetables grown in Tasmania are harvested year-round. This is due in part to the cool temperate climate in Tasmania, and also in part to producers employing specific farming methods to extend growing seasons (e.g. polytunnel or greenhouse production systems), and growing different varieties of crops which flower, ripen or fruit at different times.

Table 8: Seasonality of Vegetable production

Crop	Spring: September October November	Summer: December January February	Autumn: March April May	Winter: June July August
Artichoke	✓	✓	✓	✓
Asparagus	✓	✓	✓	✓
Asian greens	✓	✓	✓	✓
Beans	✓	✓	✓	✓
Beetroot	✓	✓	✓	✓
Broccoli	✓	✓	✓	✓
Brussels sprouts	✓	✓	✓	
Cabbage	✓	✓	✓	✓
Carrot	✓	✓	✓	✓
Capsicum		✓	✓	
Cauliflower		✓	✓	✓
Celery		✓	✓	✓
Chard	✓		✓	✓
Chilli		✓	✓	
Cucumber		✓	✓	
Eggplant		✓	✓	
Fennel		✓	✓	✓
Garlic	✓	✓	✓	✓
Herbs	✓	✓	✓	✓
Kale	✓	✓	✓	✓
Leek	✓	✓	✓	✓
Lettuce	✓	✓	✓	✓
Mushroom	✓	✓	✓	✓
Mustard greens	✓		✓	✓
Onion	✓	✓	✓	✓
Parsnip	✓		✓	✓
Peas	✓	✓	✓	✓
Potatoes	✓	✓	✓	✓
Pumpkin		✓	✓	✓
Radish		✓	✓	✓
Rocket	✓	✓	✓	✓
Shallot	✓	✓	✓	✓
Silverbeet	✓	✓	✓	✓
Spinach	✓	✓	✓	✓
Spring onion	✓	✓	✓	✓
Squash		✓	✓	✓

Swede	✓		✓	✓
Sprouts	✓	✓	✓	✓
Tomatoes		✓	✓	
Turnip	✓		✓	✓
Zucchini		✓	✓	

(Seasonal food guide, 2014; Eat Well Tasmania, 2013)

Fruit production appears to be more seasonal than vegetable production in Tasmania. Table 9 provides an indication of the types of fruits grown commercially in Tasmania, and the seasons in which these are harvested. This list is not exhaustive, but provides an illustration of the varieties of fruit available through each season. While stone fruit and berry varieties have brief harvesting periods which span over summer and autumn, dozens of varieties of apples and pears are grown year-round.

Table 9: Fruit production by season

Crop	Spring: September October November	Summer: December January February	Autumn: March April May	Winter: June July August
Apple	✓	✓	✓	✓
Apricot		✓		
Blackberry		✓	✓	
Blueberry		✓	✓	
Cherry		✓		
Fig			✓	
Gooseberry		✓		
Greengage		✓		
Lemon	✓	✓	✓	✓
Nectarine		✓	✓	
Passionfruit		✓	✓	
Peach		✓		
Pear	✓		✓	✓
Plum		✓	✓	
Rhubarb		✓	✓	✓
Raspberry		✓	✓	
Strawberry		✓	✓	
Tayberry		✓		
Yosterberry		✓		

(Seasonal food guide, 2014; Eat Well Tasmania, 2013)

3.1.5 Production by region

While dozens of varieties of fruit and vegetables are grown commercially in Tasmania as indicated in the tables above, reliable data is only available for a limited selection of these. Various sources of data were reviewed to identify the types and quantities of fruit and vegetables grown in each region of the state.

Northern Tasmania

The Launceston and North East SA4 includes eight LGAs: Break O'Day, Dorset, Flinders Island, George Town, Launceston, Meander Valley, Northern Midlands, and West Tamar. Four of these LGAs namely; Launceston, Dorset, West Tamar and Meander Valley were included under the projects northern region study area.

The region covers around 20 000 square kilometres, and makes up twenty-nine per cent of Tasmania's total area. Launceston and the North East are home to around 137 600 people (ABS, 2011a). Agricultural land occupies thirty-eight per cent of this region, with the majority of this being dedicated to grazing, which occupies a quarter of the total land in the Launceston and North East region.

Vegetable production is one of the most important agricultural commodities in the Launceston and North East region of Tasmania. In 2011-2012, vegetables contributed twenty-one per cent (\$101 million) of the value of agricultural production in the region. The North East produces forty-one per cent of all vegetables grown in the state by weight (Figure 6). Key vegetable crops by weight in the region include potatoes (148 946 tonnes), onions (43 036 tonnes) carrots (10 914 tonnes), and beans (1 972 tonnes), with lesser production of other crops including lettuce and tomatoes (ABS, 2014b).

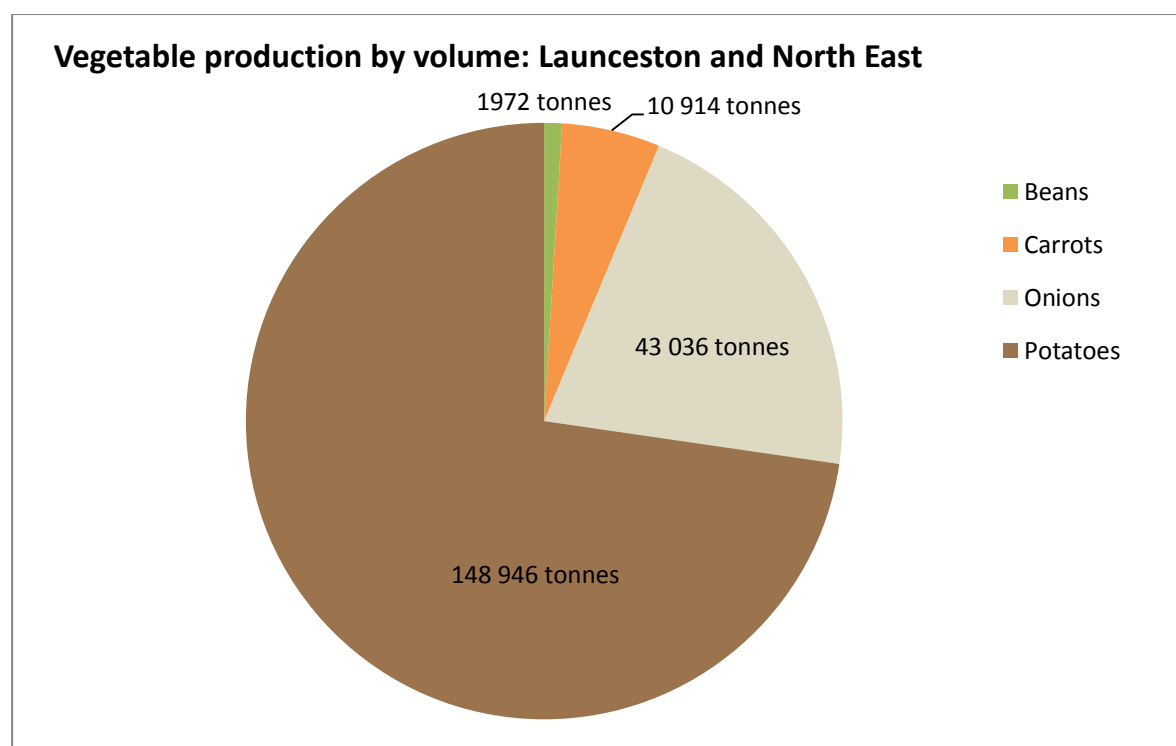


Figure 6: Vegetable production in the Launceston and North East SA4 in 2012-2013⁷

⁷ The North East produces over 41% of all vegetables grown in the state (ABS, 2014b).

Fruit production accounts for just three per cent (\$14 million) of total value of agricultural production in the Launceston and North East region (ABS economic survey 2012) (Figure 7). But this figure belies the significance of fruit production in the area. The region is responsible for over twenty per cent of fruit production in the state, with major fruit crops including apples, strawberries, pears and cherries (ABS, 2014b).

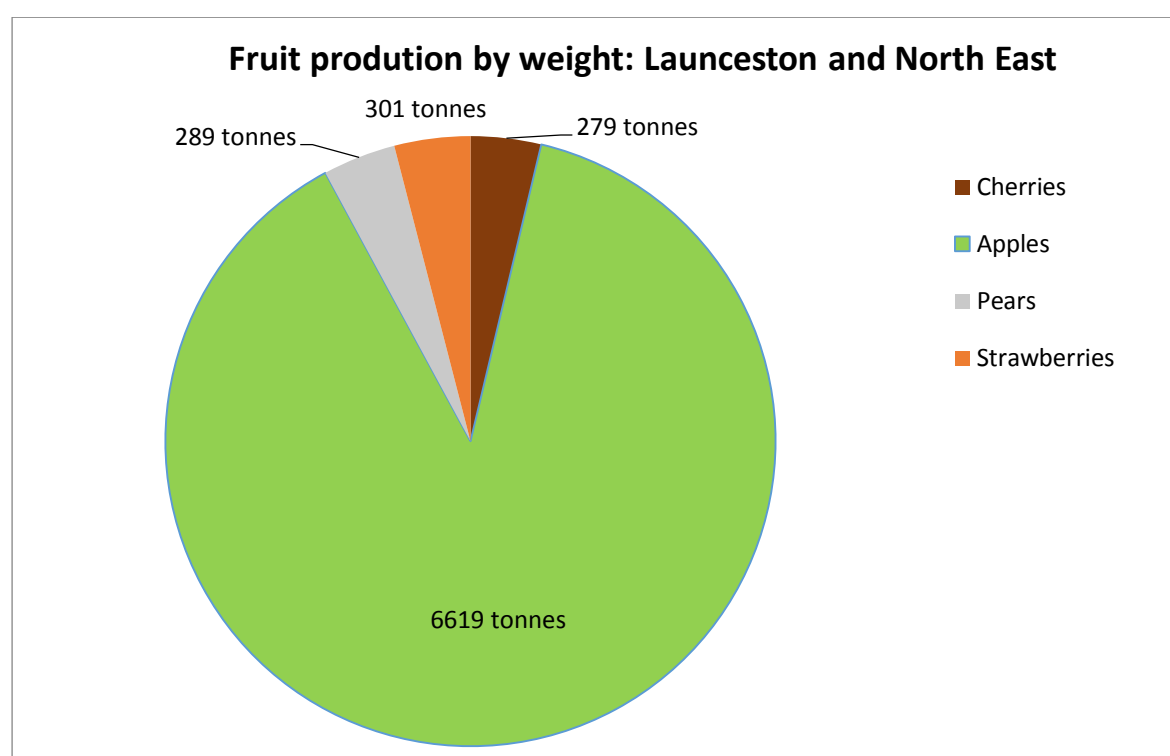


Figure 7: Fruit production in the Launceston and North East SA4 in 2012-2013⁸

West and North West Tasmania

The West and North West SA4 includes nine Local Government Areas: Burnie, Central Coast, Circular Head, Devonport, Kentish, King Island, Latrobe, Waratah/Wynyard, and the West Coast. Five of these LGAs namely; Burnie, Central Coast, Devonport, Kentish and Latrobe were included under the projects north west study area. The region has a population of around 109 000 people, and covers around 22 500 square kilometres, 14 per cent of which is dedicated to agricultural land, with the majority of this region dedicated to conservation and natural environments (ABARES 2014).

⁸ The North East produces over 20% of all fruit grown in the state. (ABS, 2014b)

Vegetable production is the second most important agricultural commodity in the West and North West accounting for twenty-three per cent (\$106 million) of agricultural production in the region (ABS economic survey 2012). The West and North West produces fifty-seven per cent of all vegetables grown in the state by weight (Figure 8).

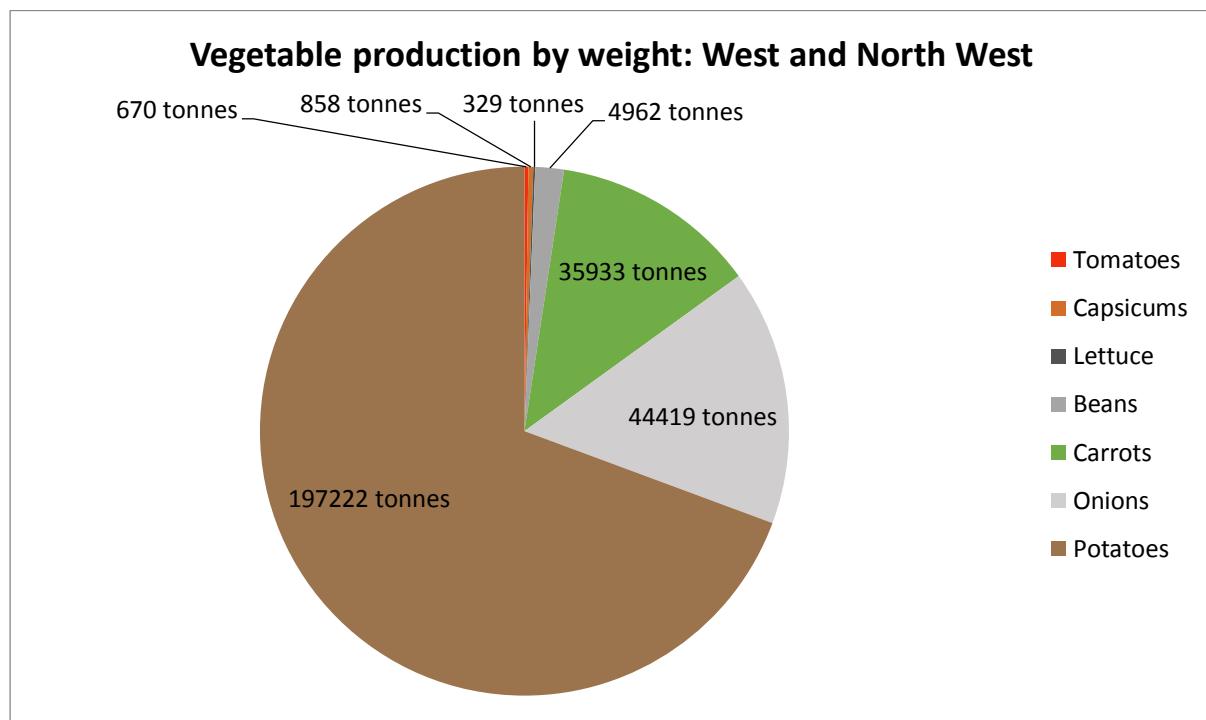


Figure 8: Vegetable production in the West and North West SA4 in 2012-2013⁹

Key vegetable crops by weight in the region include potatoes (197 222 tonnes), onions (44 419 tonnes) and carrots (35 933 tonnes, with significant production of other crops including beans (4 962 tonnes), capsicums (858 tonnes), tomatoes (670 tonnes) and lettuce (329 tonnes) (ABS agricultural commodities 2012-13).

⁹ The North West of Tasmania produces over half (57%) of all vegetables grown in the state. (ABS, 2014b)

Fruit production accounts for one per cent of the value of agricultural production in the West and North West of the state. This amounts to just over one fifth (21%) of all the fruit grown in Tasmania by weight. Apples are the major fruit crop in West and North West Tasmania, with other significant crops including pears, cherries and strawberries (Figure 9).

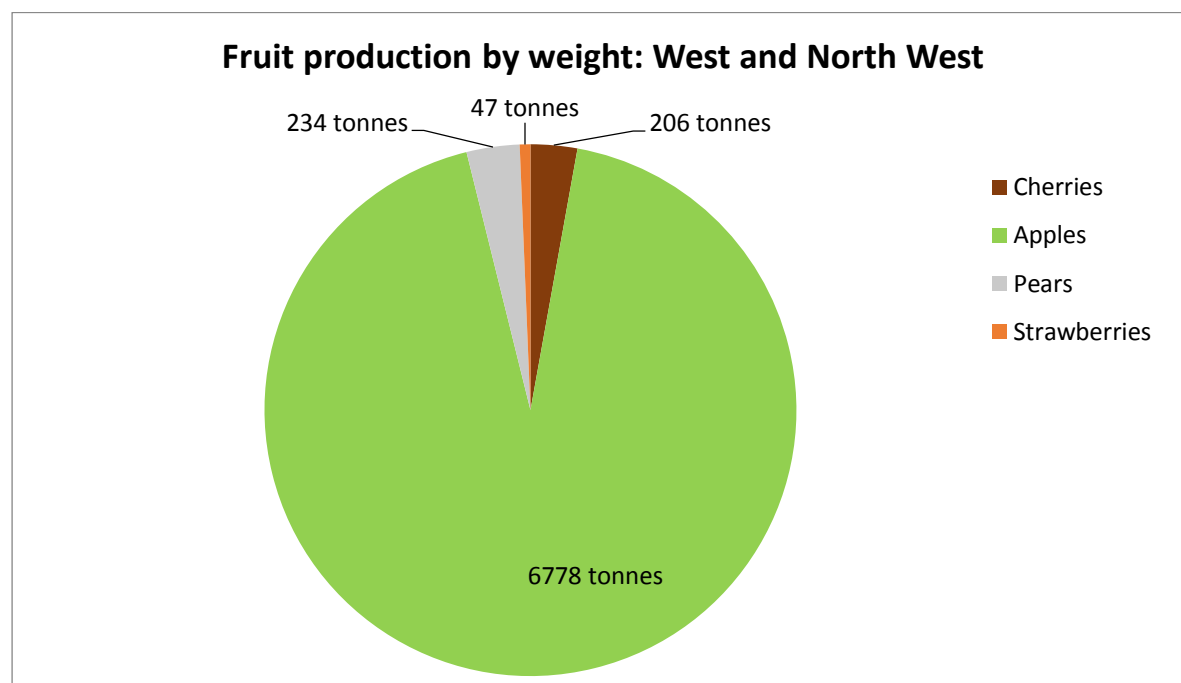


Figure 9: Fruit production in the West and North West SA4 in 2012-2013¹⁰

Southern Region

The Southern Region of Tasmania contains two SA4 areas – the South East SA4, and the Hobart SA4.

The South East SA4 includes seven LGAs: Central Highlands, Derwent Valley, Glamorgan/Spring Bay, Huon Valley, Kingborough, Southern Midlands, and Tasman. The Kingborough City Council is the only LGA which does not fall entirely within one SA4 region – it is split between the South East and the Hobart SA4s. The majority of agricultural land in the Kingborough municipality is located in the South East SA4, and so for the purpose of this research it was deemed to be part of the South East SA4. Two of the LGAs within the South East SA4 area namely the Derwent Valley and Huon Valley, were included under the projects study site as were two LGA's within the Hobart SA4 area Clarence City and Sorell.

The region covers an area of around 23 800 square kilometres, which amounts to 35 per cent of the total area of Tasmania. It is home to approximately 35 800 people (ABS census 2011).

¹⁰ The North West of Tasmania produces over one fifth (21%) of all fruit grown in the state. (ABS, 2014b)

The South East SA4 is significant as a fruit-producing region, with over fifty-six per cent of all fruit grown in Tasmania coming from this area. The region is responsible for the majority of all fruit varieties grown in Tasmania, from nectarines and peaches (100%) to cherries (86%) strawberries (58%) apples (53%) and pears (39%) (Figure 10). The South East region is not a significant producer of any vegetable varieties, though many types are grown in the region in small quantities – including carrots, potatoes, onions and beans.

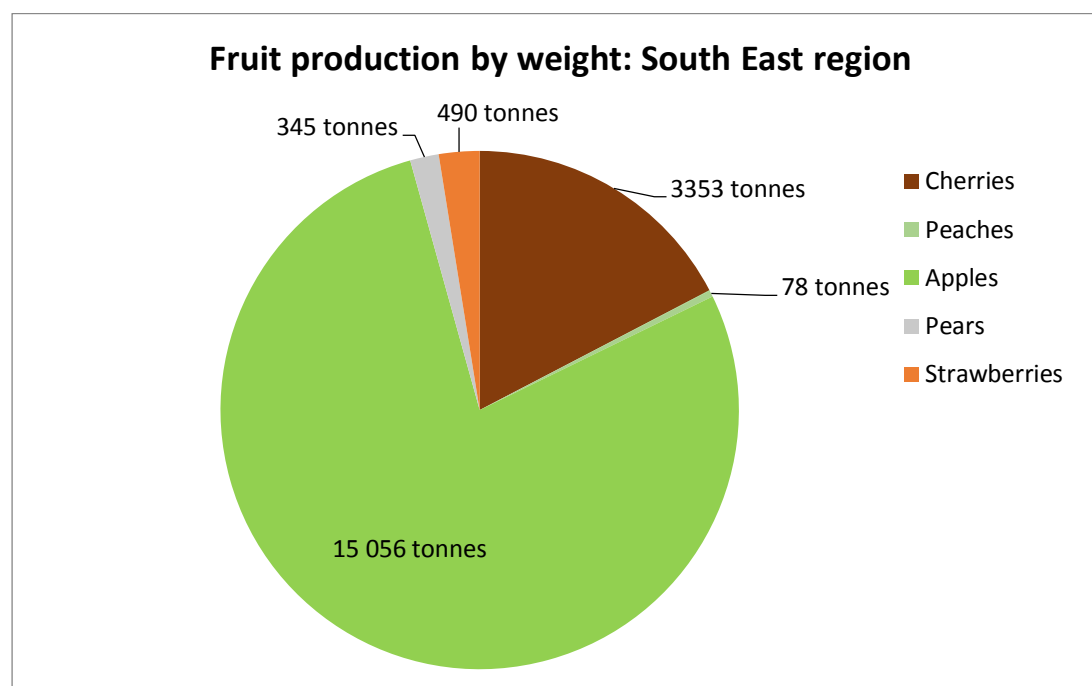


Figure 10: Fruit production in the South East SA4 in 2012-2013¹¹

The Hobart SA4 includes five LGAs: Brighton, Clarence City, Glenorchy, Hobart, and Sorell. This statistical area is not a significant growing region, but is instead a population hub. Nearly 200 000 people are spread across the five LGAs that make up this SA4, accounting for a third of the total population of the state.

Only 1.5 per cent of the total fruit and vegetables produced in Tasmania (by weight) are grown in this area, but the region is a key producer of certain crops. Over three quarters of the lettuce (77%) and over a quarter of the tomatoes (28.5%) produced in the state are grown in this region.

¹¹ The South East of Tasmania produces over half (56%) of all fruit grown in the state. (ABS, 2014b)

3.2 Tasmanian Local Food Distribution

Local food production-distribution networks often start on smaller, family farms. Farm products are transported over shorter geographic distances, generally processed either on the farm itself, or with smaller processors. Local food distribution networks generally rely on two primary markets: the direct-to-consumer market and the direct-to-retail, foodservice, and institution market.

3.2.1 Direct-to-consumer market for locally grown fresh fruit and vegetables

The direct-to-consumer market is currently the most established sector of local food distribution (Martinez, et al, 2010). Direct-to-consumer means that all middlemen are cut out of the food distribution equation – farmers sell their products directly to consumers, rather than through third parties, such as grocery shops. Common direct-to-consumer operations include farmers markets, community supported agriculture and farm gate produce sales have shown in the UK to be having the largest impact on the sale of local fruit and vegetables (Pearson et al , 2012). Details of each operation is include:

Famers markets

Farmers' Markets are a growth area for farmers and other local food businesses to market their produce direct to consumers (RIRDC, 2014). Farmers' markets are predominantly fresh food markets that operate regularly within a community, at a focal public location that provides a suitable environment for farmers and producers to sell farm-origin and associated value-added processed artisan food products directly to customers (DAFF, 2012).

The report Social and Economic Dimensions of Farmers Markets in Australia included in Australian Food Statistics 2010-2011 (DAFF, 2012) found that farmers markets, along with other alternative fresh food retail markets, are estimated to represent 7 per cent of all fresh food sales. The report also found that the market numbers had more than doubled between 2004 and 2011 to 150-plus nationally and this continues to rise.

Tasmania hosts a wide range of farmers markets from the Farm Gate Market in the south, Harvest Launceston in the north and Devonport Farmer Market in the northwest (AFMA, n.d.)

Community supported agriculture

Community Supported Agriculture (CSAs) are direct-to-consumer programs in which consumers buy a "share" of a local farm's projected harvest. Consumers are often required to pay for their share of the harvest up front; this arrangement distributes the risks and rewards of farming amongst both consumers and the farmer. CSA participants often pick up their CSA shares in a communal location, or the shares may be delivered directly to customers (Martinez, et al, 2010).

CSA schemes reduce the need to transport food, which has environmental benefits (reducing 'food miles'), health benefits (produce is fresher and therefore more nutritious) and economic benefits (food prices won't rise with fuel prices). CSA schemes also increase the potential for local employment, ensure long-term economic viability of small farms and improve the environmental sustainability of farming practices.

In Tasmania a number of different CSA schemes have emerged. Examples of these include the Channel Living - *Local Food for Local People* program. This program combines CSA and commercial “veggie box” systems to create local, not-for-profit food production and distribution systems owned and controlled by the community. Local farms and/or growers of all scales (including backyard growers) are supported to grow coordinated crops that are then distributed to participating households via weekly “veggie boxes” through Channel Living’s food co-operative. Northern Suburbs Community Centre in Launceston is part of the community houses network in Tasmania and has established a vegetable box social enterprise scheme which is supported by a local fruit and vegetable shop that sources most of their produce from their very own farms.

Through funding from the Tasmanian Food Security Fund (DPAC, 2012), a CSA Toolkit for Tasmanian Communities was developed collaborative organisations: Channel Living; West Winds Community Centre Inc and North West Environment Centre¹².

Farm Gates Produce Sales

Farm gate sales is a marketing strategy undertaken by the farmer near the location where the product is produced. Consumers come to the production unit or farm to buy produce and, in some cases, pick the produce themselves. Farm gate sales help to build a direct relationship between the farming community and consumers as well as fostering respect for food and awareness of how it is produced by consumers. The long-standing farm gate sales opportunity is not only an affordable way for people to access fresh fruit and vegetables living in rural communities it is also fast becoming an ‘agri-tourism’ destination for independent travelers around the state.

Tasmania has a plethora of ‘gourmet food trails’ such as cheese, beer, cider and whisky. Most recently fruit and vegetable food trails are emerging such as the Delicious Dorset initiative which has received funding from Heart Foundation to establish the trail.

Other direct to consumer programs

A much smaller proportion of the direct-to-consumer markets are options such as informal distribution networks where food may be swapped or exchanged. These are usually local gatherings where people swap excess home-grown produce and gardening extras. Items may include fruit, vegetables, herbs, eggs, seeds, seedlings, gardening tips and worm juice, but may easily extend to skills shares, stories and seasonal recipes.

Urban Farming Tasmania is an example of a collective of people supporting stronger communities through growing, collecting and sharing fruit and vegetables.

Emergency Food relief

It has been widely documented that particular groups of the Australian and specifically the Tasmanian population are vulnerable to food insecurity. Groups at higher risk of food insecurity in Tasmania include: remote dwellers, Indigenous Australians, homeless people, street drug users, those with low or unreliable incomes, the elderly, disabled people, and newly arrived groups such as asylum seekers, migrants and refugees.

Emergency food relief (EFR) services can provide short-term assistance to those in greatest need of food provision (Booth, 2001; Rychetnik et al, 2003). In Tasmania not-for-profit organisations such as Foodbank of Tasmania¹³, SecondBite¹⁴ and Produce to the People Tasmania¹⁵ is a provider of fresh produce for those in need.

¹² CSA ToolKit <http://www.csatoolkit.channelliving.org.au/index.html>

¹³ Foodbank of Tasmania <http://www.foodbank.org.au/tasmania/>

¹⁴ Secondbite <http://secondbite.org/>

3.2.2 Direct-to-retail market, for local grown fresh fruit and vegetables

A growing component of local food systems are programs that provide farm products directly to retailers. These types of programs cut out the (usually corporate) middlemen involved in storing, processing, and/or transporting food destined for grocery (and other retail) stores, restaurants, schools, hospitals, and other institutions (Martinez, et al, 2010).

Direct to retailer programs may involve farmers delivering farm products directly to these establishments, or may rely upon a “food hub,” which is a centralized location where many farmers drop off their farm products for distribution amongst multiple establishments (USDA, n.d).

In Tasmania there are three main retailers who sell fresh fruit and vegetables including IGA, Coles and Woolworths. IGA (Independent Grocers Alliance) an alliance between wholesalers, retailers and manufacturers, has over 80 shops in Tasmania today. IGA proprietors routinely source their fresh produce from a local distributor, Island Fresh, which supplies both independent retailers and other food service customers across Tasmania¹⁵. IGA proprietors may also establish informal agreements with local farmers directly to source local fresh produce whenever possible.

Coles and Woolworths routinely will purchase from producers under contractual agreements and according to pre-determined specifications. They use their own distribution infrastructure which is both local and interstate to supply their supermarket networks.

There are also a number of local processors such as Harvest Moon¹⁷ and Houston’s Farm¹⁸ which purchase produce directly off farm and package and process and on sell to larger retailers such as Coles and Woolworths.

¹⁵ Produce to the People Tasmania <http://www.producetothepopletasmania.com.au/>

¹⁶ Island Fresh Produce <http://www.igatas.com.au/island-fresh-produce/>

¹⁷ Harvest Moon <http://harvestmoon.com.au/>

¹⁸ Houston’s Farm <http://www.houstonsfarm.com.au/>

4. FINDINGS – PART B

4.1 Overview of findings

This section reports the findings from the 55 interviews conducted with 64 key stakeholders from five distinct stakeholder groups.

During the process of thematic analysis, a ‘coding tree’ was developed which identified common themes which emerged from the data. The coding tree can be found in Appendix 7.5, and was used to isolate key themes and side themes which are explored below.

A notable connection across all participants interviewed was a passion for the issue of food production in Tasmania, and for local food systems.

I get really excited about just getting the small players producing really, really good stuff and selling it for a good dollar and keeping that dollar in Tassie.

(Consultant, Southern Tasmania)

I see food as Tasmania’s future in every way, from a tourist perspective, from the exports perspective; I think it’s our entire future because we do it so very well. I think the time is now.

(Wholesaler, Northern Tasmania)

While views varied about the key challenges facing Tasmania and the way that these challenges needed to be addressed, there was a shared vision around the opportunity for Tasmania to become a leader in this field.

4.2 Key themes

Through the coding process, a number of challenges and opportunities emerged from the data which directly addressed the objectives of the evaluation. These are considered the ‘key themes’ of the project, and are explored below in order of significance – that is, how well they met the criteria of *relevance*; *breadth*; *depth*; and *practicability*, discussed in section 2.6.

Key themes include:

- Relationships;
- The role of education;
- Economic sustainability; and
- Value-adding as Tasmania’s point of difference.

4.2.1 Relationships

Throughout the interviews, the importance of relationships was mentioned by nearly half of all participants. While perspectives varied about the positives and negatives of current relationships, there was a consensus that strong collaborative relationships are an essential part of an effectively functioning local food system.

While there are many individuals and groups involved in the food supply chain, participants focussed their attention on several key stakeholder groups while discussing relationships. Regardless of the relationships being discussed, producers were always mentioned. Key relationships between stakeholder groups that emerged included the relationship that producers had with their consumers, their wholesalers, the processing companies and supermarket chains, the local council and state government, and with each other.

The producer-producer relationship was typified by a struggle to balance collaboration and competition. Participants shared a view that an effective local food system requires growers to work together, but with a recognition that producers weren't always able to collaborate fully as they were also often competitors for the same market space.

Unfortunately I see a lot of agricultural industries here a bit fractioned, because so many of these people have been competing for contracts, so they don't see their neighbours as collaborators, they see them as competition. We have to start learning how to work together so we can start competing together. (Community group member, Northern region)

Opinion was split around the issue of collaboration and competition. Some participants felt that the challenge of collaborating was worse in Tasmania than other places, and that there may be lessons to learn from other states.

Others expressed a view that relationships between producers already function very effectively within the state. Examples of successful collaborative partnerships already in place included relationships within regions (such as the Coal River Products Association and the Huon Producers Network) and relationships within particular industries such as producers of certain varieties of fruit.

Some farmers can work together. A lot of the old farms still find it difficult, I think it's just this entrenched mentality of competition. We have a terrible record of working in silos in Tasmania compared to other areas I've worked in on the mainland. There was more openness among producers. (University, North West region)

Even today you could ring one of the major growers and say "mate I've got this problem..." and they'll take time with you. Try that in any other state in Australia and they'll go "piss off". (Peak Industry representative, Southern Tasmania)

Examples emerged of situations where collaboration helped producers to deal with challenges that were affecting their industry. These situations were showcased by participants to explain that collaboration was possible and could be highly successful, particularly if an issue was relevant and serious enough.

It's amazing, when we had (a processor) pull out of Smithton suddenly a portion of that community became very collaborative because they were going bankrupt.
(University, North West Region)

The producer–consumer relationship was seen as one of reciprocal responsiveness. Participants felt that consumers' actions were both a potential barrier and a potential enabler for successful local food systems.

Participants felt that growers respond and change their business to meet consumer expectations and demands, indicating that consumer demands (and purchasing behaviours) had the power to drive food systems.

In Tasmania, we're intrinsically lazy. I mean it's just a fact of life – everyone's busy and the supermarkets supply everything. The quality is good, and it's always available. 90% of all food in Australia is sold through supermarkets, that's our biggest problem. Training people to move away from supermarkets is the biggest problem".
(Local Government, Northern Tasmania)

There was also a recognition that producers had a role in the reciprocal relationship with consumers beyond simply responding to consumer demands. Some participants (the majority of whom were growers themselves) felt that producers could play a part in influencing consumer expectations and purchasing behaviours. Many participants felt that growers had a role to play in marketing their produce and influencing consumers on their broader purchasing habits (e.g. choosing local produce over interstate or imported varieties). However, one participant felt strongly that this should not be the role of the producer, and that any expectation on growers to step outside of their specific role in the agricultural sector was unreasonable. This participant expressed concern about placing extra burdens on growers who were already stretched to capacity.

Awareness of freshness and awareness of where the products come from is what we growers need to focus on telling our customers. We'll never put Coles and Woolies out of business. There will always be the busy people who don't have time to come to a place like this. But I think there is an untapped market here that will become prevalent in the next five years or so. (Grower, Southern Tasmania)

People go and talk to their friends and say "we went to (farm name) and it was really good and we had a chat to the guy in the orchard... We try to get that personalised feel to the experience. Most farmers are not good at that because they're too busy doing what they're doing. (Grower, Southern Tasmania)

Relationships between a) producers and b) wholesalers, processors and larger supermarket chains was complex, and there was limited consistency between participants' experiences. Growers who discussed this relationship commonly expressed feelings of disempowerment, but this was largely dependent on the specific company they were producing for.

The sense of imbalance expressed by growers was only mentioned with regards to larger processors and supermarkets. Their concerns typically revolved around a lack of autonomy (i.e. being told what to grow and how much), and a sense that their work and their products were being under-valued. The sense of disempowerment that producers expressed was often tied closely to the theme of financial sustainability of their business.

The problem we've got is with the high Australian dollar we lost a lot of opportunities to export. That allowed a lot of extra produce on the Australian market. Supermarkets are taking advantage of that and squeezed the prices down but now their publicity says prices are staying down and all this sort of thing. It doesn't give a grower any confidence or a packer producer or anybody else any incentive to really go out and try and progress his own industry. (Grower, North West region)

(A large processing company) come around to talk and they want to talk price – these companies like to talk to farmers individually, not in a group. They like to say "oh your neighbour Jack is going to grow poppies for us next year for such and such". They say we have to get more efficient, and each year they will go back to the poorer growers again because they know they'll probably accept the price and you know why. (Grower, Southern region)

A notable similarity between all the relationships discussed was a recognition by participants that there didn't have to be a formal structure in place for a partnership to be successful. Many participants felt that it could be more effective for partners to have a strong informal partnership, than a partnership formalised by signed contracts. Some growers identified situations where formal contracts had not been honoured, and there was a broad recognition that trust and loyalty played a large part in all relationships along the food supply chain.

Last year we developed a relationship with a wholesaler – we ended up sending him 4 tonnes in total and that's very successful – we've been up and met him and I think that's really important to have a face to the name. It doesn't always mean he pays his bills any faster. But it's good. It's good to have that relationship. (Grower, Southern Tasmania)

4.2.2 The role of education

Consumer education was seen as a pivotal part of increasing the economic viability of the local food system. There was recognition that consumer demand is a major driver within the food system, and if local individuals are not purchasing and consuming fruit and vegetables, then growers are not able to sell their produce and will look for markets outside the state.

This is supported by evidence, which shows that Tasmanians are not eating enough fruit and vegetables (ABS, 2015).

There was consensus among participants that there has been a shift in recent decades towards convenience food, and away from home-cooking. Participants expressed a view that healthy eating was no longer a cultural 'norm', and that younger generations no longer saw their parents preparing meals, which meant that they weren't learning the skills needed to use locally-grown produce like fruit and vegetables.

I think it's a really sad reflection that kids just don't see the value in it whereas we were brought up seeing value in good food. But all of a sudden you've got generational change and you could be in your third generation of a family who aren't used to seeing fresh fruit and veg, or fresh meat, or anything on their plate. (Consultant, Northern Tasmania)

I think to get back to basics is what people need to do. People don't know how to cook a cake unless it comes out of a box because we are all so busy, it's just convenience. We're forgetting the basics, like eggs come from a chook and milk comes from a cow and potatoes come from the ground. I had people complain because potatoes are dirty... but they're grown in the dirt! (Seller, Northern Tasmania)

There were mixed opinions about who should be involved in education, and where it needed to happen. Some felt that there needed to be a focus on families, and providing practical skills to adults as a key way to support generational change. Others saw education on healthy eating as something that could be linked to formal education through schools.

I think teaching people how to prepare food is an important thing. Schools need to bring back in cooking classes. I heard teachers say they want to cook fancy things, but I think they need to cook simple things. I think the schools, you have specialist teachers like music, phys-ed... I think there should be a specialist cooking teacher like a dietitian, it's as important as everything else. There is a generation of people who don't know how to prepare food. (Grower, Northern Tasmania)

Some participants felt that it was the role of government or community organisations to be provide education to consumers, while some growers believed that their industry could play a part in the process.

4.2.3 Economic sustainability

One of the key themes discussed by over half of participants was the issue of economic sustainability of food systems. There was a recognition that the needs of the grower and the consumer had to be considered for a food system to be successful.

From the perspective of the growers, the biggest challenges were the cost of food production, and external pressure from consumers, processors, large supermarkets and from the government. Many growers expressed a sense that their products were undervalued, and this sentiment was more common among those growing under contract to larger processors or supermarkets. Many growers reported that cost pressures were a key driver for changes in their business – often because they were no longer being offered a price for produce which would allow them to turn a profit.

Farming in Australia is on a knife edge. Everywhere else in the world agriculture is booming, the governments consider the industry protected species, whereas here we're nearly vermin. I think that is starting to change. [...] I wouldn't say it needs funding, but it needs nurturing. (Grower, Northern Tasmania)

We can grow all sorts of things. There's all sorts of crops we've grown that we don't grow, because relative to someone else (in another state) we can't do it as cost effectively. (Processor, North West region)

One retailer also identified the challenge of cost pressures as being a concern for their business. They acknowledged there was a difficulty to price-setting which met consumer expectations while also providing a suitable return for their growers.

We've had people come in and say 'well I can get this over there for a dollar less than you'. But we actually give our farmer a good price, but you can't say that. You can't say that the other store probably scams the farmers. People don't get it, they just think its convenience. (Seller, Northern Tasmania)

Several participants expressed a view that local food was more expensive and up-market, which priced large portions of the local population out of the market.

You'll get that comment [...] they'll say 'farmers' markets are for yuppies'. You look at (particular farmers' market) and you'd argue it IS for yuppies, because people are priced out. It's all gourmet produce, organic. Most people wouldn't be able to shop there unfortunately. (Local Government, North West region)

I know with my shopping, I'd put easily an extra \$30 a week into it purely because I'm looking for Tasmanian or local. So that's a cost I know a lot of people can't afford. (State Government, Northern Tasmania)

There was a broad consensus among participants that for a local food system to be sustainable, it would need to meet the needs of both the growers and the consumers. That is – good quality produce would need to be affordable and accessible for local communities, while allowing growers to be profitable.

There was also a very strong sense from most participants that a sustainable local food system would need to be financially stable, and have no reliance on ongoing support from the government. One participant offered a potential solution to this issue, to build sustainability into the support that government offers, and to encourage businesses to work towards economic sustainability over time.

Rather than the government giving out grants, you know every couple of years they have a \$20 million pool of money to give away, they should loan it so there's payback to that pool and it regenerates over time so it actually grows. I mean if I loaned a million dollars today and paid it back over the next four years then someone else could borrow the same money. You'd end up with a big pool of funds that would support people like us to grow.
(Processor, Northern region).

4.2.4 Value-adding – Tasmania's point of difference

Participants were asked about whether there were opportunities for value-adding in the food industry in Tasmania.

Several participants clarified the meaning of 'value-adding' through the interviews, explaining that it could vary from simple processing (e.g. packaging fruits into 'lunchbox' size portions) to more high-end niche products (e.g. freeze-drying raspberries, powdering this and packaging it as 'Angel Dust' for decorating desserts). It was felt that there were opportunities for all types of value-adding, from simple to complex.

The overwhelming consensus among participants was that value-adding was a key economic opportunity for the food system (particularly for growers, processors and food tourism), and that this could be Tasmania's 'point of difference'.

There's a whole range of opportunities I think from basic value adding to really technical stuff.
(Processor, Northern Tasmania)

The majority of participants felt that Tasmanian growers and processors were already starting to shift towards a focus on value-adding of produce, but there was a broad agreement that this was an ongoing opportunity, and that more could be done in this space.

I keep saying the opportunities for us are in value adding. Our high quality cool temperate produce marketed at the upper end of the market. (University, Northern Tasmania)

The plan is over the next few years to increase the amount of value adding we do. Whether it's pickling or roasting, and making granola and other things. (Grower, Southern Tasmania)

Everybody understands the size of the market in Australia. One town in China has a population as big as our whole country. We're not bulk producers. We'll end up being speciality producers. (Consultant, Northern Tasmania)

Smaller people are looking at growing beautiful produce but they're not looking at processing it or adding any value and I think sometimes it gets put in the too-hard basket, and I think it has only just moved from the too-hard basket to the 'we better do this!' basket for some of the big guys to be honest. (Consultant, Southern Tasmania)

Participants drew a link between value-added production and opportunities for food tourism in Tasmania, particularly with regards to the development of high-end niche products.

There has been a fairly marked increase in the number of people moving into the agricultural sector. They are probably value-adding; they're niche, maybe smaller scale farmers. That's providing more local opportunities (Community group, North West Tasmania)

I think the Tasmanian brand has value. It's hard to know how much. There's a market for anything. If you're aiming for the top end you can get the price, but you can't sell in Tasmania for a high price because there's not the population and people can't afford it. (Grower, Northern Tasmania)

Producers are crying out for local processing, so you've got value-added product instead of shopping raw product. People are always complaining about the cost of shipping, so anything that streamlines that is clearly a winner. With value-added produce you get employment here and all the other stuff instead of shipping your raw product and letting someone else getting the benefit of the processing. It's like a magic door – more efficient, more effective, less waste of a local product, get it done, ship it out. (Local Government, Northern Tasmania)

The overall perception of value-adding was that it could play a crucial role in maintaining financial sustainability for the food industry in Tasmania.

You only have to read Tas Country (magazine) to see that people are complaining about the low returns from farming. There are a whole host of people that have been doing things in a more direct manner. They grow their own product, they package it, they market it. (State Government, Southern Tasmania)

4.3 Region-specific themes

All coded themes were assessed using a 'node-coding' chart. This allowed researchers to identify the geographical location of stakeholders who discussed the theme. Any theme which was discussed primarily by stakeholders in a specific region (North, South or North West) was deemed to be a 'region-specific theme'.

4.3.1 North-West

Two main themes were identified as being specific to North-Western Tasmania. These related to the climactic advantages for agriculture in the region, and the challenges of geographical isolation.

Participants in the North West of the state had a pride in their region, particularly with regard to the quality of produce that was grown in the area. Several participants mentioned the climate and soil in the region – this was viewed as a distinct advantage for the area, and an opportunity for future agricultural development.

On the North-West coast, studies have shown poly tunnels have been ideal. Not a lot of frost, warmer conditions in winter which means less heating, really long daylight hours, close to market. (Consultant, Northern Tasmania)

Participants from the North West noted that the population in the region was relatively small, and geographically spread over a large distance. This was seen as a major challenge for the North West coast. Those who lived and worked in the region noted that there was an insularity within towns in the North West, which created a challenge for building a large enough market for food systems to be economically sustainable.

We're a very long region along the coast, there's no clusters. When you're talking about the North West you've got Latrobe and Devonport, who are completely different from Ulverstone and Burnie. Nobody's willing to travel. We talked about setting up a hub, which was kind of the idea but we're not going to get people from Devonport coming here to get fruit and veggies.
(Community Organisation, North West region)

It's always going to be about geography up here, about the number of miles in between, you know, for us to drive from here to Forth and back.
(Community Organisation, North West region)

4.3.2 North

No significant themes were identified as being specific to the Northern region of Tasmania, and no comments were made about specific challenges faced by Northern Tasmania.

4.3.3 South

No significant themes were identified as being specific to the Southern region of Tasmania. Only two participants made comments which related to South-specific challenges.

One related to land values in the Coal River Valley being prohibitively expensive. This was seen to be due to people buying agricultural land for leisure or lifestyle rather than farming. This links to the broader theme of economic sustainability of farming enterprises, which was discussed by nearly half of all participants.

The other related to the soil quality in Southern Tasmania not being as good as the North West of the state. This comment is considered to be a statement about the North West rather than the Southern region, and is discussed above.

4.4 Role-specific themes

All coded themes were assessed using a 'node-coding' chart. This allowed researchers to identify the roles of stakeholders who discussed the theme. Any theme which was discussed primarily by a specific stakeholder group was deemed to be a 'role-specific theme'.

The only role-specific theme identified using the node-coding process was the theme of workforce sustainability. This theme was specifically identified and discussed by growers and peak industry representatives.

I have children and nephews that want to get involved in agriculture and farming, so as a fifth generation on a family farm, an original land grant, I've got a lot of heritage to protect.

(Peak Industry representative, North West region)

Participants raised concerns about the issue of ongoing workforce renewal in the agriculture industry, and over three quarters of the people who mentioned this issue were growers themselves. Many of these focussed on the challenges of managing a farming business as they aged, and a wish to be able to pass on the family business to their children.

There was recognition from some growers that the legacy of the family farm might stop with them.

I'm in my twilight years of my active farming career. I still want to be involved [...] but not hands-on so much. I have four children all with university degrees. None of them are on the farm and they're all actively out working and living, and under the current circumstances I would not wish them to come back into this farming enterprise. I'm a sixth generation Tasmanian farmer and my line stops with me and that's really sad because those kids would all make very good agriculturalists.

(Grower, North West region)

4.5 Side themes

During the process of thematic analysis, several challenges (and opportunities) emerged from the data which could not be identified as key themes as they did not meet one or more of the criteria: *relevance*; *breadth*; *depth*; and *practicability* (discussed in detail in section 5.1).

The themes are explored below in order of significance. They are:

- Accessibility
- Economies of scale
- Second grade produce and wastage
- Food tourism
- Transport and logistics.

4.5.1 Accessibility

Accessibility was a polarising theme, with participants expressing strong and varied views around the issue of food accessibility in Tasmania. Nearly a quarter of participants interviewed felt access to fresh fruit and vegetables was difficult in Tasmania. A range of prohibitive factors were mentioned, including financial issues, lack of public transport and geographical isolation of small communities. An equal number of participants felt that access to fresh fruit and vegetables in Tasmania was easy, and not an issue.

There's a broad belief around here that healthy food is expensive. People are already pushed with costs, especially once the bills are paid. Takeaway foods are so much easier to access than healthy foods, especially in the middle of Gagebrook and Old Beach.

(Local Council, Southern Tasmania)

There's no problem with food supply. Everybody in Australia has access [...] to fresh fruit and vegetables, but the logistics of getting them there and the price of doing so stops a lot of it happening. Everybody has access to them, unfortunately some can't afford to pay what it actually costs.

(Peak Industry representative, North West region)

These disparate views were not related to either the participants' demographics or their geographical location. Local government employees were the most likely stakeholder group to express a view on accessibility of fresh fruit and vegetables, but the views of this stakeholder group were evenly split between access being easy and being difficult.

4.5.2 Economy of Scale

Tasmania has a population of around 500 000 people, and participants expressed a recognition that this small population base was a potential barrier to a sustainable local food system.

Economic sustainability of farming operations was frequently mentioned as a concern, and this issue was particularly highlighted by growers and peak industry organisations. There was a clear consensus among participants that a successful local food system needed to be economically self-sustaining, and that it could only become sustainable if there was an adequate population of consumers to support it.

I think the Tassie domestic market is relatively small. I mean just over five hundred thousand people, it's not going to be the saviour for our farmers.

(University, Northern Tasmania)

Several participants saw this issue as an opportunity to innovate, rather than a barrier. There was a recognition (particularly expressed by peak industry representatives and sellers) that Tasmania should aim to compete on quality of products rather than quantity, and should focus on niche and value-adding opportunities. These views tie the theme of economy of scale back to the key theme of the importance of value-adding and exploring niche markets.

One thing I've always felt in Tasmania is that we can't do it bigger here. We don't have the economies of scale so we have to do things better. And I think that's why a lot of these successful farmers have turned to things like vegetables for processing, and high end things like wine grapes, wasabi... Because you can actually get a really good margin.

(Seller, Northern Tasmania)

4.5.3 Second grade produce

Participants were asked about second-grade produce, and how this was used. There was a widely held belief (particularly among growers and peak industry) that second grade produce is often under-utilized, but rarely wasted.

There's a fantasy out there that a lot of material goes to waste and could be recovered. It doesn't go to waste, we're not throwing it out. We place it in a process market. If you're not doing that, you're going broke. (Processor, North West region)

'Wasted' produce was considered to be that which ended up in landfill. Some participants also referred to produce that was ploughed back into the field as 'waste'. But there was a broad consensus that any produce which was used for processing or secondary industries (such as juicing) was not a waste product, as growers were still receiving a payment (albeit a lesser one) for this produce.

Participants saw second-grade produce as an opportunity which is linked to the theme of value-adding and processing. Many interviewees highlighted examples of success and ingenuity in this area, both by growers themselves, and by the processing industry.

We take the second-grade carrots and beetroot and whatever, freeze-dry them and then powder them. And then we've turned something that's probably a dollar a kilo that's going to sell for 75 to 80 dollars a kilo. The farmer gets money for something that would otherwise be fed to his cows or dumped. (Processor, Northern Tasmania)

We had waste this week because we had moths. We try to catch them but they devastate all the brassica crops. So I just say 'we can't pick that, it's not worth it, turn it in'. Because that's the killer, labour costs. (Grower, Northern Tasmania)

The economics of most of the processing is almost entirely dependent on the yield of prime grade. There may only be somewhere between 10 and 15% of additional value to be gained, and it might be 50-80% extra effort to get it to a customer that will value it. (University, Northern Tasmania)

Views on second-grade produce and waste varied depending on the crop in question. Some growers explained that harvesting second-grade produce was prohibitively expensive, and therefore crops are left in the field. This was particularly an issue for crops harvested by hand – such as brassicas, berries and cherries.

The consumer says ‘that’s what I want. I don’t want an apple, I want the reddest apple possible’. To the extent that now we have to sort apples by colour. (Consultant, Northern Tasmania)

The theme of second-grade produce was also linked closely with themes around consumer demands and the importance of education. Participants expressed a belief that consumers often have unrealistic expectations about what fruit and vegetables should look like.

Some growers explained that they were limited in terms of how they could use second grade produce, due to existing contracts with larger supermarkets or processors, but there were mixed views about the level of impact that this issue had on wastage of second-grade produce at a broader level.

There are contracts that producers sign that say they can only sell to the market that ordered the produce, and any sort of loss you have to plough back in. There are some who find ways of “accidentally” leaving pallets of onions close to the road and they mysteriously go missing. (Seller, Northern Tasmania)

4.5.4 Food tourism

Food tourism was not part of the set of questions used for prompting discussion during the stakeholder interviews. Nevertheless, it was raised and discussed in 20 of the 55 interviews, indicating it is a highly relevant issue when considering the local food systems in Tasmania.

Participants expressed varied perspectives about the links between food tourism and local food supply. Some participants felt that food tourism could be beneficial for supporting economic sustainability of farming enterprises. Others identified a risk that if attention shifts to meeting the needs of tourists, there is a risk that this may be detrimental to the local food supply.

While food tourism was a consideration for many growers, there were mixed views about how important it is to engage with the food tourism industry. Some growers saw it as an opportunity to expand into new markets and drive consumer demand for export markets.

At the moment some of the products like the cider industry is helping to put Huon on the map a bit more, which also helps other farmers.

(Local Government, Southern Tasmania)

I can totally see why we would link with tourism, and people would come for the food. I hope that it happens, just not at the expense of the local people in Tassie who need a really affordable food supply.

(State Government, Southern Tasmania)

Other growers believed it was a distraction from their main consumers – the local market.

Smaller growers were more likely to consider food tourism as an opportunity for their business, regardless of the region they were based in.

There's a definite move in the food business to highlight locally grown food and have a story that goes with it. I think a lot more tourists are demanding that. There are people coming back to Tasmania for their second or third visit and are really getting into it.

(Grower, Northern Tasmania)

I see the local market as the key. Tourists are good, and they bring money, but we need to educate who is here. Not who's flying in and flying out, because it's whose here that matters. (Grower, Southern Tasmania)

4.5.5 Transport, logistics and infrastructure

Transport, logistics and infrastructure was identified as a side-theme, because it was not directly asked about during the interview process. However these challenges were mentioned by nearly a quarter of participants. Many of these participants identified existing infrastructure as a potential opportunity for local food systems within the state, while transport and logistics were considered a key challenge, particularly with regards to food distribution to regional and rural areas.

The problem with being in Tasmania is the cost of getting a box of product to Strahan or St Helens or Bothwell is extraordinarily expensive. The cost of doing so can be prohibitive. Freight is probably our biggest challenge, and it means we've got to run a very lean operation here.

(Processor, Northern Tasmania)

The majority of participants who discussed transport and logistics also identified that transport and logistics were a major challenge for exporting produce interstate and overseas, given that Tasmania is an island state. The key challenges identified with transport and logistics were the prohibitive costs associated with freight, and the difficulty of ensuring quality of produce up to point of sale. One processor felt that transport and logistics wasn't a problem, but had no broader comments to expand on this view.

We have a freight subsidy scheme at the moment but we still have the most expensive freight in the world. I mean, go figure. [...] The freight company thinks 'well I know my customers are going to get government money so I will price to a point where I actually incorporate that subsidy'. The person who gets the subsidy isn't always the one who gets the benefit.

(Processor, Northern Tasmania)

At the moment, all the critical time sensitive products, we're talking about salmon and lettuce, have seven to ten days shelf life. They have to process by 9 or 10am in the morning to have it on the boat by lunchtime to get across to be distributed on the mainland the next morning to reach the other states two days later. It's very very tight. Then supermarkets start discounting fresh produce at somewhere between two and three days out from its best before date. So the actual shelf life is between day 3 and day 7. They really only have four days true shelf life out of that product.

(University, Northern Tasmania)

One participant considered the prohibitive costs of export as being an opportunity to drive the local food system, and others agreed that the issue of transport and logistics needed to be considered when planning, managing and supporting local food systems.

Fossil fuel is only going to get more expensive, so transporting food is going to get more expensive. I don't know the technical details but it stands to reason that producers need a local market as well as exports.

(Local Government, Northern Tasmania)

Transport is a huge problem in regional Tasmania [...] That is where logistics systems in your regional hubs need to be done really well.

(Grower, Northern Tasmania)

Freight is probably our biggest challenge, and it means we've got to run a very lean operation here.

(Processor, Northern Tasmania)

4.6 What it could look like and who needs to be involved

Stakeholders were asked during the interviews about what a successful local food system would look like, and who needed to be involved. All participants made contributions towards this question. There was a high degree of consistency in responses, regardless of stakeholder group or location. Some of the most consistent feedback from participants is outlined below.

4.6.1 Existing systems need to be strengthened

There was a strong sense from participants that existing local food systems should be further supported and strengthened in order to create a sustainable long-term solution. Stakeholders recognised the process would take a lot of time and effort, but explained that collaboration and linking with existing systems was the key to success.

We still have our local food system, it's just a matter of strengthening it as we go through our next major wave of supporting local.
(Community group, Northern region)

There is a lot of work involved, involving a lot of people to put together what is being proposed.
(Grower, Northern region)

Participants recognised a number of businesses and social enterprises (such as independent grocers and farmers' markets) which already focus on supplying local produce. There was a very strong indication from all stakeholders that any strategies aimed at improving local food systems should work alongside existing groups in a collaborative fashion, rather than competing against them or duplicating systems.

I think add value to what's already there. Get behind the existing farmers' markets and promote them, the independents that are already having a go at it.
(Processor, Northern region)

[an established wholesaler or distributor] could be the hub, the distribution is there, there is no need for the farmer to double up and become the producer and the distributor, there's no point.
(Seller, Northern region)

4.6.2 Local Government needs to be involved

A number of participants mentioned the relationship between producers and Local Government as being important for a stronger local food system in Tasmania. Local Government were seen as an important source of support and advice to growers and other food-related businesses in their local area, but this view was balanced by concerns about 'red tape', which growers often saw as a hindrance to their work.

Participants felt that Local Government had an important role to play in supporting an effective local food system. Nearly a quarter of participants used the words ‘facilitate’ or ‘facilitator’ when describing the potential role of Local Government in developing or strengthening local food systems in Tasmania.

I think traditionally farmers are not a terribly organised or proactive group, they don't network because they're on the farm doing stuff. If council can do anything to facilitate that it would be fantastic. (Local government, Northern region)

At the end of the day the councils (whether they like it or not) are regulators, but we as producers need to also think about, they provide the enabling environment. (Producer, Northern region)

If you look at the bigger picture around getting people to work together to explore those opportunities [...] there's a lot more Council could do. Like signage, promotion, removing some of the barriers. Planning permits and the like. As well as helping facilitate the development of a new structural network or whatever it might be called, they're obviously a key stakeholder that you want at the table. (Community group, North West region)

4.6.3 Address the broader social determinants of health

Many participants expressed a recognition that efforts to improve Tasmanian's fruit and vegetable consumption (and their health more broadly) linked back to broader social determinants of health, such as socioeconomic disadvantage and low levels of education.

What we've got is a social problem, not a business problem. Our lower socio-economic areas are undersupplied with fresh fruit and veg related to demand. I'm not going to set up a shop where people are not going to buy it. It's chicken and the egg, you can't get people in those areas to buy more of it unless they can see more of it, but then businesses won't come until the people change. (Consultant, Northern region)

My gut feeling is part of it is difficult because [...] the social disadvantage of this city and lack of education. What I'm trying to do is float the boat and see if we can increase wealth in the community, because I think that is the single biggest determinant of how you fix it. We're not doing enough with disadvantaged communities in council, but there's so many things on my plate. (Local Government, Northern region)

Stakeholders in all regions highlighted the importance of addressing broader issues within disadvantaged communities in order to strengthen local food systems and increase fruit and vegetable consumption.

Participants (particularly those working in Local and State Government) argued that increasing access to fruit and vegetables without taking into account other factors in people's lives would not create sustainable improvement in their dietary intake or longer-term health outcomes.

4.6.4 Don't take a one-size-fits-all approach

Participants identified different solutions for geographic different areas of Tasmania, ranging from farmers' markets to food hubs, vegetable box schemes and supported transport options to local food outlets. Each solution was linked to specific challenges faced by particular communities.

I think there has to be a really good farmers' market quite frankly. I think we need to get a bit of parochialism out of the North East, and have a central market [...] in Scottsdale.
(Consultant, Northern region)

If you had a food hub, it would operate in terms of people would appreciate going there and selecting things. In Legana industrial estate it would be perfect. Legana is too far away if you're going to include George Town, it is only really accessible from Launceston [...] I don't think most people from Rocherlea would drive out to Legana. It would be great for our community but it wouldn't be a regional thing. (Local Government, Northern region)

One key similarity among all stakeholders was the importance they placed on finding different solutions for different regions, and considering the specific needs of each community rather than taking a one-size-fits-all approach. This was particularly true for stakeholders who lived and worked in rural or remote areas, who felt that special consideration would need to be given to finding solutions which supported isolated communities to access locally grown fruit and vegetables. Ideas focussed around transport – either a mobile fruit-and-vegetable van to bring produce to communities, or a community bus to take individuals to a central market in the region.

4.6.5 Engage with consumers to meet the needs of the market

Throughout the interview process, stakeholders remarked on the importance of engaging with consumers. Consumers were seen as driving food systems, as purchasing habits of the community have a direct influence on which businesses thrive and which fail. Participants felt that consumers could be engaged by appealing to their values (e.g. the ‘feel-good’ experience of connecting with farmers at farmers’ markets). However, the majority of stakeholders believed that ‘convenience’ was more important to consumers than ‘values’, and that a successful local food system would need to make it easy for consumers to purchase locally-grown fruit and vegetable.

You would have to structure it carefully so it is never harder than going to the supermarket [...] Home deliveries or deliveries to workplaces maybe. So yeah if you could find out what the hassle is in shopping and take that hassle out then yeah I think it will work. (Seller, Northern region)

One of the things I had thought about was to team up with local meat producers, you could combine delivery of meat and vegetables. (Local Government, Northern region)

I think we have got to look at a website, a virtual shop. People down in Hobart, Hill Street have got a site, also one of our other stores and Longford IGA have got a website. (Grower, North West region)

Assorted strategies were suggested by stakeholders for making the purchase of local food more convenient. Many of these were linked to the importance of utilising technology (particularly social media and online sales), and using effective marketing strategies.

There’s a phenomenal explosion of using virtual technology. We’re just locked into the mindset of how we look at things traditionally, and unfortunately for growers we don’t have the scale yet to be able to take advantage of these things. Somebody has to start somewhere, right. (State Government, Northern region)

4.6.6 Make incremental changes

Several participants noted that the concept of an economically sustainable and vibrant local food system within Tasmania would require changes at a Government level, including legislative changes to support the system.

Participants who discussed the importance of these high-level changes linked this back to other themes such as ensuring the system was economically sustainable and reducing transport and logistics barriers to reaching local markets.

But participants also reflected that smaller, incremental changes were valuable at a grassroots level, rather than just relying on a top-down approach.

It's probably wise to start small and work your way up because starting big will just freak out investors and just about everybody. (Seller, Northern region)

Examples of incremental changes included the building and strengthening of growers' networks across the state, trialling new crops and value-added products, and creating an online marketplace for growers to link more easily with consumers.

4.6.7 Engaging smaller growers and community groups

Almost all participants expressed a view that the growers most likely to be involved in a local food system were small to medium-sized producers. These smaller producers were seen as having more flexibility than larger growers, particularly as they were considered less likely to be under contract with large processors or supermarket chains. This means that smaller growers might have a greater degree of flexibility, and be more likely to be responsive to market changes. It should be noted that a local food system doesn't preclude larger producers from being involved as it is not just about scale of production. It is also about 'mindset' and attitude. Larger producers may still choose to be involved depending on their own business model or personal circumstances.

If we could crack the smaller, agile farmer model to the point where they could produce and supply locally. They would be the main beneficiaries. The primary producers would all have some capacity to diversify if the system was made easy for them. Now whether that was small scale or large scale it doesn't matter. I think all the growers, particularly the producers, they would be the ones that would benefit. (Community group, North West region)

If you're wanting to do something like a local food hub, you're really looking at connecting the small farm holders with small market opportunities. And that may give the smaller farmer a leg up into bigger things later on. (State Government, Southern region)

Community organisations and social enterprises from all regions of the state felt that they could play a part in supporting and advocating for local food systems. These community groups sit outside of government, and are trusted by other stakeholders because they are considered independent. They are highly connected to organisations and businesses involved in local food systems, so they are in a strong position to facilitate collaboration.

I see potential for an organisation like ours to offer services to some of those other organisations. Whether it was a farmers' market or whether it was a food hub [...] I think an organisation like ours could probably offer either secretariat services or business advice. (Community Group, North West region)

5. DISCUSSION

5.1 Identified challenges and opportunities from data

A number of key themes and side themes were identified through the data, and each of these have potential implications for future work, research and policy directions for local food systems in Tasmania (see figure 11). This section explores the implications of these challenges and opportunities further, and outlines the links between results from the desk-top review and themes from the interview process.



Figure 11 Key themes identified as having influence on the Tasmanian Local Food System

Participants expressed a very broad range of opinions on what the term ‘local’ meant within a Tasmanian context. Attitudes were split over whether ‘local’ food referred food grown and sold within a Local Government Area, a region of the state (e.g. within the North-West) or whether ‘local’ meant anything grown and sold within Tasmania. However, there was a consensus that food grown within Tasmania and sold interstate or food imported from mainland Australia could no longer be considered ‘local’.

As a whole, stakeholders frequently struggled to identify examples of local food systems, and there was a common misconception that ‘local’ only referred to small growers who were producing niche products and value-adding on the farm.

Given that stakeholders interviewed through the Local Food Systems Project are working in the area, they are likely to have a stronger understanding about local food than the broader community. Future work in this area may need to include a focus on broadening public (and government) understanding of local food systems, and the benefits they can bring to communities.

Through thematic analysis, the researchers identified a very high level of consistency in themes discussed by each of the stakeholder groups, and across each of the regions. This finding was significant in that it indicates a shared view of the situation. It was also significant as it implies a commonality of interest, which may help to facilitate opportunities for cross-sectoral collaboration.

5.1.1 Relationships

Throughout the interview process, the importance of relationships was discussed at length by all stakeholder groups and in all regions. Collaboration was regarded as a cornerstone to developing successful local food supply systems.

Trust, loyalty and reliability were seen as underpinning strong collaboration. Building relationships was seen as a vital first step in establishing successful local food systems. This was considered to be particularly relevant with regards to building networks amongst growers, in order to build collective capability.

Building and enhancing relationships between growers and other points in the supply chain was also seen as pivotal in supporting local supply and distribution systems. Relationships with wholesalers, distributors and processors were considered important for understanding local market needs and trends.

Researchers noted that regardless of the relationships being discussed, producers were always mentioned. This is considered to be a reflection of the integral role that producers play in the local food system, and the dependence of the entire system on growers.

One of the notable conclusions from the 'relationships' theme was that the majority of stakeholders felt that partnerships did not need to be formalised (e.g. with a memorandum of understanding or a signed contract) in order to be successful. This links back to the issue of trust. It is important for all stakeholders working within local food systems to be facilitated to build a strong, genuine partnership with the people they worked with.

5.1.2 The role of education

Education for consumers was seen as a pivotal step in ensuring the success of local food systems. Participants felt that the role of education was two-fold. Firstly, participants expressed recognition of a cultural shift, where children are less likely to learn cooking skills at home as parents are less frequently cooking from scratch. Participants felt that consumers didn't always know how to use locally grown produce, and food literacy education was important both for children (e.g. teaching growing and cooking skills in schools) and also for adults.

Secondly, there was a sense that consumers didn't understand what local food systems were, or what the benefits of 'choosing local' could be. This implies than more than just food literacy, there needs to be an ongoing focus on food system literacy – that is, helping the community to gain a broader understanding of food systems, and what happens to food between paddock and plate (Sustain Ontario, 2014; Widener & Karides, 2014).

There are several existing programs run through Tasmanian schools which already focus on teaching practical growing and cooking skills to children and young people.

The Stephanie Alexander Kitchen Garden program teaches children how to grow, harvest, prepare and share fresh, seasonal food. This program is currently run across 37 schools in Tasmania¹⁹.

The 24 Carrot program²⁰ is partnered with the Stephanie Alexander Kitchen Garden program, and links school gardens with activities around creative arts, culinary arts, science and sustainability. This program is run across 12 schools in Southern Tasmania.

Mulching Munchkins²¹ is an agricultural program for primary school aged children at two schools in Northern Tasmania, which is linked to other lessons around history, science, literacy and numeracy.

Move Well Eat Well²² is a Tasmanian government initiative that supports the healthy development of children and young people by promoting physical activity and healthy eating as a normal and positive part of every day. Across Tasmania, 172 schools are currently members of the Move Well Eat Well program.

Participants expressed a strong view that addressing any attempt to increase local fruit and vegetable availability should be linked with work to address the broader social determinants of health. These views are backed up by literature in the area, which shows inconsistent associations between fruit and vegetable availability and consumption.

A study by Boone-Heinonen et al. (2011) found an association between increased intake of fast food (particularly in men) when there was a take-away shop within 1-3km of the house, but no significant association between fruit and vegetable accessibility and intake.

Pearson et al. (2005) found that the three key elements of a food desert (fruit and vegetable price, socio-economic status, and access to a locally available supermarket) did not significantly influence fruit and vegetable intake. Researchers suggested that food policies should aim at changing socio-cultural attitudes towards food.

These findings tie in with expressed views of participants in the current project, who recognised the importance of food literacy and food system literacy for consumers. Moving forward, there is a need for continued education about healthy eating and cooking, along with an added dimension around education on what happens to food between paddock and plate. Education opportunities should be extended beyond existing formal settings such as schools.

¹⁹ Stephanie Alexandra Kitchen Garden Program <http://www.kitchengardenfoundation.org.au/>

²⁰ 24 Hour Carrot program <http://24carrot.mona.net.au/about-24-carrot-gardens>

²¹ Mulching Munchkins initiative http://www.dhhs.tas.gov.au/_data/assets/pdf_file/0010/177445/Mulching_Munchkins_Dorset.pdf

²² Move Well Eat Well Initiative <http://www.movewelleteatwell.tas.gov.au/>

5.1.3 Economic sustainability and economy of scale

Participants identified 'economic sustainability' as one of the key factors to a successful local food system. This theme was discussed by over half of participants, across all stakeholder groups and regions.

One of the factors that was seen as influencing economic sustainability of food systems in Tasmania was the issue of economies of scale in the State.

There is a significant disparity between the high production capacity of the state, and the relatively small population. Tasmania produces enough food to feed the equivalent of two million people, and has a population of around 500 000. This means that the local market only has the capacity to consume of around 25 per cent of the food produced within Tasmania (DPIPWE, 2014b).

Local food systems were seen as having finite potential in terms of economic viability, and ensuring a reliable, loyal and consistent customer base was seen as a crucial to the sustainability of local food systems. However, according to Person et al (2012) the local food sector offers an opportunity for implementing niche strategies for many businesses including farming businesses.

In order for a food system to achieve economic sustainability, it needs to be viable for both growers and consumers. Growers need to ensure a suitable profit margin in order to successfully maintain their business, while consumers need steady and reliable access to affordable produce.

During the semi-structured interviews, participants were asked 'who needs to be involved in a local food system'. Several responded that State government should not play a part. When asked to expand upon their answers, these participants described feeling a sense that irregular injections of funding through State government leads to an economically unstable system.

One stakeholder suggested that in the future if the government was considering giving grants, they could instead offer a loans program to those wanting to work in the local food system space. Rather than being given a grant, people could re-pay the loan to create a pool of funds which could then be used again for future work in the area. This would help organisations and businesses work towards financial independence.

Moving forward, economic sustainability is considered to be an essential element of a successful local food system. In order to support economic sustainability and stability, the needs of both growers and consumers need to be met. This may include further research into which local food enterprise models would be viable for strengthening Tasmania's local food economy.

5.1.4 Value-adding – Tasmania’s point of difference

Stakeholders interviewed through the current research project saw value-added production and niche markets as a significant opportunity for creating a vibrant and economically sustainable local food system in the future.

Historically, Tasmania’s vegetable industry has been primarily focussed on produce for processing, which receives a low rate of return. Tasmanian growers receive the lowest prices for their crops of any state in Australia, with prices equivalent to 55 per cent of the national average (Crooks, 2010).

This focus on processing stems from the limited local market for fresh produce. Tasmania produces enough food to feed the equivalent of two million people. Only around 25 per cent of food produced within Tasmania is sold within the state. The remainder is sold to interstate markets (50%) or exported overseas (25%) (DPIPWE, 2014b).

However, the focus of the industry appears to be shifting. A national survey of growers and producers found that attitudes are shifting when it comes to value-adding on the farm. Growers were asked about their perceptions on growth opportunities on their farms in the future; 83 per cent of Tasmanian farmers reported that they considered ‘high quality produce’ to be a growth opportunity for their business, 37 per cent stated that ‘niche products’ were an opportunity, and 11 per cent believed that ‘value-adding on the farm’ was a future growth opportunity for their business (Thompson & Zhang, 2012).

More Tasmanian farmers were looking towards niche markets and value-adding on the farm than growers in any other state. This supports findings of the current study, which suggest that Tasmanian growers are increasingly motivated to build their businesses by looking at new products and value-adding activities.

There appears to be an inherent tension between producers’ aspirations to value-add and sell premium product to international and mainland markets; and the need for affordable and accessible locally-produced food within the state. Value-adding is a potentially significant opportunity for Tasmania’s food industry in the future, but in order to build a resilient and vibrant local food system within the state, the conflicting needs of producers and consumers should be considered.

5.1.5 Accessibility

Stakeholders expressed broad and discordant views around the topic of food accessibility within Tasmania, with split opinion over whether it was easy or difficult to access healthy locally grown food.

One participant felt that *“everybody has access to them (fruit and vegetables) unfortunately some can’t afford to pay what it actually costs”*.

This view is indicative of a common misconception within the community that food access is limited to purely the ability of an individual or household to afford to buy food. While financial access is certainly a part of food access, the reality is that the concept of *food access* extends beyond just financial issues. It relates to broader determinants which influence a person’s ability to acquire fresh and nutritious food. This includes but is not limited to:

- Having physical access to the food (i.e. having a means of transport, and having a food outlet within a manageable distance)
- The shop or food outlet having a variety of fresh and healthy produce available to choose from
- The produce being of a suitable quality
- The produce being culturally appropriate.

While Tasmania is fortunate to be such a productive state, it is also recognised that there are pockets of geographic isolation and disadvantage which clearly impact upon individuals' ability to access affordable fruit and vegetables.

A 2014 Healthy Food Access Basket Survey (Murray et al, 2014) highlighted a high degree of variability in the cost and availability of healthy food across Tasmania. Access to healthy food was identified as being more difficult in regional areas, and for families who live in towns but do not have easy modes of transport to supermarkets. Affordability of healthy food relative to income was found to be a significant issue for disadvantaged groups – particularly those relying on pensions or government support payments.

The pervasive misconceptions that exist about healthy food being easily accessible and affordable for all Tasmanians indicate that there is still work to be done – both to raise awareness of the challenges around healthy food access, and to address the causes of this inaccessibility.

5.1.6 Second grade produce and the issue of waste

Fruit and vegetable production is largely driven by a requirement to meet the quality standards of major supermarket retailers, export markets and the hospitality and food service sector. These quality standards can lead to edible food not entering the human food supply chain, reducing the amount of food available for human consumption, and therefore acting as a form of food waste.

Second grade produce was recognised by many stakeholders as a significant challenge within the food system. Despite this, wastage was not identified as a major issue in most industries. This may be a reflection of the differing perceptions about what the term 'waste' means.

Stakeholders who discussed wastage of produce generally considered 'waste' to only mean product which was tilled back into the soil or dumped in landfill. Other uses for second-grade produce (such as being fed to livestock) were considered to be 'under-utilising' the produce rather than wasting it. However, it could be argued that any product not used to its full potential (i.e. sold for human consumption) is being 'wasted'.

According to participants, waste of second grade produce depends largely on the crop in question. Specifically, if crops are harvested by hand (e.g. berries, cherries and brassicas) it can be prohibitively expensive to harvest second-grade produce as the return doesn't justify the expense of harvesting.

Regardless of whether second-grade produce is being 'wasted' or 'under-utilised', there does appear to be an opportunity for increasing the income received from second grade produce. There are examples of industries that have worked to maximize the value of their

second grade produce to great effect (e.g. juicing and the cider industry as a way to use second-grade apples and other fruits) but there is much potential for other industries to follow. Participants frequently linked discussions about second grade produce with ideas about opportunities for processing and value-adding.

Just as participants identified that there could be no one-size-fits-all approach to local food systems generally, it is recognised that there can be no one-size-fits-all approach to managing second grade produce. Second grade produce was viewed as an opportunity for future development in the value-adding space.

5.1.7 Food Tourism

Although food tourism (sometimes known as agri tourism) was not a focus of the interviews, many participants identified this theme as an opportunity which linked closely to local food systems.

Recent figures indicate that more tourists were coming to Tasmania every year, they were staying longer, and they were spending more money whilst in the state. In the year ending September 2014, there were over one million visitors to Tasmania. This was an increase of 6 per cent from the previous year²³.

Tourists visiting Tasmania frequently visit food producers (26% of visitors), wineries (17% of visitors), and breweries and distilleries (13% of visitors). Food and drink-related activities were one of the fastest growing areas of tourism in the state, along with bushwalks and cycling.

The increase in tourist numbers in the state creates an opportunity for Tasmanian food and drink producers. Food-based tourism can give an incentive for farmers to diversify their crops away from the basics, in an attempt to meet tourists' demands for speciality and value-added products.

Increasing tourist numbers may also help to support a local food economy. One stakeholder from a local government in Sothern Tasmania explained that a weekend market in their region only existed because tourists in the area inflated market attendance. This created an incentive for local growers to bring their produce to sell. This implies that food tourism could play an important role in boosting the economy of scale for local food systems.

A study in the UK (Everett, 2008) identified a correlation between increased levels of food tourism interest and the retention and development of regional identity, the enhancement of environmental awareness and sustainability, an increase in social and cultural benefits celebrating the production of local food and the conservation of traditional heritage, skills and ways of life.

However it should also be recognised that food tourism may pose a risk to local food systems, if it detracts from the local market. Food tourism may increase value-added and niche production at the expense of production of healthier products which can be sold to the local market.

²³ Tasmanian Tourism Snapshot Year ending December 2014 Introduction
http://www.tourism.tas.gov.au/data/assets/pdf_file/0004/27337/TVS-Snapshot-December-2014.pdf

There are clearly potential linkages between food tourism activities in Tasmania and local food systems with the success of the wine, whiskey and cheese industries as example of this success – further research in this area may be warranted.

5.1.8 Transport, logistics and infrastructure

Participants expressed a broad recognition that transport, logistics and infrastructure were challenges which was inextricably linked with the Tasmanian context. While not a key theme identified through interviews, transport and logistics was a side theme that was frequently considered to be one of the core challenges for creating a successful local food system within the state. Conversely, infrastructure (and particularly existing infrastructure) was frequently discussed as an advantageous factor which could help to facilitate the development of local food systems.

Transport and logistics were considered to be closely linked to the theme of economic sustainability of local food systems. The cost of transport (particularly in rural and remote areas) was seen as a barrier at all points in the supply chain. While stakeholders felt that the issue of transport and logistics needed to be considered when planning, managing and supporting local food systems, there were no clear suggestions for solutions to these challenges identified by stakeholders.

Participants felt that future work towards sustainable local food systems in the state should not take a one-size-fits-all approach. This holds true for the issue of transport, logistics and infrastructure, where the regional context should be factored in.

Local stakeholders are likely to have the best grasp of context in their area, and should be included in all discussions about local food systems, particularly with regards to utilizing existing infrastructure, and managing transport and logistics challenges.

5.2 Implications for future directions local food supply systems in Tasmania

A number overarching themes were identified as primary influencing factors on the design, scale and operation of local food supply/distribution systems which have broader implications for the future directions of local food supply systems in Tasmania. These themes and their implications are summarised below.

1. Relationships and collaboration

Relationships between growers themselves and between growers and other links in the supply chain was seen as an essential prerequisite for the collective ability to determine what was needed and determine a means to achieve it. There was a clear emphasis on the benefits from working in genuine partnerships, both formal and informal. A key challenge was to identify the processes that needed to put in place to enable stakeholders to work alongside existing groups engaged in local food systems in a collaborative fashion, rather than competing against them or duplicating systems. The report recommends that programs be put in place to **support and strengthen relationships** between stakeholders working within local food systems.

2. Education

Participants identified a need for more education around local food systems. There was a recognised need for education about healthy eating and cooking, along with an added dimension around education on what happens to food between paddock and plate. There was an identified need for food system literacy and not just food literacy. The report recommends that educational programs promoting healthy eating should **incorporate information about key elements of local food systems** including local food supply and distribution.

3. Economic sustainability

Stakeholders discussed the importance of achieving economic sustainability to ensure the long-term viability of local food systems. There was a strong sense that a sustainable local food system would need to be financially stable, and have no reliance on ongoing support from the government. The issue of economies of scale was identified as challenge to creating an economically sustainable local food system. Central to this issue was a disparity between Tasmania's high capacity for production, and the small population base of the State. Local food systems were seen as having finite potential in terms of economic viability, and ensuring a reliable, loyal and consistent customer base was seen as a crucial to the sustainability of local food systems. The report recommends that strategies aimed at **building economic sustainability** must consider the needs of both producers and consumers. This may include further research into which local food enterprise models would be viable for strengthening Tasmania's local food economy.

4. Value adding

The study revealed that Tasmanian fruit and vegetable growers regarded value-added production and niche markets as integral parts of local food systems. Whilst this view was generally held by most participants, the study also revealed an inherent tension between producers' aspirations to value-add and sell premium product to international and mainland

markets; and the need for affordable and accessible locally-produced food within the state. The conflicting needs of producers and consumers should be considered in order to build a resilient and economically sustainable local food system. The report acknowledges the pivotal role value-adding plays in local food systems and supports further investigation and support for **value-adding opportunities** in order to build a resilient and vibrant local food system within the state.

5. Accessibility

Informants expressed broad and discordant views around the topic of food accessibility within Tasmania, with split opinions over whether it was easy or difficult to access locally grown food. The findings showed that there were misconceptions amongst stakeholder groups about the idea of food access, and common misunderstandings about the broader determinants of food security. This finding indicates the need for ongoing advocacy and education to address the **misconceptions about accessibility** by raising awareness of the challenges around healthy food access, and addressing the causes of this inaccessibility.

6. Second grade produce and waste

Second grade produce was recognised as a significant challenge within the food system. Participants generally viewed that local food systems could play a role in increasing growers' income from second grade produce. These opportunities were identified both in terms of fresh and value added produce. The report recommends **further investigation of market opportunities for second-grade produce** particularly in the value-adding space.

7. Food tourism

Food tourism was recognised as a significant opportunity within the food system. The majority of participants interviewed identified Food tourism as an important activity that could support existing and new local food initiatives to ensure a sustainable local food economy.

However it should also be recognised that food tourism may pose a risk to local food systems, if it detracts from the local market. Food tourism may increase value-added and niche production at the expense of production of healthier products which can be sold to the local market.

8. Transport, logistics and infrastructure

The vexed issue of transport and infrastructure such as packing sheds and cool storage facilities were identified as core challenges to creating successful local food systems. Whilst a number of informants acknowledged the existing road networks and infrastructure as being conducive to the development of effective local food systems, the prohibitive costs of transport in rural and remote areas was seen as a significant impediment at all points of the supply chain. The study recommends that future planning for local food systems consider existing transport, logistics and infrastructure systems to ensure efficient utilisation of existing infrastructure and road networks.

Further considerations for strengthening Local Food Systems

Our findings regardless of stakeholder group consistently suggested that a successful Tasmanian local food system included the following themes:

1. Existing systems need to be strengthened;
2. Local government needs to be involved;
3. The broader social determinants of health need to be addressed;
4. Don't take a one-size-fits-all approach;
5. Consumers need to be engaged to meet the needs of the market;
6. Changes need to be made incrementally; and
7. Smaller growers & community groups need to be involved.

The study demonstrated that Tasmania is well positioned in terms of its production capacity, infrastructure and community connectedness to further develop local food systems.

The report recommends that strategies aimed at improving local food systems should target the specific needs of each community rather than taking a one-size-fits-all approach. Importantly, there was a sense that communities had already put in place a range of traditional and innovative ways to enhance the availability of local food and that these systems should be further supported and strengthened in order to create a sustainable long-term solution.

Consumers were seen as driving food systems, as purchasing habits of the community would have a direct influence on which businesses thrived and which failed. Convenience from both a grower and consumer perspective was seen as being at the heart of successful local food systems. The report supports on-going initiatives aimed at engaging with consumers, in order to gain market intelligence and understand the needs of the market.

There was a strong view that Local Governments were an important source of support and advice to growers and other food-related businesses in their area. Local government was seen as having intimate knowledge of, and strong connections with, major stakeholders groups and local enabling factors within local communities. The report recommends that this advantage be operationalised and consideration given to the role of local government as a broker or facilitator for the further development of local food systems.

The authors of this report were heartened by the level of interest in local food systems by all stakeholder groups irrespective of the nature of their business or scale of their enterprise. However, it should be noted that almost all participants expressed a view that the growers most likely to be involved in a local food system were small to medium-size farming enterprises. These smaller enterprises were seen as having more flexibility than larger enterprises, particularly as they were considered less likely to be under contract with large processing or supermarket chains. This means that smaller growers have a greater degree of flexibility, and are more likely to be responsive to market changes. The report recommends that the small to medium size fruit and vegetable enterprises be targeted for piloting future local food systems.

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7. APPENDICES

7.1 Ethics Approval

This project received ethics email approval from the Tasmania Social Sciences Human Research Ethics Committee (Ethics Ref: H14167) on the 4th July, 2014 and received the formal letter on 12th August 2014.

Social Science Ethics
Officer Private Bag
01 Hobart Tasmania
7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148



12 August 2014
Ms Sandra Murray
Health Sciences
Locked Bag 1320
Sent via email

Dear Ms Murray

Re: MINIMAL RISK ETHICS APPLICATION APPROVAL
Ethics Ref: **H0014167 - Tasmanian Local Food Supply Project**

We are pleased to advise that acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 4 July 2014.

This approval constitutes ethical clearance by the Tasmania Social Sciences Human Research Ethics Committee. The decision and authority to commence the associated research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approval of other bodies or authorities is required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.
2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. Failure to submit a Progress Report will mean that ethics approval for this project will lapse.
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely



Katherine Shaw
Executive Officer
Tasmania Social Sciences HREC

7.2 Letter of Invitation

Letter to Interview Participants

Tasmanian Local Food Supply Project

Dear Stakeholder

We are writing to you in your capacity as a key stakeholder in the Tasmanian fruit and vegetable industry and as a person who may assist with the delivery of the Tasmanian Local Food Supply Project.

The Tasmanian Local Food Supply project is part of the Healthy Food Access Tasmania Initiative (HFAT). The project aims to map production of fresh fruit and vegetables in 12 Tasmanian local government areas (LGAs) with a view to gaining an improved understanding of production and supply factors that may impact on the creation of new economic opportunities to increase the availability and affordability of locally produced fruit and vegetables.

Your experience, knowledge and perceptions of the production and supply of locally produced fresh fruit and vegetable would help inform key elements of the study. To this end we would like to invite you to participate in a semi-structured interview to be held at a mutually convenient time and location.

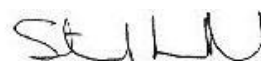
Please find attached a copy of the detailed information sheet that provides a broader context for the study. My colleague Stuart Auckland or I will be contacting you shortly to seek your interest in participating in an interview and to canvass your availability for a mutually convenient interview time and location.

In the meantime if you would like to discuss any aspect of this study, please feel free to contact myself Sandra Murray via email on Sandra.Murray@utas.edu.au or my research colleague Stuart Auckland on stuart.auckland@utas.edu.au We would be happy to discuss any aspect of the project with you.

Kind regards,



Sandra Murray



Stuart Auckland

7.3 Information Sheet and Consent Form

PARTICIPANT INFORMATION SHEET

Tasmanian Local Food Supply Project

You are invited to participate in a research study which aims to map stakeholders, programs, policies and other activities including the foods grown across local government areas and regions which support making healthy choices easy choices. This study, titled the Tasmanian Local Food Supply project, is part of the larger research Healthy Food Access Tasmania (HFAT) project being conducted by The Tasmanian Heart Foundation and the UTas School of Health Science. The Tasmanian Local Food Supply Project is being conducted by Sandra Murray, Stuart Auckland, Dr Kiran Ahuja and Prof Madeleine Ball from the School of Health Science.

1. 'What is the purpose of this study?'

The Tasmanian Local Food Supply Project is a key component of the Healthy Food Access Tasmania Initiative. The project aims to map production of fresh fruit and vegetables in 12 Tasmanian local government areas (LGAs) with a view to gaining an improved understanding of production and supply factors that may impact on the creation of new economic opportunities to increase the availability and affordability of locally produced fruit and vegetables. The study concerns itself with the locally grown fresh fruit and vegetable supply chain from production to distribution.

2. 'Why have I been invited to participate in this study?'

You are invited to participate in this study because you have been identified as a key informant to the project aims and objectives.

4. 'What does this study involve?'

Your involvement is as a interview participant who will take part in a 30-40 minute recorded interview. The interviews will be semi-structured and recorded using a Sony MP3 IC Recorder and transcribed. Where possible the interviews will be conducted face to face at a mutually convenient time and place. If a face to face interview is not possible then a telephone interview is an option.

It is important that you understand that your involvement in this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. There will be no consequences to you if you decide not to participate. If you decide to discontinue participation at any time, you may do so without providing an explanation. All information will be treated in a confidential manner, and your name will not be used in any publication arising out of the research. All of the research will be kept in a locked cabinet in the office of Sandra Murray/Stuart Auckland, School of Health Science, University of Tasmania, Launceston, Tasmania.

5. Are there any possible benefits from participation in this study?

We anticipate that the findings of this study will have important implications for the supply of fresh fruit and vegetables in local Tasmanian communities. The findings will contribute to a bank of knowledge relating to the production of fresh fruit and vegetables which can be used to inform the development of new economic opportunities for Tasmanian fresh fruit and vegetable producers. The findings will also support the establishment of regional or locally based enterprises that will increase the availability and affordability of locally grown produce to Tasmanians where they live, work and play.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study.

7. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact any of the investigators below:

Primary Contacts

Mr Stuart Auckland on ph (03) 6324 4035 OR email stuart.auckland@utas.edu.au

Ms Sandra Murray on ph (03) 6324 5493 OR email sandra.murray@utas.edu.au

Secondary Contacts

Dr Kiran Ahuja on ph (03) 6324 5478 OR email Kiran.ahuja@utas.edu.au

Prof Madeleine Ball on ph (03) 6324 5480 OR email madeleine@utas.edu.au

Once we have analysed the information we will be emailing you a summary of our findings. You are welcome to contact us at that time to discuss any issue relating to the research study.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study should contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote [*HREC project number: H14167*].

Thank you for taking the time to consider this study. This information sheet is for you to keep.

CONSENT FORM

Tasmanian Local Food Supply Project

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that my involvement in this study may be as a:
 - Participant who will take part in a 30-40 minute recorded interview. The interviews will be semi-structured and recorded using a Sony MP3 IC Recorder and transcribed. Where possible the interviews will be conducted face to face at a time and place convenient for the primary stakeholder. If a face to face interview is not possible then a telephone interview is an option. As a participant you will be asked questions relating to your experience, your knowledge and your attitudes with regard to the production and supply of locally grown fruit and vegetables.
4. I understand that there are no specific risks with participation in this study:
 - participation in the study is entirely voluntary and there is no obligation to take part in the study
5. I understand that all research data will be securely stored on the University of Tasmania premises for five years, and will then be destroyed.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researchers will maintain my identity confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

Name of Participant:

Signature:

Date:

Statement by Investigator

☐ I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐ The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of investigator: _____

Signature of investigator: _____

Date: _____

7.4 Interview Preamble and Schedules

PREAMBLE TO LOCAL FOOD SUPPLY PROJECT INTERVIEWS

Introduce yourself and Local Food Supply Project

The Local Food Supply Project (LFSP). The Local Food Supply Project aims to build a picture of the production, supply and distribution of fresh fruit and vegetables from producer to wholesaler/distributors, in 12 Tasmanian local government areas (LGAs) which comprises the main fruit and vegetable growing areas in Tasmania.

The project is part of a larger project known as the Healthy Food Access Tasmania Project which is funded by Tasmania Medicare Local and is being delivered through a collaboration between the Heart Foundation (Tasmanian Division) and UTas.

The information gathered from the project will help inform ways in which local fruit and vegetable producers may have improved, or new, opportunities to sell their produce in local markets. This will be achieved by getting a better understanding about what fruit and vegetables are grown and where they are grown, as well as identifying factors that influence the supply of local fruit and vegetables to local markets. This project does not compete with but rather complements existing local fruit and vegetable supply chains.

This potentially will mean improved access to locally grown fresh fruit and vegetables by local communities and increased local job opportunities.

Information will be gathered from a range of interest groups including fruit and vegetables producers, processors/wholesalers/distributors, peak grower organisations representatives, State and Local government employees and consultants to the fruit and vegetable industry.

This information will be used to develop a resource kit which will assist interested parties in developing local fruit and vegetable supply systems that link the growers to the consumers.

The information gathering component will be completed by the end of 2014.

Your participation in this project is greatly appreciated.

If you have any thoughts or questions regarding this project you are welcome to contact two members of the research team;

Mr Stuart Auckland on (03)63244035 or stuart.auckland@utas.edu.au

Ms Sandra Murray on (03) 63245493 or sandra.murray@utas.edu.au

Interview Schedule A:

Commercial sector/Consultants/University of Tasmania/State and Local Government

1. What is your interest/role in the Tasmanian food and vegetable industry?
2. What opportunities do you think exist for fresh fruit, vegetables and value-added production in the major growing regions in Tasmania?
3. Are you or your employer organisation a member of any local fruit and vegetable industry association and if so which association(s) and why?
4. What has changed or is changing in distribution structures across the region and how will this affect your work/organisation?
5. What do you understand by the term local food distribution systems?
6. What would an effective local food distribution systems look like to you?
7. What form of farming enterprise may best benefit from the development of effective local food distribution systems?
8. What do you think of the idea of a local food distribution model for this region (prompt - HUB, COOP, Cluster)?
9. What would it look like in your view and how would it work in Tasmania?
10. Do you think fruit and vegetable producers, stakeholder groups e.g. Councils and local communities in Tasmania could work together on something like this? Why or why not?
11. What opportunities do you think exist for strengthening the network between fresh fruit and vegetable production, distributor/wholesaler/consumer across Tasmania?
12. What are the positives and negatives of current markets and relationships?
13. Is there scope to produce more of different varieties/products?
14. What are some of the challenges to producing more of different varieties/products?
15. What needs to be done to address these challenges?
16. What do you think are the key issues around diet and health?
17. Are you interested in keeping in contact and being updated on the project as it progresses?
18. Is there anything further that you feel I should ask or you would like to ask?

Interview Schedule B: Community Groups

1. What is your interest/role in the Tasmanian food and vegetable industry?
2. Is your community group a member of any Tasmanian based fruit and vegetable industry associations and if so which association(s) and why?
3. What local produce do you currently have access to from growers in your area?

Product type	Use	Quality / seasonality / availability

4. What method best describes how you access local produce from local businesses/producers?

Product type	Supermarket	Farmers market	Direct purchase	Wholesale	others

5. Would you like to be able to purchase more local produce? If so please indicate product type and amount:

Product type	Quantity	Frequency	Buying outlet

If not, why not?

6. What opportunities do you think exist for fresh fruit, vegetables and value-added production in your area?
7. What has changed or is changing in distribution structures across the region
8. How will this affect community groups?
9. What opportunities do you think exist for strengthening the network between fresh fruit and vegetable production, distributor/wholesaler/consumer across Tasmania?

10. What are the positives and negatives of current markets and relationships?
11. What do you understand by the term local food distribution systems?
12. What do you think of the idea of a local food distribution model for this region (prompt - HUB, COOP, Cluster)? What would it look like in your view and how would it work for community groups?
13. Do you think fruit and vegetable growers, processors/wholesalers/distributors, Council and community groups in this region could work together on something like this?
14. What do you think are the key issues around diet and health in your community?
15. Are you interested in keeping in contact and being updated on the project as it progresses?
16. Is there anything further that you feel I should ask or you would like to ask?

Interview Schedule C: Fruit and Vegetable Growers

1. What is your interest/role in the Tasmanian food and vegetable industry?
2. What fruit and vegetable products do you grow on your property and why?

Product type	Area (HA)	Yield if they are happy to provide	Other

3. Can you tell me some more about your produce and your farming enterprise?
4. How do you describe your farm and enterprise?
5. Are you certified or aligned with any specific system in terms of your farming methods (e.g. organic, green veg, FreshCare, EurepGAP, SQF etc)?
6. What opportunities do you think exist for fresh fruit, vegetables and value-added production in your area?
7. If you had the opportunity, would you produce different products in addition to your current range? If yes, what? If not, why not?
8. What are some of the challenges to producing more of different products?
9. Do you have any planned or anticipated changes to your product lines and what you produce and why?
10. Are you a member of any local fruit and vegetable industry associations and if so which association(s) and why?
11. What method best describes how and where your fresh fruit and vegetables gets sold?

Product type	Local	Metro	Regional	Interstate	Export

12. How do you distribute and market your produce?
13. Are there different outlets for different products? What are they and why?

14. How do you grade your produce and what happens to excess or any second grade produce?
15. Do you do any processing or value adding activities?
 - a. Have you done this before and how?
 - b. Would you want to?
 - c. What forms might they take?
 - d. Do you think there is a need and opportunity for more value adding / processing activities in the area?
16. Do you distribute or market your produce directly to local households, markets and businesses and why or why not?
17. What has changed or is changing in distribution structures across the region and how will this affect you and your enterprise?
18. What do you understand by the term local food distribution systems?
19. What do you think of the idea of a local food distribution model for this region (prompt - HUB, COOP)? What would it look like in your view and would it work for you?
20. Do you think farmers and business in this region could work together on something like this?
21. What opportunities do you think exist for strengthening the network between fresh fruit and vegetable production, distributor/wholesaler/consumer across Tasmania?
22. What are the positives and negatives of current markets and relationships?
23. How do you access information/marketing/research/technology for your enterprise/business?
24. What do you think are the key issues around diet and health?
25. Are you aware that 'not for profit' food rescue agencies such as SecondBite, Produce to the People and Foodbank, redistribute locally grown produce (which is surplus to market requirements) to charities in Tasmania?
26. Are you interested in keeping in contact and being updated on the project as it progresses?
27. Is there anything further that you feel I should ask or you would like to ask?

Interview Schedule D: Peak Grower Organisations

1. What is your interest/role in the Tasmanian food and vegetable industry?
2. Can you tell me some more about the produce and farming enterprises your organisation represents?
 - a. How do you describe a typical farming enterprise for your produce you represent?
 - b. Is the produce you represent certified or aligned with any specific system in terms of your farming methods (e.g. organic, green veg etc)?
3. How are the products from your typical horticultural enterprises distributed and marketed locally?
4. How does it differ between fruit and vegetables?
5. Data provided by the State Government in the Food and Beverage Scorecard suggests that the majority of the produce is sold interstate. Can you provide any additional information as to what products may have additional challenges in Tasmania?
6. What new opportunities do you think are available for fresh fruit, vegetables and value-added production in your Industry?
7. How could your industry produce more of different varieties/products?
8. What are some of the challenges to producing more of different varieties/products?
9. How is the fruit and/or vegetable produce your growers produce graded and what happens to excess or any second grade produce?
10. What are the processing or value-adding activities in the industry(ies) your organisation represents ?
 - a. If so, how have they done this before?
 - b. If not, How Would they want to value-add?
 - c. What forms might it take?
 - d. Do you think there is a need and opportunity for more value adding / processing activities in the area?
11. Does your industry distribute or market produce directly to local households, markets and businesses and why or why not?
12. Is your organisation a member of any larger fruit and vegetable industry organisation or associations and if so which association(s)
13. What has changed or is changing in distribution structures across the region and how will this affect your industry?
14. What do you understand by the term local food distribution systems?

15. What do you think of the idea of a local food distribution model for this region (prompt - HUB, COOP)? What would it look like in your view and how would it work for your industry?
16. Do you think growers, processors/wholesalers/distributors, Council and peak organisations in this region could work together on something like this?
17. What opportunities do you think exist for strengthening the network between fresh fruit and vegetable production, distributor/wholesaler/consumer across Tasmania?
18. What are the positives and negatives of current markets and relationships?
19. What do you think are the key issues around diet and health?
20. Are you interested in keeping in contact and being updated on the project as it progresses?
21. Is there anything further that you feel I should ask or you would like to ask?

Interview Schedule E: Processors / wholesalers /distributors

1. What is your interest/role in the Tasmanian food and vegetable industry?
2. What local produce do you currently have access to from growers in your area?

Product type	Use	Quality / seasonality / availability

3. Can you tell me some more about the farming enterprises from which you source your produce?
 - a. How would you describe the farming enterprises from which you source your produce?
 - b. Does the producer need to work to a quality assurance scheme that you nominate or are there others that they produce to (e.g. organic, green veg etc)?

4. What fruit and vegetable products do you process/wholesale/distribute and why?

5. What method best describes how you access local produce from local businesses?

Product type	Supermarket	Farmers market	Direct purchase/contract	Wholesale	others

6. What method best describes how and where the produce you handle gets sold?

Product type	Local	Metro	Regional	Interstate	Export

7. Would you like to be able to purchase more produce? If so please indicate product type and amount:

Product type	Quantity	Frequency	Buying outlet
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8. How do you distribute and/or market your produce?
9. If you grade your produce, how is this done and what happens to excess or any second grade produce?
10. Do you have any planned or anticipated changes to the produce lines that you process/wholesale/distribute, if yes then which produce and why?(Not to processor)
11. Are there different outlets for different products? What are they and why?
12. Do you do any processing or value adding activities?
 - a. Have you done this before and how?
 - b. Would you want to?
 - c. What forms might they take?
 - d. Do you think there is a need and opportunity for more value adding / processing activities in Tasmania?
13. What new opportunities do you think exist for fresh fruit, vegetables and value-added production in the major growing regions in Tasmania?
14. Are you or your employer organisation a member of any local fruit and vegetable industry associations and if so which association(s) and why?
15. Do you distribute or market anything to local households, markets and businesses and why or why not?
16. What has changed or is changing in distribution/wholesaling structures across the region and how may this affect your work/organisation?
17. What do you understand by the term local food distribution systems?
18. What would an effective local food distribution systems look like to you?
19. What form of farming enterprise may best benefit from the development of effective local food distribution system?
20. What do you think of the idea of a local food distribution model for this region (prompt - HUB, COOP)? What would it look like in your view and how would it work in Tasmania?
21. Do you think fruit and vegetable producers, stakeholder groups and local communities in Tasmania could work together on something like this?
22. What opportunities do you think exist for strengthening the network between fresh fruit and vegetable production, distributor/wholesaler/consumer across Tasmania?

23. What are the positives and negatives of current markets and relationships?
24. Is there scope to produce more of different varieties/products?
25. What are some of the challenges to producing more of different varieties/products?
What needs to be done to address these challenges?
26. What do you think are the key issues around diet and health?
27. Are you interested in keeping in contact and being updated on the project as it progresses?
28. Is there anything further that you feel I should ask or you would like to ask?

7.5 Coding Structure

